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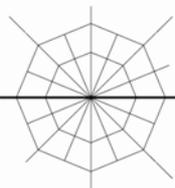
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**Occupational health and safety  
regulation and management systems:  
experiences from Denmark**

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# Abstract

There is an urgent need for research in the actual effects of the implementation of Occupational Health and Safety management systems (OHSM) in industry and of the preconditions for a successful process of implementation as well as for durable results in the health and safety performance of companies. Increasingly governments, including the Danish, integrate the existence of management systems as not only an indicator but also a guarantee of acceptable practices. In this paper the evolution of a regulatory focus on OHSM in Denmark through the last decade is shortly outlined. Onwards a study, primarily based on qualitative interviewing of management and employees, of the implementation of OHSM in five small fish-processing companies is presented. The study confirms the general results of other provisional research in the field. The process of implementation in the five companies by way of a supportive environment, primarily management commitment, and the way it was conducted, especially through its bottom-up approach, has resulted in a positive reinforcement of attitudes and practices towards improving the OHS performance. The study, thus, has shown the crucial importance of external factors to the system itself to secure a positive outcome.



# Occupational health and safety regulation and management systems: experiences from Denmark

By Tine Herreborg Jørgensen and Ole Busck

## Changing regulation of occupational health and safety in Denmark

During the 1990s, the Danish Health and Safety authorities made an effort to increase companies' health and safety performance through a series of activities that focused on incentives and organisational tools rather than traditional prescriptive regulation. As in many other industrialised countries the profound OHS reforms of the late 70s had not rendered satisfying results. The statistics on injured workers and work related diseases kept creeping upwards. In the quest for new measures, the systematic approach to safety management came into the fore, no doubt influenced by the strong focus on quality and environmental management of the time. In 1992, in the process of implementing the EU framework directive on Health and Safety, a provision on "Workplace-assessment of health and safety" was implemented in Danish law and in 1997 it became mandatory for all companies to elaborate and maintain such one in written form. The provision follows in principle the structure of a management system and prescribes a bottom-up approach with workers' participation. Many other initiatives from the authorities followed to promote company-internal drivers and mechanisms of co-operation, in order to strengthen the preventive efforts, which were reflecting the changing role of the supervising authority from traditional control towards process consultancy for companies with a proactive attitude towards OHS. It would include economic compensation, if companies implemented a certified management system.

In general the industrial partners were positive towards these initiatives. The labour unions welcomed the workplace-assessment and saw it as an important tool for participation and influence. Also the attitude towards elaborated management systems was positive. This should be seen in the light of the fact that all through the 90s, more than half of the Danish companies, who implemented EMS also integrated health and safety issues into the systems (Jørgensen, 2001). This included also workers' participation, at least at the representative level (Christensen et. al., 1999). Studies have shown that the implementation of a management system by no means guarantees better environmental or OHS performance (Kamp, 1997), (Busck, 2000). But in companies with a proactive approach intending to use the management system as a tool for change rather than just as a management tool, the possibilities for improvements in performance as well as employee participation are at hand.

By the end of the 90s the HS-authorities adopted a new over-all strategy. Through a so-called 'Adjusted Inspection' all companies were divided into 3 categories depending on a: their capacity to ensure a safe working environment and b: their actual OHS-performance:

Level 1: Companies who are both able to and willing to work for OHS improvements.

Level 2: Companies who need assistance to improve.

Level 3: Companies who are neither able to nor willing to work for OHS improvements.

A core aim of the strategy was for the authorities better to prioritise their resources. Level 1 companies were considered to be self-supporting, when first inspected and categorised, level 2 companies were put under some pressure and assisted to improve, whereas most resources were directed towards level 3 companies to correct their performance.

In 2001 the new liberal government in Denmark decided to maintain this over-all strategy but with some radical changes in its preconditions. The staff of the HS-Authority and the Labour Inspection was seriously cut and it was resolved that companies with a certified OHS management system independent of any visit from the Labour Inspection would automatically be placed at level 1. A regulation was, however, issued specifying some substantial OHS-requirements to the management system, including clauses on health-promotion and marginalised social groups (Ministry of Labour, 2001). Once being at level 1, the company will actually not be inspected for a period of 11 years, unless in case of serious accidents. Besides, from 2005 company with will receive a green "smiley"-label to inform the public of its high performance. At the same time companies with poor OHS performance receive a yellow or red smiley.

The liberal government's reform of the working environment system in Denmark included other drawbacks in the traditional requirements and control of the companies in favour of market-oriented approaches. Approaches, which ideally could move the companies in a wanted direction, at least from a systems point of view. The inherent bottom-up approach of the former strategy, including workers' participation and a specific check of the companies' capacities and strives, were, however, left behind. It is obvious, therefore, that OHS management system has come to play a crucial role in the OHS regulation as well as in the maintenance of or improvements in the actual health and safety performance of companies in Denmark.

## **Occupational health and safety management systems (OHSAS 18001)**

At the end of the 1980s, companies began to implement quality management systems according to the ISO 9000 series. In the beginning of the 1990s, the next systematic management "wave" within environmental management systems (EMS) began. An increasing number of companies implemented EMS systems according to the EU-commission's EMAS-guidelines (published 1993 and revised 2000) or ISO 14001 (Published 1996). Health and safety is only to be included in these systems, if it is related to the external environment. Today more than 800 Danish companies have an ISO 14001 certification.

OHSAS 18001 was published in 1999 and was formulated by international certifying bodies based on BS 8800 (British Standard, 1996), (BSI, 1999). OHSAS 18001 can be described as a de facto standard and is used internationally as the basis for certification of OHS management systems. Two times, ISO has voted about, whether to develop an ISO standard within this field and on both occasions the suggestion was refused. Currently, no further plans have been made in ISO to prepare a standard for OHS management systems. OHSAS 18001 has been developed to be compatible with ISO 9001:1994 and ISO 14001:1996 in order to facilitate the integration of quality, environment and occupational health and safety management systems by organisations. (BSI, 1999). In Denmark, today, more than 165 companies have a certified OHSAS 18001 management system.

Little research has been made about the actual outcome of implementing OHS-management for the health and safety performance. Frick et al (2000) elaborates on the sum of intermediary experiences collected in their anthology and concludes: "it has not been demonstrated that the strategy of systematic OHSM can be combined with a deregulation strategy" (p.13). From the "most positive cases presented" they deduce that as well "participatory elements" as a "supportive OHS-infrastructure" are needed to complement the systematic management practices. The national OHS Commission of Australia seems to have conducted the most comprehensive analysis of existing research in the area. According to Hasle et al (2003) the analysis concludes that OHSM can render positive results but there is no guarantee. The best results are associated with the involvement of both management and employees and an innovative style of management that is directed more towards the control of risks in the workplace than towards the behaviour of employees (p.18).

In the following we will present a modest contribution to the knowledge about the workings of an OHS-management system when implemented in small companies.

## **Implementation of OHSAS 18001 in five fish processing companies**

The empirical background of this paper is an investigation of the implementation of OHS management system in five fish processing companies in Skagen, Denmark (May 2003 to April 2004). The companies together initiated a project with their national trade association and a consultant and received funding from a government agency. The aim of the project was for the five companies to achieve a certificate according to the Danish OHSM-regulation and furthermore, to produce different materials to help other companies through the phases of implementation. We, from Aalborg University, undertook the assessment of the implementation process and carried out interviews with management and employee-representatives during and after certification of the system. Based on the interviews, the analysis of documents and the observations in the premises, we identified the actual changes in OHS activities in the companies as well as the perceived changes in attitudes and behaviour. Furthermore, we identified actual and perceived changes in management-commitment, employee participation, and the scope of the HS activities in the companies, e.g. in relation to integration of OHS-considerations in planning, technological development and investments.

Our investigation does not embark on an identification of actual effects in the long-term health and safety performance of the companies. The period after certification was too short and we did not have access to the required data. We did, however, collect valuable information about some fundamental requirements to improvements of the performance in an industry that has a bad reputation and bad records in the OHS-field. Our findings, however, are no doubt biased by the fact that the implementation process in itself has focused the attention on OHS among both management and employees in the companies, although for some companies this took place half a year ago. When things become daily routines, the activities and the engagement may decrease.

### **Reasons for implementation**

It was exclusively by the initiative of the managers that the decision to implement an OHS management system and join the project was made. An important motive of the managers, however, was - with an OHS certificate - to show the employees their motivation and concern about the employees and their OHS conditions. Behind this lay that the companies wanted to create or to maintain a reputation as a good workplace and to be able to attract or keep good and experienced employees. Most of the companies did not experience actual problems, when keeping or attracting manpower, but they found it difficult to replace experienced operators and furthermore, how the labour market would develop in the future was uncertain. Besides focussing on the employees, the management also wanted a more systematic approach to improve their self-discipline in paying attention to OHS problems and carrying out solutions. Especially the companies with certificates on quality and environment found it natural and rather simple to integrate OHS into their management system. Another reason for OHS certification, but not the most important was to get one step ahead of the Labour Inspection. Only few of the companies mentioned their customers or the market as a reason for certification. Considerations of image seemed primarily related to the employees and the local community.

The employees had a positive attitude towards the project even though they did not take part in the initiative. The most common reason for the positive attitude was the expectations that the system would have a disciplining effect on conservative and inattentive colleagues. Other reasons mentioned were good experiences from the quality and environmental management systems and the expectations that an OHS system could contribute to real improvements of the existing OHS problems.

### **Organisation of the project and integration with other management systems**

Five network meetings supported the implementation of the OHS management systems. Consultants from The Danish Chamber of Commerce (a network for Trade, IT, Industry and Service) and Danish Technological Institute started the meetings with a presentation of the specific phases of implementation with subsequent assignments to the companies. The meetings were also used for discussing, how to handle specific OHS issues in order to comply with the act 923. The companies participated with the OHS responsible person and some companies also participated with 1 or 2 employee representatives. All companies were satisfied with the network meetings, especially the practical exchange of experiences.

The companies with quality and environmental management systems certificates found that it was an advantage to be familiar with these systems in advance. With their knowledge of management systems, the structure of the handbook, documentation and routines, it was estimated that the implementation of OHS took 25-50% of the time spent to implement other systems. All companies with at least one existing management system choose to integrate OHS into this system. In the discussions of integrated management systems (IMS), distinctions between two approaches/levels of integration are often made (Hines, 2002), (Wilkinson and Dale, 2002):

**Alignment:** A parallelisation of the systems using the similarities of the standards to structure the system. The purpose of the alignment is to reduce administration and audit costs. Still separate procedures for each area but placed in only one manual.

**Integration:** Full integration in all relevant procedures and instructions. Total Quality Management (TQM) approach with focus on employees, customers and continuous improvements.

The approached to integration which is used in most Danish companies and also by the companies in Skagen is the alignment approach.

### **Starting point of the OHS activities**

At the beginning of the project, it was found that the five companies were already in a process of solving the traditional OHS problems in this industry; accidents, noise, manual handling, climate and repetitive strain injury. Most of the remaining problems were considered difficult to solve by both management and employees, and often connected with considerable investments. The exposure to operators of noise from the machines, at which they worked, for example, generally exceeded 85 dB and they had to wear hearing protection all day. Small improvements have been made by the installation of noise-reducing devices, but more radical changes such as investment in new machines or the construction of new buildings lay far outside the scope. On the other hand, there seem to be a general recognition of the fact that only automation of the work could solve the many simultaneous problems associated with the work at the machines.

## **Changes resulting from implementation**

It was obvious that management commitment to OHS had increased considerably during implementation and that the employees had noticed this. In general they found that the process of raising OSH issues and getting things done had eased. Management seemed more willing to spend on OHS improvements. As the project involved revision of the workplace assessments, the employees had been actively involved. Involvement was also practised, when new work-instructions were elaborated. Whereas the planning of the implementation and the elaboration of higher levels of the system (OHS-policy, targets etc) was a matter only for management, the implementation at more basic levels was obviously carried through in a bottom-up process. After certification the workers' representatives actually felt committed to the system. The purpose of management to send a signal of their commitment to care for the employees thus had been fulfilled.

Major and probably durable changes have occurred in the field of organised safety work in the companies. The systematic approach had clearly improved the overview and control of problems in the physical environment and secured together with the positive engagement from both sides that solutions were carried out in a reasonable amount of time. The OHS activities had become more formalised and the focus had been sharpened, including at the meetings in the safety committees. As an example "close by" accidents were registered by participation of employees in production, and the safety representatives felt better prepared to make suggestions for action plans. These registrations received substantial treatment at the meetings.

The perception of a general lift in the safety routines and accomplishments was widespread among the workers' representatives. Only a minority felt that they had actually got more influence through the implementation of the management system. No one, however, felt that it had diminished and they generally welcomed the effects of the system in respect of participation of employees and improving their attitudes and behaviour. The representatives had experienced that their responsibilities in the maintaining of safe work practices had increased. But they accepted this as long as sufficient possibilities for competence building education were granted from management. They felt that the system was a helpful framework for their functions both towards management as well as towards their colleagues and they did not regard it as a bureaucratic substitution of good, traditional practices. Besides their own education, they stressed the need of extending educational offers to all employees. Together with other offers such as physiotherapy this would be helpful initiatives in the improvement of the psycho-social environment which in general was not included in the OHS-management system

## Conclusions

The development of management systems to cover also OHS issues makes it an important object for studies in their actual effects on OHS performance in companies. The Danish Government's decision to accept OHSM certification as a final proof of acceptable performance is a hazardous step that makes research urgent.

Provisional studies show that OHSM can work successfully, but they do not confirm that OHSM is a guarantee of a high or even acceptable OHS performance. Results from a study of the implementation of OHSM in five small fish-processing companies in Denmark, primarily based on qualitative interviewing, further underlines the above conclusion. The study has shown:

That OHMS implementation, based on management commitment, a tradition of co-operation on OHS issues and a bottom-up process may result in a positive spiral of mutual commitment, improved attitudes and safety routines and actual improvements in the physical environment.

That the system as such is hardly responsible for more than the institutionalisation of improved systematic practices in the safety work. But it may also serve as a useful framework for improvements, when the decisive factors associated with the commitment of management and participation of employees are established.

That the OHSM implementation in the studied case had evident limitations in regard of important influencing factors on the OHS performance outside the immediate safety work, e.g. planning, technological development and investments, factors associated with the organisation of work. This meant that the psycho-social strains in the work were hardly touched by the OHSM implementation.

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