

SAFETY SCIENCE

M o n i t o r

ISSUE 1 1997

VOL 1

Article 2

THE SYSTEM OF THE GERMAN BERUFGENOSSENSCHAFTEN FROM THE ASPECT OF PREVENTION OF ACCIDENTS AT WORK AND OCCUPATIONAL DISEASES

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ABSTRACT

An analysis of the trend in costs and benefits of occupational safety and health over the past 34 years shows that they would be about double as much without the activities in prevention which have taken place. The employers alone are responsible for the statutory measures of protection at work and they alone have to pay the contributions to the statutory accident insurance in Germany. The scheme consists of prevention, rehabilitation, and compensation for work related accidents and occupational diseases, and it is grouped together according to the branches of the industrial economy. This scheme relieves the burden on the state, it is a stabilising economic factor, it is humanitarian, and it guarantees a wide acceptance from the social point of view. The efforts of the scheme are proven by a sharp drop down of the notifiable occupational accidents to 40% in 1994 of the level of 1960. The fatal accidents have decreased to 24% in 1994 of the 1960 level. Nevertheless there is still a lot to be done in the future to develop this system of prevention further on the basis of risk specific assessments.

The insurance against accidents at work and occupational diseases for the industrial sector (gewerbliche Berufsgenossenschaften) in Germany represents a particular model of social security, in which prevention is very important both as a humanitarian and as a methodological element. An analysis of the trend in costs and benefits over the past 34 years proves that success in prevention - in spite of a major increase in the actual benefits - has made a substantial contribution to the stability of the system. If the frequency of serious occupational accidents were today still at the high level of the year 1960, contributions under the current cost structure would have to be much higher: serious estimations proceed from the double of the current costs of 22 billion DM. In this context, we have to point out that the financial contributions levied to cover these costs are paid exclusively by the employers.

The Berufsgenossenschaften, in their capacity as administrators of the statutory accident insurance scheme for industry, trade and commerce, have the statutory *duty to use all appropriate means for reducing accidents at work and occupational diseases and their consequences*. The effectiveness of the primary prevention measures practised under the Berufsgenossenschaften is evidenced by a drop to 40 % of the frequency of notifiable accidents at work since 1960. One reason for this effectiveness is that prevention, rehabilitation and compensation of accidents at work, including commuting accidents as well as occupational diseases, are in one hand, i.e. in the hand of the Berufsgenossenschaften.

The employers alone are responsible for the implementation of the statutory measures of protection at work. They also have to pay the full costs of accident insurance by contributions based on payroll. This has created a particular incentive creating an increased awareness on the side of the companies of their own interest in applying effective prevention measures in order to have a positive effect on cost levels and thus on their own insurance contributions. The accident insurance scheme therefore operates as a closed circuit, because a drop in accidents at work and occupational diseases in enterprises has a full and direct effect on the level of their contributions. The scope of this insurance system goes far beyond the mere payment of financial compensation for income losses. Since the foundation of the Berufsgenossenschaften in 1884, the prevention of work-related accidents and occupational diseases and later also of commuting accidents by taking measures to avoid them with all appropriate means has gained equal importance.

The measures taken by firms to avoid accidents at work and occupational diseases are supported by the Berufsgenossenschaften through a varied range of organizational, managerial and operational functions which relate closely to the relevant branch of industry and the individual enterprise. The list of prevention activities carried out by the accident insurance scheme includes the development of occupational health and safety regulations for individual firms, technical supervision in the member firms, counselling and support of firms in all matters relating to protection at work, checking of technical working equipment and of personal protective equipment, training of employees in safety at work as well as of occupational and company physicians and the promotion and implementation of research with the aim to improve protection against accidents and health impairments at work. In this context, the Berufsgenossenschaften can also apply means of negative incentive such as financial penalties against the employer to avoid the occurrence of risks at work.

Another element of the German accident insurance scheme is rehabilitation of the victims with the aim to restore their physical and mental abilities as far as possible. This is done both for humanitarian and for economic reasons.

The statutory accident insurance in Germany is organized in three sectors: industry, agriculture and the public service. The risks covered have already been mentioned: accidents at work, occupational diseases and commuting accidents. As to health impairments, the legislator has adopted a list of occupational diseases that are recognized as such. At present, this list contains 64 occupational diseases. In addition, health impairments related to work can - under certain circumstances - be compensated for in the same way as occupational diseases. The number of persons insured under the German accident insurance scheme was 52.5 million in 1992 (pupils and trainees not included) and the number of member firms was 4.3 million.

The workplace is still a major area of risks to the safety and health of the employees. Overcoming the risks at the workplace requires a large range of specialist knowledge in the fields of technology, medicine and law as well as the development of practice-oriented and technology-related procedures for the identification and effective prevention of these risks. This is only possible if the causal connection of work-related causes of impairments and their consequences can be identified without being distorted by other influences. This is a prerequisite which permits to find indicators that give precise information on the developments in the field of accidents at work and occupational diseases. These indicators are supposed to show the resulting costs and eventually reveal the effectiveness of prevention and rehabilitation measures. In Germany, the Berufsgenossenschaften were installed separately from the other branches of social insurance and were structured according to the different sectors of the economy and branches of industry. The insurance institutions are public law bodies and are subject to state supervision.

The employees are exposed to the safety and health risks at work whilst the responsibility for the safety and health of the employees lies with the employers. It is therefore logical that both parties should set up a joint organization responsible for directing the accident insurance scheme and that they should cooperate in organizing the necessary measures of prevention, rehabilitation and compensation (i.e. financial indemnification) under consideration of the requirements and possibilities given. The fact that the individual accident insurance institutions are grouped together by branches of economy also guarantees that employers and employees work in close contact to the companies and are thus able to react directly in relation to current industrial and technological developments in the various branches of industry.

- Such a system relieves the burden on the State for the whole field of accident insurance and has the same effect on numerous measures of control and management aimed at the improvement of health and safety at work.
- It is a stabilizing economic factor with regard to the development of the costs for the statutory accident insurance scheme.
- It is humanitarian since prevention and rehabilitation measures can efficiently be applied to avoid or minimize impairments or losses suffered by the workers.
- The joint involvement of employers and employees is institutionalized and guarantees a wide acceptance from the social point of view.

The accident insurance for industry is organized by branches. In these branches, there were in 1994 a total of 2.7 million member companies and 50.7 million employees insured by the Berufsgenossenschaften. The working time of these employees corresponded in 1994 to that of 29.7 million full-time workers. Accordingly, the following statistical data is based on the number of the presumed “full-time workers”.

The following data give an overview of the development of costs and benefits of the Berufsgenossenschaften for the period from 1960 to 1994. In order to obtain valid indicators relating to the number of member firms and full-time employees and in particular to the very substantial rise in the cost-of-living index over this period of 34 years, specific indices have been created. The original data come from the statistical publications of the Central Federation of the Berufsgenossenschaften.

Table 1 contains data on cost movements. Together with the data for the years 1960 and 1994, an index figure for 1994 is given which indicates changes compared to 1960 (1960 = 100). The figures for the year 1994 reflect the number of member firms and full-time workers covered by the insurance of the Berufsgenossenschaften in the united Germany.

Table 1 Cost trends

	1960	1994	Index 1994 1960 = 100
1. Number of member firms (million)	1.656	2.719	164
2. Number of full-time workers (million) ¹	17.86	29.71	166
3. Payroll of full-time workers (million)	5,379	38,877	722
4. Total expenditure (million DM)	1.452	16.804	1,157
5. Expenditure per full-time worker (DM)	81	566	699
6. Average percentage contribution rate	1.51	1.44	96
7. Contribution rate for social insurance as a whole	25.9	40.95	158
8. Proportion of contribution for accident insurance	5.83	3.59	62
9. Accident rate ²	3.22	1.17	36

¹ Full-time workers, full-time employees and part-time employees according to their share in the working time.

² Employment accidents per 1,000 full-time workers, compensated for the first time.

Because of the sharp increase in the number of member companies and of full-time workers (position 1 and 2) and particularly because of the rise in wage costs (position 3), the overall expenditure of the Berufsgenossenschaften grew by 1,157 per cent by 1994. If this expenditure is related to the number of full-time employees, however, the 1994 index is only 699 per cent (position 5). This rise is a little less than the rise in wage costs per full-time worker (722 per cent - position 3). This means that the contribution rate

(position 6) fell from 1.51 per cent in 1960 to 1.44 per cent in 1994, which gives an index figure of 96 per cent. That means that the contribution rate has been almost stable which is particularly remarkable if it is compared to the rise in contributions for social insurance as a whole (health, unemployment and pension insurance), for which the figure is 158 per cent (position 7), whilst at the same time the proportion relating to the accident insurance dropped to 62 per cent (position 8). The positive trend of accident insurance is largely explained by a clear reduction in the frequency of occupational accidents (position 9) from the earlier figure of 3.22 accidents per thousand full-time workers in 1960 to 1.17 occupational accidents per thousand full-time workers in 1994. During this period, the accident frequency was reduced to 36 per cent of its 1960 level.

Table 2a gives a summary of the changes in accident frequencies for the period from 1960 to 1994. It shows the number of accidents per 1,000 full-time workers and the number of commuting accidents per 1,000 insured persons. Together with the case frequencies for 1960 and 1994 the corresponding index figure for 1994 is indicated. This reveals that notifiable occupational and commuting accidents fell to 40 per cent of the level of 1960.

Table 2a Changes in accident frequencies

Accidents per 1,000 full-time workers/insured persons*	1960	1994	Index 1994 1960 = 100%
Notifiable occupational accidents	126.7	50.1	40
Notifiable commuting accidents	13.9	5.6	40
Occupational accidents compensated for the first time	3.22	1.17	36
Commuting accidents compensated for the first time	0.87	0.28	33
Fatal occupational accidents	0.17	0.04	24
Fatal commuting accidents	0.09	0.02	22

*Accidents in 1993 per 1,000 persons insured

Accidents and occupational diseases compensated for the first time in the year under review represent cases which have led to a reduction in working capacity of at least 20 per cent and are therefore of significant importance in terms of consequences on the individual and of cost levels. In these severe cases, the period showed a clear drop in accident frequency, which fell to 36 per cent for accidents at work and 33 per cent for commuting accidents. An even clearer reduction occurred in fatal accidents, as fatal accidents at work were reduced to 24 per cent and commuting accidents to 22 per cent of the 1960 level.

Table 2b Occupational diseases

Occupational diseases*	1960	1994	Index 1994 1960 = 100%
Notification of a suspected occupational disease	31,502	83,847	266
Recognized occupational diseases	-	19,419	-
Occupational diseases compensated for the first time	7,445	6,432	86

Recognized occupational diseases are cases in which there was a notification of a suspected occupational disease and this was confirmed by examination of the case by the Berufsgenossenschaften. These figures have only been collected since 1978, so that the long-term trend cannot be shown here. In the case of severe occupational diseases compensated for the first time, there has been a reduction to 86 per cent in the number of cases since 1960. As regards the notification of suspected occupational diseases, these have - on the contrary - increased to 266 per cent. Since 1993 however, they have been decreasing again. The general increase is due to a number of reasons:

- The list of occupational diseases was extended several times;
- Since 1986, the statistical records of notification have also covered cases in which it is stated at an early stage that it is unlikely that the suspicion of an occupational disease will be confirmed in terms of the relevant legislation in force;

- Cases of suspected occupational diseases identified during occupational medical preventive examinations have systematically been recorded.
- Greater awareness has been achieved in general and among physicians in particular of the risks to health at the workplace. This awareness has been created by well-aimed public relations activities in the media.

As mentioned earlier, despite substantial increases in costs and improvements in specific benefits, the contribution paid by the companies to accident insurance has not only been stable over the period from 1960 to 1994 but has even been slightly reduced. Even though a causal relationship cannot be proven in this respect, it is more than probable that the diminishing number of (notifiable) accidents has been one of the effects of preventive measures taken by the enterprises and by the Berufsgenossenschaften together with the success of specific rehabilitation concepts.

The Berufsgenossenschaften have developed a comprehensive set of instruments with which they are able to effectively direct and support the preventive measures that need to be taken in the enterprises. These instruments have continuously been adjusted to the technological progress, the latest medical findings and the practical needs of health and safety at work.

The Berufsgenossenschaften have the right and the duty to issue regulations on the prevention of accidents at work, of occupational diseases and most recently also of work-related diseases. These regulations for health and safety at work are mandatory for the member companies and the insured persons. Accident prevention regulations of the Berufsgenossenschaften take into account the specific requirements of the branch of industry concerned. They are completed by comprehensive rules on technical safety and occupational medicine which permits a flexible reaction to the latest developments in the field of health and safety at work.

The Berufsgenossenschaften monitor the measures taken in companies for accident prevention and health protection. To this end, they employ about 2,300 technical inspectors and other qualified personnel. In 1994 alone, some 690,000 inspection visits to firms were made by this staff. Their supervisory capacity is by far greater than that of the national labour inspectorates and thus provides substantial relief for the state labour protection authorities.

Special attention is devoted to counselling of firms on prevention by the accident insurance institutions. To detect and quantify risks, measurements are taken at the workplace, especially of dangerous substances, noise and vibrations, and recommendations are issued as to the suitable measures which should be taken to provide safety and health protection at the workplace.

One of the main tasks is to provide extended and additional training for employees on safety at work. Courses are given free of charge by the Berufsgenossenschaften for the safety specialists in the companies but also for employers, senior staff and works councils, so that they acquire the necessary awareness and knowledge. Within the framework of these additional training measures, around 360,000 persons were given training in 1994, many of them in the training centres of the Berufsgenossenschaften.

Besides the technical side of health and safety at work, growing importance has been attached to occupational medical care and occupational medical services. Here, a distinction must be made between general occupational medical care for all employees and special preventive measures for those employees who are exposed to chemical, physical or biological hazards or particular stresses at the workplace. In this context, the Berufsgenossenschaften have to determine the contents of the medical preventive examinations that the employer must provide for his employees. Their number has increased enormously in the last ten years and in 1994 came to more than 4.25 million medical examinations carried out in accordance with the 43 specific principles laid down by the Berufsgenossenschaften. They all reflect the latest medical knowledge and were elaborated by more than 300 advisors of all relevant medical and technical sectors. They represent an excellent example of joint venture in the field of health and safety at work.

Last but not least, it should be mentioned that, in order to provide an additional incentive to firms for distinguishing themselves from the general level of their branch of industry by taking outstanding measures of accident prevention and thus achieving a correspondingly low accident risk level, the Berufsgenossenschaften have developed a bonus/penalty system. This system permits to fix individual contribution rates for particular firms on the basis of their own number of accidents which relates to the success or failure of their in-house prevention compared to the average of the branch. In individual cases, the supplement or rebate can be as high as 50 per cent of the contribution.

One means for the further development of the concept of prevention is advice to the companies on the basis of specific risk assessments including:

- quality management under economic aspects,
- motivation of employers especially in small firms,
- participation of the employees in describing their work conditions,
- integration of both health and safety aspects in the assistance to the firms,
- specific training of the personnel involved,
- effective use of all acquired data in the firms,
- further development of methods for the evaluation of obtained data on work-related diseases.

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