

OCCUPATIONAL HYGIENE IN ROMANIA: PARTICULAR ISSUES

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Abstract. Occupational Hygiene plays an important role in many Occupational Health Safety and The Environment projects, but the efficiency of this activity is strongly influenced by factors exogenous to the profession. This paper undertakes a partial analysis of the Occupational Hygiene (OH) practise in Romania. In order to illustrate the drawbacks encountered in practise, some of the implications of the political, economic and social context are first emphasised. Further trends are then presented: the perpetuation of the extensive industries, the increasing the number of small companies, the low perception of the workers towards the efficiency of the OH, the development of the non-industrial activities. A further discussion that underscores the improvement of the human potential as the driving force of OH efficiency suggest some solutions of improvement.

Key words: Occupational Hygiene, hazard identification, hazard control

Rezumat. Igiena Ocupațională (IO) joacă un rol important în multe proiecte de Sănătate Ocupațională, Protecția Muncii și a Mediului Înconjurător, dar eficiența acestei activități este puternic influențată de factori ce nu aparțin profesiei. Prezentul articol întreprinde o analiză parțială a practicii IO în România. Mai întâi, pentru a ilustra piedicile întâlnite în practică, sunt reliefate unele implicații ale contextului politic, economic și social. Sunt prezentate apoi tendințe viitoare: menținerea industriilor extensive, sporirea numărului de firme mici, slaba percepție a muncitorilor față de eficacitatea IO, dezvoltarea activităților neindustriale. Urmează o discuție ce identifică îmbunătățirea potențialului uman ca forță motrice în eficientizarea IO și sugerează câteva soluții pentru îmbunătățire.

Cuvinte cheie: igiena ocupațională, identificarea riscului de expunere, menținerea sub control.

INTRODUCTION

Occupational Hygiene (OH) plays an important role in many Occupational Health Safety and The Environment (OHS&E) projects. A textbook definition outlines OH as “the discipline of anticipating, recognizing, evaluation and controlling health hazards in the working environment with the objectives of protecting worker health and well-being and safeguarding the community at large”. According to the definition, the occupational hygienist is required to

provide technical data concerning the exposure risk and solutions to control the hazard. But the reduction of occupational risk is a complex chain that implies: good analytical know how, skills and equipment, a thorough interpretation of data, the design of adequate solutions, an effectual communication with the employer and employees and a strictly supervision of the implemented safety measures. Each of these actions must be effective in itself and also effectively harmonised. For the sake of the present analysis the

overall efficiency, from the recognition to the control of hazard will be referred as to “The Efficiency Chain” (EC).

Every loop of EC is strongly influenced by diverse factors, but those exogenous to the profession are of critical importance. The implications of extensive phenomenon such as the fall of the communism, the global economy, or the ageing population, have been stressed elsewhere [1,2]. The present paper deals with some particular aspects that influenced the evolution of OH in the Eastern Europe with reference to Romania. Some discussions regarding the future trends and the driving forces for the potential actions are included.

Factors of influence

The advancements in science and technology brought into the OH practise more sensitive measurement methods and laboratory techniques. This was, undoubtedly, a factor of progress, because it created the possibility of a more accurate characterisation of the working conditions. Therefore, one may suggest that this is the main driving force in OH advancement and state that a more sophisticated apparatus leads to a higher efficiency.

However, the equation is not so simple. It comprises all the other components of the EC. In fact, the technological advancement, if not used in conjunction with the other factors, may prove not to be of much use or even inefficient. Two examples follow:

- a. The acquisition of new equipment must be accompanied by the adequate laboratory know-how, the training of the analysts and by running proficiency schemes in order to test the overall performance of the newly acquired methods. Otherwise, the investigators and analysts will continue to produce the same unprecise results, but using a better equipment. This situation is known as “old results with new tools”.
- b. the state-of-the-art characterisation of the adverse working conditions represent only the starting point for the improvement of the situation. The reduction of the occupational hazards implies that all the other loops of the EC (solution design, communication, etc.) to work properly. If they don't, the result is that the new measurement and analytical equipment can only make the life a bit easier for the investigator, but leave the working conditions unchanged.

These two examples were chosen because they were present in Romania. The widespread opinion that the acquisition of new equipment will bring a better efficiency, not only it did not solve the problem but had a negative impact in the last 10 years.

The political context is a strong driving force in the evolution of every society. In the present analysis, the implications of the political isolation, such as that imposed by the post-war iron curtain in Europe, will be stressed out, again, by means of two examples:

OCCUPATIONAL HYGIENE IN ROMANIA: PARTICULAR ISSUES

- a. isolationism brings the informational transfer disruption; consequently, the dissemination of the scientific information is impaired. The OH community in Romania had limited access to scientific information and received only scattered pieces of information. One consequence was that OH professionals gained a partial representation of a problem in question. Animated by the will to improve their work, some of them tried to translate this truncated information into the local situation. The result was a mixture of old and new that often had a negative impact upon the quality of the work (e.g. the hazard quantification using a sensitive laboratory method in conjunction with an obsolete sampling technique). Another consequence was that some other individuals tried to fill the informational gaps using their basic training background. Thus, they have worked a lot to accomplish what was already done - in other words to “reinvent the wheel”. Some of them had succeeded, but some had not. The motivations were diverse but the result was that, often, they developed a reluctant attitude to the introduction of a complete know-how (e.g. a new method of analysis).
- b. isolationism hinders the professional contacts; if limited to sporadic meetings and not extended on regular basis, the professional contacts cannot exert their mission

(i.e. the sharing of experience and establishing the cooperation of mutual interest).

The limitations imposed by the political isolationism lead to the creation of enclosed professional communities that evolved separately. In time, they became hardly compatible with each other. This observation refers to the OH communities from inside the iron curtain in Europe; however, these examples could apply to some other situations- every limitative political context produces the same effect.

The economic context strongly influences the evolution of OH both quantitative and qualitative. Unlike the Western Europe [3], the extensive industries, and thus the OH, were born in Romania as a result of the forced industrialisation. Consequently, they bear the features of centralism. The process of reconversion which is on the run, largely known as “the transition”, is a very delicate and complex task that brought economic disturbances, such as (the references are illustrative and not exhaustive):

- a. heavy industries (e.g. steel and mining) diminished their production and worked discontinuously;
- b. other products (e.g. detergents, dyes and paints) grew in volume;
- c. some non-industrial activities (e.g. transportation and trading) flourished.

All these transformations produced in a short time, lead to less usual profiles of exposure. For instance, in the heavy industries, the customary and steady levels of airborne toxicants in the workplace were replaced by an

unpredictable alternation of high values (“peaks of exposure”) and low values, according to the disturbances in the processes. Another example is the rising of urban pollution when compared to the workplace contamination [4]. These situations, never encountered before in the literature or in their own practise, exerted pressure upon the occupational hygienists. They had to face different situations but they had not the necessary meanings (e.g. latest toxicological data, adequate standards, analytical know-how and equipment etc.)

The social context puts a strong fingerprint upon the efficiency of the OH activities. Supposing that the occupational hygienists would be able to overcome all the drawbacks stated before, there is still in question how well is their work perceived. People more educated, more experienced and financial balanced pay more attention to their working conditions and the occupational exposure risk. Therefore, they tend to be susceptible to workplace related problems and become receptive to the advice and expertise of an occupational hygienist. Otherwise, they tend to neglect their own health in favour of a few gain; and the history of OH is full of such examples.

What’s next ?

Nobody can predict the future. However, based on the last 10 years evolution, there are some trends that are likely to maintain:

a) the perpetuation of some extensive industries. In the present global

context, the shift of the polluting and energy-consuming industries from the developed countries to countries with a cheaper labour force and a weaker environmental legislation will persist. In Romania, there is a large infrastructure for the extensive industries established in the ‘60ties. Some of these units will cease to exist, but others have already began to be updated, mostly by selling to foreign companies (e.g. steel industry, oil refineries, etc.). Such factories manufacture the same goods under new standards of quality. Therefore, the occupational hygienists are expected to continue to deal with traditional problems such as silica exposure, lead poisoning, etc.

- b) the increasing number of small companies, with only few employees. These units cannot afford to hire an occupational hygienist on permanent basis and need only sporadic assistance. Therefore, the need for consultancy will increase and the hygienists will have to deal with small scale but very diverse problems (e.g. the “sweat shops”). This situation requires more skilled and trained professionals.
- c) the preservation of a low perception of the workers towards the OH. Paul Oldershaw, cited by [5], said that 95 percent of workers in the United Kingdom who work in enterprises of less than 10 people would probably not “recognise a hygienist if one flew

OCCUPATIONAL HYGIENE IN ROMANIA: PARTICULAR ISSUES

by”. This superficial perception is also present in Romania. The situation is further worsened due to the compensatory money paid for hazardous conditions (“the dirty money”). Under these circumstances the workers tend to associate the measurement of occupational hazard with a formal activity issued by some useless law, but that can eventually bring them some extra money. The superficial perception could be also regarded as the main drawback in extending the OH activities from evaluation only, to control and reduction of hazard exposure.

- d) the development of non-industrial activities. On one hand, the growth of the amount of the traded goods brings more and more chemical substances, both as raw materials and direct utilisation. On the other hand the preoccupation towards problems such as “white collar environment”, “sick building syndrome”, bioaerosols and ergonomics will continue to grow. This diversity requires more knowledge and flexibility. Again, consultancy needs will prevail upon extensive investigations performed on regular basis (such as those practised by the District Public Health Departments).
- e) the OH versus Environmental Hygiene in the plant: the problem clearly exists and is visible[6] but it is still unclear how to solve it in a unitary manner. In the last 10 years the environmental concern

grew more and more; laws were issued and law enforcement bodies were created. However, the environmental hygiene practise in plants and other production units fell upon the shoulders of the occupational hygienists already in the job. These people were not prepared to deal with various environmental demands, neither due to their basic training, nor by their previous experience. Until specialists with a proper training in environmental hygiene will enter in service, the problems will continue to be solved by the occupational hygienists. This trend is not expected to change, at least in the next coming years.

What should we do ?

As stated in the Introduction, the evolution of the OH is strongly affected by factors exogenous to the profession; these are strong forces that may stimulate or hinder its evolution. Under these circumstances, the occupational hygienists must continuously embrace new challenges and adapt their knowledge to the particular situations encountered in practise. Nobody can create enough scenarios to cover all the possible circumstances of exposure, exposure profiles and solutions for remediation. Although there is a lot of knowledge available, there is always a final detail that determines the realistic evaluation of the working conditions or the design of an efficient solution to avoid exposure. And this detail pertains only to the professional judgement of the occupational hygienist involved.

Although the hazardous agents are quite common (e.g. chemicals, noise, bioaerosols, etc.), there are hardly two circumstances of exposure alike.

Therefore, there are not cut and dried direction to follow, but some general actions to improve the situation could be:

- a. every occupational hygienist should try to think in the general context and not to limit his horizon to his momentarily job task. Between the '50ies and '90ties, in Romania the technologies did not evolved very much. With few exceptions, every factory used the same technology that was implemented at the establishment of the plant itself. Consequently, the routine of OH investigations and surveillance did not changed very much; the hygienists faced the same problems year after year. The last 10 years brought dramatic changes in the economic life. The picture shows now a large diversity, from primitive and manufacture-like production, to the usage of the up to date technologies imported in the last years. Thus, the occupational hygienist have to face diversity instead of regularity. In order to do that he must analyse more careful the economic context.
- b. every occupational hygienist should relay more on know how and professional judgement than on the acquisition of new equipment. The last 10 years proved that the newly acquired western measurement

apparatuses used in conjunction with the old laboratory methods and investigation protocols failed to improve things (e.g. to generate reliable results).

- c. to work closer with the trade unions in order to assist workers with their specific problems and to sensitise the workers towards a healthy working environment. Communication is essential for achieving the ultimate goal; if not proper informed, the workers will continue to perceive OH as a formal and of no substance action.
- d. to attract in OH projects more technical and economic specialists capable to elaborate solutions (such as engineering) and to evaluate the costs. In the past, the gaps between the O H investigators and the personnel who was supposed to create and apply solutions lead to inefficiency of improving the working conditions.
- e. to focus on specific programs rather than extensive routinely surveys (e.g. the periodical measurement system practised by the District Public Health Departments). These schemes do not correspond any more to the economical reality.

The improvement of the human potential

The CE is a complex structure with delicate links; it comprises different actions carried out by different people with different specialities and educational background. Therefore, it is unlikely to ever function smoothly and quietly like a well oiled engine.

OCCUPATIONAL HYGIENE IN ROMANIA: PARTICULAR ISSUES

There will always be friction, discontinuities and gaps, both in Romania or elsewhere. It is for every occupational hygienist not only to try to do his particular job, but also to have enough additional knowledge in order to integrate into the chain. There are two main driving forces to achieve this goal.

One driving force is the legislation; in other words to impose. The legislative needs for the countries in the Central and Eastern Europe have been emphasized in [6]. Another analysis dedicated to Occupational Health and Safety (OH&S) in the EU candidate countries is that by Woolfson [7]. Both documents stress out the difference between Western legislation and the one in the former communist countries and recommend improvement. At present, Romania is making efforts to join the EU. In the general frame of this action, the compatibility with the EU legislation is a mandatory matter. Therefore, sooner or later, the OH&S legislation will be aligned to the Western standards, either by adaptation or by pure translation (e.g. the ISO standards).

The legislation is undoubtedly a fundamental aspect. But it has to be remembered that some good aspects existed even in the past legislation, such as a TLV list with restrictive values and the means to enforce it. Still, the system did not work very efficiently. Some explanations were analysed in the other sections of this paper. Another reason is the lack of high skilled professionals.

Therefore, the present paper identifies the second driving force as being the improvement of the human potential. In order to be efficient, the key is to have good quality professionals. But to achieve this goal there is a serious drawback to be overcome. In Romania, the OH is still not recognised as a profession. Although practised for more than 50 years, OH do not have an educational system, dedicated literature or a system of quality control. Consequently, the improvement of the human potential is not a very easy action. It will take time and effort to create an educational system to solve the basics. On short term the solution is to increase the experience exchange process. More meetings and publications are needed. These should not be regarded as a waste of time and money. Any tiny piece of information may correct errors that are currently performed. The exchange of information with the international OH community leads to a broader view upon various aspects. For instance, instead of applying for expensive equipment suited for the situations encountered some 20 years ago, some cheaper and profitable solutions could be borrowed from other people's experience. In the OH field, the old controversy Men vs. Machine is still dominated by the human factor.

CONCLUSIONS

The political, economic and social context put a strong fingerprint upon the evolution of OH profession in Romania. At present, the OH professionals are caught between a rapid

changing of occupational exposure circumstances and an slow evolution of the system of investigation and control of the hazard. In the last 10 years, the introduction of new equipment of sampling and analysis did no prove to be crucial to advancement. The main causes are the lack of adequate OH know-how and a superficial perception towards the usefulness of OH. An aggravating circumstance is that the OH activities are orientated predominantly towards investigation; the control and prevention of exposure to occupational hazard are not very effective.

There is an increasing need for consultancy in order to elaborate integrative solutions for occupational hazard reduction. This action needs extensive know-how, flexibility and skilled professionals. Thus, the present analysis identifies the improvement of the human potential as the main driving force for the advancement of the OH in Romania. In order to achieve this goal there is a need for:

- a. experience exchange with the international OH community on short term
- b. education in OH on long term

These actions are not a waste of time and money; in order to raise the quality one must first invest in people and than in equipment.

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