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DEVELOPMENT OF A MODEL FOR
OCCUPATIONAL ACCIDENT RESEARCH AND
PRACTICAL SAFETY WORK

BY

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This paper is based upon a report "On accidents during work - a study conducted in Malmö" published by Ragnar Andersson, Bo Johansson, Karin Lindén, Kerstin Svanström and Leif Svanström. The first part of that study was finished 1974 - 75 and the second part has started during 1976.

The first part consisted of

- a. An epidemiological study on the occurrence of accidents at work been reported to Malmö General Hospital, Sweden, during a certain period and its relations to some determinants according to a "host-agent-environment" model.
- b. Development of a research model.

The second part (now just started) aims at bringing this theoretical model to a guide that could be used in practical safety work at industries. This part also concludes evaluation of that part.

This paper will mainly deal with a presentation of the theoretical model.

SKÖVDE, SWEDEN
Sept. 1976.

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DEVELOPMENT OF A RESEARCH MODEL

1. THE EPIDEMIOLOGICAL MODEL: APPRAISAL

Through our accounts in the first part (The epidemiological study) we have tried to meet the need of a population description. We have found that certain relations exist, but the method used has not allowed us to determine the nature of the causality behind those relations. Although data from the population description may support hypotheses about possible causes, they cannot in themselves constitute explanations, because there are no links between the different parts of a complicated reality encircled by our description. Such links would be provided by a developed theory of accident research.

In certain respects the epidemiological research model does not satisfy our demands on an instrument for research

and prevention of occupational accidents. This is partly associated with the difficulties to group the obtained data in adequate categories.

The epidemiological model essentially consists of categories arranged in 3 dimensions, of which the space dimension concerns the division into agent, host, and environment factors, while the time dimension has bearing upon the preaccidental, accident, and postaccidental periods, and the causal dimension refers to background and trigger factors. It is mainly the causal dimension that gives rise to problems. A division of data into background and trigger factors cannot be made unless the causal pattern has been analysed at an earlier stage, and it has been established that some factors have had a background character, others a trigger function. The agent concept within the space dimension also has a causal implication, which gives rise to similar difficulties.

Our description makes a quantitative appraisal of the accident problem possible in various respects, but it remains to obtain more qualitative analyses of the accidents, with concentration on the causal pattern. Our aims included endeavours to develop the research methods still further.

1. SURRY'S AND WEF'S MODEL

A model developed by Surry (1969) and modified by the Work Environment Fund (1973) stands for an attempt to approach the qualitative aspects of accidents in a theoretical-methodological way, i.e. to examine the complicated causal picture analytically. (See Appendix.)

This model suggestion is of central importance, mainly for two reasons. Firstly, it is an attempt to create a model generally applicable to research concerning causes and prevention of accidents; secondly, the model was intended to serve as a "check-list", which could be immediately useful in connection with safety beats, studies of "narrow escapes", etc.

2. TESTING AND EVALUATION OF SURRY'S AND WEF'S MODEL

We have chosen to avail ourselves of the detailed documentation of the 60 cases, where the work places have been visited and where the causal picture was fairly clear, for testing, evaluation, and development of Surry's and WEF's model. This ought to be of special interest, since the model, as far as we know, never before has been applied in association with more specific research projects, and consequently not has been evaluated before.

The analysis of accidents has been accounted for in 3 phases. At first, a running summary of our observations has been given together with illustrations, collected data, etc., primarily relevant to the events, as well as our own appraisal of causal factors, guided by our own investigations and the answers obtained at the interviews. Subsequently, our analysis has followed WEF's model. In each step of the analysis we have tried to find out if the questions could have been answered with the real cases as points of departure. Finally, the suitability of the model for the individual cases has been commented upon.

After having dealt with the whole material in this way, we put the commentaries together in a general appraisal, which later served as a starting point for a model development.

In her examples of accidents (1969) Surry had chosen to apply the model quite strictly. Thus she visualized the cases by means of elementary no-answers in both sequences of the model. We feel that reality only very seldom allows itself to be described in this way, and that no-deviations are obtainable on several levels in the various sequences. WEF also have paid attention to this circumstance: they stress the importance of endeavours to appraise, on every point, the probability distribution of yes- and no-answers. Since we feel that our data support is inadequate for painstaking probability estimates - which in our opinion have no primary importance when it comes to establish the explanatory

qualities of the model - we have in our analyses limited ourselves to dealing with the alternatives "yes", "yes/no" and "no". The explanatory qualities of the model presuppose that a test question is relevant in explanatory terms only if the immediately preceding question entirely or partly has been answered in the affirmative. Hence the sequence passage always is ended by an unambiguous denial. All our cases are such where personal injury has been contracted, and consequently risk has been present. This also implies an important limitation of our study, since the model is meant to be applicable also to "narrow escapes" and material damages.

3. MODEL APPRAISAL

The testing of the model had two aims: to examine the extent to which the model is able to describe accidents, and to find out which help it can give in an analytical quest for factors and circumstances relevant to preventive measures, i.e. an examination of the explanatory qualities of the model. Although our analyses could have been more detailed than they are, the test results have been very unambiguous and now may be summed up in a model appraisal containing four points.

1. The model is a behaviour model. This is the most serious and most spectacular point of criticism against the model. There is much to show that Surry, when constructing the model, has been aware of that quality, while WEF to the model has attributed qualities without justification. This is most evident when WEF maintains that the model could be applied to practical prevention by elimination of the denial probabilities in the various points. In almost half of our cases we have found that circumstances justifying measures not at all, or very unsatisfactorily, can be determined in this way. The analyses mainly have questioned factors acting through the individual and influencing the individual's behaviour, but they have not been able to point out deficiencies in machines, tools, etc, to the same degree.

2. The model does not duly consider compulsory elements in the work process. Hence our accidents cannot be correctly described or explained by the model with regard to behaviour. This is manifest by a wrong consecutive order of the questions 5, 6, and 7, in some cases also 12, 13, and 14. The problem is how a person shall be able to avoid a danger that not really is avoidable in a given situation; then, what use has the question whether or not the person decides to avoid the danger?

3. The model is not able to explain why the person at all is confronted with the objective danger, nor does it give any directions for analysis of this problem. In some cases this deficiency has been very evident, when for instance the objective danger has been built up by a series of irregularities in the work process. The question also has a general importance, pertaining to studies of the economic, social, and labour political circumstances conditioning peoples' choice of work,

4. The model only allows studies of "single accidents", since it includes only one subject. The seriousness of this point of criticism may, however, be debated. A reasonably satisfying mass of knowledge should be obtainable, if the analysis is made from the several actors' viewpoints in cases where more than one person is involved.

4. MODEL DEVELOPMENT

The continued model development must start from the work process, the course of events where the occupational accident has its origin. Faverge (1968) regards the accident as a disturbance in the expected course of the production cycle. This way of looking has been our point of departure in the continued development.

4:1 The work process: general abstraction

Generally speaking, the work process may be described, by way of the system analogy, as an elementary feedback system (Figure 1).

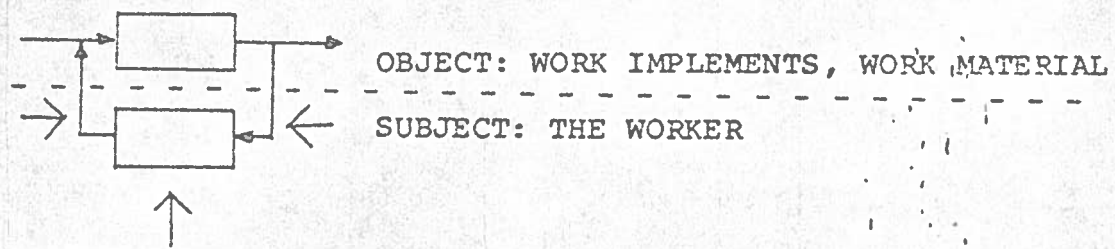


Figure 1. Schematic sketch representing the work process as an elementary feed-back system.

To the system are brought "raw materials" of various kinds (work material), as well as tools, machines, energy, etc. (work implements). By means of the work implements the worker treats the material during the work process, until the desired result is obtained. Abstractly speaking, the work process is a cyclical information process, where the worker perceptually obtains the information which the system is able to deliver about its own state. Subsequently he handles the information intellectually, supported by knowledge and experience magazined in his memory, and from there he arrives at decision and action, i.e. the information is redirected to the object phase of the system. If we, for example, regard a carpenter who is nailing two boards together, each stroke of the hammer is a function of an intellectual process, based on his visual information from the result of the preceding stroke. If he happens to drive the nail into a knob or other unsuitable part, his hearing, too, enters as a relevant receptor, since the object part of the system then delivers auditory stimuli other than the normal. This process the carpenter will cyclically reproduce until the nail is fastened, i.e. until he has obtained the desired result.

Whether or not the working process will be successful, now depends on several circumstances. A prerequisite condition is, of course, that the work implement (the hammer) and the work material (nails and boards) are of a quality that makes the process practically possible.

The process must be controllable. Further it has to be observable, i.e. it must be possible to perceive information concerning the state of the process. If the carpenter is working in darkness, he is hypothetically able to perform his task by feeling, but practically speaking the process is hardly observable. The perceptual phase of the cycle also depends on factors associated with the individual: sight, hearing, etc. Such factors, pertaining to the subject part of the system, may in their turn, to varying degrees, depend on objective circumstances f.i. hearing diminishing noise during work. Also the intellectual phase of the work cycle pertains to the subject and depends on physical and social conditions within and outside the work. It also depends on the worker's knowledge of the work process and its condition, as well as on practical experience. Finally the worker's motorics, as a subjective factor, must be adapted to the conditions determined by the object part of the work process. Consequently the carpenter must be able to hit the nail with the hammer, which in terms of conditions is determined by the surfaces of the nail and the hammer, and in individual terms by the carpenter's motoric capacity, which may be impaired by cold and draught, etc., i.e. to varying degrees is depending on the object part and environment conditions.

4:2 Objective danger: the tendency to disturbances in the system

As shown above, the object part of the system determines the conditions of the work process. This we call the system's work conditions precedent. It also has been shown that the capacity of the system subject is a function of individual conditions, the quality of the object part, and internal and external environment conditions. Starting from here we will now further visualize the concept of "tendency to disturbance in the system".

No matter where in the work cycle some irregularity is arising, it will always be concretely expressed in the left part of the system (Figure 1), i.e. as a conflict between action (manipulation) and system conditions. Thus the object part of the system determines the frames within which the behaviour of the subject can be allowed to fluctuate, if the wanted result shall be guaranteed. Figure 2 shows how the work conditions vary in different work moments during a hypothetical part of a workday, and how the behaviour of the subject is fluctuating within the frames of the conditions. (The figure is only meant to serve as an illustration and has no experimental foundation whatever.)

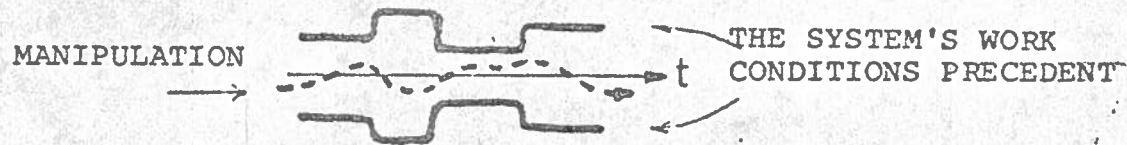


Figure 2. Behaviour within the frames of work conditions: safe manipulation.

The manipulation in Figure 2 is safe, i.e. it will never conflict with the work conditions precedent of the system. Figure 3 shows an exact manipulation, Figure 4 an unsafe one.

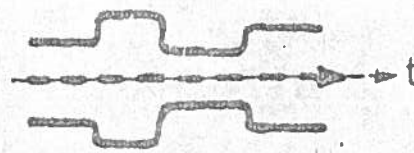


Figure 3. Behaviour within the frames of work conditions: exact manipulation.

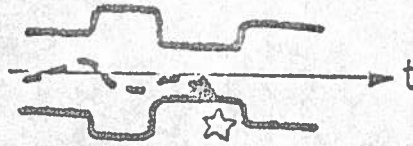


Figure 4. Behaviour within the frames of work conditions: unsafe manipulation.

The unsafe manipulation is a conflict-inviting behaviour with three possible results: personal injury, material damage, and "narrow escape". When the carpenter hits his thumb with the hammer, he has contracted a personal injury. When he hits the nail in a wrong way and bends it, a material damage has arisen, and when he misses both nail and thumb, he has had a "narrow escape". All three results derive their origins from the same conflict between behaviour fluctuations and system conditions. Naturally the probability distribution of material damage, personal injury and "narrow escape" varies with the different work moments, depending on work conditions precedent, the self-protective behaviour of the subject, etc., but the decisive factor is their common origin in the same objective circumstance: a conflict between conditions and capacity.

If we now are going to let a representative selection of carpenters fasten nails under similar circumstances, we will, provided that we are able to record the precision of each hammer stroke, obtain a normally distributed frequency graph, where the majority of strokes will stay within the frames of the work conditions. But at the same time a certain frequency sum will point out the objective conflict tendency in the work process called "nailing". We will then obtain a measure of the disturbance tendency of the system, or its objective danger.

Graphically the relation may be represented as a projection of the work conditions and the total number of manipulations on a section perpendicular to the time axis (Figure 5).

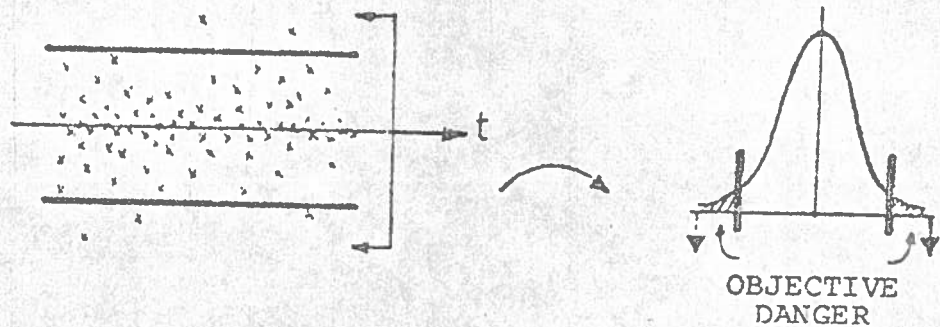


Figure 5. Disturbance tendency of the system during a specific work process, executed by the "average" craftsman.

If in the same way the individual carpenter should be subjected to observation, his behaviour too would result in a normal graph, though probably with a dispersion different from that of the craft population as a whole. Thus the dispersion is dependent on the subject, which means that our carpenter may be exposed to risk more or less than the "average carpenter", depending on the conditions that are specific for him and his work habits (Figure 6).

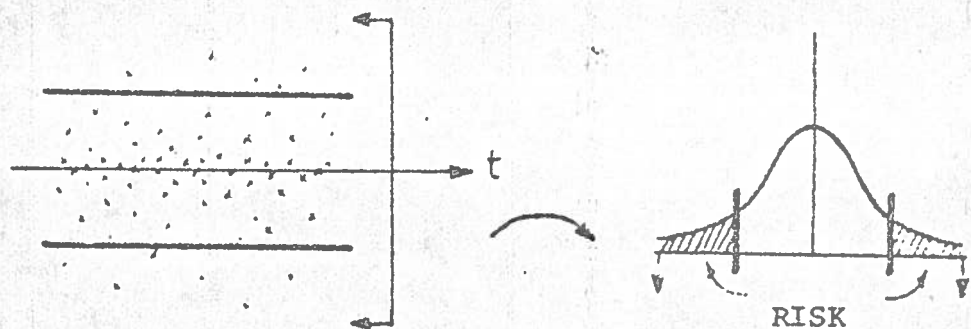


Figure 6. Conflict probability in the same work process as above (Figure 5), executed by an individual craftsman.

Consequently, the objective danger is determined by the system's work conditions precedent related to the behaviour of the (hypothetical) population of craftsmen, while the risk equals the conflict probability associated with the individual subject.

4:3 Research and prevention

The field of accident prevention now may be divided into two qualitatively different target areas: absolute and relative prevention, which correspond to the following two central questions:

How increase the tolerance of the work conditions precedent towards behaviour fluctuations? (absolute prevention)

How influence the behaviour of the subject? (relative prevention)

Consequently, the preventive measures pertaining to the work conditions precedent have an absolute character, as opposed to the relative measures designed to eliminate behaviour fluctuations within the frame of the given object system.

This is a challenge to the researchers, who must try to gain knowledge concerning two corresponding questions:

What influences the work conditions precedent of the system?

What influences the behaviour of the subject?

In other words: which circumstances in work and society have a general significance pertaining to system conflicts? How are they connected, and how is the individual influenced?

4:4 Suggestions for a developed model for occupational accident research

In our evaluation of Surry's and WEF's model we could establish that this model essentially is to be regarded as a behaviour model. We felt that a feedback to the

level "objective danger" was missing. The analyses mainly explained the factors that had conditioned the behaviour of the accident-stricken, and only seldom did they question what we here have termed the work conditions precedent of the system.

Our reasoning has shown that this deficiency in the model not primarily can be remedied by feed-back from the behaviour model, the introduction of new test questions into the sequences, or in similar ways. The behaviour model, which of course is relevant as such, must be contained in a wider construction, where the objective danger is derived, not from a study of separate individuals' behaviour, but from the work process as a general abstraction. Only then it will be possible to "objectivize" the analysis and create an adequate foundation for the behaviour analysis too.

We have chosen to solve the problem by augmenting the model with still another sequence, analogous to the two original, and aiming to a systematic analysis of the objective danger inherent in the work process (the first step shown in Figure 7). Thus the sequence falls in the top of the model.

The first level is now called "the work process" and should be described with regard to work operations, work implements, work material, environment conditions and structural conditions. From this level follows a question sequence, where a question is supposed to be relevant only if it has any implication from the immediately preceding question.

01. Is the process controllable?

The controllability criterion was dealt with in section 1.

02. Is the process observable?

The observability criterion also was touched upon in section 1. We have, however, deviating from that reasoning, in our question sequence chosen to distinguish between technical and perceptual observability. Thus the technical observability strictly concerns the information that the

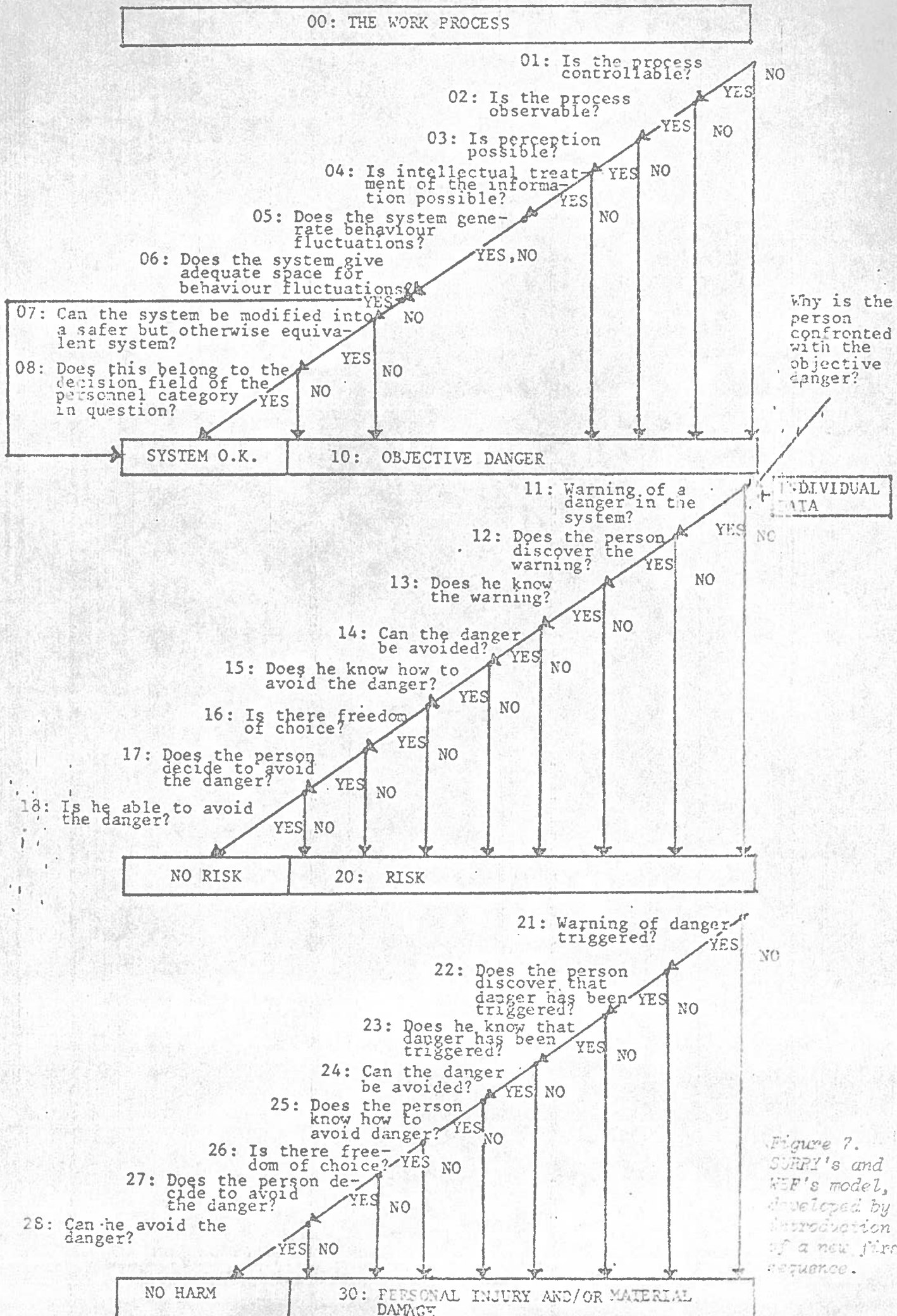


Figure 7.
SORRY's and
NEF's model,
developed by
introduction
of a new fire
sequence.

system is able to deliver about its own state, while the perceptual concerns its availability to the perception capacity.

03. Is perception possible?

Example: Disturbing noise, poor lighting, etc., often are effective obstacles to perceptual assimilation of relevant information.

04. Is intellectual treatment of the information possible?

Here arises need of an analysis concerning the intellectual demands of the work process on conflict-free manipulation, and concerning the question if these demands have been met to an adequate extent by education and information. The analysis also must comprise other circumstances limiting the intellectual process, f.i. stress, monotony, motivation-repressing or tiring occurrences.

05. Does the system generate behaviour fluctuations?

To a great extent the question derives the same qualities in the work process and environment as 04, though from a more concrete behaviour plan, as well as work conditions precedent giving rise to motorical incapacity.

06. Does the system give adequate space for behaviour fluctuations?

If we have arrived at this point and have been able to answer this question in the affirmative, it means that the system includes an absolute prevention, which takes expected behaviour fluctuations into consideration, and eliminates the conflict probability or keeps it on an acceptable level.

07. Can the system be modified into a safer but otherwise equivalent system? In order to give permanent results, the prevention must interfere with the totality of the work process and the work environment, and it must not produce negative secondary effects which in themselves may imply new conflict possibilities.

08. Does this belong to the decision field of the personnel category in question?

This question concerns a real freedom of choice for the personnel: will they protect themselves or not?

The second sequence in our model is essentially the same as the first in Surry's and WEF's model. Our principal objection to that sequence was that a possible compulsory element in the work conditions precedent was not rendered correctly, owing to the wrong consecutive order of the 3 last questions in the sequence. This problem we have solved by bringing 2 new questions to the sequence (Figure 7). Also the last sequence in the model has been subjected to corresponding revision.

Our model, which is entirely accounted for in Figure 7, now is almost completed. Only a few details remain. One point of criticism against Surry's and WEF's model was based on the fact that it did not make it possible to explain why a person was confronted with the objective danger. Often this emerged very clearly, when f.i. the objective danger was the result of a series of disturbing occurrences in the work process. This point of the analysis also has general importance, when we are trying to understand the mechanisms that make it possible to recruit labour even for very dangerous tasks. Sequence 2 in the model, illustrating how an individual is confronted with the objective danger, consequently should be initiated by the sought analysis, which we have shown by means of an "analysis block" to the right of the level called objective danger. It also remains to find necessary connections between the work process and the enterprise and finally the society conditioning the work process. The analysis blocks primarily are meant to be a reminder that the factors indicated by the blocks belong to the relevant knowledge mass, and further indicate on which level those factors are interfering.

One point of criticism in our evaluation remains, viz. the difficulty to perform the analysis when the system includes more than one subject. We felt that we had partly mastered this difficulty by analysing the accident from the separate actors and thus obtain several analyses that together could give a good picture of the events. We can now, to our satisfaction, find that such a method is facilitated by our introduction of the first sequence. This is not tied to any specific number of subjects but may, on the contrary, be adapted to several actors, depending on the limits of the work process. Consequently, the first sequence may summarize and generalize circumstances that have emerged through analyses from the view-points of respective actors, supported by the sequences 2 and 3.

5. THE ADVANTAGES OF THE MODEL

The model now developed has four essential advantages, associated with the methodological problems we have touched upon in the introduction.

- The model is independent of any accident definition based on the result of the accident process, since it derives the three possible, and from the view of prevention interesting, results - personal injury, material damage and "narrow escape" - from identical foundations.
- The model is independent of an exact limitation of the extension in time of the accident process, since it derives the factor interactions for different cases in identical ways.
- The model derives the factor interaction that defines an individual's confrontation with an objective danger and brings him into a risk situation.
- *The model is able to summarize and generalize knowledge gained through separate observations to a general knowledge of the work process and its qualities concerning stability. Conversely, when this general knowledge is present, the model is able to deliver a*

relevant knowledge mass about the work process, which is necessary for a correct explanation of the objective danger and the individuals' confrontation with this.

The three first points have already in principle been formulated and their problems solved by Surry and WEF. Here we only have adjusted the model in order to make it more suited to its purpose. The fourth advantage, however, has been brought to the model by our development of a new first sequence.

As previously mentioned, our model is based on system ergonomics. In its present shape we regard it as an embryo of something that might be a valuable instrument of analysis and prevention. To this end efforts are necessary in at least three fields.

Firstly, there is need of a continued theoretical development of the system ergonomics, principally regarding criteria of stability analysis of the "man-machine system". This we have initiated through introduction of the regulation-theoretical concepts of controllability and observability.

Secondly, the model must be more exactly expressed and particularized in the sections where there now are "analysis blocks". This refers to the causal influence from levels structurally pertaining to the enterprise or to the society as a whole, i.e. factors influencing, but not belonging to, the immediate vicinity of the work process.

Finally, concepts and lines of thought emanating from the points mentioned above must be brought to life in concrete terms, and on a concrete level, so as to enable the model to be broadly used in practical prevention too. However ingenious and detailed the model may be, its value will ultimately be determined by the real contributions it will be able to make in the fight against occupational accidents.

The first and second field mentioned is an area for several research projects, and much effort is still to be strained upon these fields. We hope that some researchers can use our regulation - theoretical concepts of controllability and observability as a basis for their works. We do know that some work is brought out on the matter dealt with in the second remark i.e. the influence from levels pertaining to the enterprise or to the society as a whole, but there it shows that political considerations makes it hard to get the scientific basis for knowledge of these complicated connections. The final fields is also a field for a broad development work, where we now are trying to make our minor contributions in a project, that will go on for two years from now. The timetable is presented in the last appendix. We also hope and know that parallely similar projects will be brought out elsewhere and this seminar will therefor help us in our further efforts in the scientific field of occupational accidents.

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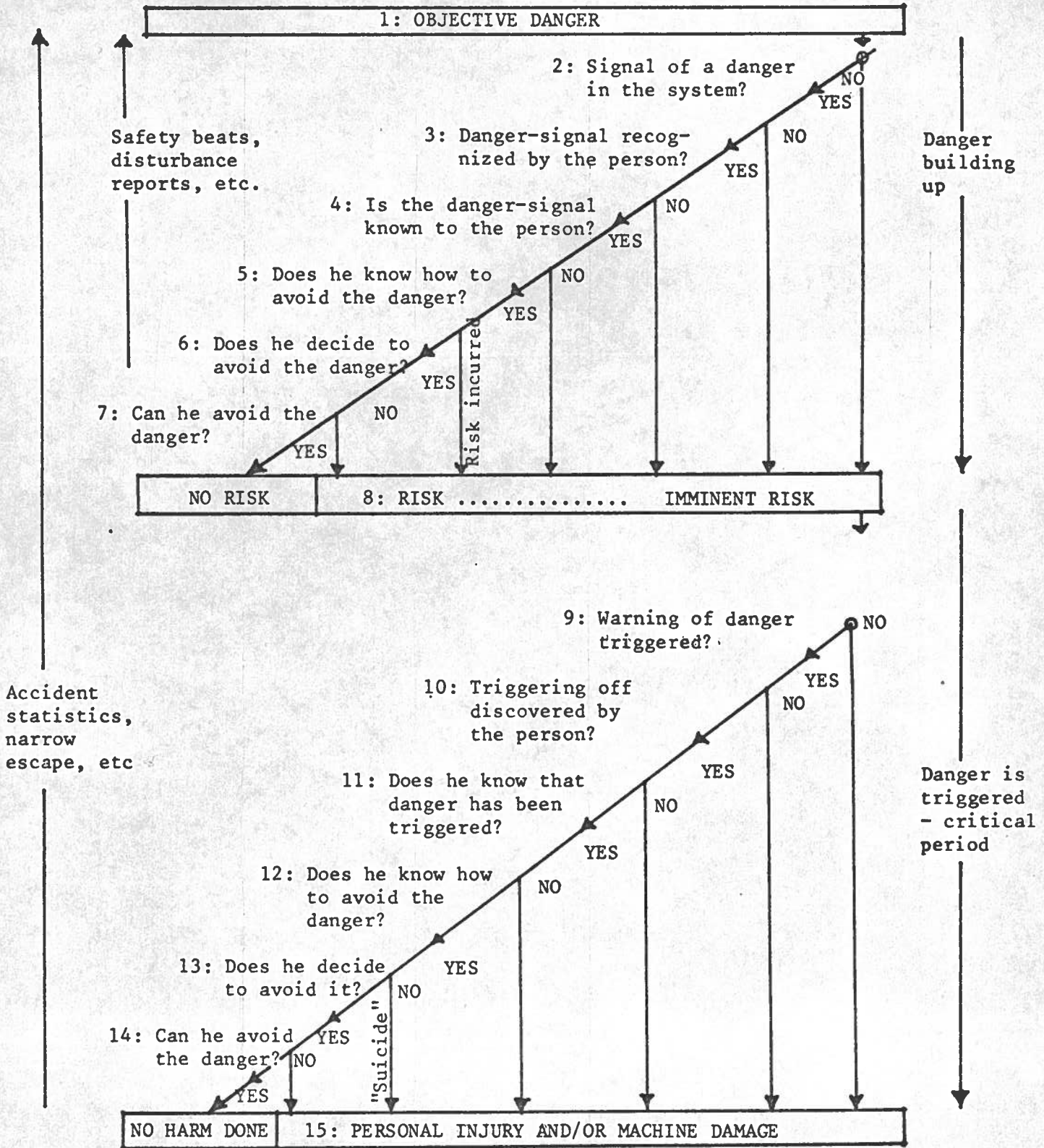
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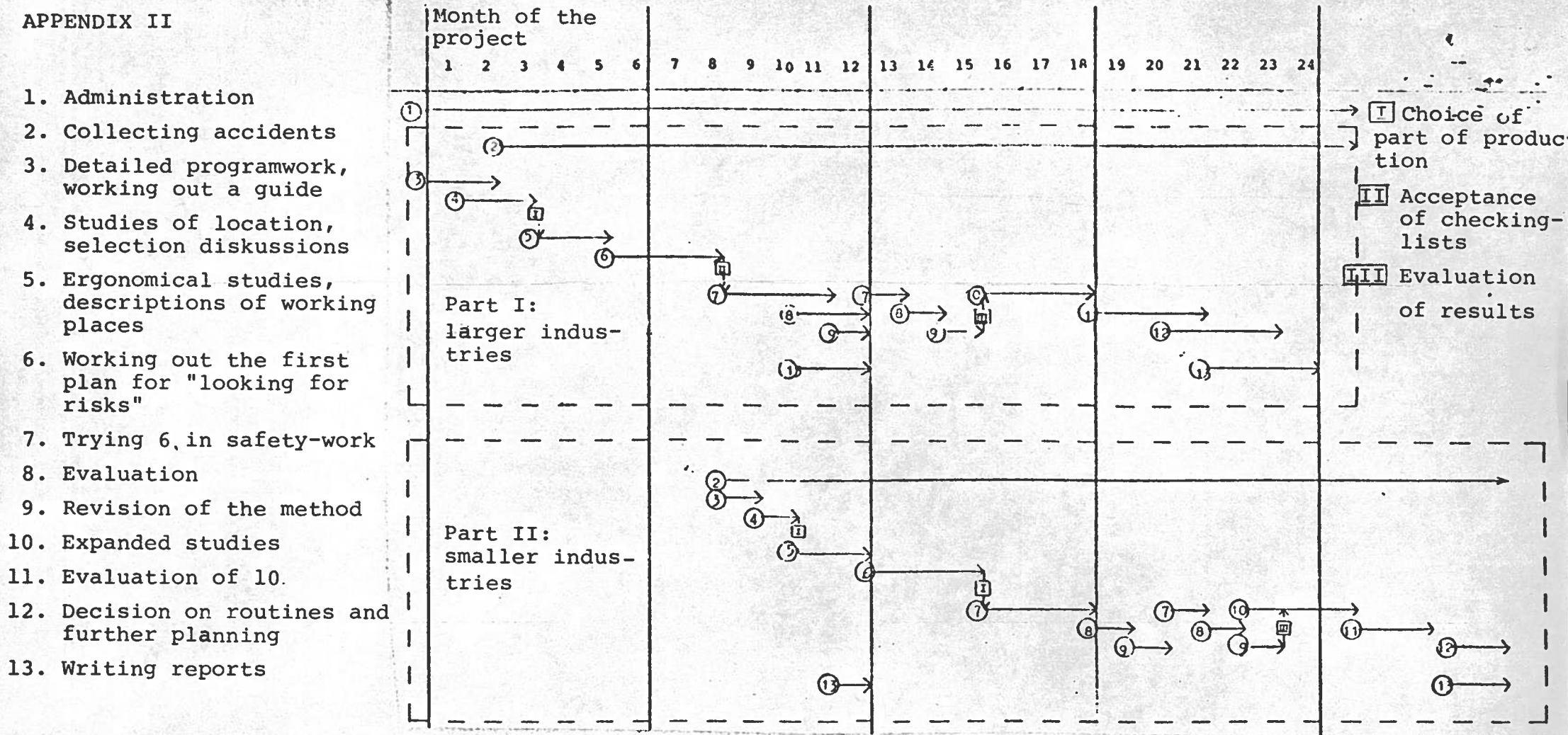
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APPENDIX

SURRY'S MODEL FOR ACCIDENT RESEARCH, MODIFIED BY THE WORK ENVIRONMENT FUND



APPENDIX II



ISSUES OF THE WORKING ENVIRONMENT

Current features of Swedish policy

MINISTRY OF LABOUR
(Arbetsmarknadsdepartementet)
International Secretariat
September, 1975

Postal address:
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S-103 10 STOCKHOLM 2
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In common with the rest of Europe, Sweden enjoyed favourable economic developments during the 1960s with rising real wages and a high level of employment. Parallel to rising material living standards and a rising educational standard, growing discontent has been observed with the non-economic aspects of work. Trade unions have made progressively more emphatic demands for a revision of working conditions. Discontent has also become manifest through recruitment difficulties in industry and a high personnel turnover.

Demands for improvement to the working environment have long been voiced at work places. In Sweden this topic has acquired greater importance and aroused increasing political interest during the past ten years. In 1966 the Federation of Swedish Trade Unions (LO) presented a publication entitled *The Trade Union Movement and Technological Development*, describing the influence of technological developments on working conditions. LO then carried out a survey among its own members which revealed that 82 per cent were inconvenienced by one or more environmental factors (e.g. noise, heat, air pollution) and that half of these 82 per cent considered themselves gravely inconvenienced. A Parliamentary Commission set up to study the living standards of the population found that whereas the traditional epidemics had substantially reduced, many of the environmental problems of work places still remained. The commission noted that certain jobs result in employees becoming physically and mentally worn out while others enable the employee successively to build up and develop his capacity. These reports have done a great deal to create the powerful body of public opinion calling for a better working environment.

The broader basis of facts strengthened the union organizations and infused their demands regarding the working environment and working conditions in the broadest sense. The term working environment as used in Sweden includes not only the physical environment of the work place but also the mental and social aspects of employment. Thus the unions of employers and employees are agreed that the form of remuneration (fixed wages, piece work etc.) is an important part of the working environment.

1.1 Personnel turnover and recruitment difficulties

No penetrating analysis has been made in recent years of the role of working conditions as a cause of personnel turnover but there is a study on the mobility of labour in the engineering industry. This study covered the period 1969-1972 and showed that 42 per cent of the workers left their jobs during these years. Only 8 per cent went to other engineering companies, while about 34 per cent left the industry. A continued survey will be concerned with the causes of the high drop-out rate of the industry, but unions are of the opinion that the working environment plays an important part.

Recruitment difficulties, personnel turnover and the demands voiced by the unions undoubtedly stem from actual conditions at work places. Although technical advance has eliminated many heavy and dangerous jobs, a great many of the traditional problems of the production system still remain. Hitherto the structure of that system has been mainly determined by economic and technical considerations, the physical, mental and social demands of the individual being of less importance. The Tayloristic principles from the beginning of the twentieth century still constitute the foundation of the technical and administrative structure of the firm. People will no longer accept monotonous tasks which mainly require physical stamina and strength, nor will they submit to authoritarian and hierarchic organizations which deny the employee influence over his work, his place of work and his working conditions.

1.2 Unemployment

Employment in Sweden has risen in recent years and the proportion of gainfully employed persons has increased. There has been no significant change in the number of persons unemployed, but periods of unemployment have grown longer causing a rise in the number of persons registered as unemployed. Due to the more exacting demands put on industrial employees and the greater speed at which they become mentally and physically worn out, increasing numbers of people have been more or less permanently excluded from the open labour market. Elderly persons, persons with physical or mental handicaps and others who do not satisfy

the employers' labour requirements have difficulty in finding work even during periods of rising labour demand. In response to this situation efforts have been made to create other forms of employment.

A wide-ranging programme of reform has been implemented by the Swedish Government in the field of industrial relations in recent years with a view to overcoming the problems of working life and satisfying demands for changed working conditions. This programme of reform includes legislation as well as other measures.

1.3 The representative organizations of the labour market

By tradition conditions in the Swedish labour market are to a great extent regulated by agreements. The existence of a few organizations representing the majority of employers and employees has done a great deal to make this possible. In the private sector 80 per cent of employers belong to the Federation of Swedish Employers (SAF), while on the employees' side 90 per cent of workers belong to LO and 70 per cent of salaried employees to the Central Organization of Salaried Employees (TCO). Approximately 90 per cent of a total of some 700,000 public servants belong to unions. The measures taken by the Government in the sphere of industrial relations are meant to maintain the paramount status of the negotiating bodies and to strengthen the position of employees in various ways. The aim is for the work of reform to be based to a great extent on the direct participation of the representative organizations of the labour market. The Swedish trade unions are not only pressure groups acting to promote the interests of their members, they are also closely connected with important social functions. This helps to achieve a decentralised system of influence on the part of employees. In certain cases legislation is coercive, but in others it is discretionary and may be replaced or supplemented by agreements. Statutes and ordinances constitute a framework within which agreements can be reached on detailed adjustments to the conditions applying in different industries and occupations.

In the current international debate on how to improve the working environment, the concept of work satisfaction is sometimes used as a kind of general parameter. In Sweden, this habit is viewed with considerable suspicion.

Work satisfaction is an elusive concept. Instead of venturing to define it, one may only indicate a number of complications. Work satisfaction is relative and is influenced e.g. by people's expectations. Employees with identical working conditions can report different degrees of work satisfaction depending among other things on differences in their expectations and aspirations. The level of aspiration would in turn appear to be influenced e.g. by opportunities of alternative employment. During periods of heavy unemployment subjective work satisfaction is generally high among those who have any job to go to. During prosperous periods when there are plenty of alternative employment alternatives, people tend to take a more critical view of their work, to have greater expectations and, consequently, to report less work satisfaction. Their expectations are also influenced by e.g. propaganda and information. The close interest which unions and politicians have taken in working conditions in recent years has helped to generate increased concern over and greater expectations with regard to the improvement of working conditions. The Swedish Government has realized that, in collaborating with the unions to work for full employment and to stimulate the discussion of working conditions, it has helped to raise popular expectations. In this way subjective work satisfaction has probably in a sense been reduced in the short run.

For the above reasons, among others, the Swedish Government feels that motivation and work satisfaction are unsuitable concepts for the purposes of direct labour market policy. In order to experience work satisfaction, the employee must have a secure employment and feel safe from mental and physical injury, and he must know that he can alter his working conditions if necessary. Apart from traditional employment policies and policies for the physical working environment, the Government has preferred to focus attention on the concept of industrial

democracy, i.e. the influence exerted by employees on their own work, working conditions and the firm as a whole. By conducting a policy giving employees greater influence over decision in the firm at all levels, the employees themselves can be enabled to work for the improvement of their working conditions. This in turn will doubtless affect their motivation and work satisfaction. Greater industrial democracy can be expected to influence work satisfaction in two ways. Firstly it will lead to decision in the firm which make better provisions for the desires of the employees, and secondly participation in the decision making process is in itself a major source of work satisfaction.

As has already been observed, conditions in the Swedish labour market are to a great extent governed by agreements between the unions of employers and employees. Hitherto legislation has been mainly confined to matters connected with working hours, holidays, industrial safety and rules governing the mutual dealings of the parties in the labour market. Wages and conditions of employment have been governed by free negotiations between the unions of employers and employees. Matters concerning the direction and distribution of work, appointments, dismissals and the design of work organization have remained an employer prerogative.

The current reform policy being implemented by the Government in the field of industrial relations implies the statutory reinforcement of the status of the trade unions and the subjection of matters previously arbitrarily determined by employers to negotiations or of joint settlement. The legislation passed to date concerns industrial safety and health, employment security, the status of shop stewards, the representation of employees on the company boards, including an employees' adviser, i.e. an economic expert with a status corresponding to that of an auditor, right to educational leave and labour market training. The question of a revision of the present labour legislation and a general expansion of the range of matters subject to negotiation has been investigated by a Royal Commission and the proposal is under consideration by the Government. The intention is for the act to come into force on January 1, 1977. The possibilities of creating so-called Employee Funds are also investigated.

3.1 Measures for the improvement of industrial safety

Through its adoption in 1973 of the Bill on Measures for the Improvement of the Working Environment, the Parliament resolved on several major amendments to the legislation on industrial safety (the Workers' Protection Act). The new legislation became effective on January 1, 1974.

Important novelties comprise a reinforcement of the local organization of industrial safety officers. Safety officers are to be elected at all work places with five or more employees. Work places with 50 or more employees must have safety committees including personnel and management representatives.

Safety officers are entitled to take part in the planning of working premises, the purchases of machinery and the choice of working methods. This prerogative is geared among other things to the award of building permits in such a way that the authorities will not grant a permit until a report has been received from the safety officer or the local branch of a trade union. Safety officers are therefore entitled to full information regarding plans, investment programmes and other documents relevant to their work. They shall be given the necessary leave of absence with full pay in order to discharge their duties. They also have the right to order work to be stopped and to summon the Labour Inspectorate (the national enforcement authority) if they believe the life or health of employees to be immediately endangered or if an employer contravenes a ruling by the Inspectorate.

The safety officers enjoy special security of employment and are entitled to the training they require.

The new Act also deals with the question of regional safety officers for the smallest work places and the organization of industrial safety at so-called joint work places involving several employers (e.g. building sites). Regional safety officers are industrial representatives elected by the trade unions. They cover several work places within a given geographical area and are remunerated out of public funds.

A Parliamentary Commission is at present engaged in a further redrafting of the Workers' Protection Act. Proposals are due in 1975. The measures which have already been taken provide the organizational framework for further improvements to the working environment. Subsequent proposals will be concerned with the content of the working environment as regards limit values for nuisances (noise, pollution etc.), working hours, socio-psychological aspects etc.

3.2 Industrial health services

Industrial health services are now regulated by agreements between the parties in the labour market. Discussions are in process concerning the attachment of industrial health services to national medical services or the establishment of special health centres.

The training of personnel for industrial health services is subsidized by the state, and the National Board of Occupational Safety and Health has courses for physicians, nurses and safety engineers.

3.3 Security of employment

Through its adoption in 1973 of the Bill on Security of Employment, the Parliament resolved in favour of greater security of employment as well as certain measures for the promotion of employment. This legislation became effective on July 1, 1974.

The basic provision of the new Act on Security of Employment is that an employer must have acceptable reasons for giving notice. Notice of dismissal can be contested in a court of law and an employee is generally entitled to retain his employment pending a settlement. The Act provides for a mutual period of one month's notice and extended notice of up to six months in favour of the employee, according to age.

The Act also stipulates that notice must be given in writing and it sets out rules for lay-offs and for the order in which employees are to be given notice. An employee dismissed for lack of work is entitled to first refusal of new appointments by the employer concerned for up to one year after notice is given.

An employer in breach of the Act may be ordered to pay the injured party damages ranging from one to 48 months' earnings.

Under the Act on measures for the promotion of employment, an employer must give the county employment board 2-6 months' notice of cut-backs, depending on the number of employees affected. The Act

also entitles the labour market authorities to negotiate with and require information from employers concerning personnel structure etc. with a view to providing employment for hard-to-place categories.

The same Act provides support for the establishment of what are termed "adjustment groups". These can be set up at any firm and include representatives of the employer, the local union organizations and the local employment office. The task of the adjustment group is to work for the adjustment of the work place to the employees. Above all it must work to enable elderly and hard-to-place employees to remain in employment and for employment to be found for applicants from these categories. Firms can obtain a certain measure of financial support from employment offices to help them carry out measures designed to provide work for hard-to-place labour or to provide alternative employment for persons who are prevented by advancing age, injury etc. from retaining the jobs they have had previously.

So far adjustment groups have been set up at about 4,500 firms representing two-thirds of all firms with more than 50 employees. No systematic evaluation has yet been undertaken of these activities, but there have already been several instances of these groups having a profound influence on the recruitment policy of firms and of difficult transfer problems being overcome.

If discussion fails to lead to an agreed solution, the labour market authorities can issue an employer with instructions concerning the measures to be taken. As a last resort, an employer disregarding the instructions of the labour market authorities can be ordered only to engage personnel referred to him or approved by the Employment Service. An employer disobeying an order of this kind can be punished. The Act thus represents a departure from the principle of the employer freely engaging and dismissing personnel.

3.4 The status of shop stewards

Parallel to its action for the general enhancement of security of employment, the Parliament has recently passed legislation on special measures designed to strengthen the position of shop stewards. This

legislation, which became effective on July 1, 1974, is regarded as an important supplement to other reforms increasing the functions and responsibilities of the trade unions.

The Act is primarily concerned with union functions directly influencing the interests of employees vis à vis employers, but it also covers other matters of relevance to union affairs. It relates to shop stewards employed by the employer and belonging to an association which is currently or usually bound by a collective agreement with the employer. It is primarily for the union organizations to decide which employees are to serve as shop stewards for the purposes of the Act.

The Act provides that the employer may not obstruct the shop steward in the discharge of his union duties. He is entitled to the requisite leave of absence in order to attend to union business. Union business concerning the place of work may be attended to during working hours and with full pay.

Shop stewards are not to be given inferior conditions of work and employment on account of their union duties. In the event of cut-backs, shop stewards with particularly important duties have a preferential right to continuing employment.

The basic rules concerning the protection of shop stewards are mandatory, but otherwise the majority of rules are discretionary and can thus be adapted by means of collective agreements to suit the various conditions of different industries.

If a dispute arises concerning the implementation of the Act, its implementation is to be determined by the trade union organization pending a settlement of the dispute. In the event of improprieties the union organization can be ordered to pay damages, but a shop steward is absolved from liability provided he has acted with the approval of his organization.

3.5 Representation on company boards

Hitherto a great deal of the insight and influence possessed by em-

ployees in connection with company management has been through the medium of joint councils, i.e. advisory bodies comprising representatives of the management and of the local union organizations. These councils are based on agreements concluded in the 1940s. As a result of new legislation which came into force in 1973, employees are now entitled to representation on company boards in addition to the facilities provided by the joint councils.

The Act in question entitles local union organizations having a collective agreement with the firm in question to nominate at least two board members together with deputies. The employees' representatives have the same rights and obligations as other members of the board but may not take part in the deliberation of the board concerning wage agreements, lock-outs etc.

The Act applies to limited companies and economic associations with 100 or more employees and is to run for an experimental period of three years.

Some 4,000 employees have now become members of company boards and a very large proportion of the union associations to which the Act applies would appear to have taken the opportunity thus presented.

Similar board representation has been introduced on an experimental basis in government authorities. Employees have also been given the right to attend and speak at board meetings held by local and county council authorities.

3.6 Employee advisers

Joint councils and board representation give union representatives formal access to all important information concerning the finances of the company, its plans and the general nature of its activities. Often, however, this information is difficult for shop stewards to assimilate, since most of them have enjoyed only rudimentary economic schooling. The leading union organizations have therefore demanded the right to appoint so-called employee advisers, i.e. advisers who are qualified economists and who are allowed the same insight into company accounts

and other documents as the shareholders' agents, the auditors.

The unions of employers and employees have agreed that employees' representatives in the joint councils of up to 200 companies be entitled to appoint an economic expert. The company board and executive management are obliged to grant the employee adviser access to the company's books, accounts and other documents and generally furnish him with the information and assistance he requires.

The employee adviser is at the service of the employees' representatives in the joint council and the company board for reviews, investigations, discussions of the company's finances etc. This agreement is designed to put the employees' representatives in a better position to take active part in the work of company boards and joint councils.

3.7 State support for improving the working environment

In 1969 state support was introduced for a six-year period to enable firms to improve the external environment, i.e. inconveniences to their surroundings resulting from gases, dust and noise generated by industrial activities. Grants are payable for a transitional period pending more stringent legislation regarding the environmental effects of industrial activities.

A Parliament resolution has provided for the appointment of a Parliamentary Commission to consider the possibility of state incentives for the improvement of the working environment in industrial enterprises, above all in companies with poor economic resources. Previously the Government and Parliament have declared that the costs of an improved working environment are to be regarded as part of the costs of production and paid for by production.

3.8 Working environment funds

Under an Act passed recently, limited companies, economic associations and banks were ordered to set aside 20 per cent of their untaxed profits in 1974 to finance measures for the improvement of the working

environment and the social conditions of their personnel. This measure was primarily occasioned by the great rise in company profits in 1974 and by a desire on the part of the Government for these extra profits to benefit the employees in the form of a better working environment instead of accruing solely in favour of the shareholders.

The Act applies to companies with profits exceeding 100,000 Sw.Kr. The money is to be used within five years and the use to which it is put must be approved by the employees through the joint councils or safety committees. Investments out of the working environment funds are written off when the funds are utilized.

Employees not covered by the Act (i.e. smaller firms with profits not exceeding 100,000 Sw. Kr.) and with difficulties in obtaining ordinary loans, can apply for loan guaranties from the State, in order to finance improvements of the work environments. The State pays the interest for such loans during the first two years. Guaranties for loans amounting to 200 millions Sw.Kr. can be granted during period 1975-76.

3.9 Proposals for an Industrial Democracy Act

The most thoroughgoing reform of the conditions on the Swedish labour market is expected to come from the proposals put forward by the so-called Labour Legislation Committee. This committee started its work in 1971 and its task was to draft amendments of the legislation concerning labour relations so as to widen the sphere of negotiations. It has drafted proposals for an industrial democracy act, which will be put before the Parliament in the spring of 1976. The intention is for the Act to come into force on January 1, 1977.

One of the basic rules of the new Act is that all matters concerning the relationship between employer and employee are to be subject to negotiation. The employees can negotiate on matters concerning individual cases as well as on matters of a more general nature, e.g. concerning production, business and management.

In order to further reinforce the employees' influence the draft

legislation enables the employees' representatives to demand that rules concerning their influence on a number of matters should be incorporated in the collective agreements. If agreement cannot be reached concerning the formulation of these rules, the employees' representatives will be entitled to resort to industrial action. This right to settle matters concerning joint influence by collective bargaining is very extensive and includes for example the choice of working methods, working equipments, efficiency measures, personnel training, transfers and promotion, the handling of matters connected with dismissals and disciplinary matters. To this is added limitations to the employers' priority of interpretation of an existing collective agreement in the event of a dispute.

In order to give the trade union representatives sufficient insight into the firm's affairs to enable them to make effective use of their new rights the committee's proposal also makes it the duty of an employer to keep the local branch of the trade union, with which he has a collective agreement, regularly informed of the development of the firm's production and finances as well as of the guiding principles of the personnel policy.

Some of the conditions reviewed by the committee have already been changed in the public sector. Thus the Public Servants Act was amended in 1973 so as to make it possible for agreements to be concluded regarding personnel policy, rationalization and certain other issues in Government departments.

3.10 Employee funds

In the last couple of years and with a growing interest the different central organizations of employees have discussed the question of how to make the employees get a share of the enterprises' building up of capital in order to reduce the wealth gaps and strengthen the development towards industrial democracy. The question is at present being studied by the Swedish Confederation of Trade Unions (LO) and the Swedish Central Organization of Salaried Employees (TCO) has also shown interest in some kind of system of employee funds.

The Government has initiated an investigation to make a survey of the different ways of creating employee funds which are discussed in the Swedish and international debate, and also to suggest how such a system could be constructed.

The Government's work of reform in the context of the working environment is supported by a number of different training measures. Perhaps the most important of these is the training given to safety officers for the implementation of the amended Workers' Protection Act. A large proportion of the costs of this training are defrayed by means of employers' contributions to the Industrial Safety Fund mentioned earlier.

Government grants have since 1970 been provided for training courses run by union organizations. Grants towards tuition costs, travel expenses and board and lodging are provided for courses lasting five days or more.

Employees serving as union representatives on company boards are trained by the union organizations themselves. LO has arranged a four-week training course and TCO a course lasting for two weeks. The Industrial Safety Fund contributes towards the cost of the actual courses (teachers, board and lodging etc.) while each individual firm bears the cost of the loss of earnings sustained by the employee concerned. Many firms have also arranged internal training schemes at their own expense for board representatives.

Many of the shortcomings of the working environment are connected with the technical design of premises, machines and other production apparatus. Many initiatives are now being taken to include ergonomics in the training of technologists at different levels. Special emphasis has been placed on ergonomics as part of the course in mechanical engineering at a newly established graduate school unit in Luleå.

4.1 Right to educational leave

An act concerning the employees' right to educational leave came into force on January 1, 1975, giving every employee in public or private service who wants to undergo education, the right to necessary time

off from his employment. This right falls to everyone who has been in the service of the employer during the last six months or for a total period of at least twelve months during the last two years. If the education concerns trade-union matters the employee has the right to time off even if he has not reached the stipulated period of employment.

The law is valid for every type of education and it is up to the employee himself to decide what he wants to study. The length of the time off is not limited by the law and depends on the educational goals of the employee. However, the employer has a limited right to defer time off to a later date than requested. Concerning education in trade-union matters, however, it cannot be postponed longer than two weeks.

If it is impossible to let several employees have time off simultaneously, he or she who wants to take part in education concerning trade-union matters has priority. In the second place priority shall be given to the employee who has not got education corresponding to nine-year elementary school.

The employee who has enjoyed time off shall, when he returns to work, be guaranteed the same or an equivalent position in respect of working conditions and employment terms as if he had not had any time off. He also has the right to go back to work if he will break off his studies.

The trade unions are given an important influence concerning the application of this act. In case of a dispute the opinion of the local trade union applies until the dispute has been finally considered in court.

4.2 Labour market training

In September 1972 the Government appointed a Royal Commission of Enquiry to make a general review of what in Sweden is called Labour Market Training, i.e. training and retraining of adults for labour market reasons. On the basis of its report a proposal was put to the Parliament and decided on in May 1975.

It stressed the importance of labour market training as an instrument not only to ensure safe employment for those who are unemployed or run the risk of becoming so, but also as a way to stimulate training in fields which are particularly valuable from the labour market point of view. The labour market training is an important measure to counteract the economic trends, increase the economic growth and the distribution of wealth.

As regards the question of recurrent education, it was concluded that the principle of recurrent education should be introduced into labour market training, that the right to labour market training should be widened and that training for shortage occupations should comprise a larger selection of courses than at present. In order to improve the chances for people with low incomes to take part in the training for shortage occupations it was decided that they should be given priority for up to 10,000 places. Labour market training for some groups with special problems on the labour market was also discussed, as for example the women (who constitute more than half of the trainees), the handicapped and the immigrants.

As to the question of training allowances it was concluded that an economic stimulus is needed to attract the insured unemployed to training. The system of allowances will therefore, to the largest possible extent be constructed in a way which will make the training allowance comparable with the income from gainful employment.

Research and development work for the improvement of working conditions is supported by the Swedish Government in a number of ways.

- a) The National Swedish Board of Occupational Safety and Health has a research section, which conducts interdisciplinary research on the subject of the working environment.
- b) A special Industrial Safety Fund was set up in January 1972. The purpose of this fund is to support research, training and information which can bring about improvements to the working environment and prevent the occurrence of industrial injuries and other inconveniences. The fund is financed by an industrial safety contribution paid by private and public employers. The contribution is 0.1 per cent of the total wage bill of the company or body concerned and the total thus raised was approximately 77 million Sw.Kr. for 1974.

Hitherto the fund has given priority to four fields of research: matters concerning working hours (especially shift work), accidents, chemical hazards to health and so-called branch surveys. A great deal of money has also been provided for training and information activities. For instance, the fund has made grants for the training of safety officers in connection with the new Working Environment Act.

- c) The Swedish Board for Technical Development (STU) supports research in the technical sphere, among other things with a view to the improvement of working conditions. STU is mainly concerned with projects in the sphere of ergonomics and common problems of the physical environment.
- d) Research into working life has long been conducted as a part of regular university research in various subjects. A special ergonomics section has been established in connection with the establishment of a new college of technology in Luleå. At the Royal

Institute of Technology in Stockholm a chair in industrial ergonomics has been installed.

- e) The Government has initiated various experimental changes designed to increase the influence wielded by employees at their place of work. There are many reasons for these experiments. For one thing the Government has wished to provide a foundation for the work done by trade unions in the sphere of industrial democracy. Another aim has been to encourage debate and if possible present experiments which may set a precedent for developments in Swedish working life as a whole.

The Industrial Democracy Delegation was appointed in 1968 to collaborate with local associations of employers and employees in some of the publicly owned corporations in the practical testing of new forms of joint influence concerning decisions at all levels. So far the delegation has participated in experiments within five enterprises, viz. two shipyards, two tobacco factories and a restaurant concern.

The Delegation for Administrative Democracy (DEFF) was appointed in 1969 to help arrange increased personnel influence in public authorities on an experimental basis. The work of the DEFF has focussed on the question of influence in representative forms. It is emphasized that the essence of administrative democracy is for the employees to participate formally in the decision making processes of the authority concerned. Several public authorities have introduced a scheme whereby decisions on hiring, internal education and other matters are decided by equal numbers of employers' and employees' representatives.

- f) Apart from these two experimental schemes initiated by the Government, there are many other experiments in progress led by the representative organizations in the various spheres of collective bargaining. The Development Council for Joint Consultation has been at work in the private sector since 1969. A number of experiments have been inaugurated as part of its programme of research and experimentation.

Similar development activities have begun and several experiments have started within the co-operative enterprises.

In the sphere of municipal and county council government, the representative associations have set up so-called Central Councils which have helped to inaugurate a number of experiments. For the most part these experiments are planned and carried out at local level.

A common feature of all these public and private experiments is that their direction and scope are determined by the local representative associations of employers and employees. As a rule all that the central joint bodies do is to provide initiatives and collect experience. Many experiments are conducted with the assistance of researchers and consultants with advisory and investigatory functions who are often recruited from the universities on a consultancy basis, though in certain cases the parties have set up special permanently staffed research secretariats. Besides some 40 experiments under scientific observation there are numerous local "experiments" where management and unions try to find new ways of organizing work. Among the best known experiments are the efforts of the Saab-Scania and Volvo car manufacturing companies to modify the assembly line production system.

The changes which are being tried out are of two main kinds. Firstly they involve representative forms of influence with personnel delegates nominated by the trade unions taking part in decision making. These delegates can form a majority or a minority of the decision making body concerned. As a rule they have clearly defined spheres of jurisdiction and, in order to work properly, they should also have clearly defined rules of decision making.

The second type of change involved by these experiments concerns various changes to the organization and disposition of work. These changes are designed to give the individual employee and the small working group greater control and influence over their own work and also to provide scope for more qualified and competent individual action. These experiments may include elements of job enlargement, job enrichment, job rotation and other psychologically

Justified changes, but they must also include formal and real changes of relative influence in order to be relevant in terms of industrial democracy.

It is too early yet to draw any farreaching conclusions from these experiments. The following are some of the most important experiences to have been gained so far.

Perhaps the most amply documented experience concerns the difficulty of carrying out experiments entailing a genuine shift of power within the organization of work. The experiment reporting a smooth course of development is invariably an experiment which has not entailed any significant redistribution of power. Difficulties are above all apparent in the disagreements arising between the parties concerning the organization of changes, the speed at which they are to be effected and the value of the experiments carried out. The main conflicts are between employers and employees but conflicts also occur between groups of employees occupying different positions in the hierarchy of the firm. Those with more influence tend to stand by the previous order of things while those with little or no influence try to produce changes.

Most of the employees are interested in greater influence and more variable and qualified jobs. In most of the cases where the employees have not been interested in greater influence and job enlargement they have not taken part in framing the changes and have therefore regarded them as ominous and undesirable.

In order to be effective, the influence exerted by employees must include all levels within the firm. Changes should be carried out parallel at different levels. Influence confined to a section of the firm or a level of the organization cannot survive if the traditional hierarchic structure is otherwise retained intact.

Representative forms of influence must be organized through the unions. Otherwise an irritated rivalry will develop which only serves to weaken the status of the employees.

The socio-technical theories concerning relations between the technical and social systems of firms can be applied to many firms both in

industry, services and clerical work. In order to be relevant from the point of view of industrial democracy, these changes must be supplemented by influence in representative forms at other levels of the firm.

In order to be successful, changes with a view to industrial democracy must be based on both formal and informal conditions. This means that rules concerning influence and decision making should as far as possible be defined in agreements. In order to acquire real content, the formal rules must be borne up by informal conditions, including opportunities of obtaining the necessary training, of carrying on union business at the work place and - in the case of the employees' representatives on different bodies - of maintaining contact with the people they represent, and so forth.

The experiments carried out so far have been able to show improved or at least unchanged productivity in the firms affected. However, it should be observed in this connection that improved or unchanged productivity was one of the premises of the majority of experiments, so that this result cannot be said to establish a relationship between productivity and industrial democracy. On the other hand it is worth noting that management control can be reduced and the influence of workers and lower grade salaried staff correspondingly increased in a manner which does not have a negative effect on production.

Ministry of Labour
Stockholm, Sweden

Proposals for a new work environment legislation

Summary of the Final Report
by the Commission on the
Work Environment (SOU 1976:1)
Stockholm, 1976

Summary

The Work Environment Commission was appointed in 1970. Its chairman is the director general of the National Board of Occupational Safety and Health (Arbetskyddsstyrelsen), and the Commission includes representatives of the trade unions and employers' associations together with a number of advisers.

In 1972 the Commission published an interim report entitled A Better Work Environment (SOU 1972:86) containing proposals for a partial reform of occupational safety legislation (particularly the Workers' Protection Act and Ordinance of 1949). The proposed amendments were mainly concerned with co-operation between employers and employees in connection with local safety work, prior assessment of work premises, safety precautions at common work places and enforcement provisions. The Commission also recommended an expansion of the occupational safety authorities.

A Government Bill (1970:130) for the amendment of current occupational safety legislation and for the introduction of other measures aimed at improving the work environment was drafted on the basis of the report. The Bill was passed by Parliament and the new provisions came into force on January 1, 1974.

The Commission now presents its final report to the Government. After it has been circulated to the relevant organizations and authorities for comment, this report is intended to form the basis of a Bill to Parliament.

In the final report the Commission outlines a completely new code of occupational safety legislation. The new Work Environment Act thus proposed defines the fundamental requirements applying to working conditions and covers measures for the prevention of every variety of health and safety hazard relating to the working environment. The Work Environment Act will override all other legislation in these respects.

The essential aim of the new Act is to afford protection against health hazards and accident risks. But the Act also sets out to do more than protect workers against certain negative phenomena endangering health and security. In keeping with the broader view which is now taken of the working environment, the proposal is also founded on the aim of establishing working conditions in which the individual can experience his work as a meaningful and rewarding part of his life.

The Work Environment Act gives a rough outline of the means whereby these ends are to be achieved, and it defines the liabilities, obligations and rights involved.

One important section of the Act concerns co-operation between employer and employee. This section contains regulations concerning the organization of safety arrangements within the firm. Considerable emphasis is placed here on the participation of employees in the shaping of their work environment, but attention is also drawn to the role of public authorities in furnishing guidance and intervening when necessary to ensure that the legislation serves its purpose. The National Board of Occupational Safety and Health and the Labour Inspectorate (Yrkesinspektionen) are invested with far greater powers to issue regulations, supervise the implementation of the Act and intervene at particular work places.

In its report *A Better Work Environment* the Commission proposed among other things that new regulations should be introduced with a view to strengthening the influence exerted by employees on the design of their work places. A special call was made for an increase of the powers of safety delegates and safety committees. The appointment of regional safety delegates was one of the important new ideas put forward with smaller work places in mind.

The provisions added to the existing Workers' Protection Act with effect from January 1, 1974 have to all intents and purposes been incorporated in the proposed new legislation, though certain alterations and additions have been made in the light of subsequent experience.

Otherwise most of the Act represents a completely new order of things as compared to the Workers' Protection Act. The general validity of the legislation is further underlined by an expansion of its applicability, e.g. in the armed forces, in education, in family agricultural enterprises and with regard to self-employed persons.

The proposed Work Environment Act is essentially of an outline character, which means that the material content of its rules concerning the state of the working environment and the enforcement measures to be taken will very much depend on the regulations which the National Board of Occupational Safety and Health will be empowered to issue concerning the implementation of the Act. The proposed Act and the accompanying Work Environment Ordinance contain a number of provisions empowering the Board, in close co-operation with trade unions and employers' associations, to issue detailed regulations in various points.

Within the framework of the new Act, it will be possible for requirements concerning the working environment to be stepped up in keeping with social and technological developments in the community generally. The successive publication of regulations by the Board will lead to a closer definition of requirements and the establishment of a more reliable basis for safety work. Many of the penal sanctions proposed refer to infringements of these regulations. Otherwise the system of sanctions is based on the existing rules concerning the issue of orders and prohibitions to negligent employers.

The new legislation will demand a considerable increase in the resources at the disposal of the occupational safety authorities. The Commission therefore advocates a continuation of the present rapid expansion of personnel and facilities. This recommendation is made in the full realization that the demands and expectations attaching to the new legislation cannot be fulfilled otherwise.

It is proposed that the new legislation be made effective as from January 1, 1978. Even where resources are already available or will become so, it will take time to frame the detailed regulations that will be needed – regulations, moreover, which must be amenable to constant revision in keeping with new developments and findings. Thus the date when the new legislation comes into force will by no means mark the completion of the entire innovation process. Instead it will mark the beginning of a new phase of development in the work environment sector, development based to a great extent on previous experience and effort and which will subsequently be influenced by new knowledge and new ways of thinking. One consistent feature of the framing of the system of rules and of enforcement is a close connection between the work of the authorities and those on behalf of whom that work is undertaken.

A more systematic description will now be given of the Commission's proposals.

Scope of work environment legislation

The scope of the Workers' Protection Act today is very wide. Substantial expansions are proposed, however, through the new work environment legislation.

The Work Environment Act will include work done by the employer himself. Self-employed persons are also to come under the rules applying to machinery and other technical devices and to substances liable to cause ill health or accidents.

In principle, legislation concerning the work environment will be made applicable to the armed forces in their entirety, to civil defence and to the rest of the total defence establishment. Among other things this will entail the abolition of the present exception for military manoeuvres and suchlike. Conscripts will be protected by the same rules as apply to civilian employees. The National Board of Occupational Safety and Health and the Labour Inspectorate will be made responsible for enforcement activities within the armed forces. In view of the special nature of military activities, facilities will be provided for the issue of instructions concerning the implementation of the Work Environment Act in this sector. In this context the Commission proposes an exception to the right of a safety delegate to suspend activities during manoeuvres.

The Workers' Protection Act applies to work which is executed by pupils in vocational training institutions and other schools as far as practical work is concerned. The new Act will apply equally to theoretical and practical work by all students in the whole education sector, including universities, elementary schools and adult education. On the other hand the legislation will not apply to the most junior grades (1–6) of elementary school.

The Workers' Protection Act also applies to inmates in different kinds of institutions where they are held for mental care, care of inebriates, prison discipline, and so on. In the new Act this restriction to institutions where inmates can be detained against their will is to be abolished. This means that the whole of the nursing sector will come within the scope of the legislation.

The rules concerning co-operation between employer and employee are not to be made directly applicable to conscripts, students and persons undergoing treatment.

The present exception concerning the work of members of an employer's family is to be abolished. This will mainly be of relevance to family farms, which will be brought within the scope of the Work Environment Act.

The only exceptions contained in the Workers' Protection Act and retained by the Commission in its proposals are those concerning service on board ship and work in the employer's household. These sectors are governed by special legislation in which provision is also made concerning safety precautions.

Provisions concerning forest accommodation and stables are today contained in the Forest Accommodation Act. This Act, which covers forestry work, river driving and road work, has grown less and less relevant to modern needs as a result of the mechanization of forestry work and improvements to the permanent road network. The Commission feels that there is no longer any cause for separate legislation concerning accommodation for forestry workers and road workers, and it therefore proposes the repeal of the Forest Accommodation Act.

The state of the working environment

By way of an introduction, the Commission's report begins with a survey of different work environments, a general description being given of the changes undergone by them as a result of technological progress. Viewpoints are also presented concerning the influence which new knowledge and new values have had on the attitude taken to working conditions. Against this background the Commission affirms that the right to work which is as meaningful and as safe as possible is of fundamental importance to the members of an affluent society. In this connection, account must be taken of all aspects of the working environment with a potential bearing on physical and mental health. The Commission proposes that the material rules of the Work Environment Act be prefaced by a provision to the effect that the work environment must be satisfactory in relation to the work done there and in relation to social and technical developments.

The report consistently emphasizes that the working environment must be designed with a view to providing for human needs in the broadest sense. A basic rule is proposed whereby working condition must be adapted to human physical and mental aptitudes. At the same time it is observed that inferior work environments still exist in a number of occupational sectors where in many cases there are several adverse environmental conditions involved simultaneously. The Commission emphasizes that these problems must be tackled in depth.

The proposed legislation also covers matters concerning the organization and content of work. Among other things, the Commission deals with the work environment problems arising in the form of monotony, stress, social isolation etc. The Commission finds that, to a great extent, this will mean choosing between different forms of work. It seems appropriate for this

choice to be made in the first instance by employers and employees themselves.

The concept of job satisfaction is also discussed. The Commission arrives at the conclusion that part of the essence of job satisfaction is the ability to play an active part in the design of one's work place and work tasks and to assume professional responsibility. A provision is proposed to the effect that work must be organized in such a way as to enable the employee to influence his own work situation.

The Commission points out that questions concerning personal relations at work are included in the psychological and social assessment which must be made of the physical work environment and the arrangement of work. It is also emphasized that the local safety organization and occupational health services have an important role to play in this sector.

The new legislation concerning the work environment draws attention to measures which are needed in order to make working conditions as good as possible. At the same time the Commission emphasizes that the foundations of continuing national prosperity are not to be destroyed. Every assessment must incorporate due consideration for vital public functions and so on.

In order for the creation of a good working environment to be possible, the design of work premises and equipment, technology and working methods etc. must be considered at an early stage in terms of the effects they can have on workers. There are often various possibilities to choose from in this respect. A general provision is proposed to the effect that work must be planned and arranged in such a way that it can be done in safe and healthy surroundings.

The provisions of the proposed Act concerning the state of the work environment include a number of general regulations concerning the attention to be paid to factors in the work environment. In this respect the Act refers to the classification of environmental factors, which is traditionally employed for purposes of workers' protection.

Thus a special provision is proposed to the effect that work premises must be designed and furnished so as to provide a suitable work environment. The design of buildings is regulated by building legislation, but special regulations are needed with respect to the use of buildings as work premises.

Ventilation, acoustic conditions and lighting together with other hygienic conditions must be satisfactory. As stated earlier, comprehensive detailed regulations are anticipated in all the sectors to which these provisions concerning the state of the work environment refer. However, the Commission puts forward certain general considerations regarding the implementation of the new legislation. Among other things reference is made to atmospheric pollution, noise, vibrations, lighting and radiation.

A special provision is proposed to the effect that adequate precautions must be taken to prevent injuries resulting from falls, slips, fire, explosion, electrical current or other comparable factors.

Machinery and other technical devices must be designed, positioned and used in such a way as to afford adequate safeguards against ill health and accidents.

Chemical hazards are considered in various sections of the Act. A basic provision is proposed whereby a substance which can cause ill health or accidents at work may only be used in conditions affording adequate security. This provision also applies to composite products and work processes involving dangerous substances.

A general provision is also proposed on the subject of personal protective equipment. An employer may not refer to equipment of this kind when it is possible to take direct action for the improvement of the working environment. In cases where personal protective equipment is necessary, it is to be provided by the employer.

The Commission observes that the rise in general hygienic standards is bound to result in greater demands being made with regard to personnel amenities of various kinds. Above all this must be taken into consideration in connection with the erection of new buildings or alterations to existing ones. A provision is proposed to the effect that any work place must be provided with spaces and facilities for personal hygiene, meals and rest to the extent justified by the nature of the work and the needs of the workers. This provision also includes first aid in connection with accidents or sickness. Personnel transport vehicles must be suited to their purpose. As with the other material requirements defined by the Work Environment Act, implementing regulations issued by the National Board of Occupational Safety and Health are envisaged as a means of adjusting statutory provisions to changing needs in the way of personnel facilities etc.

The Commission emphasizes the need for the working environment to be planned with due consideration for the different aptitudes of different individuals. The inspection of plans etc. must include consideration of employment opportunities for the disabled.

Apart from a proposal concerning leave of absence for nursing mothers, the Commission does not propose that the new Work Environment Act should contain any special provisions on behalf of women employees. It is proposed that a somewhat amplified version of the provision of the Workers' Protection Act concerning leave of absence in connection with childbirth be incorporated in the 1945 Act Prohibiting the Dismissal of Employees on Account of Marriage, Pregnancy etc. The present special regulations prohibiting the employment of women underground will be repealed. At the same time the Commission observes that groups of employees may be particularly susceptible to special hazards in the working environment. Among other things, mention is made in this connection of hazards relating to pregnancy. It is proposed that the National Board of Occupational Safety and Health be empowered in cases of this kind to prohibit certain kinds of work or to prescribe other special conditions applying to the conduct of such work.

General obligations of employers etc.

The chapter of the Work Environment Act concerning the distribution of responsibility for the working environment opens with a provision concerning the duty of employer and employee to co-operate with each other.

The Commission presumes that the main responsibility for the working environment will continue to rest with the employer. The employer must take all the precautions necessary to prevent his employees from being exposed to health hazards or accident risks. The employer must also take care to ensure that all work is planned and arranged in such a way as to provide a good work environment. Assessment is to be related to the work environment as such and not to the financial resources of the individual employer. On the other hand, the measures demand must not be out of proportion to the results attainable.

In certain respects the proposed Act gives a closer definition of the general obligations of the employer, as in the case of responsibility for introduction, instruction and training. The employer must ensure that employees acquire a sound knowledge of the conditions in which work is conducted and that they are informed of the risks which work may entail. He must also make sure that the employee has received the training which is required and that he knows what measures must be taken for the avoidance of risks. The Commission also refers to the importance of the employee being shown the relationship between his own work input and the general context of his employment.

Special attention is paid to solitary employment. A special provision in the Act stresses that employers must take into account the special risk of ill health and accidents connected with an employee working alone.

The Commission also considers the report on Television Monitoring which has been presented by the Committee on Privacy. This report recommends prohibiting the training of a monitoring camera on a public place without permission. The Work Environment Commission maintains that, in the event of a work place being involved in a situation of this kind, the employees should be given a hearing when permission for TV monitoring is applied for. It is also proposed that a provision on this point be added to the expected Television Monitoring Bill.

An employer is not generally responsible for safety conditions in contracting companies or companies producing by contract or in some other way on his behalf. Facilities should be provided, however, whereby possible work environment problems can be rapidly traced. For this reason it is proposed that anybody who in the course of his business uses a certain product or commissions another person to perform certain work shall be obliged upon request to disclose to the enforcement authority the identity of the person supplying the product or doing the work.

The new Act provides that employees must help to create a good working environment and that they must observe the caution required for the prevention of ill health and accidents. The Commission observes that safety work can be jeopardized if an employee refuses to comply with the rules applying at his work place. The question as to whether this constitutes due cause for dismissal must be decided under the Security of Employment Act, with due regard to the considerations of safety which can be pleaded as an argument against continued employment.

The Act expressly entitles workers to suspend work in a dangerous situation in order to confer with a safety delegate or foreman. In this connection a rule is proposed indemnifying the employee against any claim in damages.

This question is closely related to the right of a safety delegate to suspend work in certain circumstances.

Common building and other work places are at present covered by certain rules concerning the safety liabilities of persons conducting activities there. Co-ordinating responsibility is vested in the prospective owner of the building etc. and can be delegated by him. These rules were introduced as a result of the amendments made in 1973 to occupational safety legislation. The Commission observes that the rules have played an important part in many common work places in helping to establish co-ordinated safety precautions and clarify responsibilities. The Commission feels that it is natural to go further. It is proposed that a co-ordinating responsibility resembling that of the prospective owner of a building be imposed upon the person owning or otherwise controlling a permanent site where work is carried on by several enterprises simultaneously.

The Commission proposes that safety liability be imposed upon the person owning or otherwise controlling a work site or letting premises or land for work or as personnel facilities. The purpose of this proposal is to give the enforcement authorities recourse against the person who is *de facto* in a position to take the necessary precautions.

The disposition of working hours

The basic rules concerning the duration of working hours are contained in the Working Hours Act. This Act has not come within the scope of the Commission's work, which has been concerned with the disposition of working hours and appurtenant questions of breaks and rest.

The disposition of working hours is to a great extent a matter governed by collective agreements, within the existing legislative framework, and there can be no question of any detailed statutory regulations in this context. The Commission observes that the current process of reform in the sphere of occupational legislation should have a major bearing on these matters. It is the opinion of the Commission that the code of rules resulting from the Labour Legislation Committee's proposals should give a basis for the desirable improvement of employee influence on the disposition of working hours.

The Commission has found cause to propose various changes to the rules governing rest intervals and breaks, rest at night and weekly rest. The Commission feels that the present system of absolute statutory provisions concerning working hours does not accord with the claims advanced by employees for participation and influence in the shaping of their working conditions. The Commission therefore proposes that facilities be introduced for departures by collective agreement from the general statutory rules. Departures of this kind will be made subject to the approval of the national union organization concerned.

By the expression "rest interval" the Workers' Protection Act means an interruption of work, of which the length is fixed beforehand and during which the employee is free to dispose of his time and is not required to remain at the place of employment. A "break" means a short intermission in the work fixed beforehand, which is ordered with a view to allowing

the employee to detach himself from his work and which is not to be counted as a rest interval.

The Commission proposes that work should not be allowed to proceed for more than five consecutive hours without a rest interval. Otherwise, however, the number of rest intervals punctuating working hours will as hitherto be a matter to be decided in accordance with the nature and duration of the work involved and in keeping with working conditions generally.

The Commission proposes that the restrictively phrased exceptional provisions of the Workers' Protection Act concerning the exchange of a rest interval for a mealtime pause at the work place be transferred, subject to certain minor alterations, to the Work Environment Act. Mealtime pauses of the kind in question are to be counted as working time. At the same time facilities will be introduced whereby a collective agreement can replace a rest interval with a mealtime pause.

The Commission feels that efforts should be made to organize work in such a way that the employee enjoys a reasonable amount of liberty to take a break when he feels mentally or physically in need of doing so. Despite this approach there will continue to be various types of work in which the desirable opportunities of relaxation or variety are lacking, and the Commission therefore proposes a new provision concerning work breaks whereby the timing and extent of special breaks is to be determined according to the working conditions involved. More detailed provisions concerning breaks are therefore to be made, on this base, by collective bargaining in the first instance.

The Commission wishes to retain the generally restrictive view concerning night work incorporated in the provisions of the Workers' Protection Act on this point. It is proposed that current regulations concerning the necessary time off for rest at night and concerning the prohibition of night work be incorporated in the Work Environment Act. The possibility will be retained of departing from the prohibition of night work in the case of work which, on account of its nature, public requirements or some other special circumstance has to be carried on at night. On the other hand no special exception is proposed concerning employees in senior positions. The Commission's proposals envisage departures from the rules concerning night work through a special order of collective bargaining. On the other hand, exemptions from the prohibition should not be granted with the frequency now current.

The Commission proposes that legislation should continue to incorporate basic provisions concerning regular and continuous weekly rest. It is proposed that this period of rest be increased from 24 to 30 hours. Weekly rest is not to be deemed taken at the same time as the employee is on call, either in his home or elsewhere. Weekly rest must whenever possible be taken at the weekend. It is proposed that facilities be provided for negotiated departures from the statutory requirements concerning weekly rest.

The Commission feels that it is logical for consideration to be given to the question of a transfer of the handling of exemptions and other matters of implementation concerning working hours from the National Board of Occupational Safety and Health to the Labour Inspectorate, which is to be primarily responsible for the more detailed assessments of work envi-

ronments under the new legislation. However, a transfer involving working hours questions coming under the Work Environment Act and not those coming under the Working Hours Act would lead to an undesirable fragmentation of administrative authority, and the Commission therefore proposes that the Work Environment Act be framed in such a way that a transfer of this kind can be effected subsequently without any amendments being necessary.

Young persons

The Commission emphasizes that special rules for the protection of young persons should be framed in such a way as to promote vocational education instead of cutting young people off from working life. In drafting regulations on this point, the Commission has also endeavoured to produce something more simple and straightforward than the existing regulations.

The Workers' Protection Act defines young persons as persons below the age of 18. This age limit is retained in the Work Environment Act. It is proposed that the general minimum employable age be adapted to the nine-year compulsory comprehensive school, which most young persons attend until they are 16. Accordingly the main rule laid down in the Act is that a young person is not to be employed prior to the calendar year in which he has his sixteenth birthday and that he may not be employed before he has completed his compulsory schooling.

The Commission sees no cause for any significant alteration of the opportunities of gainful employment open to young persons of school age during termtime and during school holidays. An exception is, however, proposed to the general minimum age rule, to the effect that a young person aged 13 or over may be employed for light work which is not calculated to prejudice his health, development or schooling. More detailed regulations concerning the types of work covered by the exception and concerning the special conditions attaching to such work are to be issued by the National Board of Occupational Safety and Health.

The Commission proposes that legislation continue to incorporate a provision underlining the responsibility of the employer for ensuring that young persons are not employed in a manner which can entail a risk of accident or over-exertion or any other form of harmful effect on the health or development of the minor concerned. In this connection it is proposed that the National Board of Occupational Safety and Health be empowered to prohibit or regulate work involving a definite danger to young persons.

In view of the existence of school health services, among other things, the Commission feels that the full retention of the present system of work books and regular medical examinations is superfluous. Instead regulations are proposed whereby a medical examination can be ordered whenever it is obviously needed.

The Commission proposes that the present restrictions on the working hours of young persons be intensified and that young persons should not be allowed to work for more than 9 hours in 24 or 45 hours per week as against 10 and 54 hours respectively at present. Gainfully employed young persons must also be assured of uninterrupted time off from work for nightly

rest for at least 11 hours in 24, and this period should include the hours between 10 p.m. and 5 a.m.

Co-ordination with legislation concerning products hazardous to health and to the environment

Chemical products are handled in the working environment and elsewhere. Wherever these products are handled, they are liable to have negative effects both on workers and on the environment. The Commission attaches importance to the adoption of a comprehensive approach to the assessment of chemical hazards in the working environment and in other surroundings. The Commission has investigated the effects within the occupational safety sector of the control legislation which came into force on July 1, 1973.

The Act on Products Hazardous to Health and to the Environment is a general code of product control legislation in which products are regulated irrespective of how, when and by whom they are handled. The Commission favours the investment of co-ordination functions in a separate authority. This authority can also be made responsible for general product questions such as surveying, classification and basic marking. It is also considered a practical arrangement for the same authority to deal with matters of equal relevance to a number of environmental sectors. All questions of intervention involving general requirements applying to several handling stages ought preferably to be entrusted to this co-ordinating authority.

Thus the Commission recommends that the Products Control Board (Produktkontrollnämnden) should continue to issue general regulations referring to several stages of handling – manufacturers, suppliers, users etc. – within the scope of the Act on Products Hazardous to Health and to the Environment. At the same time the Commission observes that the immediate hazards presented by the handling of chemical substances come mainly within the working environment. The overwhelming proportion of these hazards occur first and most intensively in the working environment, and it is here that undesirable effects can be expected to appear first. One of the main tasks of the National Board of Occupational Safety and Health must therefore be to issue general regulations concerning product handling and other activities at work places. This has been borne in mind when drafting the Work Environment Act. It is also proposed that the occupational safety authorities be enabled in particular cases to address instructions to manufacturers and suppliers in the chemical sector, a matter which is considered more closely in the following sector.

Prior assessment

Under this heading in Commission considers ways of ensuring that due consideration is paid to work environment questions in the creation of work places. This question may arise with reference to a complete installation, a machine or a chemical substance. It may also arise in connection with a work process or a working method. Certain other control procedures are also dealt with in this connection.

The prima facie responsibility where prior assessment is concerned must

rest with producers and employers. Technical devices and chemical products must be carefully tested with respect to their safety properties before they can be released for general use. Regulations concerning liability in this respect are proposed with reference to manufacturers, importers and suppliers of machinery, implements, protective gear and other technical devices as well as chemical products.

Rules concerning compulsory prior inspection by a public authority are proposed in cases where important considerations of the working environment so dictate. However, the ability of public authorities to carry out prior inspection of projects of different types is subject to practical limitations. The Commission therefore considers it essential for prior inspection to take place within the framework of the local safety organization. The proposed Act reiterates the regulations concerning the participation of safety delegates and safety committees in planning which were introduced in 1973 with the reform of occupational safety legislation. The Act also includes supplementary provisions to the effect that safety delegates and safety committees are also to participate in the planning of work processes.

Concerning work premises and personnel facilities, the Act refers to the work environment assessment in connection with applications for building permission which was introduced by the 1973 reform. Similarly the Act retains the rules concerning notification to the Labour Inspectorate if sufficient investigation from the point of view of occupational safety has not been possible in connection with an application for building permission. These rules are expanded by the Act to include personnel facilities.

It is also proposed with a view to the co-ordination of special environmental protection legislation with legislation concerning the working environment, that the appropriate environment protection authority – the National Franchise Board for Environment Protection (Koncessionsnämnden för miljöskydd), the National Environment Protection Board (Statens naturvårdsverk) or a county administration (länsstyrelse) – should notify the safety delegate or trade union organization concerned of applications or notifications received pursuant to the Environment Protection Ordinance. This provision also implies an assurance of employees being enabled to participate in the planning process.

It is also proposed that the National Board of Occupational Safety and Health be empowered to prohibit the use of a work process, a working method or an installation pending the award of permission in the manner stipulated by the Board. An order concerning prior inspection may, for instance, refer to a work process using a particular kind of technical device, a working method in which certain chemical products are used or a plant in a certain location. Conditions may be imposed on activities. The purpose of this empowerment is to provide the Board with a subsequent opportunity of ordering prior inspection in cases where close control proves necessary.

When considerations of safety so require, the Board will also be able to stipulate approval as a condition for the use or delivery for use of a technical device. A stipulation of this kind may refer to the approval of a design or to the approval of individually tested devices. Approval can, for example, be made subject to conditions relating to factory testing. The approval of a device can be accompanied by stipulations concerning its use.

The Board will also be able to stipulate approval and lay down special conditions regarding the use of chemical products. For instance, it may stipulate the approval of a certain type of product before that product can be used in working life. Or again it may impose special conditions regarding ventilation, hygienic arrangements or the participation of an expert etc. in connection with the use of a particular type of product.

If there are particularly compelling reasons in the interests of safety for doing so, the Board may prohibit the use of a particular type of work process, working method, technical device or chemical product.

The Board will be able to issue general marking regulations that are binding upon both suppliers and users of technical devices in working life. Concerning the marking of chemical products, it will remain the prerogative of the Products Control Board to issue general regulations concerning marking in connection with the transfer of chemical products. The Commission underlines the need for marking regulations of this kind in the interests of occupational safety. At the same time, the Commission observes that the special marking regulations needed in the interests of occupational safety cannot be wholly provided within the framework of general product control. It is therefore proposed that the National Board of Occupational Safety and Health be empowered to issue general regulations for employers in this respect. The Board should also be empowered in particular cases to issue a certain supplier with an order to provide informative labelling or suchlike.

Various expansions are proposed of the existing powers of the National Board of Occupational Safety and Health to order control measures in the course of ongoing activities. The Board is now to be empowered to issue regulations concerning the inspection, testing and continuous supervision of any kind of technical device. Similarly, with respect to conditions of occupational hygiene, the Board is to be invested with a general power of ordering an inspection. These provisions are supplemented by a further provision empowering the Board to order the maintenance of a list of technical devices and dangerous substances used in activities. The Board will also be entitled to impose a duty of disclosure on persons using or intending to use a particular kind of technical device or chemical substance.

The Work Environment Act also imposes a general safety liability on the person installing a technical device.

With regard to the planning of building activities, the Commission observes that, within the framework of the assignment, the projector must consider such matters of occupational safety as may arise during the course of the project. The proposed legislation provides extensive opportunities of prior inspection where building activities are concerned.

Local safety activities

Extensive co-operation between employers and employees has long been the established practice in the sphere of occupational safety. This co-operation has assumed added importance as a result of the wider approach to occupational safety and health which has developed in recent years. Since the new labour legislation can be expected to result in work environment questions being referred to local negotiations, the Commission recommends

that, as has invariably been the practice hitherto, these questions should in the first instance be discussed by the relevant safety committee wherever such a committee exists.

The Commission underlines the very important part played by safety delegates in establishing a positive work environment. In order to enhance their standing still further, the following main innovations – apart from those already referred to – are proposed in relation to the Workers' Protection Act.

In view of the special inconveniences which may be associated with solitary employment, it is proposed that safety delegates be given wider powers to suspend such work. The Commission notes that questions concerning the organization of work as solitary work must be solved at the planning stage. Accordingly the powers of action vested in the safety delegate should not be confined to questions of serious and immediate danger to life and health. Instead it is proposed, by way of a general condition, that a safety delegate should be entitled to intervene in a case of solitary employment when intervention is justified in the interests of safety. Any such intervention is to remain in force pending a decision by the Labour Inspectorate.

A provision is also proposed whereby an employer must notify the safety delegate of any changes having a significant bearing on safety conditions within the delegate's safety area. The duty of the senior safety delegate to lead the activities of the safety delegates is affirmed by the Act.

The rules of the Work Environment Act concerning safety delegates have been adapted to the rules contained by the Shop Stewards Act. One innovation is the proposal that the provisions assuring the safety delegate of leave of absence for the discharge of his duties and of protection against harassment also be made applicable to a safety committee member representing his fellow employees.

Otherwise it is proposed that the provisions of the Workers' Protection Act concerning local safety activities be transferred more or less intact to the Work Environment Act.

The Commission proposes a reorganization of the system of grants towards regional safety activity which was introduced in connection with the 1973 reform. Grants should be annually distributed by the Government to the central trade union organizations. An increase of the total amount of these grants is recommended.

The Commission emphasizes that a great deal can be accomplished by the local safety organization on behalf of employees with reduced work capacity as well as of immigrant workers. In this connection the Commission calls for a closer investigation, during a scheduled review of the Shop Stewards Act, of the right of a safety delegate to engage a work place interpreter.

Occupational health services, medical examinations

Occupational health services are expanding rapidly, but a great deal still remains to be done in this sector. The Commission reviews a number of problems which will have to be overcome in order for occupational health services to be able to serve as expert advisory bodies to local safety or-

ganization in the manner envisaged by the proposed Act. Attention is drawn to the need for joint planning together with other health and medical services, to the need for a development of the hospital units for occupational medicine, and to the need for co-ordination with public laboratory facilities. The Commission therefore proposes that separate consideration be given to these matters.

New regulations are proposed concerning the duty of the employer to arrange medical examinations for his employees. The National Board of Occupational Safety and Health is to be empowered to order the medical examination of employees and the compilation of records of such examinations. The provision concerning the duty of a doctor to notify an enforcement authority of certain observations is to be transferred to the Work Environment Act. The Commission calls for the provision of resources for the systematization of the observations received concerning the inter-connection of work environment and ill health.

Limit values

It is observed that limit values have acquired increasing prominence through a growing realization of the environmental hazards to which man has always been exposed and of the new hazards resulting from technological progress. The Commission affirms that the system of limit values should be gradually extended to more and more chemical and physical factors. To place the system on a statutory footing, a provision is proposed empowering the National Board of Occupational Safety and Health to issue regulations concerning limit values for the planning and control of the working environment.

An account is given of foreign limit value systems. The Commission observes that it is difficult, and in certain cases impossible, to compare the limit value lists of different countries. On the other hand, the international exchange of information is of great value to work on the definition of limit values.

Basic principles are stated which the Commission feels should be decisive in the consideration of limit values. The aim must be to prevent workers being exposed to harmful or unpleasant effects. A limit value should also afford protection against long-term effects.

The Commission observes that the establishment of limit values often involves difficult risk assessments. The assumptions on which a proposed limit value is based must be stated as clearly as possible. A limit value often relates to conditions within many different sectors of working life. Assessments by the trade unions and employers' associations must therefore be made on a central basis as a rule. It is then up to the National Board of Occupational Safety and Health to make a decision based on the facts of the case and the viewpoints expressed by the interested parties.

Control of the working environment by means of limit values requires sampling, analysis and evaluation. The Commission makes it the responsibility of the employer to ensure that these steps are taken. The occupational health services should be a major asset in this connection. Continued efforts are needed to create resources which are equal to future and present needs.

Regulatory activities of the National Board of Occupational Safety and Health

As mentioned earlier, the Work Environment Act is essentially of an outline character, the framing of more detailed regulations being entrusted to the National Board of Occupational Safety and Health. In the interests of firm and effective enforcement, great importance must be devoted to the framing of regulations concerning the implementation of the Work Environment Act.

The Commission observes that the statute code of the National Board of Occupational Safety and Health will include regulations with penal sanctions issued by the Board. The Commission considers it an absolute requirement for the text of this statute code to show quite clearly that penalties can be imposed for infringements.

To maximize the effect of the instructions etc. issued by the National Board of Occupational Safety and Health, the Commission proposes that the regulations issued by the Board and concerning the activities of any particular kind of work place should be displayed at the work places concerned together with the Work Environment Act and the Work Environment Ordinance.

The Commission also raises the question of the fastest and simplest way of distributing the Board's instructions. According to the Commission the instructions should be supplied free of charge to persons involved in safety work and should be obtainable without delay.

Sanctions

The Work Environment Act represents an amplification in certain respects of the sanctions incorporated by the Workers' Protection Act. The main foundation is provided by the rules empowering the Labour Inspectorate and the National Board of Occupational Safety and Health to issue such orders, prohibitions and instructions as may be required to secure compliance with the work environment legislation. As provided under the Workers' Protection Act, orders of this kind can be accompanied by the threat of penal sanctions, fines or a faculty for the arrangement of compulsory compliance.

It is also proposed that the National Board of Occupational Safety and Health be given extensive powers to issue instructions carrying direct penal sanctions. For instance, instructions of this kind may refer to special conditions attaching to the use of a chemical product or the stipulation of a permit for the use of a work process or a working method.

Hitherto occupational safety legislation has not included any forfeiture provisions. The Commission proposes that a technical device or a chemical product involved in the infringement of a prohibition should be declared forfeit except where such a penalty would be unreasonable. Alternatively the value of the device or product could be declared forfeit.

Organizational questions

The Commission's proposals impose additional tasks on the enforcement authorities. To a very great extent, it has been left to the authorities themselves to express in various respects the demands which can be made concerning different conditions in working life. Their tasks will be further increased by the expansion of the scope of occupational safety legislation as proposed by the Commission.

The Commission has proceeded on the assumption that the work environment legislation is to be generally valid. The occupational safety authorities should be responsible for enforcement concerning all aspects of the working environment. The Commission therefore proposes that all local enforcement be exercised through the 19 districts of the general Labour Inspectorate. This would imply the abolition of the Explosives Inspectorate (Sprängämnesinspektionen) and the Electrical Inspectorate (Elektriska inspektionen) as separate inspection authorities within the Labour Inspectorate, although they would continue to exist and would retain their responsibilities for safety questions connected with legislation concerning explosive and inflammable products and electrical installations respectively.

Unlike the Workers' Protection Act, the Work Environment Act will also apply to risks of injury resulting from radioactive radiation, but enforcement of the Radiation Act is to remain the responsibility of the National Institute of Radiation Protection (Strålskyddsinstitutet).

A general review is undertaken of the tasks and needs of the National Board of Occupational Safety and Health and of the Labour Inspectorate under the new legislation. It will be the task of the National Board of Occupational Safety and Health to specify the additional resources needed as the situation becomes more clear.

The Commission was instructed to take into consideration proposals put forward by the Committee on the Co-ordination of the Laboratory Resources of the National Board of Occupational Safety and Health and the National Environment Protection Board (the LABAN Committee) concerning the establishment of an institute of environmental medicine. The Commission does not second these proposals. The Department of Environmental Hygiene temporarily attached to the National Environment Protection Board, on which the proposed institute was to be based, should in the Commission's opinion be attached to the National Board of Health and Welfare (Socialstyrelsen) instead, forming a laboratory of environmental medicine.

A new provision is proposed concerning the rights of appeal of safety delegates and trade unions against the decisions by enforcement authorities. It is proposed that the senior safety delegate or, in the absence of a senior delegate, some other safety delegate be empowered to lodge an appeal to assert the interests of employees. If there is no safety delegate, the appropriate trade union will be entitled to lodge an appeal insofar as it has previously made a pronouncement in the matter. It is proposed that a corresponding provision regarding the right of appeal also be incorporated in the Building Statute.

Information

The Commission also raises the special information requirements which will arise when new work environment legislation comes into force. The National Board of Occupational Safety and Health should be put in charge of the national information effort here, in view of its general responsibility for the administration of occupational safety and health. To this end the Board should co-opt a reference group of persons representing various main interests affected by the new legislation. The Commission proposes that the sum of Skr 6 m. be placed at the Board's disposal for this purpose.

The Commission assumes that information measures will also be taken by the trade unions and employers' associations among others.

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Sweden

**WORKERS' PROTECTION ACT
AND
WORKERS' PROTECTION ORDINANCE**

**MINISTRY OF LABOUR
Stockholm, Sweden
February, 1976**

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as amended 26 June, 1975

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I WORKERS' PROTECTION ACT

of 3 January, 1949, as amended 26 June, 1975

Chapter 1. Scope

1 Subject to the restrictions given hereinafter, this Act shall apply to every activity, in which employees are used for work on account of an employer.

In this Act, the expression "employee" means any person who executes work on account of another (other than a person who is to be treated as an independent contractor in relation to the latter); and the expression "employer" means any person on whose account work is executed by such employee without the intervention of a third person who has undertaken as an independent contractor to take charge of the execution of the work.

2 In addition to what is provided in sektion 1, this Act shall apply save as otherwise provided hereinafter, to

- (1) work which two or more persons execute on their joint account under such conditions that, if employees were engaged in the concern or undertaking, this Act would apply to it under section 1;
- (2) work which is executed by a pupil in any vocational training institution or section thereof, in respect of which the Crown orders that this Act shall apply;
- (3) work which is executed by a conscript in his capacity as such under such conditions that this Act would apply to it under section 1 if the work were executed by an employee on account of an employer; and
- (4) work which an inmate of an institution for prison discipline or compulsory work, working home according to Public Assistance Act, a public institution for inebriates, a mental hospital or other institution for the care of the mentally diseased executes on the instructions of the management of the institution, in the said institution.

In the cases here referred to, the provisions of this Act which relate to employees shall apply, mutatis mutandis, to the persons who executes the work; and the provisions of this Act which relate to employers shall apply to the person or persons carrying on the business in which the work is executed.

3 The following shall be excepted from the scope of this Act:

- (a) work which is executed in the home of the employee or elsewhere under such conditions that the employer cannot be held responsible for supervising the arrangement of the work;
- (b) work which is executed by a member of the employer's family, if it takes place in the home of the employer or is to be treated as belonging to agriculture or any subsidiary thereof which is not carried on as an independent undertaking, or to constructional work in agriculture or any such subsidiary thereof;
- (c) work which is executed in the home of the employer; and
- (d) work which is to be treated as employment in shipping.

From the scope of this Act shall be excepted training within the Forces or civil defence or otherwise for the purpose of total defence and other work within the Forces or civil defence other than such executed mainly under the same circumstances as corresponding work in other activities.

4 Sections 17-21, 23-25 and 27-44 shall not apply as regards the types of work mentioned in (1), (2) and (4) of section 2. The provisions of sections 17-21, 23-25, 27-31 and 33-38 shall not cover work which is executed by a member of the employer's family.

In respect of work which is subject to supervision according to the Act on Protection against Radiation, the provisions in chapters 2-5 and 7-10 shall apply only as regards protection against injuries other than those due to

the action of X-rays or radioactive substances.

- 5 In any case where work which is not subject to this Act under the foregoing provisions and is not to be treated as employment in shipping is carried on under such conditions that the persons engaged therein are exposed to grave danger of accident or injury to health, the Crown may order that the appropriate provisions of this Act shall apply to the said work, and issue such directions as may be required in connection therewith.
- 6 As regards the special duties referred to in section 7 a regarding common workplaces and in sections 45 and 46 regarding technical equipment and places of employment there mentioned, this Act shall apply even where the type of business is not one covered by this Act under the foregoing provisions.

Chapter 2. General provisions regarding hygiene and safety measures

- 7 It shall be the duty of the employer, with particular regard to what is prescribed below or in pursuance of this Act, to take all steps which can reasonably be required of him in view of the nature of the work, the conditions under which it is carried on and the age, experience and other qualifications of the employees, for preventing the persons employed by him from suffering injury to health as a consequence of the employment or from meeting with accidents therein.

It shall be the duty of the employee to use the safety equipment provided, to observe strictly the rules given in this Act or prescribed in pursuance thereof, and in all other respects to exercise due care and co-operate in so far as it lies with him in preventing injury to health and accidents.

- 7 a Two or more employers simultaneously working in the same workplace are to consult one another and co-operate with a view to establishing healthy and safe conditions in the workplace.

The person commissioning the building or construction (the developer) is responsible for the co-ordination of measures for the prevention of ill health and accidents in a common building workplace. The developer may delegate responsibility for such co-ordination to an employer at the workplace.

Employers in other common workplaces than those referred to in the second paragraph may agree that one of their number is to be responsible for co-ordination. Failing such an agreement, the Labour Inspectorate may determine who is to be vested with the responsibility in question.

The person responsible in accordance with the second or third paragraph is to ensure the co-ordination of safety measures in the work place. It is the duty of other employers and of employees working at the workplace to comply with the instructions given by him to this end.

The provisions of this section concerning employers are similarly applicable to a person conducting a business without employees.

- 8 The workplace shall be arranged in accordance with any special directions which may be issued.
- 8 a A report is to be made by the employer concerned to the Labour Inspectorate when a workplace, for which building permission or notification pursuant to § 66 of the Building Statutes (1959:612) is not required, is to be put to permanent use for activities covered by this Act. This report is to be submitted not less than three weeks before the workplace begins to be used.

A report as indicated in the first paragraph is also to be submitted when the requisite industrial safety assessment has not been possible in connection with an application for building permission, when the workplace is to be used for a different purpose from that for which it has most recently been used and also when employees are to be engaged in activities for which employees have not previously been engaged on behalf of an employer.

Given due cause in view of the risks attaching to activities of a particular kind, the Crown or an authority nominated by the Crown may order that a workplace intended for such activities may not be used until it has been examined by the Labour Inspectorate.

- 9 In so far as they are required, water for drinking and washing, sanitary conveniences, a suitable place for changing, keeping and (in appropriate cases) drying clothing and a suitable place for taking meals shall be made available to the employees at or near the place of employment in such manner as may be considered satisfactory in view of their number, the proportion of each sex, and the nature and duration of the work.

Where it appears necessary in view of the conditions under which the work is carried on, a suitable place for resting or a shelter offering adequate protection against cold, rain and snow shall be provided for the employees.

- 10 In enclosed workplaces there shall be sufficient air space, as a rule not less than 10 cubic metres for each person therein employed. Adequate ventilation shall be provided in such places and, where necessary, at other places where work is carried on.

While work is proceeding, there shall be adequate and suitable lighting, and the temperature and degree of

humidity shall be such as may reasonably be required in view of the character of the work and the place where it is performed.

Suitable arrangements shall be made where possible to prevent dust, smoke, gas or steam from spreading in such quantities as to be injurious or offensive to the employees, and to prevent them from being harmed by exposure to noise, vibration or other similar inconvenience.

The place of employment shall be kept clean and tidy.

Work shall be so arranged that it may be carried out in a manner not involving unnecessary fatigue.

- 11 For the prevention of accidents in employment, all prime movers, transmission gear, working machinery and other similar mechanical equipment, boilers and other pressure containers, and hoisting and transport equipment, shall be provided with the necessary safety devices and shall in general be so made and arranged as to offer adequate security.

Such measures to prevent employees from being injured by falls, falling objects, collapsing masses, by splinters, splashes, sharp or hot objects or hot liquids, by being crushed or struck, by inflammable, explosive, corrosive, poisonous or other noxious substances, by electrical current, cold or heat, or by dazzling light, shall be taken as will eliminate the danger as far as possible.

- 12 Where no other measures for obtaining the necessary protection against injury to health or accident can be adopted or can reasonably be required, personal safety equipment of a suitable type shall be provided for the employees. It shall be the duty of the latter to use the equipment during work and to take good care of it.

- 13 Such arrangements shall be made for the provision of first aid in the event of accident or illness as may be considered necessary in view of the size and situation of the place of employment, the character of the work and the conditions under which it is carried on.
- 14 Detailed directions regarding the matters referred to in sections 8-13 shall be issued by the Crown.
- 15 Where any direction issued under section 14 prohibits the use of a given type of machinery, tool or other appliance, or prohibits its use with or without a certain device, the Crown may also direct that the object of which the use is prohibited shall not be transferred to or made available for use by another person unless such steps have been taken that it is no longer covered by the prohibition or unless it may be taken as certain that the object will be used solely for a purpose to which the prohibition does not apply.

The provisions of the first paragraph shall apply, mutatis mutandis, in cases where the use of a certain substance or of certain materials is prohibited under section 14.

- 16 The Crown may prescribe special conditions for the employment of persons on work which is considered to involve special danger of accident or injury to health. Is work considered to involve particular danger of injury to health the Crown may order that persons shall not be employed on such work.

Chapter 3. Special provisions regarding hours of work

- 17 When an employee is at work for six hours or more a day, his work shall be interrupted to the extent which appears necessary having regard to its character and duration and to working conditions in general, by allowing one

or more suitably spaced rest intervals of adequate length. Exceptions to this rule may be made on occasion, where illness or other unforeseen occurrences render it necessary.

In this Act, the expression "rest interval" means an interruption of work, of which the length is fixed beforehand and during which the employee is free to dispose of his time and is not required to remain at the place of employment.

Where it is found unavoidable in view of the nature of the work and the working conditions in general, time off for a meal at the work site or in the immediate vicinity may be substituted for the rest interval.

- 18 Where, by reason of its connection with a mechanical process or as a result of other circumstances, the work involves continuous strain or is particularly trying in other ways, the employee shall be allowed the requisite number of suitably adjusted and spaced breaks in the work.

In this Act, the expression "break in the work" means a short intermission in the work fixed beforehand, which is ordered with a view to allowing the employee to detach himself from his work and which is not to be counted as a rest interval or time off under section 17.

- 19 Every employee shall have the necessary free time for rest at night. The said free time shall include the period between 12 p.m. and 5 a.m.

Exceptions to the above rule may be made where certain types of work must, in view of their nature, the needs of the public or other special circumstances, be continued during the night or must be carried on during the

time before 5 a.m. or after 12 p.m. If a natural occurrence, accident or other circumstance which could not be foreseen causes an interruption of operations or imminent danger of such interruption or of damage to life, health or property, the employees may to the extent which is needful in view of the circumstances be required to work during the period between 12 p.m. and 5 a.m.

Employees in positions of authority may, where necessary, be required to work during the period between 12 p.m. and 5 a.m., notwithstanding the provisions of the first paragraph.

- 20 Where there are special reasons for so doing, the National Board of Occupational Safety and Health may permit employees to be given work during the period between 12 p.m. and 5 a.m. in other cases not covered by the provisions of section 19.

Such exceptions may also be authorised by the National Board of Occupational Safety and Health where it appears, from the statements of the employees' organisation or organisations or otherwise, that the majority of the employees who would be affected by the exception consider it desirable and no danger to health or overstrain is likely to arise therefrom.

- 21 In every period of seven days, an employee shall have not less than 24 consecutive hours of free time save where special circumstances occasionally require an exception to be made. The said weekly rest shall be given as far as possible on Sundays and at the same times for all persons employed at the same place of employment.

The National Board of Occupational Safety and Health may, after hearing the appropriate organisations of employers and employees, permit exceptions from the foregoing in respect of certain types of work or certain places of employment.

If any reduction takes place in the weekly rest period referred to in the first paragraph, corresponding time off from work shall be allowed as far as possible.

Chapter 4. Special provisions regarding the employment of young persons

22 In this Act, the expression "young person" means any person who has not attained the age of 18 years.

23 No young person shall be employed unless he has attained the age of 14 years or will attain the said age during the calendar year, and unless (in the case of employment other than during the holidays) he has completed the prescribed elementary school course or has duly obtained permission to leave the elementary school.

The National Board of Occupational Safety and Health may allow exceptions to the foregoing as regards admission to employment on light duties which may be expected to have no harmful effect on the health or physical development of the young person, or on his capacity to benefit from school education.

24 No young person who has not attained the age of 15 years or will not attain the said age during the calendar year shall be employed in handicrafts, industry, construction, or work in a mine, quarry, gravel-pit or any other similar place of employment, in forestry, lumbering or charcoal-burning, in passenger or goods transport, or in hotels, restaurants or cafes. The foregoing shall not apply to the carrying of messages, running of errands or light distribution work.

As regards employment during the holidays, the National Board of Occupational Safety and Health may permit exceptions to the first paragraph in the case of certain types of work which are to be considered as particularly light. The Board may also in particular cases permit

young persons who have attained the age of 14 years or will attain the said age during the calendar year to be employed on work to which the first paragraph applies, where this appears necessary with regard to the vocational training of the young person or otherwise to his advantage.

25 Young persons shall not be employed below ground in mines, quarries or in other work sites comparable with mines or quarries.

Where there are special reasons for so doing, the National Board of Occupational Safety and Health may permit exceptions to the provisions of the first paragraph in respect of male young persons who have attained the age of 16 years and who are found on medical examination to be of good health and physical development. Exceptions may be permitted in respect of male young person who has attained or during the calendar year attains the age of 15 years and who on medical examination is found to be of good health and physical development, if so required with regard to his vocational training.

26 It shall be the duty of the employer to take special care that the employment of young persons does not involve danger of accident or overstrain or other harmful effect on the young person's health or physical development, and that the young person is not employed on work which gives rise to risk from the moral point of view.

If it is found that the employment of young persons on a certain type of work involves particular danger in any respect mentioned in the first paragraph, the Crown may prescribe special conditions for the employment of young persons on such work or order that young persons shall not be employed thereon.

27 No young person shall be employed unless the employer has received a work book for him, containing particulars as to his age and education, and a medical certificate. The

said certificate must not be more than one year old at the time when the work book is handed to the employer, unless the engagement of the young person is for less than one month or is for work during the holidays. The certificate may consist of a note entered in the work book when the medical examination is made under section 28.

The foregoing shall not apply to work not lasting more than three days or involving little effort.

- 28 At every place of employment where a young person is employed, a medical examination of the young person or young persons shall be made once in every calendar year in order to ascertain whether the employment of the young person is detrimental to his health or physical development. The foregoing shall not, however, apply to forestry work and log-floating (other than work at sorting places).

The said examination shall be carried out by a medical practitioner appointed for the purpose by the county administration ("examining surgeon"). The cost of the examination shall, with the exception of the travelling expenses and allowances of the surgeon, be defrayed by the employer, who shall also be responsible for making available a suitable place for the examination.

If there are no means of providing a suitable place for the examination, the examining surgeon may in agreement with the employer transfer the examination elsewhere.

- 29 In the case of work involving very little effort or lasting only a short time each year, the National Board of Occupational Safety and Health may grant exemptions from the examinations under section 28. Where such exemptions are granted, a young person may be employed on the work to which the exemption refers, notwithstanding the provisions of section 27, even where the last medical certificate entered in the young person's

work book before the said book is handed to the employer is more than one year old.

- 30 No young person shall be employed on work which is incompatible with the certificate appearing in his work book unless the National Board of Occupational Safety and Health has seen fit to allow such employment.
- 31 As regards the hours of work of young persons, the following rule shall apply in addition to anything else prescribed in enactments or statutory instruments for the limitation of hours of work, namely, that a young person shall (subject to the following exceptions) in no case be employed for more than 10 hours a day or 54 hours a week.

If a natural occurrence, accident or other circumstance which could not be foreseen causes an interruption of operations or imminent danger of such interruption or of damage to life, health or property, the hours of work of a young person may to such extent as is needful exceed 10 hours a day and 54 a week. The employer shall be required to give notice to the National Board of Occupational Safety and Health of employment of a young person in excess of the said hours and of the reason, extent and duration, within two days after the beginning thereof. The employment shall not be continued beyond the last-mentioned period unless the permission of the said authority is applied for. A decision in respect of such applications shall be issued without delay. The above notices and applications shall be deemed to have been given and made at the time when they are posted in the form of a prepaid letter.

Where it appears necessary in any other particular case, the National Board of Occupational Safety and Health shall have power to authorise the employment of young persons for a short period in excess of the hours given in the first paragraph.

- 32 It shall be the duty of the employer to allow every young person employed the necessary free time to attend courses of religious instruction or any vocational or continued education of which the cost is paid wholly or partly by the State or out of the funds of the communes.
- 33 Every young person employed shall be allowed a continuous period of free time of not less than 11 hours each day for his nightly rest. In the case of young persons under 16 years of age, the said period shall include the time between 7 p.m. and 6 a.m. and, in other cases, the time between 10 p.m. and 5 a.m., or, if the National Board of Occupational Safety and Health so authorises for a particular locality, a particular category of work or a particular establishment, some other period of seven consecutive hours between 10 p.m. and 7 a.m.

The following exceptions to the foregoing shall apply:

- (a) In the circumstances referred to in the second paragraph of section 31, a young person who has attained the age of 16 years may be employed to such extent as may be necessary notwithstanding the provisions of the first paragraph. The provisions of the said section shall apply, mutatis mutandis, as regards notification of such employment and application for permission to continue it.
- (b) The National Board of Occupational Safety and Health may, where it appears necessary, permit young persons under the age of 16 years to be employed between the hours of 7 p.m. and 10 p.m., on condition that no departure from the rules requiring a nightly rest period of at least 11 hours results therefrom.
- (c) Where there is special reason to do so, the National Board of Occupational Safety and Health may permit a young person who has attained the age of 16 years

and is medically certified to possess good health and physical development to be employed outside the hours prescribed in the first paragraph.

- (d) A young person who has attained the age of 15 years and is medically certified to possess good health and physical development may with the permission of the National Board of Occupational Safety and Health be employed on log-floating to such extent as the circumstances require.

Chapter 5. Special provisions regarding the employment of women

- 34 No woman shall be employed below ground in a mine or quarry.

The provisions of the first paragraph shall not apply in the case of female employees occupying superior posts who are not manual labourers.

The National Board of Occupational Safety and Health may allow a woman, notwithstanding the provisions of the first paragraph, to be employed below ground.

- 35 If a woman produces a certificate from a medical practitioner or midwife to the effect that she can probably expect delivery within six weeks, she must not be refused leave from work.

A woman who has borne a child shall not be employed on work to which the first paragraph of section 24 applies during the first six weeks following childbirth unless it is medically certified that she can begin earlier without detriment to herself or the child.

A woman who is nursing her child must not be refused the necessary time off for the purpose.

- 36 (Abrogated 1962)
- 37 (Abrogated 1962)
- 38 If it is found that a given type of work involves particular danger of accident when women are employed thereon or particular strain or danger to health for women, the Crown may prescribe special conditions for the employment of women on such work or order that women shall not be employed thereon.

Chapter 6. Co-operation between employers and employees

- 39 The employer and the persons employed by him shall collaborate in order to establish healthy and safe working conditions.
- 40 At every place of employment where five or more persons are regularly employed, one or more of the employees shall be appointed safety delegates. Safety delegates are also to be appointed at other workplaces if working conditions so require. Deputies should be appointed for safety delegates.

Safety delegates are to be appointed by the local union organization having a collective agreement with the employer. In the absence of such an organization, safety delegates are to be appointed by the employees.

In the case of a workplace for which no safety committee has been appointed, the Labour Inspectorate may, if conditions so require, sanction the appointment of a safety delegate from outside the group of employees by the local branch of an organization which is to be regarded as the principal union organization under the Collective Bargaining Act (1936:506).

Should more than one safety delegate be appointed at a particular place of employment, one of the delegates is to be appointed senior safety delegate with the task of co-ordinating the safety delegates' activities.

- 40 a The safety delegate represents the employees on safety matters and is to work for satisfactory safety conditions. To this end the safety delegate is to supervise the healthiness and safety of work in his safety sphere and is to participate in the planning of new premises, equipment and working methods or alterations to existing ones.

The safety delegate shall endeavour to gain the participation of other employees in safety work.

Employer and employees are jointly responsible for the safety delegate being given the requisite training.

The safety delegate is to be given the leave of absence required for the performance of his duties, without prejudice to his remuneration or other benefits.

The safety delegate is entitled to study all documents and to obtain any other information material to his activities.

- 40 b If a work involves an immediate and serious danger to the life or health of an employee and if no immediate remedy can be obtained through representations to the employer, the safety delegate may order the suspension of the work pending a decision by the Labour Inspectorate.

In the event of an infringement of a prohibition pursuant to section 53 having acquired force of law or applying regardless of an appeal being lodged, the safety delegate may suspend work to which the prohibition refers.

The safety delegate cannot be held liable for any damage

resulting from a measure referred to in the first or second paragraph.

- 41 At every place of employment where 50 or more persons are regularly employed, there shall be a safety committee consisting of representatives of the employer and of the employees. A safety committee is also to be appointed at places of employment with smaller numbers of employees if the employees so require.

Employees' representatives are to be appointed from among the employees by the local union organization having a collective agreement with their employer. In the absence of such an organization, representatives are to be appointed by the employees.

- 41 a The safety committee is to plan and supervise safety work throughout the place of employment. It is to keep careful track of the development of matters concerning protection against ill health and accidents and is to work for satisfactory safety conditions at the place of employment. The safety committee is to deal with matters concerning occupational health services, matters concerning the planning of new premises, equipment and working methods or alterations to existing ones, and matters concerning information and training on the subject of industrial safety.

- 42 The safety delegates shall be permitted to carry out their duties without hindrance. An employee shall not suffer any deterioration of his working conditions as a result of his being appointed as a safety delegate or on account of his activity as a safety delegate; and the employer shall not for that reason vary the conditions of appointment to his disadvantage.

If any employer or employee contravenes the provisions of the first paragraph, he shall be required to make good any loss or injury caused. In determining whether loss or injury has been caused and (if so) the extent thereof, circumstances which are not of a purely economic character shall also be taken into account. If it appears reasonable in view of the small degree of blame attached to the injurer, the attitude of the injured party in the dispute, the extent of the loss or injury in comparison with the injured party's resources or any other circumstances, the amount of damages may be reduced; complete exoneration from liability for damages may also be given. If two or more persons are responsible for the loss or injury, the liability for damages shall be apportioned among them in such a manner as appears reasonable in view of the greater or lesser degree of blame attached to each and of the other circumstances.

Any legal act which is in contravention of the provisions of the first paragraph shall be invalid.

A safety delegate alleging that he has been given inferior working conditions or terms of employment on account of his office of safety delegate is entitled to retain his conditions of work and terms of employment unchanged pending a final decision of the matter.

- 43 Actions under section 42 must be brought not later than six months after the ending of the measure in respect of which the claim is made. If this is not done, the right of action shall be lost.
- 44 Cases relating to the application of section 42 shall be tried by the Labour Court; but actions against employees shall be tried by the ordinary courts.

The provision of section 42 of the Security of Employment Act (1974:12) notwithstanding, the Labour Court shall try cases concerning the dismissal or laying off of an employee on account of his duties as a safety delegate.

Cases which are tried by the Labour Court are to be tried according to the provisions of the Industrial Litigation Act (1974:371).

Pending a judgment or decision having acquired force of law, the court may ordain that section 42 paragraph 4 is not to apply. A request for such an order may not be granted without the opponent having been given the opportunity of making a submission concerning the request.

Chapter 7. Certain obligations of manufacturers, vendors, etc.

- 45 The manufacturer or vendor of machinery, tools or other technical equipment and any person who makes such equipment available for use shall ensure that the equipment, when delivered to be taken into use in the Kingdom or when displayed here for sale or advertisement, is fitted with the necessary safety devices and offers adequate security against accident and injury to health; and shall also furnish the necessary instructions for the putting up, use and care of the equipment.

Where there are special reasons for so doing, the National Board of Occupational Safety and Health may prescribe that the equipment also shall be furnished with a plate or a marking with the name of the manufacturer or with other information which the Board thinks necessary.

The National Board of Occupational Safety and Health may also, where there are reasons for so doing, as to special equipment as mentioned in the first paragraph, prescribe that the equipment shall be approved by the Board before delivered to be taken into use in the Kingdom or displayed here for sale or advertisement.

Where the person who installs the equipment referred to in the first paragraph is an independent contractor, he shall ensure that the prescribed safety devices are fitted and all other directions for the installation of the equipment are complied with.

- 46 It shall be the duty of every owner of land where a gravelpit or similar place of employment is situated, when allowing any person for a consideration to extract gravel or the like therefrom, to ensure that the place of employment is kept in a satisfactory condition from the point of view of safety, even where this Act in other respects does not apply to it. Where the right to extract gravel or other right of use has been assigned, the foregoing provisions shall apply to the user instead of to the owner.

Chapter 8. Administration

- 47 The National Board of Occupational Safety and Health and, under its superintendence and direction, the Labour Inspectorate shall supervise the observance of this Act and of the directions issued pursuant thereto.

Detailed provisions as to the organization of supervision shall be issued by the Crown.

- 48 It is the duty of the commune, following consultation with the Labour Inspectorate, to appoint one or more appropriately qualified persons to assist the Inspectorate with inspection as provided in section 47.

- 49 If any commune supervision representative is remiss in the performance of his duties and the commune receives a report to that effect from the Labour Inspectorate or becomes aware of the fact in any other manner, the commune is to take the necessary action to remedy the situation.
- 50 Every person who is responsible for supervising the observance of this Act or of the directions issued in pursuance thereof shall have the power whenever he so requests, to enter the places of employment which are liable to supervision by him and the right to undertake any investigation required for the performance of his official duties.

The employer and his representative at the place of employment shall, on request, furnish the supervising officer or body with all explanations required for the due exercise of supervision.

The foregoing provisions as to supervising officers or bodies shall likewise apply to medical practitioners who are responsible for inspections or examinations under this Act or in accordance with directions issued in pursuance thereof.

It is the duty of the police authorities to provide such practical assistance as may be required for supervisory purposes pursuant to this Act.

- 51 No person who has been concerned with supervisory activities under this Act or has been appointed safety delegate or member of a safety committee may improperly disclose or make use of knowledge acquired by him in the course of his duties concerning professional secrets, working methods, business affairs, the personal circumstances of an individual person or matters having a bearing on the defence of the realm.

The foregoing shall apply, *mutatis mutandis*, to any member of the committee of a local trade union organization with respect to knowledge derived by him from a safety delegate or a safety committee member appointed by the organization.

- 52 Every medical practitioner who in the course of his duties becomes apprised of disease which may be connected with work is to report the matter to the supervisory body. It is the duty of any medical practitioner, school authority, public health committee and building committee to furnish the supervisory body with information and assistance.
- 53 In the event of any place of employment failing to satisfy the requirements of this Act or of regulations or instructions issued pursuant to the same, the Labour Inspectorate may order the employer to remedy the deficiency. The Inspectorate may also forbid him to carry on a certain kind of work or to use certain premises, machinery, tools or other appliances, certain substances or materials or certain methods of work unless certain conditions laid down in the notice are observed. The aforesaid order or prohibition shall also apply with regard to activities which he to whom the notice is addressed conducts at the workplace without the assistance of any employees.

An order or prohibition according to the aforesaid may be issued on pain of fines. Should the employer neglect to take the action ordered, the Inspectorate may arrange for rectification to be effected at his expense.

When, in a case referred to in the first paragraph, the action to be taken refers to premises which have been leased to the employer, the Labour Inspectorate shall have power to prohibit any leasing of the premises as a workplace or place for certain type of work or purposes until certain specified action is taken.

The National Board of Occupational Safety and Health may, without any prior decision of the Labour Inspectorate, order action under this section.

- 53 a If an unsatisfactory state of affairs exists in terms of occupational safety or health and if an employer referred to in the first paragraph of section 53 lacks the command of the place of employment required in order to remedy the deficiency, the Labour Inspectorate shall have power to address an order or prohibition as provided in section 53 to whoever is in control of the place of employment.

The Labour Inspectorate shall have power to issue the requisite instructions for occupational safety and health measures at a place of employment referred to in section 7 a.

- 54 If any employer contravenes the provisions of sections 17-21 and the first paragraph of section 26, the National Board of Occupational Safety and Health shall have power, after giving the employer an opportunity to make a statement in the matter, to issue any necessary directions for ensuring that the provisions contravened are henceforth observed.
- 55 If any employer employs a young person who has not undergone the medical examination prescribed in section 28 during the last preceding calendar year although this should have taken place, the Labour Inspectorate shall have power, if the circumstances so require, to forbid the employer in writing to employ the young person after a stipulated reasonable time limit unless he has been previously examined by a medical practitioner and a certificate of the examination has been entered in the work book.
- 56 Where it is found necessary to prevent a manufacturer or

vendor of machinery, tools or other technical equipment, or a person who makes such equipment available for use, from delivering the equipment to be taken into use in the Kingdom or from displaying it here for sale or advertisement without having complied with the provisions of the first paragraph of section 45 or the directions in virtue of the second and third paragraphs of the named section, then the National Board of Occupational Safety and Health shall have power, after giving the said manufacturer, vendor or person an opportunity of stating his point of view in the matter, to prohibit him from delivering or displaying the equipment unless such steps are taken as the Board considers to be necessary.

If there is special reason to do so, the Board may issue a prohibition under the first paragraph with immediate effect and until further notice, without awaiting a statement from the manufacturer, vendor or person making the equipment available; and may also, if necessary, cause any action required for enforcing the prohibition to be taken by the police authorities at the said manufacturer's, vendor's or person's expense.

- 57 If any installation contractor referred to in the fourth paragraph of section 45 contravenes the provisions of that section, the National Board of Occupational Safety and Health shall have power, if necessary, to lay down certain conditions to be observed by him when carrying out the work of installation, or to prohibit him from executing a certain type of installation work. Before issuing the order or prohibition, the installation contractor shall be given an opportunity to state his point of view in the matter.
- 58 If the owner of land where a gravel-pit or similar place of employment is situated or the person to whom the right to extract gravel or other right of use has been granted

fails to comply with his obligations under section 46, the owner or user may be required to take certain safety measures, or may be forbidden to allow other persons for a consideration to extract gravel or other similar substance from the gravel-pit or at the place of employment unless he complies with certain specified conditions. The provisions of section 53 shall apply, *mutatis mutandis*.

- 59 It is the duty of the employer, at the request of the National Board of Occupational Safety and Health or the Labour Inspectorate, to arrange for the examination of substances or materials used or produced by him in the course of his business or to furnish the necessary samples for such examination.

It is the duty of persons who manufacture, sell or lease equipment referred to in the first paragraph of section 45, at the request of the National Board of Occupational Safety and Health or the Labour Inspectorate, to arrange for an examination of the said equipment or to furnish the necessary samples for such examination.

If any person fails to comply with a request under the first or second paragraph, the authority shall have power to require him to take the requisite action, under penalty of a fine.

An examination according to this section shall be paid for by the employer or, in cases referred to in the second paragraph, by the manufacturer, vendor or lessor, unless the authority rules that the cost is to be partly or wholly defrayed out of the public funds.

- 60 (Abrogated 1973)

- 61 A complaint against an order or prohibition of the Labour Inspectorate may be made to the National Board of Occupational Safety and Health. The notice of the

Inspectorate's decision must state the procedure to be followed by a complainant.

The provisions of section 73 shall apply as regards complaints against decisions by the National Board of Occupational Safety and Health.

- 62 An employer intentionally or negligently employing a young person or woman in contravention of the provisions of sections 23-25, 27, 30-34 or 35 (second paragraph) shall be liable to a fine.

Where the offence consists of or relates to the employment of a young person, the person having custody of the young person shall be liable to a fine of not less than five and not more than 50 kronor if the employment occurred within his knowledge and consent.

- 63 Any person intentionally or negligently failing to comply with an order, prohibition or direction issued to him in pursuance of the provisions of sections 53-58 shall be liable to a fine or to imprisonment for not more than one year. Any person intentionally or negligently failing to comply with a direction issued pursuant to the third paragraph of section 8 a shall be liable to the same penalties.

Any person failing to comply with an order or prohibition issued under penalty of a fine shall not be held liable under the first paragraph.

- 64 Any employer intentionally or negligently failing to give notice under section 8 a, 31 or 33 shall be liable to a fine. The same shall apply in the case of an employer or a person acting on behalf of the employer furnishing particulars in a notice under the said sections which he knows to be incorrect.

65 Any person furnishing the supervisory authority with particulars which he knows to be incorrect concerning the taking of any steps which he has been instructed to take under this Act or in accordance with directions issued pursuant thereto shall be liable to a fine.

A manufacturer, vendor or lessor furnishing the supervisory authority with particulars which he knows to be incorrect concerning equipment referred to in section 45 shall be liable to a fine.

The first and second paragraphs shall also apply, mutatis mutandis, to any person intentionally furnishing incorrect particulars on behalf of another.

66 Any employer intentionally or negligently failing to discharge his obligation under section 28 to provide a suitable place for the medical examination of young persons shall be liable to a fine.

67 Any employee intentionally or negligently and without valid reason removing any safety device or rendering it unserviceable shall be liable to a fine.

68 (Abrogated 1975)

69 (Abrogated 1973)

70 An authority may order that its decision be complied with regardless of an appeal pending.

71 In the final determination by the National Board of Occupational Safety and Health of matters concerning the application of this Act or of directions issued in pursuance thereof, special members appointed on the recommendation of the national associations of employers and employees shall take part, the number of such members and the appropriate procedure being prescribed by the Crown.

72 The National Board of Occupational Safety and Health shall have power to charge the Labour Inspectorate, in accordance with detailed directions issued by the Board, with the duty of authorizing exceptions under sections 23, 24 or 29.

73 No complaint may be brought against the decisions of the National Board of Occupational Safety and Health on matters under sections 23-25, 29-31, 33 or 40 (third paragraph).

Proceedings against the decisions of the National Board of Occupational Safety and Health in other matters under this Act or against the decisions of a public authority pursuant to a Crown appointment under the Act are to be instituted by an appeal to the Crown.

74 Detailed directions regarding the application of this Act shall be issued by the Crown.

In connection with the application of this Act, the National Board of Occupational Safety and Health shall have power to give advice and instructions.

75 When issuing directions in pursuance of this Act, the Crown may at the same time prescribe penalties for offences against the said directions; but such penalties shall in no case exceed six months' imprisonment.

This Act shall come into operation on 1 January 1974.

The earlier provisions under section 73 shall still apply to appeals against decisions which were pronounced prior to 1 January 1974.

Sanctions given by the National Board of Occupational Safety and Health in pursuance of the earlier provisions under section 40 (third paragraph) shall be valid until the end of 1974.

II ROYAL ORDINANCE REGULATIONS under the WORKERS' PROTECTION ACT ("WORKERS' PROTECTION ORDINANCE") of 6 May, 1949, as amended 16 November, 1973

General provisions

- 1 It shall be the duty of the employer to see that the persons employed by him are informed of the special risks of accident and injury to health which the work involves and, where necessary, to issue rules and instructions to be observed by the employees for the avoidance of the said risks.

No person who lacks experience in a given type of work shall be placed in charge of such work if danger of accident or injury to health may be expected to result therefrom.

In the case of work in which insufficient knowledge or skill may be expected to involve danger of accident or injury to health, care shall also be taken that employees lacking the necessary experience are not used on such work without adequate instruction and supervision.

- 2 No person shall be employed on work which makes special demands upon the worker's health or physical development, if a medical examination has shown him to be lacking in, or it is otherwise evident that he does not possess, the necessary physical or mental qualifications for the work, and he may consequently expose himself or others to risk of accident or injury to health. In such cases, the employee should, if possible, be provided with other more suitable employment.
- 3 The necessary rules as to the special precautions which employees are required to observe in order to avoid

accidents and injury to health shall be posted in the place of employment.

In places where there is particular danger of accident or injury to health, warning of such danger shall be given by means of conspicuous posters, signboards or notices painted on the machine, apparatus, etc.

At the request of the employer, the Labour Inspectorate shall examine, free of charge, any proposed rules or notices of the kind referred to above.

It shall be the duty of the employee to comply strictly with the rules and notices referred to in this section.

- 4 Where an employee is required to work alone consideration shall be given, when determining the need for safety precautions, not only to the nature and degree of the accident risk present, but also to the possibility of the employee obtaining the necessary assistance in case of accident or illness.

- 5 Whenever an accident has resulted in death or serious bodily injury or has involved two or more employees, and also whenever an accident or dangerous occurrence is of such a character that it may be assumed that it is of particular importance to bring it to the notice of the Labour Inspectorate, the employer shall without delay inform the Labour Inspectorate thereof.

Notice, as provided for in the first paragraph, shall also be given of cases of disease which are covered by the Act of 14 May 1954 respecting insurance against occupational injuries (No. 243) or other diseases which can be assumed to have been caused by employment that is dangerous to health.

- 5 a The person responsible for the co-ordination of safety measures under section 7 a of the Workers' Protection

Act (1949:1) is to display a notice at the place of employment stating that this responsibility is vested in him.

- 6 An employer who intends to construct, reconstruct or extend any workroom or staff accommodation may submit the proposal to the Labour Inspectorate, accompanied by such drawings and other particulars as may be required for the examination of the proposal. The Labour Inspectorate shall give their written opinion of the proposal as soon as possible, without charge to the employer. If, after the proposal has been examined, it is proposed to make any modifications not already prescribed by the Labour Inspectorate and if the modification has a bearing on hygiene and safety in the employment, the proposed modification should be submitted to the Labour Inspectorate for examination.

The foregoing shall apply, mutatis mutandis, in the case of any reorganisation of the working arrangements or of any considerable alteration in the method of work.

- 6 a At the request of the person intending to apply for building permission under the Building Statutes (1959: 612) for a building enterprise concerning working premises or staff accommodation, the Labour Inspectorate is to give an assessment of the suitability of the building undertaking in terms of occupational safety and health. This assessment is to state whether the safety delegate, safety committee or organisation representing the employees has been given the opportunity of stating its opinion concerning the building undertaking. If the requisite examination in terms of occupational safety and health is precluded by ignorance of the type of activities for which the premises are to be used, this is also to be stated in the assessment.

7 If the Labour Inspectorate has received for examination any proposal of the kind referred to in section 6 or proposals needed for a statement as provided in section 6 a, the Inspectorate shall have power to request the person submitting the proposal to submit any additional drawings and particulars which may be required for the examination of the proposal from the point of view of occupational safety and health.

8 An employer shall inform the safety delegate, safety committee or employees' association of the granting of building permission for a building undertaking concerning a workroom or staff accommodation.

Notice pursuant to section 8 a of the Workers' Protection Act (1949:1) must state the employer's name, occupation, place of residence and address, the location of the workplace and the nature and scope of the activities concerned.

9 Directions pursuant to section 8 a (third paragraph) of the Workers' Protection Act (1949:1) are to be issued by the National Board of Occupational Safety and Health.

10 Every mine or quarry of which the whole or a considerable part is below ground shall, if the National Board of Occupational Safety and Health considers it necessary to so prescribe, be connected with the surface by two or more suitably situated exits. Where a shaft is used as an exit, it shall be provided with an adequate ladder-way.

Where it appears necessary, the Labour Inspectorate may prescribe that underground work sites in mines or quarries shall be provided with two or more exits.

Certain hygiene arrangements

11 When giving effect to section 9 of the Workers' Protection Act, the provisions of sections 12 to 18 below shall be observed, while having regard to the requirements of each particular case in view of the nature of the work and other circumstances.

12 Drinking water of suitable quality shall be provided at easily accessible places by a method satisfying the requirements of hygiene.

Suitable water for washing shall be provided at an adequate number of suitably placed wash-basins, situated as far as possible in an enclosed space or special room ("washroom"). In appropriate cases, the water for washing should be heated.

Where required by the nature of the work, shower-baths or foot-baths shall be installed in or beside the wash-room.

Unless otherwise agreed, soap or other suitable cleansing agents and, where no other satisfactory means of drying are available, an adequate supply of towels, shall be provided for the employees by the employer at his expense.

13 Rooms for changing and keeping clothes ("changing rooms") shall be conveniently situated and provided with appropriate and satisfactory fittings.

Places for the drying of clothes ("drying rooms") shall be conveniently situated in or beside the changing rooms and shall be provided with satisfactory arrangements for heating and ventilation.

- 14 Places for taking meals ("dining rooms") shall be conveniently situated, and set apart and equipped for the purpose; where prepared meals are not supplied by the employer or otherwise, the necessary equipment for keeping and warming up food and drink brought by the employees shall be provided.
- 15 Sanitary conveniences shall be conveniently situated and separated from one another and, as a rule, there shall be separate conveniences for men and women; they shall be installed and ventilated in a manner satisfying the requirements of hygiene. Where practicable, sanitary conveniences and urinals shall be provided with flushing arrangements. If possible a washbasin should be available in or near the convenience.
- 16 In certain types of activity where, owing to the nature of the work, individual employees are frequently obliged to spend the night elsewhere than at the place where they live, a suitable room with the necessary number of beds ("dormitory") should be provided.
- 17 Where the work is of such a nature that waiting periods occur more or less regularly, the employees should have a suitably situated and equipped room ("waiting room") at their disposal during waiting periods.
- 18 On building, engineering construction and similar sites where the extent and duration of the operations are such that the employer cannot reasonably be required to provide the rooms and other arrangements for the employees referred to above, huts, wagons or other arrangements for the accommodation of the employees may be provided in lieu thereof.

Measures for the prevention of injury to health

- 19 When giving effect to the general provisions of the Workers' Protection Act respecting the prevention of injury to health, the provisions of sections 20 to 30 below shall be observed, while having regard to the requirements of each particular case in view of the nature of the work and other circumstances.
- 20 Workrooms shall be supplied with the requisite amount of fresh air in the way which is found most suitable for meeting the requirements of ventilation in each particular case and so that draughts are avoided as far as possible. Where conditions so require, the fresh air supplied shall be heated, cleaned or subjected to other special treatment.
- Where work is carried out below ground in mines, quarries, mountains, tunnels or other similar workplaces, the necessary arrangements for changing the air shall be provided. Similarly, where work is carried out in wells, containers or chambers where there is risk of lack of oxygen or poisoning, arrangements for changing the air shall be made or other adequate protective measures taken.
- Where there is a risk of lack of oxygen or of poisoning the employees shall satisfy themselves, before work, that the necessary change of air has taken place.
- 21 The lighting of places of employment shall be suitably arranged having regard to the requirements of each workplace. Where natural lighting is insufficient or where, owing to the nature of the work or other particular circumstances, such lighting is out of the question, other lighting suited to the type of work shall be provided. In addition to general lighting, local lighting shall be provided where required. Suitable measures shall be taken to afford protection against glare.

22 Where necessary, appropriate arrangements shall be made to enable the work to be carried on in suitable conditions as regards temperature and humidity. In this connection, due regard shall be had as to whether the work is light or heavy in character and whether it requires the worker to move around or is performed while sitting or standing in one place. Where it appears necessary, work-sheds, drivers' compartments on motor vehicles, motor equipment and cranes and other similar spaces where persons work should also be heated.

23 In the case of work where the employees are exposed for considerable periods of time to a high degree of humidity, to wet, cold or heat, or to strong light, adequate protective measures shall be taken unless such measures may be regarded as impracticable owing to the nature of the work or other circumstances.

Where the work is regularly performed while standing or sitting in one place, measures shall be taken, where necessary, to guard against cold from the floor.

24 In the case of work where dust, smoke, gases or vapours are released in such quantities as to be injurious or offensive to the employees, the working process shall, as far as possible, take place in closed apparatus or the work shall be performed in a separate room or enclosed place. If this is not feasible, satisfactory arrangements for collecting and carrying off the dust, smoke, gases or vapours or otherwise rendering them harmless shall be made as far as possible at the place where such contamination of the air originates and can spread.

Exhaust equipment shall not be installed in such a way that the employees are exposed, through contaminated air from such equipment, to influences of the kind referred to in the first paragraph.

If certain work or certain kind of work is found to cause special risks for bad health on account of the existence of dust, smoke, gases or vapours, the National Board of Occupational Safety and Health may, as condition for employment of persons to such work, prescribe investigation of the conditions of the air. The Board will decide the extent of the investigation and give directives required regarding the accomplishment of the investigation.

An investigation report and any other document necessary for the assessment of the results of the investigation shall be submitted to the Labour Inspectorate if so prescribed by the National Board of Occupational Safety and Health.

All expenses incidental to the investigation shall be paid by the employer, unless by the National Board of Occupational Safety and Health decided, that the expenses, when special circumstances render it desirable, shall to a certain extent be paid by Governmental funds.

25 In the case of work where poisonous or other substances injurious to health are used or where the conditions of work are such as to involve a risk of poisoning or infection, effective protective measures shall be taken. Poisonous or other substances injurious to health shall, where practicable in the circumstances, be replaced by non-poisonous or less injurious substances.

26 In the case of work where the employee is exposed for a considerable period of time to continuous or frequently and regularly recurring noise or vibration, suitable protective measures shall as far as possible be adopted. Riveting, forging, the cleaning of castings and other types of work which are accompanied by noise or vibration that cannot be reduced or eliminated shall, if possible, be carried out in a special workroom or workplace.

If any work is carried out under such air pressure as to involve risk of injury to the employees, effective protective measures shall be taken.

Employees must not be employed on such work, under increased pressure, which is carried out under water with diving equipment or divingbell without lock (diving work) or other work in direct connection thereto, if he does not have the knowledge of and experience in the work as prescribed by the National Board of Occupational Safety and Health. The National Board of Occupational Safety and Health may allow exceptions.

- 27 The work shall be so planned and arranged that postures which are unnecessarily tiring for the employee are avoided. Where the work can be regularly carried out in a sitting position without detriment to it, suitable seats shall be provided. In other cases where working conditions allow the employees to sit from time to time, a sufficient number of seats shall be made available for them.

Where the work involves the carrying of lifting of heavy objects, special appliances should, if possible, be used for the purpose.

Where work is regularly performed in a standing position and the flooring is not of suitable composition, the employee shall be provided with a suitable surface to stand on.

- 28 Workrooms and fittings, machinery, apparatus and appliances, and also rooms for the employees, stairs and passageways shall be kept clean and tidy. Where the nature of the work permits, in addition to the daily cleaning and clearing up, a general cleaning of the workrooms shall be undertaken at regular intervals when floors, walls, ceilings, windows and fittings shall be

thoroughly cleaned. Painting or other surface treatment of walls, ceilings, floors, fittings, machinery, apparatus and the like shall be reasonably well maintained.

Sweeping shall be so carried out that dust is not spread unnecessarily. Sweeping of workrooms should be avoided during working hours. Sweepings, chips or other waste shall be collected in a suitable manner and removed.

It shall be the duty of the employees to comply strictly with the instructions issued with respect to the matters dealt with in this section.

- 29 Personal protective equipment for the special purpose of preventing injury to health shall, unless otherwise agreed, be paid for by the employer and kept at the place of employment. Equipment of this kind, such as respirators, eye protectors, protective clothing, gloves or footwear shall, to such extent as the National Board of Occupational Safety and Health prescribes, be approved by the Board.

Personal protective equipment should be provided even if the work is only of an occasional character and protective measures which would otherwise have had to be taken are consequently inappropriate for practical reasons as, for instance, in spray painting steel structures, sand-blasting the outsides of buildings or the repair of gas mains.

- 30 Where possible, the time during which an employee is employed on work entailing special risks to his health shall be suitable reduced by giving him other work not involving risk to health for a certain period in each work-day or week, or for longer periods.

Measures for the prevention of accidents

- 31 When giving effect to the general provisions of the Workers' Protection Act respecting the prevention of accidents, the provisions of sections 32 to 47 below shall be observed, while having regard to the requirements of each particular case in view of the nature of the work and other circumstances.

Instructions respecting the inspections and tests referred to in sections 33, 35, 36 and 39 and rules prescribing the conditions for appointment as inspector shall be issued by the National Board of Occupational Safety and Health.

- 32 Prime movers, transmission gear, working machinery and other comparable mechanical equipment shall be so constructed and equipped as to be sufficiently safe; they shall be provided with the necessary guards and shall be so erected, installed or placed as to remove to the greatest extent possible any accident risk connected therewith.

The equipment referred to in the first paragraph shall be properly maintained. In addition, the following special provisions shall apply;

- (a) Rotating and other moving machine parts shall not be run at such speed or under such load that they cease to be sufficiently safe.
- (b) Transmission belts, ropes or chains shall not be mounted or shifted while the transmission is running, unless a device suitable for the purpose has been provided or an exception is deemed to be justified in view of the low speed of the transmission or the small amount of mechanical force transmitted by it.
- (c) Before any prime mover or transmission gear which

drives a working machine is set in motion, warning thereof shall, where necessary, be given to the employees concerned in good time by a special signal in a manner to be announced in advance.

- (d) Where this can reasonably be required, working machinery shall be furnished with suitable and clearly marked devices by means of which the machinery can be quickly stopped. Such devices shall as far as possible be easily accessible from the place by the working machine where it is expected that the employee will normally stand while working.

Where this can reasonably be required, working machinery shall also be fitted with satisfactory devices to prevent unintentional starting of the machine.

The above provisions respecting devices for stopping and preventing unintentional starting of working machinery shall also apply to transmission gear.

- 33 Steam boilers, cookers, containers and other vessels for liquids, steam, air or any other gas under pressure (hereinafter referred to as "pressure vessels") shall be of such material and shall be so constructed and equipped as to be sufficiently safe, and shall be suitably installed and erected. What in this paragraph is said about pressure vessels shall also apply on pipings for liquids, vapours, air or other gases under pressure.

Pressure vessels shall be properly maintained and shall, to such extent as is prescribed or, failing such prescription, to the extent judged necessary, be inspected and tested and made subject to satisfactory and constant supervision. Certificates of inspection and testing and other documents necessary for determining the safety of such vessels shall, insofar as the National Board of

Occupational Safety and Health so prescribes, be submitted to the Labour Inspectorate.

Pressure vessels shall neither be used at a pressure higher than the maximum pressure permitted in each case, nor shall they be used unless prescribed inspection and test have taken place.

At a suitable place on every pressure vessel that is subject to inspection and testing under the second paragraph there shall, in so far as the National Board of Occupational Safety and Health so prescribes, be a plate or stamp indicating the maximum permissible pressure and the date of the most recent inspection. In order to prevent substitution, mobile containers of gas under pressure shall be clearly marked in the manner prescribed by the National Board of Occupational Safety and Health.

A steam boiler register shall, if the National Board of Occupational Safety and Health so prescribes, be kept in respect of every steam boiler. The model for such register shall be prescribed by the Board.

34 With respect to the rules to be observed in the construction and arrangement of, and in working at or near, electrical machines, apparatus and wiring with a view to preventing employees from being injured by electric current, the special provisions relating thereto shall apply.

35 Lifting appliances, such as hoists, lifts, cranes, transporters, winches and other similar appliances, and likewise the fixed equipment belonging thereto, shall be of such material and be so constructed, erected and otherwise arranged as to ensure adequate safety, and shall be provided with the necessary guards.

Lifting appliances shall be properly maintained and

shall, to such extent as is prescribed or, failing such prescription, to the extent judged necessary, be inspected and tested, checked for proper assembly and be satisfactorily and constantly supervised. Certificates of inspection and testing and other documents necessary for determining the safety of such appliances shall, insofar as the National Board of Occupational Safety and Health so prescribes, be submitted to the Labour Inspectorate.

Lifting appliance shall neither be used for a load heavier than the maximum permissible load prescribed for that appliance or in contravention of any regulation prohibiting or restricting the transport of persons on the appliance, nor shall lifting appliance be used unless prescribed inspection and test have taken place.

At a suitable place on or beside every lifting appliance that is subject to inspection and testing under the second paragraph, unless special circumstances require that an exception be made, the maximum permissible load, the date of the most recent inspection and, in the case of lifts or similar appliances, particulars of any prohibition or restriction of the transport of passengers shall be clearly indicated.

In the case of engine-driven or transmission-driven lifting appliances, the relevant provisions of section 32, paragraphs (c) and (d), shall apply.

36 Transport equipment, such as cable railways, suspended railways, rollways and tramways, conveyors, trucks, vehicles and wagons of various kinds, shall be of such material and be so constructed and equipped as to ensure adequate safety, and shall be provided with the necessary guards.

Transport equipment shall be properly maintained and shall, to such extent as is prescribed or, failing such prescription, to the extent judged necessary, be inspected

and tested and be satisfactorily and constantly supervised. Certificates of inspection and testing and other documents necessary for determining the safety of such equipment shall, insofar as the National Board of Occupational Safety and Health so prescribes, be submitted to the Labour Inspectorate.

Transport appliance shall neither carry a load heavier than the maximum permissible load prescribed for it or be used in contravention of any regulation prohibiting or restricting the transport of persons thereon, nor shall transport appliance be used unless prescribed inspection and test have taken place.

In so far as is prescribed, the maximum permissible load and the date of the most recent inspection and particulars of any prohibition or restriction of the transport of passengers shall be clearly indicated at a suitable place on or beside every transport appliance. In addition, particular attention shall be paid to the following provisions:

- (a) Plant railways shall be so arranged that there is sufficient free space alongside the track to avoid employees being crushed between any vehicle, wagon or load and any wall, pillar, post, pile or stack along the track, or in any other manner. The same shall also apply to multitrack plant railways with regard to any risk of injury which may arise from vehicles or wagons being moved simultaneously over the different tracks: Provided that in the case of underground railways in mines or quarries and also in other cases where there are special grounds therefor, the above requirements as to free space along the tracks may be relaxed to such an extent as may be considered reasonable in view of the traffic conditions and the method of transport.

Where this is considered necessary, a suitable walkway shall be arranged along plant railway tracks. Plant railways shall, in appropriate cases, be equipped with reliable signalling devices.

- (b) Where this is required in view of the construction of the equipment, the inclination of the road or other conditions relating to the transport or in view of the nature of the goods to be transported and the method of transport, vehicles, wagons and other similar transport equipment shall be fitted with reliable braking devices.
- (c) In the case of engine-driven or transmission-driven transport equipment, the relevant provisions of section 32, paragraphs (c) and (d), shall apply.

- 37 In loading and unloading operations, and in other work involving the moving of heavy objects, care shall be taken that the work is carried out in a safe manner and, where necessary, under special direction and supervision, and that suitable equipment and other aids are used for the work.

In transport work, care shall be taken as far as possible that employees occupied in the work are not exposed to injury from sharp corners or edges of the goods transported or from protruding nails, wire ends or iron bands on the packing of the goods.

Where heavy objects are transported, the weight of the object shall be clearly indicated, to such extent as is considered necessary, on the outside of the object or of the packing. With regard to the marking in certain cases of the weight of objects to be loaded on board ships, the provisions of the Act of 11 March 1932 (No. 55) shall apply.

- 38 Lubrication, cleaning, repair or similar maintenance work on prime movers, transmissions, working machines or other mechanical equipment shall only be carried out after the equipment has been stopped and secured against unintentional starting, unless adequate safety precautions have been taken or the mechanical equipment is so enclosed that contact with its dangerous parts is impossible, or other special conditions justify an exception.

When repair work or alterations are being carried out near moving machinery or in other dangerous places, the necessary precautions shall be taken for the protection, both of the persons employed on the work and of others who may thereby be exposed to danger.

- 39 Tools and implements of every kind shall be of suitable and satisfactory material and workmanship. They shall be kept in good working order and shall be stored and transported in a satisfactory manner.

Lifting tackle shall, to such extent as is prescribed or, failing such prescription, to the extent judged necessary, be inspected and tested and be satisfactorily and constantly supervised. Certificates of inspection and testing and other documents necessary for determining the safety of such tackle shall, insofar as the National Board of Occupational Safety and Health so prescribes, be submitted to the Labour Inspectorate.

Lifting tackle shall neither be used to raise a load heavier than the maximum permissible load prescribed therefor, nor shall lifting tackle be used unless prescribed inspection and test have taken place.

Save where special circumstances warrant an exception, the maximum permissible load shall be marked on all lifting tackle.

With regard to tools or equipment put at the employee's disposal by the employer, it shall be the duty of the employee to report any defects observed by him which may entail a risk of accident.

- 40 In order to avert risk of injury from falls, falling objects or collapsing masses, care shall be taken that the work is arranged and carried out in a safe manner and that the necessary safety precautions are taken. The following special provisions shall apply:

- (a) Floors, passageways and roads at the place of employment shall be suitably constructed and laid out, be of sufficient size and carrying capacity and so far as possible be kept in such a condition that the employees will not be exposed to risks from stumbling or slipping.
- (b) Objects shall not be stored unnecessarily in passageways and on roads. Neither shall such places be encumbered with bicycles used for riding to and from the work. Where conditions allow, bicycle stands with a protecting roof or other suitable arrangements shall be available near the place of employment.
- (c) Basins, tanks and other open vessels, wells, pits, excavations, trenches and the like shall be arranged in a safe manner as regards position, contents and depth, and shall be fenced or covered to the extent necessary. This provision shall apply, mutatis mutandis, to floor openings. Wall openings for loading or unloading shall be suitably protected.
- (d) Stairs, ladders, gangways, scaffolds and platforms shall be of such material and be so constructed and erected as to ensure adequate safety, and shall be

provided with the necessary handrails, fencing and other safety arrangements. They shall be properly maintained.

- (e) Materials, equipment and other objects shall be stacked or piled in a safe manner.
- (f) Roofs intended to be walked on shall be of sufficient structural strength and shall be fitted with suitable safety arrangements to the extent prescribed or, if nothing is prescribed, to the extent considered necessary.
- (g) Slopes or walls of excavations, diggings and other similar works shall be given a suitable inclination or be stepped, having regard to the nature of the soil and to the height of the slope or wall: where necessary, they shall be suitably shored or braced. If undermining cannot be avoided, the resultant overhang shall be reliably supported.
- (h) The roof and walls of workplaces, galleries and haulageways in mines, quarries, tunnels and other spaces blasted out of the rock shall be kept free of loose rock. Where in such places there is a risk of loose stones or collapsing masses, props, braces, full timbering (lining) or other adequate methods, shall be adopted. Places in which no work is going on and which are consequently not kept free of loose rock shall be shut off to prevent the entry of unauthorized persons; employees should be instructed not to enter such places unless duly authorized.

41 For work in places where there is a risk of falling, and other satisfactory means of protection cannot reasonably be arranged, except work on piles of planks, straw-ricks, vehicles carrying high loads or other work in which such equipment cannot be used, the employer shall provide

safety belts and lifelines of suitable workmanship and good quality. It shall be the duty of the employee to use such safety equipment. If there is no satisfactory device for attaching the lifeline or where it is necessary for any other reason the employer shall arrange for the employee to receive suitable assistance for the purpose of ensuring that the lifeline is properly secured.

Work carried out in the open at great height should to such extent as is reasonable be interrupted when strong wind, heavy snowfall or other severe weather conditions entail a greatly increased risk of accidents through falling.

In work of wharfs, jetties or other similar workplaces where there is a risk of drowning, the necessary rescue equipment shall be kept in readily accessible places. This provision shall apply even if the work is only of an occasional character.

42 In work involving a risk of accident through gas poisoning, care shall be taken that employees occupied in such work can receive the necessary aid as quickly as possible in case of poisoning.

For this purpose there should be a person at the workplace who can carry the poisoned person to a room with fresh air or into the open and arrange for him to receive suitable treatment. Where this can reasonably be required, an apparatus for the administration of oxygen shall be available.

43 Where necessary, effective fire alarms shall be installed to warn the employees in case of fire.

With regard to the arrangements in other respects for the rescue of employees in case of fire, special provisions in this behalf shall apply.

- 44 Satisfactory lighting arrangements shall be provided, not only at the places where employees carry out their work, but also in stairways and passageways and on roads at the place of employment over which employees have regularly to pass at the beginning or the end of the work or during working hours.

In mines and quarries below ground where other satisfactory lighting cannot reasonably be required, portable mine lamps may be approved for the purpose.

- 45 With regard to personal protective equipment specially intended to prevent accidents at work, such as helmets, eye protectors, hair protectors, protective gloves, leg and foot protectors, safety shoes, protective clothing or special aprons for protection against the spilling of live coals, molten metal, acids, lye, etc., the provisions of section 29 shall apply, mutatis mutandis.

- 46 In work at machinery where the moving parts cannot conveniently be enclosed or shielded, employees shall as far as practicable wear suitable clothing. In other cases also, employees should endeavour to use such working clothes as will not lead to accidents.

- 47 At every place of employment a suitable person shall be made responsible for keeping and issuing dressings and other supplies required for first aid in case of accident or illness. At places where a considerable number of persons are employed or where other special conditions so require, there shall be the necessary staff of persons possessing the requisite training in nursing.

At the larger places of employment, an ambulance room or sickroom in which first aid can be rendered in case of accident or illness shall be installed if conditions so

require. Such rooms shall be suitably situated and arranged, and shall be provided with the necessary equipment.

A sufficient number of notices indicating the place where first-aid materials and equipment are kept, the name of the person responsible therefor and the nearest available person competent to render first aid shall be posted at places where any considerable number of persons are employed.

Certain provisions concerning juvenile employees

- 48 When giving effect to sections 27-30 of the Workers' Protection Act, the provisions of sections 49-61 below shall be observed, while having regard to the restriction on the application of the said provisions to certain kinds of work under section 4 of the said Act.
- 49 Workbooks for young persons shall contain -
- (a) the young person's full name, date and year of birth; and except in the case of work during holidays, -
 - (b) a certificate to the effect that the young person has completed the elementary school course or acquired corresponding knowledge and skills, or has obtained proper permission to leave the elementary school.

In addition, the workbook shall contain a medical certificate concerning the young person's state of health and physical development. If a young person shows signs of ill-health, weakness or deficient physical development, the medical certificate shall state in what respect this is so and under what conditions he may nevertheless be employed.

The form for the workbook shall be prescribed by the National Board of Occupational Safety and Health after consulting the Schools' Supervisory Board.

- 50 A workbook containing the particulars required under paragraphs (a) and (b) of section 49 shall be issued to the young person free of charge by the appropriate teacher or principal of the school, or otherwise through the intermediary of the school authority, when the young person or the person having custody of him so requests, on the occasion of the young person's departure from elementary school or other public educational institution or at any other time.

If in a particular case there is difficulty in obtaining a workbook from the school authority, such book shall be issued by the pastor and, if so, the latter shall be responsible for entering in the book the particulars prescribed above, if they are known or certified to him.

Where the certificate referred to in paragraph (b) of section 49 could not be entered in the workbook when the latter was issued, it shall on request, if the young person shows that he is entitled to receive it, be entered by the person who issued the book or by another school authority or pastor.

- 51 When a workbook is issued under the first paragraph of section 50, it shall be the duty of the school doctor to enter in the book the certificate referred to in the second paragraph of section 49 and at the same time to enter the necessary particulars of the medical examinations which the young person has undergone during his school-years and of the vocational guidance given in connection with the said examinations.

If there is difficulty in obtaining the entry of medical certificate in the workbook by the school doctor, another

doctor may be approached for this purpose.

- 52 It shall be the duty of the employer, unless the young person is also employed by another employer and the latter employment is to be considered as the principal employment, to retain the young person's workbook for the duration of the employment. If the young person's employment ceases before he has attained the age of 18 years, the workbook shall be returned to him.

An employer who has charge of the workbook of a young person shall, when the latter attains the age of 18 years or when for other reasons the workbook is no longer required by the young person, hand it over to the Labour Inspectorate.

- 53 Every employer who employs a young person shall enter in the young person's workbook the name and address of the place of employment, the nature of the undertaking, the date on which the young person started work, the nature of the work on which the young person is employed and the daily hours of work of the young person: Provided that the said entries need not be made where the young person is employed for a shorter period than one month.

If the young person terminates his employment or is given other employment or other working hours for any period exceeding one month, an entry to that effect shall be made in his workbook, indicating the date of the termination of employment or of the change of employment or working hours.

- 54 No entry or mark capable of giving other information concerning a young person than is prescribed in this Proclamation shall be made in any workbook.

- 55 Every employer who employs one or more young persons shall, if such employment is intended to last longer than

one month, notify the Labour Inspectorate of the fact in writing. Such notification shall be sent within 14 days of the date on which the young person or persons started work. If the employer ceases entirely to employ young persons and the cessation is more than a temporary interruption, he shall likewise notify the Labour Inspectorate of the fact in writing within 14 days.

If a young person is only employed on seasonal work and if the employer is able to give reliable information to that effect beforehand, a notification containing such information shall be valid for so long as the conditions notified continue to exist.

The provisions of this section shall not apply to forestry work or to log-floating (other than work at sorting places). Where an exemption from the examination prescribed in section 28 of the Workers' Protection Act has been granted under section 29 of the said Act, the National Board of Occupational Safety and Health may also grant an exemption from the requirement of this section respecting notifications.

56 If five or more young persons are normally employed at any place of employment, the employer shall for each calendar year keep a register of all the young persons employed during that year. In the said register, which shall be started before the first day of February in each year, there shall be entered the young persons' names, the year and date of birth, the dates on which they began work and, where a young person ceases to be employed, the date on which the employment terminates. When a new register is begun, care shall be taken to enter therein all the young persons who at the turn of the year were still employed. If a young person is engaged after the register has been started for a given calendar year, the above-mentioned particulars in respect of the young person shall also be entered in the register. Forms for the

said register shall be prescribed by the National Board of Occupational Safety and Health, which shall also have power to permit the use for this purpose of other forms of record of a type approved by it.

The registers or records referred to above shall be kept at the place of employment (or, if the work there has ceased, by the employer) for one year after the calendar year to which the register or record relates.

The provisions of this section shall not apply to forestry work or to log-floating (other than work at sorting places).

57 The procedure for medical examinations under section 28 of the Workers' Protection Act shall be governed by special provisions.

If during the calendar year a young person has undergone a medical examination as prescribed in the second paragraph of section 49, no further medical examination as mentioned above shall be required during the year unless the examining surgeon considers it necessary in view of the young person's type of employment. This provision shall also apply, *mutatis mutandis*, where the young person has undergone such medical examination earlier in the year at another place of employment.

If a young person is employed in forestry work or log-floating (otherwise than in work at a sorting place), he or the person having custody of him shall see that the medical certificate in the young person's workbook is duly renewed each year.

58 When carrying out the medical examination referred to in section 57, the examining surgeon shall enter in the workbook of each young person examined the date of the examination and his observations respecting the young

person's state of health and physical development. If the examining surgeon considers it necessary to lay down special conditions for the young person's continued employment on a certain type of work or to prohibit him from continuing such work, he shall make an entry to that effect both in the young person's workbook and in the inspection book (if any) referred to in section 69. Where a change of employment is prescribed, the examining surgeon shall as far as possible give indications as to the kind of work on which the young person may suitably be employed.

Before an examining surgeon makes any order under this section, he should consult the employer.

59 If in respect of a given young person the National Board of Occupational Safety and Health has reason to vary or revoke an order entered in the young person's workbook by an examining surgeon, the Board shall cause an entry to that effect to be made in the workbook and, where the order has been entered in the inspection book referred to in section 69, in that book also.

60 It shall be the duty of the examining surgeon, when examining the young persons employed at a place of employment for the first time and also on other occasions if there is a reason to do so, to acquaint himself with the working conditions of the juveniles at the place of employment.

The employer shall, so far as it lies with him, see that all the young persons employed at the place of employment present themselves for the examination referred to in section 57.

It shall be the duty of the young persons to present themselves for such examination.

61 The examining surgeon shall inform the employer in good time of the date of the medical examination. If the employer has engaged a special medical officer for the employees, the latter may be present during the examination.

Local safety activities

62 Insofar as the employer does not himself take part in the work of accident and disease prevention at the place of employment, he is to commission one or more persons to deal with matters of safety and health in employment to a greater or lesser extent in his stead. The employer is also to ensure that both supervisory staff and other employees participate in the work of prevention.

The employer or his representative as well as other supervisory staff shall seek co-operation with the safety delegates in matters of prevention.

63 A safety delegate and a deputy for the same are to be appointed for a period of three years unless their terms of employment or other circumstances call for an exception.

Suitable persons with good judgment and the necessary knowledge of, and interest in, matters of safety and health in employment shall be chosen as safety delegates. Safety delegates shall be well acquainted with the working conditions within their respective safety sections.

The number of safety delegates shall be determined in relation to the size of the place of employment, the nature of the work and the working conditions. If there is any doubt among the employees as to the number of safety delegates to be appointed in a given place of employment, or as to the division of the place of employment

into safety sections, they should consult with the employer and the appropriate labour inspector before the election. At places of employment where there are several departments, a safety delegate should be appointed for each department or group of departments engaged in similar work. Where work is carried on in shifts, there should as far as possible be a safety delegate at each shift for relays comprising two or more employees.

At places of employment where work is carried on by employees belonging to different trades (as in the building industry), safety delegates may be appointed from each occupational group. In places of employment where the employees are distributed among two or more workplaces (as in loading and unloading work, forestry or log-floating or other comparable work), a safety delegate may be appointed for each separate workplace at which several employees are employed simultaneously.

A safety delegate may be relieved of his duties by the decision of the organization or the employees who appointed him.

- 64 The employer is to inform the safety delegate which person representations are to be made to on safety matters.

If the safety delegate finds that action is needed to secure adequate safety conditions, the safety delegate is to make representations to this effect. The safety delegate may also request a certain investigation with a view to checking conditions within the safety sector. A written certificate of such representations is to be given to the safety delegate immediately if requested.

If the safety delegate has made representations concerning a particular safety measure, he is to be given a reply without delay. Failing this, the safety delegate is entitled to request intervention by the Labour Inspectorate

or, in matters of safety precautions under the Radiation Safety Act (1958:110), by the National Institute of Radiation Protection. The same shall apply, *mutatis mutandis*, in the event of representations not being heeded within a reasonable space of time. If there is a safety committee, the safety delegate shall have power to demand that the committee consider the safety issue directly.

Every place of employment should be regularly inspected by means of a safety rota.

- 65 The number of members of a safety committee shall be determined in relation to the number of employees at the place of employment, the nature of the work and the working conditions. One of the members shall if possible hold a managerial or comparable appointment. The committee should also include a member belonging to the committee of the local association of employees. The safety committee shall also include a safety delegate.

Meetings of the safety committee should also be attended by representatives of health services at the place of employment.

The chairman and secretary of the safety committee are to be appointed by the employer, failing agreement to the contrary.

The safety committee should meet at least once every three months.

- 65 a In the event of representatives of the employer and employees in the safety committee being unable to agree on a decision, the matter concerned may at the instance of any member be referred to the Labour Inspectorate, which shall decide the matter insofar as it comes within the Inspectorate's jurisdiction.

Resolutions adopted by the safety committee should include a specification of the time within which they are to be put into effect.

- 66 The name and address of the safety delegate, his safety section and the period for which he has been appointed are to be communicated in writing as soon as possible after his appointment to the employer and the Labour Inspectorate by the organisation or employees holding the election. If a new safety delegate succeeds a previously elected delegate, the name of the person replaced by the new delegate shall be given.

If an employer has appointed a deputy to deal with safety and hygiene questions or if a safety committee has been appointed, the Labour Inspectorate is to be informed in writing thereof.

The employer shall post notices at the place of employment, indicating the name of the deputy referred to in the second paragraph as well as the names of the safety delegates and of the members of the safety committee.

- 67 When carrying out inspections or other business at a place of employment, the labour inspection officials shall get into touch with any safety delegates who are available at the place of employment.

It shall be the duty of the supervisory body to deliver free of charge to the safety delegate copies of any advice, instructions or other written communications given or sent to the place of employment with respect to safety and hygiene matters. Copies of such communications shall be kept by the safety delegate for at least two years, reckoned from the date of the communication. On the resignation of a safety delegate, such copies are to be handed over to his successor.

Inspections

- 68 Inspection shall primarily be directed towards activities which, in view of the nature of the work or of the conditions under which it is carried out, may be regarded as involving special danger of accident or injury to health.

In carrying out these duties, the inspection officials shall have regard to what may be considered as reasonable in each case in view of the existing conditions, and consider how, in each particular case, the objects of labour protection can be attained without imposing an unnecessary burden on the employer.

Inspection officials should furnish employers, employees and safety delegates with information, advice and instructions in questions concerning health and safety at work, and promote co-operation in such matters.

- 69 At every workplace where as a rule five or more persons are permanently employed, except in cases where the Labour Inspectorate or the National Board of Occupational Safety and Health has granted an exemption, an inspection book shall be kept in which the inspection officials shall enter such advice and instructions as they see fit to give in writing when they inspect the workplace. If the Labour Inspectorate so requires, an inspection book shall also be kept in smaller workplaces. The model for the inspection book shall be prescribed by the National Board of Occupational Safety and Health.

Written communications transmitted otherwise than in the manner described in the first paragraph shall be annexed to the inspection book or kept together with it in a suitable manner. The same shall apply as regards the certificates of inspection and testing referred to in sections 33, 35, 36 and 39.

The inspection book, communications and certificates referred to above shall be kept in such manner as to be readily accessible. They shall be kept at the workplace or, if operations at the workplace have ceased, by the employer, for at least five years reckoned from the date of the last entry (in the case of the inspection book) or the date of issue (in the case of communications or certificates). The National Board of Occupational Safety and Health may prescribe a period differing from that laid down in this paragraph in the case of the aforementioned certificates. If the business carried on at the workplace is transferred, all inspection books, communications and certificates kept on the premises shall be delivered by the former owner to the new owner.

Special provisions

- 70 At every place of employment where as a rule five or more persons are permanently employed, there shall be kept a copy of the Workers' Protection Act and this Proclamation, together with any enactments amending or supplementing them or made in pursuance of the Workers' Protection Act and concerning the type of activity carried on at the place of employment.

The National Board of Occupational Safety and Health may prescribe that the provisions of the first paragraph shall also apply to other places of employment.

- 71 Unless an exemption from the provisions of section 21 of the Workers' Protection Act (1949:1) has been granted for all the employees, a notice indicating the time of weekly rest for the employees (or, where this time is not the same for all employees or groups of employees, the time for each group or employee) shall be posted at a suitable spot in every place of employment where handicraft, industrial, building or transport operations are carried on. No special

notice is required if there is a table of hours of work available at the place of employment and setting out the aforementioned particulars.

- 72 Any employer who fails to make arrangements for an investigation or inspection and test prescribed by the National Board of Occupational Safety and Health under section 24, 33, 35, 36 or 39 or uses any pressure vessel, piping, lifting appliance, transport appliance or lifting tackle in contravention of the provisions of section 33, third paragraph, section 35, third paragraph, section 36, third paragraph, or section 39, third paragraph, shall be liable to a fine (dagsböter).

An employer who does not discharge his obligation under section 5 or 55 to make notification or who fails to submit to the Labour Inspectorate any investigation report, certificate or other document mentioned in sections 24, 33, 35, 36 or 39 or to comply with regulations issued under section 33 (fifth paragraph), or to discharge his obligations under sections 52-54, 56 or 69-71, shall be liable to a fine of not more than 500 crowns.

Provided that any person who fails to make arrangements for an investigation or inspection and test or to discharge his obligation to make notification or who neglects to submit an investigation report, a certificate or other document shall not be liable to a fine if the circumstances of the case clearly show that the omission or neglect was due to an accidental oversight.

- 73 Any person failing to discharge his obligations under section 5 shall be liable to a fine of not more than 500 crowns.
- 74 A transcript of a judgment or final decision in a case concerning liability under the Workers' Protection Act

(1949:1) or regulations issued pursuant thereto shall be sent to the Labour Inspectorate.

75 (Abrogated 1973)

76 Proceedings against decisions of the National Board of Occupational Safety and Health on matters dealt with in this Proclamation shall be instituted by an appeal to the Crown.

This Ordinance shall come into force on 1 January 1974. Safety delegates appointed under earlier provisions are to retain their appointments until the end of 1974 at the latest.

DEPARTEMENTENS OFFSETCENTRAL
Stockholm 1976



L'Administration nationale de sécurité et d'hygiène du travail

L'Administration nationale de sécurité et d'hygiène du travail est le terme généralement employé pour désigner à la fois la Direction nationale de sécurité et d'hygiène du travail et l'Inspection du travail

Jamais, le cadre et les conditions de travail n'ont suscité autant d'intérêt

L'histoire du travail se confond avec celle de la civilisation humaine. Depuis les temps les plus reculés, on s'est certainement rendu compte aussi que le travail quotidien pouvait comporter des risques pour la santé et la vie de l'homme. Cependant, ce ne fut qu'avec l'avènement de l'industrialisme, pendant la seconde moitié du siècle dernier, qu'on rencontre en Suède une forme organisée de sécurité de travail. La collectivité entre en scène par la voie législative tout en instituant des organes spéciaux qu'elle charge de veiller à la sécurité et l'hygiène du travail.

A présent, les partenaires sociaux sont puissamment engagés à créer des milieux de travail satisfaisants du point de vue santé et sécurité. La coopération des partenaires s'appuie dans notre pays sur de solides traditions, tant sur le plan des lieux de travail que sur celui des organisations. Il en est de même de la collaboration des partenaires sociaux avec les Pouvoirs publics. C'est une collaboration qui s'est avérée précieuse et féconde.

Pendant les années 70, nous avons assisté à un intérêt pour les questions de milieu de travail comme encore jamais auparavant. On en discute vivement, non seulement les salariés et les employeurs mais encore les responsables politiques et tous ceux qu'intéressent les questions sociales et les conditions d'existence de l'individu. Les élus politiques ont accordé une haute priorité à tous les efforts et mesures pouvant améliorer la qualité du milieu de travail. A l'heure actuelle, un intense travail de réforme législative et d'accroissement des efforts collectifs et individuels est en cours d'exécution.

La législation sur la sécurité et l'hygiène du travail représente à cet égard un instrument important. Instance centrale, la Direction nationale de sécurité et d'hygiène du travail doit veiller à l'application des lois. Mais elle est chargée également, dans la perspective de cette application, de prodiguer des conseils et d'élaborer des normes utilisables sur le plan de la pratique.

C'est essentiellement l'Inspection du travail, répartie par régions, qui assure le contact avec les différents postes de travail. Le but qui lui est assigné est de mettre en oeuvre les objectifs de la collectivité visant à créer des conditions de travail saines et sûres et de façon générale un milieu de travail satisfaisant. Pour pouvoir se réaliser pleinement, le travail de sécurité doit être précédé d'études sur les risques professionnels et la façon de les prévenir. Il est nécessaire à cet effet de faire des recherches en matière de milieu de travail. A la Direction nationale de sécurité et d'hygiène du travail, des chercheurs travaillent côte à côte avec ceux qui sont chargés de suivre la situation sur le terrain et de transmettre les connaissances ainsi produites aux intéressés, que ce soit par voie normative ou simplement informative. Les avantages des contacts suivis et de la coopération mutuelle sont manifestes. De la même manière, il y a un bénéfice évident à ce que la formation du personnel de la médecine d'entreprise puisse se faire dans le cadre des activités de la Direction.

Dans les pages suivantes, on trouvera une brève information sur les activités poursuivies dans ce domaine. Nous espérons qu'elle pourra servir à tous ceux qui s'intéressent aux conditions de travail et à la manière dont la collectivité cherche à attaquer les problèmes qu'elles posent. Le lecteur n'oubliera pas non plus que pour mener leur tâche, les services de la sécurité du travail collaborent avec un grand nombre d'autres autorités et institutions et, peut-être tout particulièrement, avec les grandes organisations du marché du travail. A cela, il convient d'ajouter finalement une coopération internationale élargie et de plus en plus nécessaire.

Gunnar Danielson

Gunnar Danielson est depuis 1972 directeur général de la Direction nationale de sécurité et d'hygiène du travail. Il préside en outre la commission d'enquête sur le milieu de travail.



90 ans d'histoire de la sécurité du travail

L'histoire ne s'écrit que par les fous, a dit quelqu'un, mais celui qui n'a pas de connaissances sur le passé a du mal à entrevoir l'avenir et à aller de l'avant. Jetons donc un coup d'oeil sur l'histoire de la sécurité du travail en Suède.

La direction nationale de sécurité et d'hygiène du travail date de 1949, année où fut mise en vigueur également une législation nouvelle dans le domaine considéré. Mais l'histoire dont il est question ici est évidemment plus ancienne.

Le premier texte, celui de la loi sur la protection des dangers professionnels, vit le jour en 1889. L'année d'après, les premiers inspecteurs du travail commencèrent leur activité.

En 1913, une nouvelle loi de sécurité du travail fut votée en même temps que l'inspection du travail vit ses effectifs renforcés. C'est à la direction nationale de la prévoyance sociale qu'incombaient désormais les questions de sécurité, laquelle, pour la circonstance, fut dotée d'un bu-

Aux environs de 1900 ces enfants travaillaient à la verrerie de Kosta. Aujourd'hui, le travail des enfants est interdit par la loi.
Photo: Musée Nordique, Stockholm



reau spécial. En 1919 fut introduite la journée de huit heures.

En 1931, il y eut un remaniement important des dispositions relatives aux délégués à la sécurité.

L'Office national de l'assurance publique, qui s'occupait entre autres de l'assurance des accidents du travail, reprit, en 1938, la direction des affaires de sécurité du travail, mais l'institution d'une direction nationale n'eut lieu qu'en 1949. Cette direction se vit confier également le contrôle des questions de durée et d'horaires de travail.

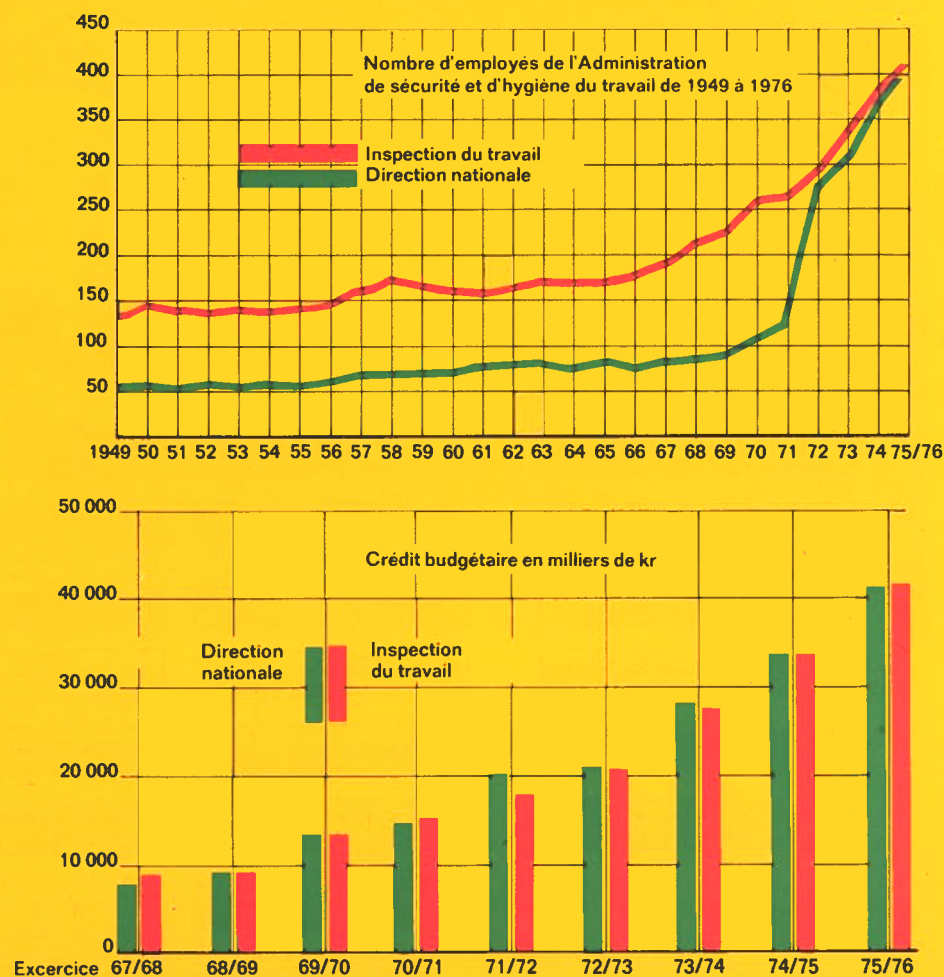
L'importance des aspects impliqués par la sécurité du travail a été constamment en s'accroissant, ce qui ressort notamment des ressources en argent et en personnel affectées à l'amélioration du milieu de travail. L'inspection du travail par exemple a été renforcée de nombreuses fois et la Loi sur la sécurité et l'hygiène du travail de 1949 a été modifiée à plusieurs reprises au cours de ses 26 ans d'existence.

Un changement important eut lieu en 1963 avec l'extension de la loi à tous les salariés, même ceux de l'Administration.

Mais le grand travail de réforme ne prit son départ qu'en 1970, avec la mise en place de la commission d'enquête sur le milieu de travail.

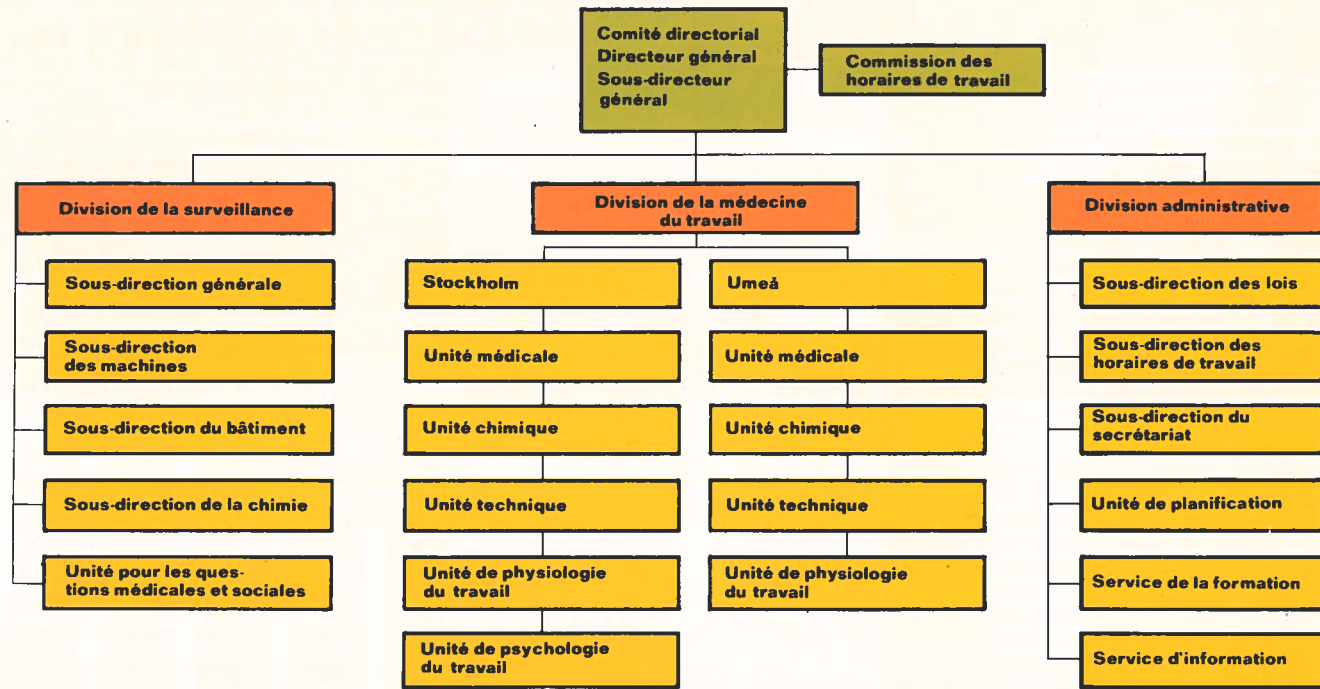
En 1972, l'Institut de la médecine du travail fusionna avec la Direction nationale de sécurité et d'hygiène et l'année suivante, sur proposition de la commission d'enquête, une législation en partie nouvelle entra en vigueur. La Direction fut réorganisée. Quant à l'inspection du travail, elle vit le nombre de ses districts passer de 11 à 19, en même temps que l'ensemble de l'Administration de la sécurité et de l'hygiène du travail changea du supérieur hiérarchique, le Ministère du Travail, nouvellement institué, venant remplacer celui des Affaires sociales et de la Santé publique.

La commission d'enquête présentera un certain nombre d'autres propositions, notamment un ensemble de textes législatifs entièrement remaniés. Le mouvement d'extension de l'Administration nationale de sécurité et d'hygiène du travail se poursuit. C'est là une nécessité si l'on tient à répondre aux impératifs posés.



Voici comment se présente l'organisation

Le Ministère du Travail
La Direction nationale de sécurité et d'hygiène
du travail



L'Inspection du travail



Voici le comité directorial

Depuis 1972, la Direction nationale de sécurité et d'hygiène du travail est dirigée par un comité d'experts-conseils. La photo réunit l'ensemble des membres ordinaires du comité. De g. à dr. : M. Leif Kjellstrand, délégué syndical, M.

Osborne Bartley, directeur, M. Sven Wehlin, vice-président, M. Hilding Westerberg, inspecteur à la sécurité et l'hygiène, M. Olle Gunnarsson, sous-directeur général, M. Gunnar Danielson, directeur général, M. Gunnar

Lindström, directeur, M. Olof Gustafsson, directeur, M. Urban Rosenblad, directeur général, et MM. Erik Larsson et Ivar Nordberg, membres du Parlement.

La Direction nationale de sécurité et d'hygiène du travail oeuvre à l'amélioration du cadre et des conditions du travail

La Direction nationale a de nombreuses attributions. Comme elle est l'instance centrale pour les questions de sécurité et d'hygiène du travail, elle est responsable pour qu'y soient apportées en permanence toutes améliorations aux points de vue des techniques de sécurité et d'hygiène professionnelle et sous les rapports médical, ergonomique, psychique et social.

Elle est chargée de conduire, de coordonner et de suivre les activités qui ont lieu dans le domaine de la sécurité et de l'hygiène du travail et de veiller à ce que les lois et règlements existants soient réellement observés. A cet effet, elle publie des directives décrivant la façon dont doit être appliquée la loi sur la

sécurité et l'hygiène du travail. Les directives peuvent avoir trait à divers types de travaux et d'équipements techniques. Ils s'adressent aux employeurs et aux salariés mais aussi à ceux qui vendent, fabriquent ou installent des machines. Ces directives sont mises au point en collaboration avec des représentants des partenaires sociaux et des branches concernées.

Les fonctionnaires de la Direction se rendent sur les lieux de travail et font des conférences sur la sécurité et la médecine du travail. Ils font en outre office d'instance consultative pour les entreprises, les institutions et les particuliers.

Dans le domaine de la médecine du travail, la Direction se livre à des recherches, organise des cours et fait des études sur commande. Elle se penche notamment sur les risques de maladies professionnelles, considère les exigences imposées à l'individu par les situations de travail, examine l'hygiène professionnelle in situ et forme du personnel destiné à la médecine d'entreprise.

Pour tenir au courant salariés et employeurs sur les règles en vigueur, mais aussi pour informer de façon générale en matière de milieu de travail et de sécurité, la Direction publie une foule d'imprimés.

Parmi ses publications, on peut citer les directives communiqués et photos-sécurité, le rapport annuel d'activité de la Direction et de l'Inspection du travail avec un résumé en anglais, une revue de médecine du travail intitulée "Arbete och hälsa" (Travail et santé) également suivie d'un résumé anglais, des rapports de recherche, de méthodologie et d'enseignement, un mensuel ainsi qu'un annuaire des imprimés parus.

En outre, la Direction fait paraître chaque année des listes en anglais sur ses publications et projets de recherche dans le domaine de la médecine du travail.

Au cours de l'année 1975, la Direction commencera la publication de newsletters en anglais sur ses activités courantes.

Équipement portatif pour la mesure des poussières dans une fonderie.



Les inspecteurs se rendent annuellement dans 75.000 lieux de travail

L'Inspection générale du travail, qui comprend désormais 19 districts et un bureau local, veille à l'observation des règles relatives à la sécurité et à la durée du travail. Avec les contrôleurs communaux, qui ont à charge d'inspecter les lieux de travail de petite dimension, c'est 75.000 lieux de travail qui sont ainsi visités chaque année, sur un total enregistré de 160.000.

Les agents inspecteurs donnent également des conseils sur la mise en oeuvre d'une bonne sécurité et d'une bonne hygiène. Il n'est pas fréquent que l'inspecteur fasse usage de son droit d'intervenir par des mesures coercitives pour venir à bout des irrégularités qui règnent sur un lieu de travail. Si l'entreprise y met du sien, il suffit le plus souvent d'un entretien pour mettre les choses au point. Mais l'Inspection du travail est habilitée à se montrer sévère, le cas échéant. Dans un premier temps, elle donnera des directives en vue

de remédier aux anomalies avant une certaine date. Sinon, des mesures assorties de sanctions pénales pourront être prises. Ainsi l'injonction d'effectuer des améliorations nommément citées, ou l'interdiction de poursuivre les activités, le tout sous peine d'amende.

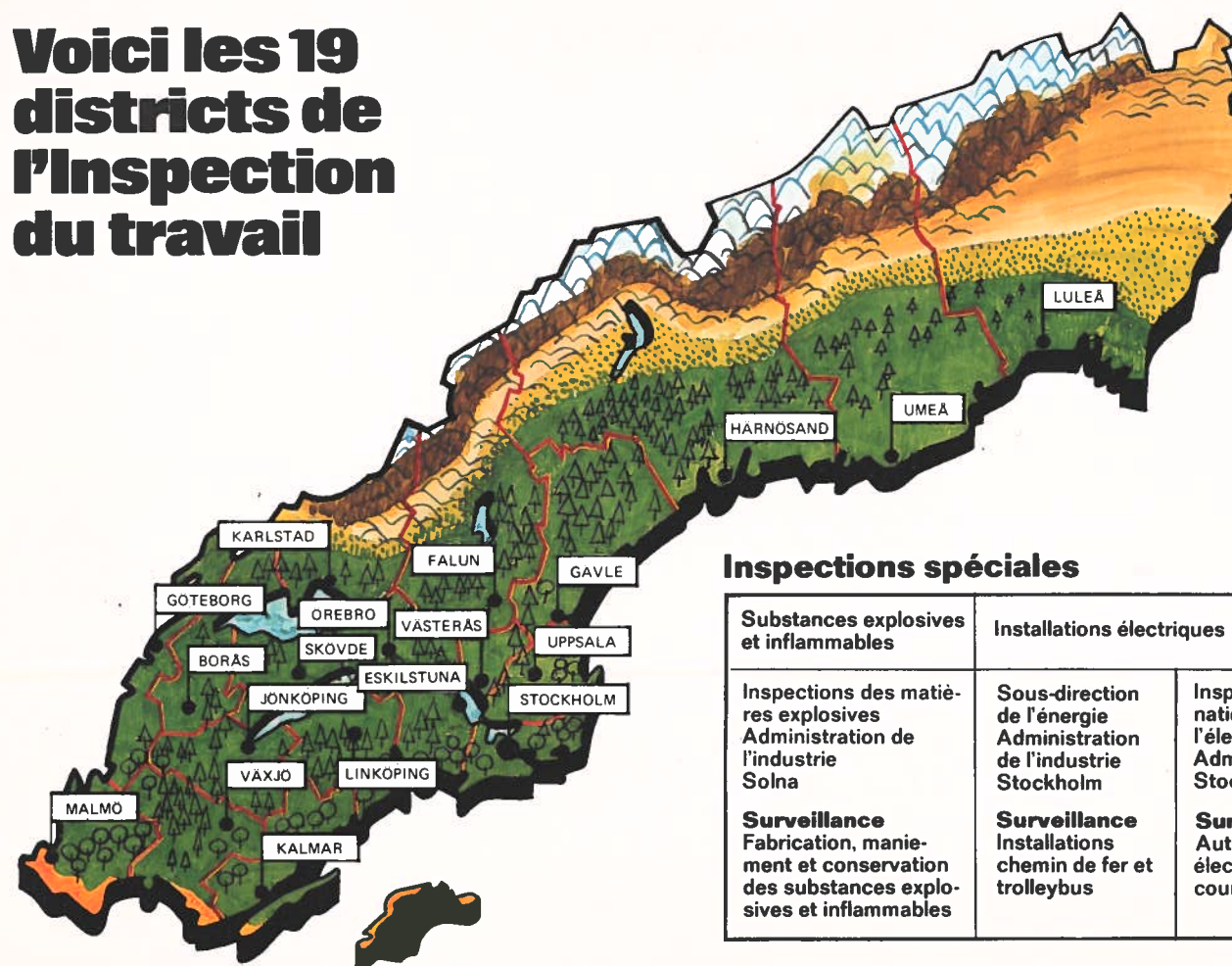
Mais ce n'est pas seulement dans les cas d'irrégularités que les inspecteurs du travail entrent en action. Ils effectuent des visites de routine pour vérifier si les prescriptions de sécurité et d'hygiène sont bien observées. En outre, il est possible de faire appel à eux en cas de construction, de transformation ou d'agrandissement des locaux de travail pour leur demander un examen des projets, qui est gratuit.

Un autre aspect important de leur activité consiste à faire des conférences et à donner des cours, notamment dans le cadre des programmes scolaires.

L'organisation des 19 districts est à peu près identique. A la tête de chaque district se trouve un chef de district, assisté d'un ou de deux adjoints et d'un certain nombre d'inspecteurs. Il a en outre à sa disposition des juristes, des médecins et du personnel de bureau.

Chacun des districts comprend une commission de l'Inspection du travail dont les représentants viennent notamment des organisations syndicales et patronales. C'est à la commission qu'il appartient de décider dans les questions importantes.

Voici les 19 districts de l'Inspection du travail



Inspections spéciales

Substances explosives et inflammables	Installations électriques	
Inspections des matières explosives Administration de l'industrie Solna	Sous-direction de l'énergie Administration de l'industrie Stockholm	Inspection nationale de l'électricité Adm. de l'ind. Stockholm
Surveillance Fabrication, manie-ment et conservation des substances explosives et inflammables	Surveillance Installations chemin de fer et trolleybus	Surveillance Autres instal. électriques à courant-force



La Direction nationale de sécurité et d'hygiène du travail

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Pour toute commande d'exemplaires de la présente brochure,
s'adresser à la Direction nationale de sécurité et d'hygiène du travail.

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