Industrial Accident Prevention

A Report of the
Industrial Safety Sub-Committee of the
National Joint Advisory Council

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LONDON

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1956

National Joint Advisory Council

The National Joint Advisory Council comprises representatives of the British Employers' Confederation, the Trades Union Congress General Council and the Boards of the Nationalised Industries, under the chairmanship of the Minister of Labour and National Service, and advises the Government on matters in which employers and workers have a common interest. The Council, in October 1955, agreed that this Report should be published.

Membership of the Sub-Committee

Chairman:
Dame Mary Smieton, D.B.E.
Ministry of Labour and National Service

Representing the British Employers' Confederation:
Mr. R. C. Dymock (from July 1955)
Mr. W. M. Larke (until July 1955)
Mr. J. P. Lowry
Mr. L. G. Wilson, O.B.E.

Representing the Trades Union Congress General Council:
Mr. H. Collison
Mr. H. Hewitt, O.B.E.
Mr. J. O'Hagan

Representing the Boards of the Nationalised Industries
Mr. G. Shrosbree, M.B.E.

Secretary: Mr. R. Turner, Ministry of Labour and National Service

Contents

Introduction

Our Terms of Reference

1. We were appointed as a Sub-Committee of the National Joint Advisory Council in mid-1954, after the Minister of Labour and National Service had invited the Council to examine the problem of accidents at work to workers in factories and other places of industrial employment subject to the Factories Acts (see para. 4). Our terms of reference were to review this problem and to make recommendations to the Council on ways and means of securing greater freedom from accidents in this sector of industry.

The Aim of Our Report

2. In presenting this Report our aim has been to set out concisely and clearly the main kinds of action which, we think, should be taken by employers and workers and their organisations, Government departments and others. We hope that organisations of employers and workers will bring the report before their members, and that all concerned, both within and outside industry, will now examine afresh how they may increase their respective contributions to the prevention of industrial accidents, in the light of our recommendations and the developments to which we hope they will give rise.

The Scope of Our Report

3. In the main body of this Report we review the problem and indicate the principles on which, in our view, industrial accident prevention work should be organised and the kinds of action which we feel need to be taken in the works, at industry level and by other authorities. Our conclusions and recommendations are summarised in Chapter 9.

4. The Factories Acts, 1937 and 1948, apply to factories and to certain other places of employment and works, including, for example, shipbuilding, ship-repairing in dry dock and electricity generating stations, which are deemed to be factories for the purposes of the Acts. All these workplaces are referred to as "factories" throughout our Report. By virtue of Sections 105–108 of the 1937 Act, certain provisions of the Acts—but not all the general safety provisions in Part II of the 1937 Act—apply also to the loading and unloading of ships at docks, wharves and quays, to certain work on ships in wet dock or harbour, to building operations and to works of engineering construction. Accordingly, these workplaces are given separate consideration in parts of our Report and are, for convenience, referred to as "workplaces, other than factories, subject to the Acts". The Acts do not apply to other sectors of industry, such as mines and quarries, transport (with some exceptions) and agriculture, or to places of "non-industrial" employment, such as shops, offices and commercial establishments.

5. Although our Report relates only to those workplaces which are subject to the Factories Acts, we hope that it may also assist efforts to prevent accidents to workers in other places of employment, and that it will be brought to the attention of all concerned with safety at work.

6. Throughout our discussions we have recognised that industrial safety and industrial health are closely linked. Ways and means of promoting the one are often the same as those of promoting the other, and safety and health measures must always be co-ordinated. Accordingly many recommendations in respect of industrial safety in this Report apply equally to industrial health.

CHAPTER 1

The Problem of Industrial Accidents

THE EXTENT OF THE PROBLEM

How many Accidents are there?

7. Substantial progress in promoting industrial safety has been made in this country, both as a result of legislation and other efforts, over a period of many years. Some measure of the success of these efforts is reflected in the fact that overall the trend both of fatal and of other accidents reported (see footnote) under the Factories Acts has been downwards, even though industry has become increasingly complex and employment has reached higher levels than ever before. Nevertheless the number of such accidents reported each year is still substantial. Out of a total of some seven million workers employed in factories over 450 are killed and about 160,000 injured in these accidents each year; in addition, over 250 workers are killed and over 20,000 injured in workplaces, other than factories, subject to the Acts (see Introduction para. 4). A much greater number of other industrial accidents are not reportable because the resulting injuries are less severe; there are also many "near accidents" or dangerous incidents in which workers do not happen to get hurt.

8. The extent and nature of the problem are not so widely appreciated and understood as might be hoped, and, though we do not wish to overload our Report with facts and figures, we think it will be useful to draw attention here to some of the more salient features. Much more detailed statistical and descriptive information about industrial accidents is to be found in the Annual Reports of Her Majesty's Chief Inspector of Factories, and in publications of the Factory Department, Ministry of Labour and National Service, and other bodies.

Accidents in Factories

9. The following tables (I and II) give the number of men, women, boys and girls killed or injured in accidents in factories reported in recent years and the average accident-rates in these groups, i.e. for each group, the average number of persons killed or injured each year in such accidents per thousand persons employed. The second table is perhaps the more illuminating one, as it takes some account of changes in the numbers of persons employed in factories.

Footnote: Accidents reportable under the Factories Acts are those incidents which cause loss of life to a person employed in a workplace subject to the Acts or disable such a person for more than three days from earning full wages at the work at which he is employed.

TABLE I

The numbers of employed persons killed or injured in Reported Accidents in Factories, 1937–8 and 1948–54

Year	*Adults—18 years and over*		*Young Persons under 18 years*		*Fatal*	*Non-Fatal*	*Total*
	Men	*Women*	*Boys*	*Girls*			
1937	125,516	15,856	26,451	8,906	716	176,013	176,729
1938	115,931	14,404	22,465	7,753	627	159,926	160,553
1948	144,834	23,561	10,253	4,190	552	182,286	182,838
1949	137,148	22,210	9,122	3,546	475	171,551	172,026
1950	135,869	22,837	8,840	3,275	506	169,865	170,371
1951	127,709	21,731	8,756	3,224	511	160,909	161,420
1952	123,774	19,929	8,605	3,158	471	154,995	155,466
1953	125,853	20,773	8,625	3,346	454	158,143	158,597
1954	127,057	22,047	8,892	3,462	454	161,004	161,458

TABLE II

The average numbers of employed persons killed or injured in Reported Accidents in Factories per thousand persons employed, by age-sex groups, 1937–8 and 1948–54

Year	*Men*	*Women*	*Boys*	*Girls*	*Total*
1937	39.0	10.2	49.9	15.4	30.6
1938	37.0	10.1	45.8	14.4	28.7
1948	36.2	12.1	34.2	14.0	27.9
1949	33.9	11.1	30.4	11.8	25.9
1950	32.0	11.2	29.5	10.9	24.9
1951	30.5	9.9	29.2	10.7	23.4
1952	29.5	9.5	28.7	10.5	22.5
1953	29.3	9.9	28.8	11.2	22.7
1954	28.9	10.0	29.6	11.5	22.4

Footnote: The Tables I and II take no account of accidents reported in workplaces, other than factories, subject to the Acts (see Introduction para. 4 and Table III).

10. Each year about three per cent. of the male factory workers and one per cent. of the female factory workers are the victims of reported accidents. It is particularly disturbing that the rates are so high for young workers under eighteen years of age on the threshold of their industrial lives, when, as compared with adults, they are employed generally on less-hazardous work.

11. There are of course variations between different industries, occupations and workplaces. The incidence of accidents and of fatal accidents in particular is higher in those industries and occupations where the work is intrinsically of a more hazardous nature, but accidents are not by any means confined to these industries and occupations. Again the average accident-rate per thousand employed is higher in the larger and medium-sized factories (which include most of those where the potentially more-dangerous kinds of work are undertaken) than it is in the smaller workplaces, but there are still many accidents in small factories.

Accidents in Workplaces other than Factories

12. The following table (III) gives the numbers of men, women, boys and girls killed or injured in accidents reported in recent years in workplaces, other than factories, subject to the Acts, i.e. accidents to workers employed on the construction, maintenance and demolition of buildings, on works of engineering construction, on the loading and unloading of ships at docks, etc. (see Introduction para. 4).

TABLE III

The numbers of employed persons killed or injured in Reported Accidents in 1937–8 *and* 1948–54 *at Workplaces, other than Factories, subject to the Factories Acts*

Year	*Men*	*Women*	*Boys*	*Girls*	*Fatal*	*Non-Fatal*	*Total*
1937	15,874	455	402	82	287	16,526	16,813
1938	18,821	222	457	50	317	19,233	19,550
1948	17,712	91	438	7	309	17,939	18,248
1949	20,309	114	525	8	297	20,659	20,956
1950	22,050	113	514	11	293	22,395	22,688
1951	21,360	94	565	5	317	21,707	22,024
1952	21,336	98	606	4	321	21,723	22,044
1953	22,341	87	609	3	290	22,750	23,040
1954	22,984	91	630	4	254	23,455	23,709

Note: It is not possible to translate these figures into accident rates, as in Table II above, as sufficiently reliable estimates of the numbers of persons employed are not available.

To some extent, the increase since 1948 in the numbers of accidents reported reflects increases in the numbers employed and the inclusion of accidents which might not have been reported if they had occurred in the earlier years.

How are the Accidents caused?

Accidents in Factories

13. The following table (IV) shows the main causes of accidents in factories reported in 1954:

TABLE IV

Analysis according to cause of Reported Accidents in Factories in 1954

Cause	*No. of Accidents*	*Percentage of total accidents in factories*	*Rate per thousand employed in all factories*
Power-driven machinery	26,221	16.2	3.6
Transport	8,963	5.6	1.2
Molten metal or other hot or corrosive substances	6,361	3.9	0.9
Use of hand tools	13,305	8.2	1.8
Struck by falling body	13,918	8.6	1.9
Persons falling	22,397	13.9	3.1
Stepping on or striking against objects	12,833	7.9	1.8
Handling goods or articles in manufacture or carrying processes	43,451	26.9	6.0
Other causes	14,009	8.7	1.9
TOTAL	161,458	100	22.4

Accidents in Workplaces other than Factories

14. The following table (V) shows the main causes of accidents reported in 1954 at other places of employment subject to the Acts, such as docks, building sites and works of engineering construction:

TABLE V

Analysis according to cause of Reported Accidents in 1954 at Workplaces, other than Factories, subject to the Factories Acts

Cause	*No. of Accidents*	*Percentage of total accidents at such workplaces*
Power-driven machinery	2,210	9.3
Transport	2,244	9.5
Molten metal or other hot or corrosive substances	314	1.3
Use of hand tools	1,821	7.7
Struck by falling body	2,791	11.8
Persons falling	5,995	25.3
Stepping on or striking against objects	2,205	9.3
Handling goods or articles in manufacture or carrying processes	4,848	20.5
Other causes	1,281	5.4
TOTAL	23,709	100

How far does Machinery cause Accidents ?

15. Power-driven machinery is commonly thought to be the principal cause of industrial accidents. The figures show very clearly that, as a result of guarding and improved design, such machinery is now a factor in only about one in every six accidents reported in factories and in about one in every eleven accidents reported in the other workplaces. Most accidents arise from ordinary everyday causes such as handling goods, using hand tools, or falls ; in nearly all cases there is some failure of the human element. In the stress of working conditions employers, supervisors and workers alike are liable to ignore normal precautions and standards of care and, in some cases, to fail to observe statutory requirements.

THE TOLL OF INDUSTRIAL ACCIDENTS

16. Statistics of workers killed or injured cannot in themselves show the full toll of industrial accidents. Accidents result in human suffering which cannot be measured in money or statistics but is extensive and serious. We wish to state at the outset, what we believe to be generally accepted in industry today, that industrial accident prevention work is justified on humanitarian grounds alone.

17. Accidents also have far-reaching and important social and economic consequences. An accident is often more costly to the victim himself than to anyone else. Apart from his own suffering and losses, there are usually direct and indirect losses of many kinds to his dependants or survivors, to the firm, to the industry

and to the nation. These cannot be measured precisely, but the cumulative total must be formidable. Some indication is given by the fact that, over the whole employment field covered by the National Insurance (Industrial Injuries) Act, 1946, the total number of days lost to industry on account of incapacity of workers through industrial injuries is little short of twenty million man-days per year; on each day some 60,000 workers are absent from work as a result of industrial injury.

How the Individual is Affected

18. The victims of industrial accidents and their families know only too well that social insurance benefits and other forms of compensation and relief can never make good in full the various financial losses arising from accidents, such as loss of normal earnings and abnormal expenditure during incapacity. There is often a continuing disability not amounting to incapacity for work. Many of the other short- and long-term consequences of physical disablement and incapacity for work and for other activities can never be made good or compensated.

How Industry is Affected

19. Accidents have a direct effect on production and efficiency, as a result of interruptions to work, the absence of workers, damaged plant and materials, delayed deliveries, etc. In addition, some indirect consequences result from the loss of experienced workers, the need to find and train replacements, the cost of rehabilitation, and in some cases the cost of legal proceedings, payment of damages and so on. Accidents can also affect morale and human relations in industry. Much of the losses to industry can never be recovered.

How the National Economy is Affected

20. A country striving to increase productivity and exports cannot afford to lose each year, through accidents, the production and services represented by twenty million man-days, apart from the additional and considerable indirect losses of production. Manpower is a vital national asset and we cannot afford to dissipate it. In particular, accidents to young persons involving death or permanent disablement represent a deplorable waste of valuable national resources. Less vital, but still very important, are the losses of other productive resources often associated with accidents—damage to plant and materials and loss of working time for others than those directly involved in the accidents. Accidents and their consequences, too, are an important factor in the cost of the national health and social services. Although the total national losses cannot be given in precise figures, it is clear that they are very serious.

CHAPTER 2

The Prevention of Accidents : A General Survey

21. Accidents can be prevented if everyone employed in industry is safety-conscious and vigilant, the risks are foreseen and the necessary precautions are taken. Positive action is essential. It is not sufficient to rely on chance and a past record of freedom from accidents, and to trust that no one will be hurt. Safety must be accepted as a definite aim of policy in industry, and there must be the will, organisation and resources to secure it.

22. The basic ways of preventing accidents are by making the working environment as safe as possible, by protecting the workers from the hazards which

remain, and by training everyone to act in a safe way at all times. To some extent it is a matter of technology to devise safe premises, plant, equipment, methods of work, and safety and protective appliances, etc.; to some extent it is a matter of good housekeeping and of education, training, supervision, propaganda and other means of influencing human behaviour; above all, it is a matter of organisation to ensure that all these things have proper attention and keep on getting it. There must be the closest co-operation between employers and workers, both in the formulation of the safety policy and in putting it into practice.

HOW ACCIDENT PREVENTION EFFORTS HAVE DEVELOPED

23. Organised action in this field in this country has been based on the common law relating to masters and servants and on the development of statutory protective legislation. It was concentrated initially more on the provision and maintenance of safe physical working conditions than on the human side of accident prevention work.

Legislation to Protect the Worker

24. The factory legislation, as we know it today, dates from an Act of 1833 which empowered the Government to appoint Inspectors of Factories. Since that time, as the means of eliminating physical hazards or of protecting workers against them have been developed, they have been embodied where appropriate in the legislation, and to-day the Factories Acts, 1937 and 1948, and the many associated regulations include an extensive and comprehensive statutory code of industrial safety. This is a continuing process.

25. The statutory safety provisions have done much to promote safety in industry, and the observance and enforcement of such legislation is, and will remain, of first importance. Necessarily, the provisions relate principally to matters which can be seen or checked by Her Majesty's Inspectors of Factories during visits to the premises or the site.

Voluntary Efforts in Industry

26. In more recent years, over and above efforts to ensure full compliance with the law, much has been done in industry on a voluntary basis to achieve higher standards of safe environment and of safe behaviour in matters not regulated by law. There has been a growing recognition that many common causes of accidents cannot be removed by legislation, its enforcement and observance. The increasing attention given to improving standards of industrial management, human relations in industry and industrial efficiency generally has been reflected in greater attention being paid by both employers and workers and by their organisations to the problems of reducing industrial accidents. Besides what has been done at the works level, valuable work has been done at industry level to promote higher standards in certain fields, e.g. by the Joint Advisory and Joint Standing Committees established by the Chief Inspector of Factories and, in some industries, under the initiative of the industry itself. An important part in stimulating interest in this field and assisting industry in this work has been played by voluntary organisations, particularly the Royal Society for the Prevention of Accidents.

The Factory Inspectorate

27. The Factory Inspectorate, alongside work in enforcing the law, has stimulated and helped these voluntary efforts. In discharging their primary duty of enforcement, Her Majesty's Inspectors of Factories acquire a unique fund of

knowledge and experience about how accidents happen and how they can be prevented. Through extensive and valuable educational and advisory work, based on this knowledge and experience, the Factory Department has made an important positive contribution to the promotion of industrial safety. The Inspectors have increasingly come to be regarded, not merely as officers enforcing the standards contained in the law, but as a source of helpful advice to industry in developing higher standards of safety, as regards both matters regulated by law and others which are not so regulated.

Legislation and Voluntary Efforts are Complementary

28. Thus, experience has shown the value of the dual approach—legislation and enforcement by Government action on the one hand and organised action on a voluntary basis by industry on the other; and, in our view, the stage has been reached, where, on the firm foundations laid down in the legislation and by voluntary action, substantial further progress can be made over the whole industrial field.

WHAT FORM SHOULD FURTHER ACCIDENT PREVENTION EFFORTS TAKE?

Legislation

29. It is essential in our view that the promotion of industrial safety should continue to be sought both by means of legislation and by voluntary efforts. The legislation should continue to be kept under review, modified and extended as necessary. The scope for further legislative safety provisions, in our view, lies in generally keeping abreast of developments in industry, in dealing with new hazards in industry, and in some rather specialised fields which have not yet been covered.

Voluntary Efforts

30. Invaluable as legislation and other enforcement work of the Factory Department must continue to be, the standards of safety reached in industry depend mainly on the efforts made at all levels within industry itself to prevent accidents. To secure a further substantial reduction in the incidence of accidents, there must be more vigorous, more extensive, more sustained, better organised, and better informed voluntary action by everyone in industry; planners, designers, managers, technicians, research workers, supervisors and workers all have an important contribution to make. The idea of considering safety in all aspects of industrial activity must so permeate industry that everyone will find his opportunity, in his ordinary day-to-day work, to make industry a safer place. It is a matter of developing self-discipline in complying with the law and of developing standards of safe environment and behaviour in matters which may not be susceptible to control by statutory regulation.

Accidents are a Challenge to Industry

31. Industrial accidents present a challenge to industry, and their prevention is essentially a task for which industry itself is both legally and morally responsible. Industry has the opportunity and the means to discharge these responsibilities effectively and will, we hope, make greater efforts to meet the challenge. The growth of industrial organisation provides increasing opportunities for effective action by the appropriate employers' organisations and trade unions to help their members to deal with their safety problems. Elsewhere in our Report, we make suggestions and recommendations which may help industry at all levels to make its full contribution.

The Factory Inspectorate

32. The Factory Inspectorate, in our view, will continue to be of the greatest importance in the promotion of safety in industry—through its enforcement work, but also, and we hope to an increasing extent, through providing an advisory service for industry and a clearing-house for information on the prevention of industrial accidents. We refer to this aspect of the work of the Factory Department in Chapter 6. In Chapter 8, we discuss the role of the Factory Inspectorate in relation to intensified activity by industry on a voluntary basis which we advocate in our Report.

Teamwork is Essential

33. We believe that important contributions can be made by others outside industry itself—for example, by those who design or plan industrial premises, plant, equipment, processes, techniques and services; by those who provide industrial information and advisory services; and by those who deal with the education and training of the present and future industrial managers and workers. We also look to scientists and research workers—both those who deal with physical phenomena and those concerned with social and human aspects—for more help in tackling these problems than they have provided in the past. In later Chapters of our Report we deal in particular with the role of research organisations, educational establishments and voluntary organisations.

34. At this point, we should like to emphasise the importance of co-operation in securing the objective of greater freedom from accidents in industry. Teamwork and co-operation are essential—first of all in the workplaces between employers and workers, and also between organisations of employers and of workers, and between industry and the Factory Department, research organisations, voluntary organisations, teaching bodies, and many others, such as architects and doctors. The problem of industrial accidents will not be solved by periodical campaigns. It calls for sustained efforts by everyone who can influence the conditions under which, and the ways in which, work is done in industry.

CHAPTER 3

The Organisation of Safety in the Works

35. The view that accidents will happen even in the best-regulated establishments must be repudiated; but there will be accidents at work unless positive action is taken by management and by workers to prevent them. When safety is taken into account in the initial planning of a method of work or in the designing of a machine the result is likely to be safer than it would otherwise be; similarly proper account needs to be taken of safety considerations in almost every aspect of industrial activity.

36. Accidents should be regarded as a reflection on efficiency. Statutory regulations and adherence in industry to legal requirements and periodical visits by Her Majesty's Inspectors of Factories cannot in themselves secure freedom from accidents. There must be definite and practical plans and determination throughout industry to achieve it.

Positive Action is Needed

37. All this points to the need for the organisation of safety in a works. By that we mean something far more than establishing some formal kind of organisation, such as appointing safety committees or safety officers, or introducing safety rules or providing the best available physical safeguards. We mean the acceptance of accident prevention as a policy, and that this must be reflected in the organisation and methods throughout the works and, above all, in the attitude of management and workers towards the prevention of accidents. We envisage everyone in the works making sustained co-operative efforts to secure freedom from accidents and doing so as a matter of course. This embraces such features as good maintenance and housekeeping, supervision, works inspection, training and education in safety, accident investigations, the keeping of accident records, studying the causes of accidents, the identification and removal of potential causes of accident, and other measures to develop that attitude of mind throughout the works whereby all tend to act safely and to consider the safety of others as a matter of second nature. Everyone in a works has a contribution to make in this field, simply by taking due account of safety considerations as they come into the job he has to do, whatever it may be.

The Cost of Safety

38. Safety measures in some circumstances may be expensive and may not appear to be immediately productive; but we should like to emphasise that the causes of many accidents can be eliminated by safety arrangements which involve little or no expenditure. It is often a matter of the better use of resources already available in the works and the observance of safety rules and practices. The effect of safety measures on production costs, productivity and output is not necessarily, nor even usually, adverse and is often positively advantageous, because concern for safety in a works stimulates better housekeeping, better working methods, greater care in handling materials and thereby reduces waste, scrap and inefficiency. The need to prevent accidents must be accepted unreservedly, and the direct cost of adequate safety arrangements regarded as necessary expenditure.

SIX PRINCIPLES OF ACCIDENT PREVENTION

39. General principles of accident prevention in industry have been stated many times, but they are so often ignored that we feel compelled to restate them as follows:—

Accident prevention is an essential part of good management and of good workmanship.

Management and workers must co-operate whole-heartedly in securing freedom from accidents.

Top management must take the lead in organising safety in the works.

There must be a definite and known safety policy in each workplace.

The organisation and resources necessary to carry out the policy must exist.

The best available knowledge and methods must be applied.

These principles apply irrespective of the size of the undertaking or the nature of the work.

WHAT MANAGEMENT CAN DO

The Acceptance of Responsibility

40. The prevention of accidents in a works is in our view an essential part of good management. Employers have a moral responsibility for the safety of those

they employ and a duty at common law to take reasonable care for the safety of the employees in the course of their employment. They also have legal responsibilities under the Factories Acts. Thus, accident prevention must be specifically provided for in the scheme of management.

41. Management must ensure that there are the organisation, staff, resources and arrangements necessary to implement the policy. The provision of guarded machinery, physical safeguards, instructions and notices does not suffice. All reasonably practicable measures must be taken to provide safe conditions and methods of work and to ensure that the prevention of accidents is accepted by everybody—management at all levels and workers—as a primary responsibility.

42. The highest levels of management must take an active, sincere and constant interest in safety in the works; the drive and enthusiasm for accident prevention must spring from them and be continually renewed from that source. The employer or a senior representative of management must have overall responsibility for all safety arrangements in the works and give this important side of his work the necessary time and attention. He must feel that it is his job to keep the works free from accidents.

43. The chain of responsibility for carrying out the safety policy in the works must be clearly defined, accepted and understood, and each individual must know the part he has to play. Whatever the work, responsibility for ensuring that it is done in a safe way cannot be divorced from the general responsibility for seeing that the work is done. Responsibility for safety should therefore rest on line-management (see footnote)—linked from the employer or managing director down through each department to the supervisors and the workers. At each level the managerial and supervisory staff must have the authority, the capacity, the time and the resources to discharge effectively their responsibility for safety in their sections of the works. Foremen, charge-hands and others in direct charge of the various sections have an important responsibility for ensuring that the safety policy is carried out, as the workers under their charge are usually the victims if accidents do occur.

The Importance of Supervision

44. The arrangements for supervision must ensure that safe methods of work are used at all times; that the working environment is kept safe; that works safety rules and practices are observed; that safety and protective appliances are adequate, are properly maintained and, most difficult of all, are used; that safety matters needing attention are observed and reported; and that all reasonable remedial action is taken without delay. In this connection, special attention needs to be given to inexperienced workers and particularly to young persons. High standards of continuous supervision should automatically ensure that statutory safety requirements are properly observed.

Works Inspection is Essential

45. Such day to day arrangements need however to be supplemented by a regular and systematic system of internal inspection by competent persons to check compliance with the law and the adequacy of all safety arrangements. These regular works inspections are essential to secure the full observance of the works

Footnote: "Line-management" is used here to refer to all individuals having a direct executive responsibility at all levels of the undertaking for production, maintenance or other work or services.

safety policy but do not replace periodical visits by Her Majesty's Inspectors of Factories.

The Need for Expert Advice

46. The responsibility of line-management for safety does not always call for special or technical experience or qualifications, but there must be arrangements whereby at every level such assistance and advice as may be necessary is available and forthcoming. The responsibility of line-management for safety cannot however be taken over by technical experts and special safety staff, although these have a valuable contribution to make.

More Safety Officers are Needed

47. We think there is much scope for developing arrangements whereby a safety officer is employed to advise and assist top- and line-management. A safety officer must have suitable qualifications, personal qualities, experience and knowledge of the works and processes concerned and be given appropriate status and authority. He must enjoy the confidence of top-management, line-management and workers and have the ability to put across, through them, a proper regard for safety throughout the works. His duties, which are essentially advisory, must be clearly defined and understood. He should normally work through line-management and have direct access to, and be responsible to, top-management, whose responsibility it is to avoid and resolve any conflict of interest between safety and production. We feel that many more firms could with advantage employ a safety officer, with assistants where necessary in the larger establishments.

WHAT THE WORKER CAN DO

48. Efforts by management alone cannot of course secure freedom from accidents. Every worker has a moral responsibility to help in preventing accidents to himself and his fellow workers; and he has duties at common law and under the Factories Acts. The worker, by virtue of his experience in the environment in which accidents are liable to occur, can make a valuable contribution to the promotion of industrial safety.

49. In our view, the prevention of accidents is an essential part of good workmanship. Each individual worker must learn the danger points of any work or process or environment in which he is engaged, and the precautions to be taken to avoid accidents. He must use this knowledge in his own practice and hand it on, at least by setting an example, to his fellow workers. Works safety rules must be observed, safe habits adopted, and all the safeguards and other facilities provided by management for his safety used. If he recognises shortcomings in the safety arrangements in the works, he should report them. He may often be able to suggest practical ways in which danger points and practices can be removed. More briefly and generally, he must play his proper part in the arrangements established in the works to maintain safety. We believe that a good worker who takes a pride in his work and knows his job will take his proper responsibilities for accident prevention in his stride.

CO-OPERATION BETWEEN MANAGEMENT AND WORKERS

50. The organisation of works safety cannot be fully effective without close co-operation between the workpeople and management. There must therefore be

effective means of securing and retaining the full support and necessary co-operation of the workers, both in framing and in implementing the safety policy, and effective arrangements for consultation between management and workers on safety matters. The normal channels of communication in the works may suffice, and special means of consultation may not be necessary. It is important that the reasons for all the safety arrangements made, and particularly changes made in any of the arrangements, should be explained to all the workers affected, and that the way should be open for matters concerning safety to be brought readily to the attention of management and workers, so that what is found to be wrong can be put right.

Many More Works Safety Committees are Needed

51. In many cases a Works Safety Committee, with advisory functions and including representatives of management, supervisory staff and workers, has been found to be a practical and convenient way of fostering active co-operation. The number of works in which such committees are known to be functioning is small. The available statistics are not comprehensive, but they indicate that there are committees of some kind with functions covering safety in about three in every five factories employing over 500 workers; in about one in every four factories employing between 250 and 500 workers; in less than one in every ten of those employing between 100 and 250 workers; and in an almost negligible number of smaller factories.

52. We recognise that a special formal committee is not necessarily appropriate in all circumstances, but the figures quoted in the previous paragraph seem to us to indicate a need for many more safety committees. The need for formal organisation is probably greatest in the largest firms; but many firms, both large and small, would, in our view, improve their safety organisation by the establishment of committees of this kind. We therefore recommend that, in every establishment, management and workers should now review their arrangements for consultation and examine whether the establishment of a committee would be an appropriate means of improving the arrangements.

53. The appointment of a committee is of course not an end in itself; to be effective there must be the full and constant support of management and workers both within and outside the committee; its recommendations must be followed up with vigour and resulting action reported back to the committee. Just as the responsibility of line-management cannot be shifted on to safety officers, neither can it be shifted on to a committee. Where line-management has fully accepted its responsibility for safety, it will often find a safety committee a most valuable support; where it has not, a committee can never be more than an empty pretence.

54. In large works, it may be desirable to establish safety committees in each of the main departments. Similarly where there are several distinct establishments or branches in a firm, it may be advantageous to maintain a central safety organisation, in addition to organisations in the separate establishments.

55. The form and functions of the committees and their relationship to other consultative machinery in the works must depend on local circumstances. A committee may be a sub-committee of, or possibly absorbed in, a works committee of a more general nature, provided that its functions relating to safety are in no way subordinated.

The Functions of a Works Safety Committee

56. The functions relating to safety (see footnote) which we have in mind are:—

(i) to promote safety-consciousness and interest in safety and accident prevention in the works;

(ii) to keep all aspects of safety arrangements in the works under review;

(iii) to consider the need for and suggestions for improvement of these arrangements;

(iv) to study reports of all accidents in the works and to consider ways and means of avoiding recurrences;

(v) to discuss relevant information received from external sources.

We deliberately emphasise the positive role of ensuring that, so far as possible, action is taken before the accident rather than afterwards.

Group Attitudes Affect Safety

57. It has to be recognised that workers are influenced decisively in their day-to-day actions and attitudes by the standards of the group to which they belong, and that they cannot be expected to carry out practices which conflict with the group sense. These considerations apply generally, but with special force where the workers work on a group basis and where group bonus and incentive schemes operate. Their attitude to wearing safety footwear and eye protection is a common example. On the other hand, workers accept safety measures more readily when they recognise and understand the need for them and have the opportunity to participate in the consideration of the problems and how the safety requirements can best be met. For this reason it is important that the arrangements for consultation should give them this opportunity. Full account of safety considerations must be taken when group bonus and other incentive schemes are framed and negotiated, so that when in operation the obligation to observe safety precautions is more readily accepted.

TRAINING FOR SAFETY

Training of Workers

58. Safety training must be an intrinsic and important part of the general training arrangements in the works. The safety officer should be associated with the arrangements. Its purpose is twofold: first to ensure that everyone in the works understands his legal and other responsibilities for safety and the part he has to play in carrying out the safety policy in the works; secondly, to train each individual in discharging his responsibilities and in the safe way of doing his particular job. Much attention is now being given in industry to the proper training of workers for their jobs. The safe way of doing any job is the best way, and so throughout their instruction due emphasis must be given to safety.

59. Irrespective of his previous experience, a new entrant to the works needs to learn about the works safety policy and arrangements, and so this kind of instruction needs to be covered by the induction arrangements. Whenever a worker is given new duties or responsibilities, he again needs to be trained in the safety aspects of his work.

60. The inexperienced new entrant also needs to be taught safe methods of work. In this connection, we must emphasise the importance of training young

Footnote: It is normally desirable and convenient for the scope of the committee to include both industrial safety and industrial health.

workers. Young persons are prone to take avoidable and unnecessary risks and are particularly susceptible to accidents; on the other hand, they readily assimilate new ideas and habits, especially if the reasons why particular actions must or must not be taken are explained to them.

Training and Supervision of Young Workers

61. There is need for good personnel selection methods and for care in selecting the work on which young persons are engaged. They are prohibited by law from doing some kinds of work. On whatever work they are employed, they must be instructed in the hazards associated with the work and environment and in the appropriate precautions they must take. If employed at certain particularly dangerous machines which have been prescribed under Section 21 of the Factories Act, 1937, there are statutory obligations to give such instruction and in regard to their training and supervision. We recommend that this list of prescribed machines should be kept under review.

62. Not only is it most important that young workers should be taught good and safe methods of work and conduct in their initial period of induction to industrial employment, but they need special supervision throughout their formative years. We attach great importance to the proper supervision and training of all young workers in industry and commend to all employers the need to review their arrangements for ensuring that they get it.

63. Apprentices and learners constitute a particular and important group of young workers, and advantage should be taken in the schemes for their training to include safety as an integral part. We recommend that those charged with the direct responsibility for drawing up and for carrying out these schemes should ensure that a prominent and adequate part is given to safety instruction and training.

Training of Supervisors

64. The close association of the supervisor with the training is essential. Apart from any organised training courses that may be arranged, much of the safety training will usually be given by the supervisor on the job. The supervisor himself must be trained in this aspect of his job. Industry is turning its attention more and more to the training of supervisors; we hope that, in these arrangements, supervisors will be trained to take their responsibilities for safety in their stride, as an essential part of good supervision.

65. The basic skills of supervision taught in the Training Within Industry (TWI) Schemes, relating to methods of instruction, to methods of work and to job relations, are all important to the safety aspects of supervisory work. In a few firms special safety training courses for supervisors incorporating TWI methods of training have been developed. This type of course could be given more generally in industry; we recommend that the Ministry of Labour and National Service should provide a course of this kind for trainers in industrial firms for an experimental period.

Training of Managers

66. We hope that every encouragement will be given to the attendance of representatives of management, at all levels and including safety officers, at training courses concerned with the responsibility of management for safety at work, with the techniques and methods of organising works safety and with the technical aspects of industrial safety.

Education for Safety

67. The object of safety education is to inculcate an attitude of safety-mindedness throughout the works. In this field all the media, such as films, talks, posters, leaflets, etc., which can influence human behaviour need to be brought into play. We deal with this more fully in Chapter 6 of our Report.

ACCIDENT INVESTIGATION AND RESEARCH

68. In all aspects of organising works safety, it is essential that the best possible methods should be used. This means that the causes of accidents and methods of organising works safety must be studied and full use made of available knowledge and experience of accident prevention measures and techniques. We deal with this in Chapters 5 and 6 of our Report.

69. As a basis of systematic methods of identifying danger points and studying how the hazards can be reduced or removed and the workers safeguarded, it is desirable that each accident should be investigated and its causes analysed, and that records of all accidents should be maintained. At the works level, a useful measure of changes from period to period in the incidence of accidents is given by the frequency rate, i.e. the number of lost-time accidents (see footnote) in a standard period of working time, e.g. 100,000 man-hours.

SAFETY IN THE SMALL FIRM

70. We should not wish it to be felt that, in setting out these general principles and methods of organising safety arrangements in a works, we have had in mind only the larger firms. In our view, these general principles are applicable in all firms irrespective of their size, and these general methods can be adapted to meet the needs of any undertaking. We do however recognise that, whereas in some respects the small firm is at an advantage, it also has special problems.

71. In the very small firm, the employer personally has to bear the major responsibility for safety in the works. Where he needs specialist or technical advice, he may have to rely more on external sources of advice; thus, full use needs to be made of available assistance. On the other hand, the hazards within the works are often less numerous and less varied and more readily identifiable to the safety-minded person. Provided the determination to secure freedom from accidents exists, it is possible to deal effectively with the hazards with a simple organisation and to achieve the necessary co-operation between the employer and his employees without introducing elaborate arrangements for consultation. Nevertheless even a small committee of, for example, the employer, a foreman and a worker may be advantageous. A difficulty of a committee in a small works is that the collective experience of its members may not be sufficiently wide to solve the problems it has to consider; there is also a risk that the small firm may not learn readily of developments in safety techniques from which it may benefit. These are both reasons why it is of particular importance that such firms should take every opportunity they have to participate in local safety organisations (see paras. 80–82) and in training courses relating to industrial safety and that they should take advantage of facilities available through organisations of employers and of workers and through other bodies.

Footnote: A lost-time accident is one involving loss of time by an injured worker from his normal employment beyond the day or shift on which the accident occurs.

SAFETY IN WORKPLACES OTHER THAN FACTORIES

72. We wish to emphasise that general principles and methods of organising safety arrangements apply with equal force to places of employment, other than factories, which are subject to the Factories Acts, such as building sites, works of engineering construction, and docks. Many of these places are often of a less permanent nature than factories and may be subject to the Acts for limited periods. Workers move from site to site or from berth to berth and generally work in relatively small groups. Employees of different employers are often working on the same site. The particular environment in which they work may be subject to frequent changes, and so the particular safety arrangements required have to take account of these changes.

73. The problem of securing freedom from accidents at such places is fundamentally the same as in factories generally and needs to be tackled on the same basis. There must be organisation and high standards of supervision and workmanship to ensure compliance with legal and other safety requirements at all times and in changing circumstances and, over and above this, an attitude of caring for safety in everyone employed on the site. Where several firms are involved, they should co-operate and co-ordinate their safety arrangements.

THE NEED FOR HELP FROM OUTSIDE THE WORKS

74. Safety in industry depends very largely on the efforts made within the individual establishments. Some of the problems and some of the necessary prevention measures are peculiar to the local circumstances in the works, and by using the available resources, knowledge and experience much effective accident prevention work can be undertaken without assistance from outside. On the other hand, as many aspects of securing freedom from accidents within the works are common to all undertakings of a similar kind and some of the aspects are common to all kinds of undertakings, and as the resources knowledge and experience available in the works may need to be supplemented in some fields, the problem of accident prevention cannot be left to be tackled by the individual undertakings without external assistance and advice. The role of organisations of employers and of workers in the promotion of safety at work is discussed in the following Chapter.

CHAPTER 4

Employers' and Workers' Organisations and the Promotion of Safety at Work

Organisations of Employers and of Workers Can Help

75. It is desirable that the full resources of industry should be brought to bear on safety problems, that knowledge and experience of effective accident prevention methods should be enlarged and shared by all who can benefit therefrom, and that those faced with common or comparable safety problems should join together in seeking ways and means of overcoming them. It seems natural to us that employers and workers should turn to their appropriate organisations for help.

76. We welcome the increasing extent to which these organisations are concerning themselves with the promotion of industrial safety. There is, in our view, a need and much scope for the appropriate organisations on both sides of industry to develop and extend this aspect of their activities. We hope that, where it has not already done so, each organisation will now accept its role and opportunity to take positive action in this field and establish appropriate machinery to develop accident prevention work, particularly at the industry level, in co-operation with the Factory Department. In addition the help of the Royal Society for the Prevention of Accidents and other voluntary bodies may be sought. We recommend that each organisation should now review how it can make its maximum contribution in this field.

77. As at the works level, enthusiasm, organisation and positive action are called for at the industry level. Organisations can foster interest in this sphere and provide information and advisory services to their members. They can arrange for problems of a general nature and beyond the capacity of individual firms and branches to be identified and to be tackled by collective efforts and for knowledge and experience to be pooled, exchanged and studied. This may well call for the establishment of special arrangements by the organisations.

What the Organisations Can Do

78. The task of organisations, as we see it, is to make arrangements, suitably adapted to the circumstances in individual industries and having regard to the constitution of the organisation concerned,

(1) To encourage individual firms and groups of workers to assume and discharge effectively their full responsibilities for accident prevention;

(2) To foster co-operation between employers and workers and their organisations in the development of works safety arrangements; in particular, to foster the establishment of works safety committees;

(3) To foster co-operation between the designers and makers and users of machines, equipment, safety appliances, etc.;

(4) To collect and analyse information and to make use of information available from other sources about the causes of accidents; and to review ways and means of safeguarding the workers from the hazards of the industry;

(5) To promote and arrange for research into safety problems in the industry; to maintain liaison with industrial research associations;

(6) To encourage emphasis on safety in training arrangements in individual firms and in particular those for apprentices, learners and other young workers; to conclude voluntary agreements relating to the instruction and safety training of young workers (e.g. to supplement, by voluntary action, the provisions of Section 21 of the Factories Act, 1937, see para. 61 above);

(7) To arrange for or to encourage the inclusion of safety in training courses attended by their members at all levels in the industry;

(8) To encourage their members to participate in special safety training courses available to them; to arrange such courses, directed particularly to special hazards in the industry;

(9) To encourage the employment of safety officers, where appropriate, and to support arrangements for their training;

(10) To provide means for the dissemination and exchange of information and advice; for example, promoting visits between firms, sponsoring conferences or discussion groups, encouraging sales and study of Factory Department and other publications, sponsoring the production of safety films and other visual aids, focusing attention on safety in exhibitions;

(11) To support and participate in the activities of voluntary organisations concerned with industrial safety; and to foster the formation of local industrial safety organisations.

Joint Safety Committees are Valuable

79. Much valuable work has been done by the Joint Advisory and Joint Standing Committees established by the Chief Inspector of Factories for some industries and for some types of machinery, including representatives of employers, of workers and, in some cases, of machinery makers. The need for other Committees of this kind may still arise, and we feel sure the Chief Inspector will not hesitate to appoint them; but we hope that to an increasing extent industry will, of its own initiative, establish and service its own joint safety committees. We recommend that the appropriate organisations in each industry should examine the possibility of establishing, where this has not already been done, joint standing or *ad hoc* safety committees to review safety problems and accident prevention arrangements in the industry. Their establishment would emphasise the responsibility for securing freedom from accidents which rests on industry. It would be useful for the Factory Department to be associated with the work of such committees, e.g. by the appointment of a liaison officer.

Local Organisations are Useful

80. The activities of employers' and workers' organisations in this field at the national and industry levels may usefully be supplemented by activities at the area level. Where the units of an industry in an area are sufficiently numerous, we feel that local industrial safety organisations organised on an industry basis might well be beneficial. At this level, organisation can provide opportunities for discussion of safety problems, for the exchange of experience through personal contacts at meetings, etc., and for small firms to benefit from the experience of large firms. To underline the need for co-operation between management and workers in industrial safety, it is desirable that representatives of both should participate in such organisations.

81. Where local organisation on an industry basis is impracticable at an area level, organisation of a general kind, not limited to a particular industry, can still be valuable. To some extent the fact that an organisation covers a wide variety of industries may be a weakness, but on the other hand accident prevention work in different industries is often very similar.

82. We commend the contribution which is being made to the promotion of safety in industry in many areas by Industrial Safety or Accident Prevention Groups, most of which are affiliated to the Royal Society for the Prevention of Accidents.

CHAPTER 5

Research

Research and Information Needs at the Works Level

83. The prevention of accidents in a works calls for the identification of hazards and risks of accident and for the systematic study of how they can be removed or evaded. Much valuable work is often done in this respect by the men on the job—for example by the workpeople affected, by their supervisors and by engineering and maintenance staff, sometimes assisted by advice from Her Majesty's Inspectors of Factories. In the larger works, the research or work study departments can often provide valuable assistance. However, the resources available within a works for tackling the more complex problems are frequently inadequate and need to be supplemented from outside.

84. The service needed by firms is two-fold. First, arrangements for the systematic study of or research into safety problems and secondly, arrangements for providing the best available information and advice, based on experience and research. We deal with the latter in Chapter 6 of our Report.

Research is needed at the Industry Level

85. Some safety problems are of course peculiar to an individual workplace but, where a problem arises throughout an industry or a sector of an industry, it is obviously desirable that the organisations in that industry should help. As we mentioned in the previous Chapter, they have the opportunity to provide a research service to their members or to arrange for these problems to be tackled. Few organisations have yet developed this kind of service. We recommend therefore that the appropriate organisations of employers and of workers should re-examine the safety research needs in their industries and the adequacy of the existing arrangements whereby problems of this kind can be identified, examined in the industry and, if necessary, referred for study to appropriate bodies. In particular we hope that they will consider what more they, as organisations, can do to improve and to extend their services in this field to their members. Action might be taken direct within the organisation or indirectly through the research association of the industry, through other research establishments, through specialist firms or otherwise.

86. Research work at the industry level has generally concentrated on production problems. Although much of the work undertaken has had an indirect bearing on safety, only limited work concerned specifically with safety has been done in most industries. As a result, with rare exceptions, firms have not looked to the research associations in their industries for help in this field. We hope that safety research will be accepted as a function of these associations, and that their members will increasingly look to them for help in coping with their safety as well as their production problems.

Research is needed at the National Level

87. Some safety problems may be beyond the resources of individual industries —for example, because of their nature or because, being common to a number of industries, a wider approach is needed. There is thus a need for research at the national level.

88. We are strongly of the opinion that, at national level, as at the works and the industry level, more attention needs to be paid to research into safety matters. We believe that, to speed up the solution of safety problems, better arrangements are needed for identifying research needs and for bringing them before the appropriate research organisations.

89. We do not wish to give the impression that extensive and elaborate new research facilities of a special kind are needed for dealing with a very wide range of industrial safety problems. The need, as we see it, is more a matter of focusing the attention of those in a position to promote or initiate research on to the problems and of bringing available resources to bear effectively on resolving them. A single Industrial Safety Research Establishment could not meet the diverse needs. The research must be done in a wide range of establishments, including those under the Government Research Departments, those of industrial research associations, in universities, and in industry itself. The Government Research Departments—the Department of Scientific and Industrial Research and the Medical Research Council—accept responsibility for conducting research on general industrial problems, including those relating to safety, to supplement the work that is essentially a matter for industry itself.

A National Committee should be Appointed

90. To ensure that effective use is made of available resources, there must, in our view, be some focal point where the needs for and the progress in industrial safety research can be analysed and kept under review, and from where action can be initiated, stimulated and co-ordinated. This is a matter of national importance which needs to be tackled jointly by industry and government. The Ministry of Labour and National Service, the Department of Scientific and Industrial Research, the Medical Research Council and the organisations representing employers and workers in industry must be associated with arrangements made to meet this need.

91. We recommend that a standing national committee, including representatives of government and industry, should be charged with this responsibility. The Ministry of Labour and National Service and the Government Research Departments would then be able to refer appropriate matters, brought to their notice in the course of their work or by industry, to such a committee for advice. The committee might well have a wider responsibility of reviewing progress in furthering all aspects of industrial safety.

Safety in Design and Planning is Important

92. We feel that it is most important that safety factors should be considered in all aspects of industrial research, even though it is not specifically directed to safety matters, and at all stages of planning in industry. Designers, architects, machine-makers, production engineers and research workers must be safety-minded and ensure that safety is given proper consideration from the earliest stage in, for example, the design of a building, machine, equipment, process, job of work or method of work. We hope that every opportunity will be taken, by the Chief Inspector of Factories and others in a position to do so, to bring these considerations before the professional, research and teaching authorities concerned; and that industry as the user will insist on getting premises, plant, and equipment

with safety "built in" by their suppliers. It is a matter of the one who pays calling the tune and getting what he wants. It is inefficient and more expensive to have to provide for safety later as an afterthought.

CHAPTER 6

Information and Advisory Services

Effective Information Services are Needed

93. The widest and fullest possible use must be made of existing knowledge, founded on experience and research, of the ways in which accidents occur and the ways in which they can be prevented. All who have a safety problem should have ready access to all relevant information and advice.

94. Arrangements of various kinds for the regular and widespread dissemination of information and advice are necessary, and also information services through which advice can be sought *ad hoc*. Action is called for at various levels—in the works and at the area, industry and national levels.

At the Works Level

95. In the works, in addition to using the normal channels of communication, special supplementary arrangements should be developed as necessary, e.g., safety committees, training courses, safety pamphlets, posters, works meetings. In the larger works, the technical information or library service can often make a valuable contribution to safety by bringing to the attention of all concerned relevant current publications. A wider use of such arrangements would help to secure more effective use in industry of information provided in, for example, the publications of the Factory Department, the research departments and associations, the Royal Society for the Prevention of Accidents and other voluntary organisations. We commend the various schemes and arrangements individual firms have made for providing information and stimulating safety-mindedness and interest in safety in their works. Much more could be done in this way by firms.

At the Area or Branch Level

96. The best way of acquiring practical knowledge and advice is often through personal contacts and seeing things with one's own eyes, rather than studying documents and so on. Opportunities to talk over safety problems with colleagues in other departments and in other works in the industry and in other industries, and to draw on their experience are invaluable. We regard the provision of such opportunities as an important function of branch or area meetings of organisations of employers, of safety officers and of workers and of local safety organisations, to which we have referred in Chapter 4 of our Report. We hope there will be much more extensive discussion and exchange of experience at this level.

At the Industry Level

97. It is in this field of disseminating information that organisations of employers and of workers and joint organisations at the industry level can probably make

their greatest contribution to industrial safety, both by direct service to their members and by enlisting the interest and assistance of the trade and industrial press.

At the National Level

98. The dissemination of information and advice, both at the national level and the works level, forms an important part of the activities of the Factory Department. In addition much valuable work is done by the voluntary organisations, particularly the Royal Society for the Prevention of Accidents. The Factory Department is particularly well placed to provide a national service, because its daily work extends to the whole of industry and beyond. This does not however reduce the responsibility of industry for organising ways and means of meeting its needs from its own resources.

99. Organisations of employers and workers at the national level, particularly the British Employers' Confederation and the Trades Union Congress, have the opportunity to make an important contribution to promoting industrial safety by providing an information and advisory service to their members. We recommend that these organisations should examine how they can further develop this aspect of their work.

THE INFORMATION AND ADVISORY SERVICES OF THE FACTORY DEPARTMENT

The Factory Department as a Source of Information

100. Through Her Majesty's Inspectors of Factories, the experience and accumulated knowledge of the Factory Inspectorate is made available freely in handling enquiries from industry and particularly in the course of visits by Inspectors to factories and workplaces. Lectures and talks given by the Inspectors to groups of various kinds, for example at conferences, at training courses and in schools, form another important aspect of the advisory and educational work of the Factory Department. The work undertaken in person by the Inspectors is reinforced by a wide range of publications and by the maintenance of the Industrial Health and Safety Centre in London.

101. It should in our view be made more widely known that all concerned in industry at the works or area levels can seek information and advice through the District Inspectors of Factories, and that, at the national level, industry can do so through the Chief Inspector of Factories. We are confident that this intelligence service will, as a result, have to deal with a far greater number of enquiries from industry. We realise that this conception of the Factory Department as the recognised national and local clearing-house for information on how accidents happen and how they can be prevented will involve additional work, but we believe that development of this service will be a good investment of resources. It would also help the Factory Department to meet the need for a wider range of official publications, to which we refer later in this Chapter, and to collate information on research needs, activities and progress for reference to the National Committee which we propose should be established.

The Industrial Health and Safety Centre

102. This Centre is a unique and up-to-date permanent exhibition of methods, arrangements and appliances for promoting safety, health and welfare in industry, with facilities for demonstrations, meetings of safety organisations and the showing

of films. Many exhibits are lent by manufacturers, and many are demonstrated in use. We commend this Centre to industry and hope that firms, organisations and individuals will take full advantage of their opportunities to use the Centre (see footnote).

Other Exhibitions are Needed

103. It would be beneficial if comparable exhibitions were maintained in all major industrial areas. We recommend that at least small mobile and temporary forms of exhibition of a more specialised character should be arranged, both for tours to factories and other workplaces and for inclusion within other exhibitions. We also recommend that industrial organisations, firms and voluntary and other organisations should stage more exhibitions relating to safety at work.

Factory Department Publications

104. The publications of the Factory Department include the annual reports of the Chief Inspector, special reports, safety pamphlets and leaflets, memoranda, cautionary notices and placards and periodical journals. If all concerned had regard to the relevant contents of these publications, many industrial accidents would never happen. Unfortunately the existing publications do not reach and are not studied by many for whom they are designed or who could benefit from them. Further efforts need to be made by industrial organisations to promote the sale and study of these publications in industry. We would also recommend that the Ministry of Labour and National Service should review the publications and the arrangements made to publicise them.

105. In our view, the official Factory Department publications are excellent within limited fields for which they were designed, but they are inadequate both in kind and in range. In addition to those of a more technical nature for specialists, there is a major need for publications of a relatively simple, brief and practical kind for use by employers and workers. Such publications would need to be issued in a form attractive to the intended readers.

106. We should like to draw particular attention to the illustrated quarterly journal "Accidents—How They Happen and How to Prevent Them", published by the Ministry of Labour and National Service. This journal merits a much greater circulation and wider study than it receives. The lessons to be learned from a particular incident described therein are often not confined to the industry or circumstances in which it occurred. Each issue of the journal is thus of interest over a very wide range of industries. We would recommend that special publicity action should be taken by the Ministry of Labour and National Service and by employers' and workers' organisations to make this publication more widely known. We also suggest that a section of each issue might be devoted to accidents in a particular industry, and special publicity for that issue arranged in that industry. Volumes containing reprints of items of interest to particular industries or types of factories or works would also be useful.

OTHER ARRANGEMENTS FOR SPREADING INFORMATION

The Services of Voluntary Organisations

107. The dissemination of information and publicity material is the main way in which voluntary organisations assist in the promotion of industrial safety. The

Footnote: The Industrial Health & Safety Centre, 97 Horseferry Road, London, S.W.1.

activities of the Royal Society for the Prevention of Accidents in this field are most valuable. They include conferences, exhibitions, training courses, a technical information service, and the issue of publications and other publicity material. We hope that organisations in industry will co-operate in this work, publicise the facilities available, encourage their members to support and make use of them, and take the opportunities they, as organisations, have to participate in these activities.

Films and other Visual Aids are Valuable

108. Use must be made as appropriate of all the many kinds of educational and publicity media which are available. We deal here specially with films and other visual aids. We think there would be considerable value in the greater use of the cinematograph film in this field. Films may be expensive to produce, but once made they can be used repeatedly and can reach a very wide audience. There is need for a substantial increase in the number, variety and use of films concerned with this subject and available to firms, employers' and workers' organisations, industrial safety groups, etc. Films dealing with the many general kinds of hazards and causes of accidents would be suitable for showing throughout industry; others concerning special hazards would be of value mainly to particular industries, firms and audiences.

109. We understand that present Government policy precludes direct expenditure of public funds on the production of films for showing in industry. We would urge nevertheless that, as industrial accident prevention is in the national interest, the Government should promote and support to the greatest extent possible arrangements for producing and making available films of a general kind relating to safety in industry. We also recommend that individual firms, groups of firms and organisations in industry should promote and encourage the production of specialised films in this field to be available to all in industry who may benefit from them. It would be advantageous if details of all such films were published in a comprehensive catalogue, and if their sponsors were to arrange for as many of the films as possible to be available through the Central Film Library of the Central Office of Information (see footnote).

110. We recognise that film projectors, projectionists and showing facilities are not readily available to many factories, workplaces or organisations. These difficulties are however not insuperable, where appropriate interest and enthusiasm exists or can be created. We understand that Her Majesty's Inspectors of Factories can advise firms and others of convenient sources from which equipment may be hired or borrowed. We must however express our regret that equipment is no longer available from Government sources.

111. We suggest that the Ministry of Labour and National Service should assist in publicising the available films, and that, where appropriate, Her Majesty's Inspectors of Factories should arrange periodically for the showing of films to representatives from factories and organisations in their districts, either in local cinemas, in host factories or at exhibitions.

112. There is also scope for the use of film-strips, lantern slides and other visual aids in safety training and propaganda, where a movie-film would be

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Footnote: Addresses:—
Central Film Library, Bromyard Avenue, Acton, London, W.3.
Central Film Library of Wales, 42 Park Place, Cardiff.
Scottish Central Film Library, 16–17 Woodside Terrace, Charing Cross, Glasgow, C.3.

inappropriate or too expensive. Such aids often have a less general appeal but have the advantages that they can illustrate matters within the direct personal experience of the audience, can be used by instructors and commentators in a more flexible and individual way to take account of particular circumstances and needs, and can be readily combined with oral explanations and practical demonstrations. Our general conclusions and recommendations in relation to films apply equally to these other media.

Wider Use of Existing Knowledge Would Prevent Many Accidents

113. There is much truth in the statement that the primary need in the field of accident prevention is not so much new knowledge and techniques as the application of information and methods that are already known. A large number of accidents are caused each year which would be prevented if the best available practices were universally adopted. For this reason we cannot overstress the importance we attach to the development of effective arrangements for disseminating information to all those who need it.

CHAPTER 7

Schools, Colleges and Universities and Education in Industrial Safety

SCHOOLS

114. As part of their general education, we understand that school children are already given some training in safe habits. Road safety is commonly taught; in school workshops, training is given in safe methods of using tools; and in domestic science, occasion is taken to teach safe working methods. In our view, this is important from the point of view of industrial safety, since lessons absorbed at this stage in the lives of children are often never forgotten; and so such general safety education is likely to influence them throughout their industrial lives. It provides a sound foundation for their industrial safety education, as well as safeguarding them from accidents at school.

115. We recognise that it would be both unreasonable and undesirable to expect technical instruction in industrial safety to be given in general education at school, and that such instruction divorced from practice is of limited value. Nevertheless, we feel that it is useful and possible to awaken in school children a general perception of the risk and toll of industrial accidents, of the importance of safety measures, and of the efforts made since the Industrial Revolution to improve working conditions. It is also possible that more use might be made of the opportunities for teaching safe working methods and behaviour in handicraft and other practical classes. We hope, therefore, that teachers concerned with these subjects will consider their practice to see whether they are, in fact, doing everything possible to this end. For the majority of industrial workers this will be the only safety training they will receive before they enter industry.

116. We recognise the value of the attention which is already paid to this subject in many schools, but we believe that they can make an even larger contribution. We hope that the Government Education Departments and the Local Education Authorities will consider whether any further steps can be taken in this direction.

TECHNICAL COLLEGES

117. Technical Colleges and other establishments, such as Government Training Centres, where industrial processes and crafts are taught and practised in a quasi-industrial atmosphere, have an important and more direct contribution to make. The students are mainly potential craftsmen, technicians and managers. Being of an impressionable age, they are likely to be influenced by the standards of safety maintained in the workshops and laboratories and by the emphasis given to safe principles and practices in the teaching. Teachers and instructors are keenly aware of their own responsibility for the prevention of accidents to students and therefore seek to secure safe practice in workshops and elsewhere. Teachers of industrial subjects, however, should also be concerned to inculcate safe methods of working which will remain with the student in his ordinary employment. We have no doubt that many already keep this well in mind, but the subject is one which cannot be over-emphasised.

118. In our view, although there may be no statutory requirements, it is essential that very high standards should be set and maintained in the college workshops and laboratories, so that accidents are prevented and the students learn to become aware and critical of the arrangements made for their safety. The standards should certainly not be lower than those required by law in industry.

119. Young entrants to industry have to get accustomed to the fact that there are risks of accidents at work and that they themselves have to be safety-minded and take safety precautions. We therefore feel that students in colleges, under proper supervision and having been taught the appropriate precautions, should not be sheltered to a degree that would be impracticable in normal industrial conditions from exposure to hazards in their practical work. Neither should they be allowed to do anything which it would be wrong for them to repeat in industry. Close liaison between the colleges and industry should help to ensure that the teaching conforms to good industrial practice.

120. Over and above their responsibility for preventing accidents to students, the colleges have the opportunity to teach safety principles, safe methods of work, the relevant statutory requirements and how accidents are liable to occur and how they can be prevented. We are advised that much is already being done on these lines. On the other hand the part-time students, who form the greatest proportion of those attending technical colleges, already tend to work under pressure, the curriculum is overcrowded because the ground to be covered is extensive and time extremely limited, and in consequence the addition of a new subject, or the expansion of an existing one, can, in general, be achieved only by the sacrifice of some existing part of the training. We consider, however, that industrial safety is of such vital consequence that an attempt should be made to extend the teaching of safety measures by giving greater emphasis to the subject in both the theoretical and the practical parts of the curriculum. It is not necessary to treat "safety" as a separate subject.

121. The general need, as we see it, is to develop further the interest of teachers and to help them to recognise, to appreciate and to make greater use of their various opportunities to inculcate in the students, in a practical way, principles and practices which they will carry over into their industrial lives. To this end, we suggest that information about accidents in industry, particularly those involving young persons, and suggestions on how advantage might be taken in college of opportunities to teach safety principles and practices should be supplied to the colleges.

122. It would, we suggest, be useful if each college formulated an accident prevention policy and a safety training policy and established an organisation, possibly under a nominated teacher, to review the arrangements made and the methods used to carry out these policies. In this way we would hope that students would learn to appreciate the need for positive action to prevent accidents.

123. Safety education is equally important for the potential managers in industry. It is therefore desirable that a proper appreciation of the responsibilities of management for safety should be taught in courses in management studies. Similarly, it is important that the designers, draughtsmen, work study and method engineers, architects and all other specialists and technicians who are concerned with the development of industrial premises, equipment, processes and methods should, in their training, be taught the importance of safety and their responsibilities for safety in design.

THE UNIVERSITIES

124. To an increasing extent technicians and managers in industry are being drawn from university graduates. It is therefore equally necessary that the faculties in universities which provide technical and business training should have regard to our recommendations in relation to technical colleges.

The Help of the Factory Department should be Sought

125. In all these fields close liaison between the schools and colleges, industry, Her Majesty's Inspectors of Schools and Her Majesty's Inspectors of Factories needs to be developed, so that the students leave the schools and colleges expecting and receptive to industrial safety training. We hope that more education authorities, colleges and schools will seek the assistance of Her Majesty's Inspectors of Factories, not only for advice on safety arrangements in educational workshops but also in regard to safety training, as is done in the case of Government Training Centres under the Ministry of Labour and National Service.

CHAPTER 8

The Factory Inspectorate

126. For more than one hundred years the Factory Department has been working towards the improvement of safety and health in industry. In this Chapter we comment on the future role of the Factory Inspectorate in the light of the various recommendations contained in this Report and the developments to which we hope they will lead.

127. We have stressed throughout our Report the importance of industry itself assuming its full responsibility for the promotion of industrial safety and organising itself to secure freedom from accidents. In our view, the stage has now been reached in the development of industrial organisation and of improved standards of industrial management, when the application of the resources of industry to the prevention of accidents can be expected to lead to substantial improvements. The more physical hazards can be eliminated through the application of standards contained in the law, the more the prevention of accidents becomes a job in human relations, organisation within industry, and co-operation between manage-

ment and workers in pursuance of a policy of safety. What in these circumstances, is the future role of the Factory Inspectorate?

128. We believe that the contribution of the Inspectorate in the future will be no less important than it has been in the past, both in regard to its enforcement functions and to the advisory work which often arises out of enforcement. We think that, in spite of certain difficulties which we see in the Inspector being at one moment an enforcement officer and at another, or even at the same time, a counsellor to employers and workpeople, it would be inefficient for the two functions to be carried out by separate officers within the Ministry or by separate organisations. The basis of the advisory work of the Factory Department is the knowledge and experience gained by the Inspectorate in enforcing the law, in studying the causes of accidents and in the course of inspections; the association of the Department with the various research organisations; the highly specialised technical and professional services—medical, engineering, chemical and electrical—behind the general Inspectorate; and finally the pulling together of knowledge from all these sources and others to provide a clearing house for information, or an intelligence service, on the promotion of industrial safety.

129. As industry shows itself capable of achieving higher standards from within, we hope there will be room for some further shift of emphasis in the work of the Inspectorate from enforcement of the law to the giving of advice. We must emphasise, however, that so long as there is failure to comply with the law, the enforcement work of the Factory Department must continue to take first place. It would be unrealistic not to recognise that there will be sectors of industry where the standards of safety will still depend to a high degree on the work of the Inspectorate in seeing that legal requirements are met.

130. We regard it therefore as a matter of great importance that standards of inspection should be high, and that an Inspectorate sufficient in number and of suitably qualified persons should be maintained and strengthened as necessary to secure full compliance with Article 16 of the International Labour Convention concerning Labour Inspection, No. 81 of 1947 (see footnote.)

131. The specific arrangements for ensuring these standards will require review from time to time. If for instance, as we hope, compliance with the law is regularly maintained through better organisation and better management in an increasing sector of industry, inspection can increasingly be concentrated on the less satisfactory parts. We should wish however to set out certain principles which we consider to be essential in the organisation of inspection.

All factories, irrespective of their risks and their standards of compliance with the law, must be subject to thorough periodic inspection.

Workplaces with special risks, with a poor accident record, or where the organisation of safety is weak and the standard of compliance with the safety and other statutory requirements is poor, should receive frequent thorough and follow-up inspections. The Chief Inspector must be the judge of the priority to be attached to individual undertakings, but we should not regard it as satisfactory for workplaces where these conditions obtain to be subject to thorough inspection less often than once a year; in many instances more frequent visits will be essential.

Footnote: *This Article reads:—

"Workplaces shall be inspected as often and as thoroughly as is necessary to ensure the effective application of the relevant legal provisions."

In planning inspection, it is most important to provide for periodic visits by an Inspector, in addition to the thorough inspections to which every factory is subject. The psychological effect on both management and workers of a visit from an Inspector of Factories is of the greatest importance both in maintaining and improving standards of safety. Such visits also provide the opportunity for a check on the continuing effectiveness of the organisation of safety in workplaces which have in the past maintained a good standard of safety and which, for that reason, have not been placed in a priority category for more frequent thorough inspection.

132. As we have mentioned in para. 4, there are certain works to which, because of their special conditions, Part II—the general safety provisions—of the Factories Act, 1937, do not apply. They include, in particular, works which are of a less permanent character than factories; for example, building operations, works of engineering construction and the loading and unloading of ships in docks. Special problems arise here from the particular hazards of such works and from the ever-changing working environment. The special dangers are reflected in the higher proportion of fatal to non-fatal accidents as compared with those in factories (see Tables I and III). The working environment and so the detailed requirements for safety are subject to frequent changes. In these circumstances, as we have mentioned in paras. 72 and 73, the proper organisation and supervision of the safety arrangements is especially important, and we recommend that particular attention should be given to the official inspection of such works.

133. On the one hand, the growing complexity of industry and the introduction of new processes, materials and methods and, on the other hand, the increasing interest of employers, of workers and of their organisations in the promotion of safety will make the advisory work of the Factory Department, which we have discussed in Chapter 6, of ever-increasing importance. This, as well as the inspection work, must be reflected in the organisation and staffing of the Department, both in regard to the numbers of Inspectors and to the strength of its technical resources. The development of voluntary action in industry, which we recommend in this Report, may well depend to a considerable degree on the capacity of the Factory Department to give industry the expert advice and assistance it will need. In our view the provision of these resources would be a profitable investment, for it would result in a rich yield of effective voluntary activity in industry.

CHAPTER 9

Summary of Conclusions and Recommendations

GENERAL CONCLUSIONS

Industrial accidents can be prevented by positive action, and when they happen they are a reflection on efficiency. Their formidable toll constitutes a challenge to industry, and their prevention is a task which industry must accept unreservedly. Maximum effort to prevent accidents are justified on humanitarian grounds alone; their direct and indirect social and economic effects provide additional reasons. A firm foundation has been laid by legislation and by the accident prevention work done in industry; on this, further organised action can be taken to secure a much greater freedom from industrial accidents.

Safety must be a definite aim throughout industry, and the necessary resources of all kinds must be provided, organised and used to secure it. Proper consideration must be given to safety factors from the earliest stage of planning and throughout the execution of almost every aspect of industrial activity.

Legislation, which itself must be kept abreast of industrial developments, must be observed and enforced, but this is not sufficient. There is need for more vigorous, more extensive, more sustained, and better organised efforts to prevent accidents in industry on the part of managers, supervisors and workers and also technicians, planners, designers, and research workers, etc. The appropriate organisations of employers and of workers within industry and many outside can make an important contribution to these co-operative efforts to secure greater freedom from accidents. It is within the individual workplaces—the places where the accidents occur—that positive action to prevent accidents is of paramount importance.

RECOMMENDATIONS

Action in the Works

1. Safety must be accepted as a policy from the top to the bottom of the undertaking, and this must be reflected in the organisation and methods throughout the works (para. 37).

2. Arrangements should be made to identify and study hazards and risks of accidents in the works, and action taken to eliminate the potential causes of accidents and to safeguard workers from the risks which remain (paras. 38, 41, 68, 83).

3. Action in the works should be based on the following six fundamental general principles, which apply irrespective of the size of the undertaking or the nature of the work (para. 39):—

Accident prevention is an essential part of good management and of good workmanship; (paras. 40, 49)

Management and workers must co-operate wholeheartedly in securing freedom from accidents; (para. 50)

Top-management must take the lead in organising safety in the works; (para. 42)

There must be a definite and known safety policy in each workplace; (para. 37)

The organisation and resources necessary to carry out the policy must exist; (para. 41)

The best available knowledge and methods must be applied; (paras. 68, 93).

4. The employer or a senior representative of management should have overall responsibility for securing freedom from accidents in the works (para. 42).

5. At all levels, safety should be a responsibility of line-management and a responsibility which cannot be taken over by technical experts, special safety staff or safety committees (paras. 43, 46, 53).

6. The appointment, as an adviser, of a safety officer with appropriate qualifications, status and personal qualities should be considered (para. 47).

7. There should be a high standard of continuous supervision, with special attention to young and other inexperienced workers (paras. 44, 62, 73).

8. There should be systematic arrangements for regular works inspection (para. 45).

9. There should be effective arrangements for consultation between management and workers on safety matters (para. 50).

10. Workers should have opportunities to participate in the framing and implementing of the safety policy in the works, in the consideration of the problems and of how the safety requirements can be met (paras. 50–57).

11. In the light of the view expressed in our Report as to the need for many more Works Safety Committees, the management and workers should review their arrangements for consultation and consider whether the establishment of a Works Safety Committee, with the following main functions, would be an appropriate means of improving the arrangements (paras. 51–56):—

(*a*) to promote safety consciousness and interest in accident prevention throughout the works;

(*b*) to keep all aspects of safety arrangements in the works under review;

(*c*) to consider the need for and suggestions for improvement of these arrangements;

(*d*) to study reports of all accidents in the works and to consider ways and means of avoiding recurrences;

(*e*) to discuss relevant information received from external resources.

12. Safety training must be arranged as an important integral part of training arrangements in the works, with special attention to young and other inexperienced persons including apprentices and learners, to other new entrants and to workers being given new duties and responsibilities (paras. 58–63).

13. The safety officer and supervisors should be associated with safety training arrangements in the works (paras. 58, 64).

14. Opportunities for managers, safety officers, and supervisors to attend safety training courses should be taken (paras. 64, 66).

15. All accidents and dangerous occurrences should be investigated, and records kept of all accidents, as a basis for study and remedial action (para. 69).

16. The rate of frequency of lost-time accidents should be more widely used to measure changes in the incidence of accidents in the works from period to period (para. 69).

17. Firms should insist upon getting premises and plant with safety "built in" by their suppliers (para. 92).

18. Full use should be made of the channels of communication in the works and of media, such as films, talks, posters and publications, for safety education (paras. 67, 95, 107–112).

19. Full use should be made of available knowledge and experience in the works and, as necessary, information and advice sought from outside the works; in particular from Her Majesty's Inspectors of Factories, the Factory Department publications, the Industrial Health and Safety Centre, industrial organisations, research organisations, specialist firms and consultants, and voluntary organisations (paras. 71, 74, 75, 80, 95, 101, 102, 107).

20. Employers and workers should participate in local and national safety organisations (paras. 71, 80, 81, 96, 107).

21. Where several firms are engaged in work at the same place, they should co-operate and co-ordinate their safety arrangements (para. 73).

Action by Employers' and Workers' Organisations

22. Organisations of employers and workers should bring this Report to the attention of their members (para. 2).

23. The establishment of special arrangements within the appropriate organisations of employers and workers in each industry to develop activities relating to safety should be considered (paras. 76, 77).

24. The possibility of further action of the following kinds (suitably adapted to the circumstances in individual industries and having regard to the constitution of the organisation) should be examined (para. 78):—

(*a*) to encourage organised action at the works level to prevent accidents;
(*b*) to foster co-operation between employers and workers and their organisations in the development of works safety arrangements; in particular, to foster the establishment of Works Safety Committees;
(*c*) to foster co-operation between the designers, makers and users of machines, equipment, safety appliances, etc.;
(*d*) to collect and analyse information and to use available information about the causes of accidents, to identify the hazards in the industry and to review ways and means of safeguarding workers from them;
(*e*) to promote and arrange for research into safety problems in the industry; to maintain liaison with industrial research associations (para. 85);
(*f*) to encourage emphasis on safety in training arrangements in the industry; to conclude voluntary agreements relating to the instruction and safety training of young workers, including apprentices and learners (para. 63);
(*g*) to arrange for, or to encourage, the inclusion of safety in training courses attended by their members at all levels in the industry;
(*h*) to encourage their members to participate in safety training courses; to arrange such courses directed particularly to special hazards in the industry;
(*i*) to encourage the employment of safety officers where appropriate, and to support arrangements for their training;
(*j*) to provide opportunities and means for the dissemination and exchange of information relating to safety in the industry (paras. 96, 97, 103);
(*k*) to support and to participate in the activities of voluntary organisations concerned with industrial safety; and to foster the formation of local industrial safety organisations (paras. 76, 80, 81, 107).

25. The establishment of Joint Safety Committees at the industry level should be considered (para. 79).

26. The needs and arrangements for research into safety problems in each industry should be reviewed (para. 85).

27. The sale and study of the Factory Department and other publications dealing with safety in industry should be encouraged (paras. 104, 106, 107).

28. The production of films and other visual aids for safety education should be promoted and encouraged (para. 109).

29. Arrangements to focus attention on safety in industrial exhibitions should be made (para. 103).

30. Opportunities to use the Industrial Health and Safety Centre should be taken (para. 102).

Action by Research Associations, Departments, etc.

31. Safety research should be accepted as a function of industrial research associations (para. 86).

32. In all arrangements for research in industry and in all planning to meet the needs of industry, safety factors should be given full consideration (paras. 33, 92).

Action by Central Organisations of Employers and Workers

33. The central organisations of employers and of workers should review how they can further develop their information and advisory services to their affiliated organisations and should bring this Report to their attention (paras. 2, 99).

Action by Voluntary Organisations

34. The voluntary organisations concerned with industrial safety should continue to develop opportunities for the exchange of information and experience and arrangements for the dissemination of information and publicity material (paras. 82, 103, 107).

Action by Education Authorities and Establishments

35. The Education Departments, Local Education Authorities, colleges and schools should examine the possibility of further developing safety-training as part of general education (para. 116).

36. The Education Departments should provide information to teachers in technical colleges, etc. about accidents in industry and suggestions on how more advantage might be taken, in college, of opportunities to teach safety principles and safe practices which will benefit the students in their industrial lives (para. 121).

37. Safety training should be integrated and given emphasis in theoretical and practical instruction in technical colleges and in the courses in management studies and techniques (paras. 120, 123).

38. There should be close liaison between the schools and colleges, industry, Her Majesty's Inspectors of Schools and Her Majesty's Inspectors of Factories (paras. 119, 125).

Action by The Ministry of Labour and National Service

39. Factory legislation should continue to be kept under review, modified and extended, as necessary, to keep abreast of developments in industry and industrial methods, to deal with new hazards in industry, and to cover those specialised fields which have not yet been covered by statutory regulations (para. 29).

40. The list of dangerous machines prescribed under Section 21 of the Factories Act, 1937, should be kept under review (para. 61).

41. The enforcement work of Her Majesty's Inspectors of Factories must continue to be of first importance (paras. 30, 129).

42. High standards of inspection should be maintained (para. 130).

43. The inspection of factories and other places of employment should be based on the following principles, to ensure the effective application of statutory provisions (para. 131):

There should be periodic thorough inspection of all workplaces; supplemented by other periodic visits.

There should be thorough inspection not less often than once a year of workplaces with special risks and a poor accident record or where the standard of compliance with the law is poor and the organisation of safety is weak; and other visits made to check progress.

44. Particular attention should be given to the inspection of workplaces, other than factories, subject to the Acts (para. 132).

45. The services of the Factory Department as the recognised local and national clearing house for information and source of advice on the prevention of accidents should be further developed (para. 101).

46. The arrangements whereby information and advice on safety problems can be obtained through Her Majesty's District Inspectors of Factories and, at the national level, through the Chief Inspector of Factories should be made more widely known (para. 101).

47. An Inspectorate, sufficient in number and of suitably qualified persons to fulfil its enforcement and advisory roles, should be maintained (paras. 130, 133).

48. Further Joint Advisory and Joint Standing Committees should be established as necessary to advise the Chief Inspector of Factories on problems in specific fields (para. 79).

49. A special safety training course, incorporating T.W.I. methods, should be provided for an experimental period for trainers of supervisors in industrial firms (para. 65).

50. The official publications on accident prevention and arrangements for publicising them should be reviewed (para. 105).

51. A wider range of publications should be provided (para. 105).

52. Special efforts should be made to publicise and to increase the circulation of the quarterly journal "Accidents, How They Happen, and How to Prevent Them"; the possibilities of producing volumes of reprints of items of interest to particular industries or types of factories and of devoting a section of each issue to accidents in a particular industry should be considered (para. 106).

53. The Industrial Health and Safety Centre should be supplemented by small mobile and temporary forms of exhibition (para. 103).

54. The production of films relating to safety in industry should be promoted, and arrangements should be encouraged whereby such films could be made widely available through the Central Film Library (para. 109).

55. The publication of a comprehensive catalogue of films relating to safety in industry should be arranged and the films publicised (paras. 109, 111).

56. Showings of films relating to safety to representatives of industry should be arranged, where appropriate, by Her Majesty's District Inspectors of Factories (para. 111).

General

57. Our Report should be brought to the attention of all concerned with safety at work in all sectors of industry (paras. 2, 5).

58. In the light of our Report, all concerned should examine afresh all the possible means by which they can help to promote higher standards of safety in industry, both directly and indirectly, and take the opportunities they have to increase their contribution (paras. 2, 76, 92).

59. A Standing National Committee, including representatives of Government and industry, should be established to keep under constant review progress in furthering all aspects of industrial safety and, in particular, to consider requirements in the field of research (para. 91).

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