

INTERNATIONAL CONFERENCE OF
ASBESTOS INFORMATION BODIES
LONDON
24TH AND 25TH NOVEMBER 1971

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List of Delegates

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Mr. A.R. Kolff van Oosterwijk	-	Holland
Dr. J. Lepoutre	-	Belgium
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FINLAND

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FRANCE

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Dr. C. Fernbach
Mr. H. Mehling
Dr. H. Meyer
Mr. G.C. Schmidt
Mr. H. Askevold
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Mr. H. Schaefer
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Associazione Nazionale degli Industriali Amiantieri

Mr. A. Calamandrei
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Norwegian Asbestos Information Group

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SWEDEN

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Mr. M.F. Howe	- Conference Chairman
Dr. S. Holmes	- Secretary, ARC
Dr. W.J. Smither	- Medical Advisor, ARC
Mr. A.A. Cross	- Chairman, Environmental Control Committee, ARC
Mr. W.P. Howard	- Secretary, AIC
Mr. D. Wright	- AIC
Mr. J.D. Grieve	- AIC
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Mr. D.F. Brady	- Interpreter

01/11/73

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Asbestos Information Association/North America

Mr. W.P. Raines.

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INTERNATIONAL CONFERENCE OF
ASBESTOS INFORMATION BODIES

WELCOME AND INTRODUCTION

Mr. M.F. Howe, Deputy Chairman, Asbestos Information Committee

As your Conference Chairman and on behalf of the Asbestos Information Committee, it gives me great pleasure to welcome you to the First International Conference of Asbestos Information Bodies.

Many of you here today attended the Conference held in London two years ago. That Conference aimed at making available to our European friends the benefit of our experiences in Britain. We hope it was useful. At that time, the AIC was the only Information Body in the world; now there are 11 in various stages of development. So this year we felt it would be appropriate to hold a Conference of Information Bodies so that we might all exchange facts, views and experiences.

The fact that there are 35 of us here from 11 countries underlines the importance of the subjects which we shall discuss. Speaking for the delegates from the Asbestos Information Committee and the Asbestosis Research Council, we are certain that we shall benefit greatly from the exchange of information and ideas. I hope that you, the delegates from the other 10 countries, will benefit similarly.

I know that we are all regarding this as a working conference and it is taking place at a very critical time in the history of the asbestos industry. In North America, in Great Britain and in other European countries, severe attacks on asbestos and its uses continue to be made in the press, on television and on radio. In these and many other countries, Government Departments are showing growing interest in Factory and other Regulations related to asbestos. Interest in the subject of environmental pollution is perhaps only now in its infancy. These are the subjects which we shall be discussing during our Conference.

USE OF ASBESTOS SOME RECENT ADVANCES IN THE MEDICAL BACKGROUND.

Dr. W.J. Smither. Asbestosis Research Council

In recent years there have been several international conferences on the biological effects of excessive inhalation of asbestos dust. Since the New York Academy of Sciences Conference of 1964, world-wide interest has been stimulated and maintained. At that conference the largest number of papers from any single country came from the U.K., and the largest contribution from the U.K. was made by members of the Asbestosis Research Council.

In the intervening period, the literature on the subject has been extremely extensive, so much so that it is impossible for one man to be conversant with the whole output. I have attempted to select and report the results of work done mainly by researchers whom I know, and whose reputations command international respect. I must emphasise that the selection is my own, and the opinions I express are personal ones.

Discases Associated with Asbestos Exposure

Let us first recapitulate. Table I shows the disorders associated with excessive exposure to asbestos. I propose to deal briefly with these. We can first dismiss the last of these listed. Asbestos corns, in my view, are increasingly rare, have no more significance than the foreign body reaction to any kind of sliver in the skin, and need not concern us further here, except to say that they are simple to prevent and to treat.

TABLE I

Asbestosis	(1) fibrosis of lung (2) fibrosis of pleura (+ calcification)
Cancer of lung	(1) bronchial (2) pleural (mesothelioma)
Cancer of intestinal tract	(1) peritoneal (mesothelioma)
Skin	(1) asbestos corns

Table II outlines the position with regard to asbestos.

TABLE II

Fibrosis of lung
Dose related: $R \propto \text{conc.} \times \text{time}$
Most individuals susceptible
Causes disability and shortens life
Progresses after removal from dust after a certain stage
Severity possibly depends on type of asbestos
Almost certainly preventable by practicable dust control

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DOSE RELATIONSHIP

072577 The dose relationship is becoming increasingly evident. Since the work of Dr. Newhouse in this country which demonstrated the dose relationship in a crude way in a factory where all types of asbestos were used, new studies have corroborated the point. In the Quebec mining areas, Dr. MacDonald made the observation that the ill effects of chrysotile inhalation were far more marked in those men who had worked in the dustiest areas, and similar results have been shown in Cyprus.

It is worth looking again at the results of the Newhouse study.

Dose equals degree of exposure multiplied by time.

For all causes of death, those men with exposure of low to moderate amounts either short or prolonged, had no excess of deaths over the number expected.

For those men with severe exposure for a prolonged period, there was an excess of deaths from all causes.

For those with severe exposure for a short time, those men not submitted for regular medical examination in the early years had an excess of deaths from all causes.

There is a paradoxical situation in that a group with severe exposure for a short time who were subject to initial and periodic medical examination had no greater incidence of death from all causes. This may possibly be due to the initial rejection of men for such work who had signs of some other disease, so that these men would be healthier than the general population.

However it is known that these were the men who worked in so-called "scheduled occupations", that is those recognised as the most dusty by the framers of the first British legislation for the industry. Early efforts at dust control were concentrated in these occupations, so that although conditions were severe, they were subject to the first measures of control. Another factor in the better record of this group is that periodic medical examinations may have removed them from exposure at the earlier signs of chest trouble.

Dr. Newhouse showed that all respiratory disease other than cancer of the lung, that is all non-malignant respiratory diseases which include asbestosis, is more likely to occur in those workers subjected to severe

levels for a long time, particularly if they are not medically supervised.

072578 SUSCEPTIBILITY

There is as yet no conclusive epidemiological evidence that susceptibility in individuals varies greatly. Work was sponsored by the A.R.C. at the Brompton Hospital and done by Dr. Margaret Turner-Warwick on the presence of certain abnormal proteins in the blood of cases of asbestosis and other interstitial pulmonary fibroses. It was hoped that there might be found a means by blood test of discovering which individuals were more likely to develop asbestosis in the future. Unfortunately it was found that blood changes which did occur in a certain proportion of asbestos workers did not precede other signs of the disease, but tended to accompany them. In other words, we failed to find a means of selecting those men least likely to suffer from excessive exposure to asbestos.

DISABILITY, MORTALITY AND PROGRESSION

A few years ago the prognosis, once asbestosis had been diagnosed, was that the disease would rapidly progress. For the past ten years or so, efforts to diagnose the disease at an early stage have met with some success.

The more sophisticated techniques of measurement of lung function have enabled us to diagnose asbestosis at earlier stages. Recently there has been some disenchantment with the results of lung function tests. There are some research workers who are sure that lung function changes occur earlier than other signs of interstitial pulmonary fibrosis, while others find them to occur no earlier than x-ray changes.

This is no occasion to discuss the diagnosis of early asbestosis, except to say that any recent research with which I am familiar has confirmed me in my belief that diagnosis rests on a table with four legs. These are history of exposure, clinical findings, x-ray changes, and fairly simple lung function tests. In the survey of workers in the industry, records must be carefully preserved from the initial examination onwards, so that each man may be used as his own control. Absolute values are of less significance than relative changes in all the diagnostic components. Each leg of the table must be firm. If any one component of diagnostic supports is lacking or shaky, the diagnosis of asbestos related disease in life is not truly secure.

Having said that, I must report a personal impression, which is shared by

072579 other experienced colleagues, that early diagnosis and removal from further risk may so reduce the rate of progression of pulmonary fibrosis as to enable the worker to live a reasonably full life.

TYPE OF ASBESTOS AND PREVENTION

Except to say that recent work, some published and some in the course of publication, supports these views, I propose to quote with little comment, the views of a most distinguished worker in the whole field of pneumoconiosis. Dr. J.C. Gilson, head of the Medical Research Council's Pneumoconiosis Research Unit in Wales, to whom I am indebted for some of the tables shown, presented recently at an International Conference on Pneumoconiosis some personal impressions with which I heartily concur:

Chrysotile

"It seems fairly clear now that it should be possible to mine, mill and manufacture chrysotile in safety, given good housekeeping. There must be some uncertainty about its use for building and ships where control of the dust is much more difficult, but I think it probably can be used at an acceptable level of risk, if the new codes of practice are followed."

Amosite

"In mining and milling, great progress in dust control has been achieved by using wet processes and exhaust ventilation at the bagging plants. The dust control problem in this part of the process does not look insoluble. When the material is manufactured into boards and insulating sections, dust control again should be achievable at an economic cost. In insulating work in buildings and ships at least as high a standard as for chrysotile will be required. At present I am less confident than in the case of chrysotile that the work can be done safely, but even when the material is sprayed it looks as though the exposure of the insulators and those in the neighbourhood can be kept at an acceptable level if all the precautions recommended are followed. The greatest uncertainty is in the removing of old insulation when supervision is difficult."

Crocidolite

"In this case I am naturally influenced by the experience and situation in my country. On the one hand, there are many cases of mesothelioma, some of which appear to be linked with past exposures to crocidolite alone, but in the majority to more than one type of fibre. On the other hand there is the evidence of the rapidly falling imports of this type of fibre. This strongly

suggests that it may not be really essential except for a very few purposes. If this is so then, in view of the present uncertainty of the relative risk of using crocidolite against other types of fibre, why not phase out its use in new products as soon as practicable? This will leave much of it in old insulation. The removal of this should only be done with the strictest control and with more supervision than is essential for dealing with chrysotile in the same circumstances."

TABLE III

Fibrosis of pleura

Information far less complete
May occur alone or combined with fibrosis of lung
Alone not a cause of severe disability
Prognosis urgently needs further study
Probably preventable by practicable dust control

The fibrosis of the pleura which occurs in people exposed to asbestos has attracted considerable attention in the past few years. I have no evidence to change the opinions expressed in this table, but I can elaborate on a few points. Thickened pleura may later become hardened by calcium so that it is visible on the x-ray as a pleural plaque.

Plaques occur with different frequency in different countries. They are especially prevalent in the anthophyllite areas of Finland, and occur with considerable frequency in South Africa. They have been found in areas where there are no asbestos mines or works, in farmers who till soil which contains a high proportion of asbestos.

Our experience of pleural fibrosis has been in an area of London where there were many who worked in asbestos factories or lived very close to them in the days before dust emission from the factories was controlled. The pleura in this group has been more frequently affected than the lungs themselves. We are coming to the conclusion that comparatively slight exposure, particularly before the age of 21, is more likely to lead to pleural effects. We are also fairly sure that these pleural signs have little significance as far as disability is concerned. In my opinion, the presence of pleural plaques or thickening alone is no more significant than the presence of asbestos bodies in the lung or sputum, being merely evidence of past exposure to asbestos.

CANCERS OF LUNG, PLEURA AND PERITONEUM

TABLE IV

Bronchial carcinoma

Common tumours

Incidence related to severity of asbestosis hence intensity of dust exposure

Other factors - cigarette smoking

- type of asbestos?

- air pollution (small)

Specific asbestos effect probably preventable by practicable dust control

The Newhouse series showed the dose relationship to cancer of the lung, which is now generally accepted.

Professor Selikoff of the Mt. Sinai Research Unit now has, I believe, 87 non-smokers in his large and intensive studies group of insulation workers. In this group, the incidence of carcinoma of the lung is no greater than that in the general population. The suggestion which Dr. Selikoff made some years ago about the role of cigarette smoking in asbestos exposure is slowly accumulating more corroborative evidence.

TABLE V

Pleural and peritoneal (mesotheliomas)

Rare tumours closely associated with exposure to asbestos

A small proportion of those exposed develop tumours

Long latent period (> 20 years)

Dust exposure short and possibly small in some cases

In mines and mills incidence apparently related to type of asbestos: amosite, anthophyllite < crocidolite, chrysotile.

In manufacturing industry no asbestos proved innocent

Other factors - not due to cigarette smoking;
others not identified

Prevention?

I propose to say a few words about some of the statements in the table.

The interesting fact about mesothelioma is that cases, although they have increased in numbers considerably, as interest in their diagnosis has increased, continue to occur in those areas in which asbestos is most extensively used. As more and more of these cases are investigated, the association with INDUSTRIAL Exposure becomes more evident. Contrary to earlier gloomy predictions, there has

077032 not been explosion of cases among the general population and, as more series are reported, it is found that cases of mesothelioma show an increased number of asbestos bodies, well above the level of so-called ferruginous bodies found in the general population. In a recent series a history of industrial exposure was obtained in 80% of cases.

It is a personal opinion, that those who develop these tumours are those who have had heavy, although possibly short, exposure in youth. We may yet find a dose relationship, if we consider that the significant dose in the case of mesothelioma is the amount of asbestos which actually goes through the lung and reaches the pleura.

With that idea in mind, let us consider the difference between the fibres of various types of asbestos.

In some elegant experiments, Dr. Timbrell of the Pneumoconiosis Research Institute has demonstrated the great effect of fibre shape and diameter on the ability of the fibre to penetrate deep into the lung.

The curly fibres of chrysotile appear quite different from the straight amphiboles of amosite and crocidolite when they reach the lower air passages in the lungs and approach the point at which the airway divides. This is the point at which impingement is most likely. The straight fibres of the amphiboles are able to pass this point much more readily than chrysotile. Experimentally it has been demonstrated that the amphiboles penetrate more deeply and are retained in greater amount than equal weights of chrysotile.

In a similar series of experiments, Dr. Timbrell has shown that the depth of penetration is dependent more upon the fibre diameter than the fibre length. The fine fibres of North-West Cape crocidolite penetrate much more deeply than the fibres of Transvaal crocidolite. These latter have a fibre diameter, much nearer the diameter of Transvaal amosite, and are therefore much thicker.

It has been recognised for many years that crocidolite produced more mesothelioma than amosite. More recently it has been revealed that, while North-West Cape crocidolite produced human mesotheliomas, fibres of crocidolite from the Transvaal produced none. Similarly amosite produced very very few. The penetrability of the fibres provides the reason. The fine straight crocidolite fibres from the North-West Cape are clearly more able to penetrate into the deepest recesses of the lung, and to the pleura itself. It is a

personal opinion, not yet substantiated experimentally, that those mesotheliomas which have occurred in chrysotile areas may well be due to inhalation of fibres of chrysotile which are the straighter and harsher. Some chrysotile samples do contain these fine straight fibres.

When I spoke to this audience two years ago, I listed some of the exposures, other than exposure to asbestos, which can produce fibrosis of the lungs very similar in many ways to asbestosis. Similarly there are now being found cases of mesothelioma in Africa in which no evidence of asbestos exposure can be found. The idea is gaining support that there may well be some other factor besides asbestos itself which causes mesothelioma.

Once again I wish to quote Dr. Gilson of the Pneumoconiosis Research Unit. Recently at an international conference on pneumoconiosis he urged the assembled delegates to keep the whole matter of the biological effects of asbestos in perspective, comparing the likelihood of death from those effects with the likelihood of death from some other exposures and occupations.

Dr. Gilson's table shows the excess mortality in a few selected occupational groups. The S.M.R. is the standard mortality rate, calculated by multiplying the observed number of deaths in a group by 100, and dividing it by the expected number of deaths in the absence of exposure. It is a means of measuring the comparative risks. The outstanding fact emerges that asbestos workers, coalminers and even fishermen, who have one of the highest occupational risks in the U.K., are all at less overall risk than those who smoke twenty or more cigarettes per day compared to non-smokers.

Dr. Gilson also made the point that all epidemiological research in occupational medicine tends to emphasise the ill effects. We need to look more at the benefits of asbestos, and consider the ill effects on the community of depriving it of asbestos.

Finally I would say that, in my own personal view, speaking only for myself and implicating none of the distinguished speakers who are yet to address you, the real purpose of this conference is to find the means to continue to offer to the community the great benefits of asbestos while doing all we can to minimise and even eliminate its ill effects on some individuals.

TABLE VI

COMPARISONS OF EXCESS MORTALITY IN MALES

All Causes. $SMR = \frac{\text{Observed deaths} \times 100}{\text{Expected deaths in absence of exposure}}$

Exposure	Group	SMR	Note
Asbestos	Mining (Quebec)	92	All deaths since 1950
	Manuf: (London)	150	> 6 years-first exposure
	Insul: (New York)	139	> 20 years-first exposure
Coal Mining	All miners & ex-miners	143	Age 25-74
Rhondda	Miners with simple pnc:	125	
S. Wales	Miners with Compli.pnc:	171	
Cigarette Smoking	Doctors (UK) 25+ pd.	160	Age 35-74
	Gen. pop:(US) 20 $\frac{1}{2}$ pd	200	
Seafaring	Fishermen (UK)	177	Age 15-64

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DISCUSSION ON PAPER BY DR.W.J. SMITHER

MR.M.J. VAN HAAGEN
CIA/CVA,

Question: What are the dangers of Asbestos fibres in the stomach?

Answer: The question is wide open. Asbestos has been found in peritoneal tumours. We believe it has a direct effect. The question is how does it get there?

There are two theories on this:-

- a. Most dust particles get into the stomach by swallowing, e.g. by coughing and swallowing, etc.
- b. Others demonstrate that fibres can be blood borne, but I personally am not happy about this theory.

MR. W.P. HOWARD,
AIC, UK

Question: On the subject of swallowing, does Dr. Smither think that swallowing can be adverse?

Answer: In speaking of swallowing I refer to heavy exposures. My overall view is that dose relationship is the significant factor.

DR. MEYER
DER

Question: How do you measure the efficiency of lung function tests against x-ray examination as a means of early diagnosis?

Answer: There are differences of opinion.

One group of opinion says that these are changes in lung function before x-ray examination shows changes.

Others say this is not so. One must have a good health service and depend on the "four legs" of the diagnosis table. It is unwise to rely on "one leg" only.

SIG. CALAMANDREI
SIA

Question: Does Dr. Smither think that the use of asbestos in filtration has an adverse effect?

Answer: No - the amounts are infinitesimal

DR.S. HOLMES,ARC,UK emphasised the insignificance of ingested fibre originated from filtration processes.

INTRODUCTION FOR MR. CROSS AND DR. HOLMES

This is an important contribution as the British Asbestos Regulations have been in full operation for 1½ years. These Regulations will probably have a big influence upon future Regulations to be introduced by other countries. Mr. Cross, Chairman of the Environmental Control Committee of the Asbestosis Research Council and Dr. Holmes, Secretary of the Asbestosis Research Council, have been closely concerned with this subject from the beginning. They are here to tell us, amongst other things, about the principles behind the British legislation, the measures which have to be adopted under these Regulations and the ways in which different forms of respiratory protection are to be used for different dust levels.

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THE UK ASBESTOS REGULATIONS - 1969

A.A. Cross, MBE, Chairman, Environmental Control Committee ARC

At the conference of representatives of the European asbestos industry in London two years ago we discussed some aspects of the United Kingdom Asbestos Regulations which had just been introduced. Since then many other countries have introduced various measures for the protection of asbestos workers or are actively considering some form of control. Some of these have followed fairly closely the methods adopted in this country; others appear to be taking somewhat different lines. It seems to us, therefore, that it might be helpful if we were to review briefly the fundamental principles behind our legislation and the main features of our law as it is being applied.

As you know, the older established sectors of asbestos manufacturing industry had been subject to legally enforceable controls in this country since 1933, so that the basic approach to a new and more comprehensive law was to build on those parts of the old law which experience had shown to be effective, to expand and define more clearly the control methods required, and to extend the application of the law to cover all persons who might be exposed in their work to harmful quantities of dust.

It should be noted that the law in this country specifically catering for asbestos is confined to working situations. There is no statutory control specifically designed to deal with possible hazards to the general public. In such matters as disposal of asbestos waste, discharge of filtered air from asbestos factories, overspill of fibre from spraying operations, the official view so far has been that existing powers of local authorities are sufficient to deal with any nuisance which can be identified. In one case, i.e. disposal of asbestos waste, advice drawn up by the Asbestosis Research Council has been issued to local authorities by the Government Department concerned, the Department of the Environment, pointing out the need for particular consideration of a potential hazard.

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The new Asbestos Regulations themselves are based on a number of clear principles:

1. They only apply to processes where dust above a certain level can be produced.
2. They apply wherever and whenever employed persons are exposed to such levels of asbestos dust. (There are some limited exceptions such as dockworkers who will be covered by separate regulations.)
3. They discriminate against blue asbestos in that they call for additional measures of control and a lower standard of dust concentration.
4. They envisage the application of control measures related to the extent of the hazard.
5. They do not spell out standards of dust levels or degrees of hazard. They rely for the detailed application of the law on the publication of explanatory documents known as Technical Data Notes which can be varied as experience or fresh knowledge dictates. For example, in the Regulations the various control measures are to be applied where asbestos dust can escape into the workplace. Asbestos dust is then defined as "dust consisting of or containing asbestos to such an extent as is liable to cause danger to the Health of employed persons".

We are continually reminded by our Department of Employment that what this means in precise terms can only be decided in due course in the courts, but for practical purposes at present this is defined in the Department's Technical Data Note 13 as "in the case of chrysotile and amosite 2 fibres/cc" measured in a certain way. Should expert opinion change and indicate that this is unnecessarily high or is too low, all that is needed is the issue of a revised Technical Data Note.

When by these standards a process is recognised as coming within the scope of these Regulations, the measures to be adopted fall into the following clearly defined groups:

1. No process to which the Regulations apply can be carried on unless exhaust ventilation is provided which prevents the entry into the air of any workplace of asbestos dust (as defined).

2. Only where the provision of exhaust ventilation equipment is impracticable (and this means impracticable in engineering terms) is personal protective equipment acceptable as an alternative. In such cases the equipment provided must consist of approved respiratory protective equipment and protective clothing. Where ventilation equipment is provided but does not reduce the dust concentration sufficiently, then personal protection may be required in addition to the ventilation equipment. At the present time there is some uncertainty as to what level of dust concentration achieved by exhaust ventilation will be considered to be low enough to avoid the necessity of wearing protective equipment. We have been working to a level of 12 fibres/cc but there is some indication in recent months that a lower standard than this will be demanded.
3. High standards of factory hygiene are demanded. Part III of the Regulations which is entirely concerned with the cleanliness of premises and plant requires that all machinery and premises should be regularly cleaned by means of vacuum cleaning equipment suitably designed or by some other dustless method. Where a dustless method is not possible, then personnel employed on cleaning must be supplied with personal protection and so must any other persons who may be in the vicinity of such cleaning work.
4. The Regulations require that new buildings used for the first time for processes giving rise to dust above the permitted level and where such processes occur for more than 8 hours in any week, should be constructed in such a way as to reduce the possibility of accumulations of dust and should be provided with a vacuum cleaning system having filters and a source of suction located at a fixed central point and with pipes throughout the building with suitably placed inlets from which portable cleaning implements can be operated.
5. Accommodation for workers' clothing must be provided in such a position or in such a form that there should be no risk of asbestos dust being deposited on it, and accommodation for changing into and out of protective equipment and clothing, as well as for the accommodation of such equipment and clothing when not in use, must be provided.

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6. All loose asbestos or waste stored or distributed within a factory must be contained in suitable closed receptacles which prevent the escape of asbestos dust therefrom.
 7. Young persons, i.e. people under eighteen years of age, may not be employed in any processes where it is necessary for them to be provided with protective clothing and respiratory equipment.
 8. The special requirements concerning blue asbestos include the need for notification to the local factory inspector before starting any process or operation involving crocidolite or blue asbestos and the requirement to mark any receptacles containing blue asbestos with the words "blue asbestos - do not inhale dust".

The Regulations, having allowed for 12 months' grace, came into full effect in May 1970. In that time, the Factory Inspectorate has been getting familiar with the existing practices in various asbestos factories and in particular among those people who are using asbestos materials without previously being concerned with regulations for its control. This particularly applies to people in the construction industry and in building work and more especially where sprayed asbestos has been used. The particular branch of the Inspectorate responsible for taking measurements has paid many visits to factories and site situations taking measurements of the air in the breathing zone of workers and has, on the whole, appeared to adopt a flexible and understanding attitude. However, in recent months there are signs that their attitude is toughening and indeed the first prosecution under the new Regulations occurred on November 10th. It is to be expected that they will apply increasing pressure for the development of more effective forms of ventilation equipment, for the modification of processes to be less likely to emit dust, and for the wearing of protective equipment, i.e. both respirators and protective clothing, where they are not satisfied with the dust levels which are attained by engineering controls. It is also to be expected that they will be increasingly severe in their requirements for high standards of factory hygiene.

The attitude towards site working again has been so far somewhat sympathetic. They appear to have been gratified by the efforts of the industry to develop less dusty methods of working, particularly, for example, in the development of predamping methods for spray and in the development of specialised tools for working with asbestos boards of all

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kinds, but where individual concerns are slow to take advantage of such methods known to have been satisfactorily developed and tested to the Inspectorate's satisfaction, it is to be expected that they will be particularly tough. They have said that they will not hesitate to prosecute, for example, if they find spray contractors who are not using predamping equipment and whose employees are not using the more sophisticated type of respirators such as positive pressure respirators.

From time to time when the Asbestos Regulations were published, i.e. in May 1969, until the present time there have been regular informal discussions between various members of the Factory Inspectorate, particularly those specialist branches concerned with the measurement of dust levels and those concerned with the development of control equipment. This has been helpful to the industry. It has meant that we have been able to anticipate to some extent the way in which the Regulations would be interpreted by inspectors, and it has also enabled us to advise our customers and users of asbestos materials generally on the measures they need to take in order to satisfy the requirements of the new law. These unofficial contacts have also been helpful in enlarging the Government Official's understanding of the different types of asbestos products that are in regular use and the manner in which they are used. They have appreciated the fact that many asbestos materials do not produce harmful quantities of dust. The Inspectorate Headquarters has, in fact, issued a list of asbestos products which, in their opinion, are unlikely to be affected by the Regulations and they have also asked for the assistance of the Asbestosis Research Council in identifying further materials which would come into this category. They have also sought the co-operation of the Council in developing improved procedures and products, for example, they sought our advice on the question of sprayed asbestos with the result that all sprayed asbestos insulation contractors in the United Kingdom have now accepted as standard procedure the predamping of asbestos fibre which, as a result of measurements taken by the Government Officials, has been reclassified by them and other Government Departments as a low risk operation. Other Government Departments have consulted the Asbestosis Research Council in the formulation of advisory documents or in dealing with enquiries from the general public or from institutions. These have included the Home Office, the Department of Environment, the Department of Health and Social Security, the Customs and Excise Department. Often these references have been at the suggestion of the Department of Employment.

While undoubtedly there are many organisations and individuals who take an extreme view of the possibility of risk, we believe that the sensible application of the new Regulations enables us to claim that many asbestos materials entail no risk and that for others it is usually possible to prevent any risk to users by the application of practical control measures.

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THE RESEARCH BEHIND THE U.K. STANDARDS

Dr. S. Holmes Secretary. Asbestosis Research Council

Further to the report which Mr. Cross has just given, I would like to add a few words explaining how the British Standard for chrysotile asbestos has been established. At the same time, I would like to clear up one or two misunderstandings that obviously still persist regarding the relationship between the size of the asbestos fibres counted and the hazard to health.

Many years before the British Occupational Hygiene Society decided to explore the idea of a standard for asbestos, the asbestos companies had adopted for routine factory monitoring the fibre count, restricted to fibres above 5 μ m in length and having a length/diameter ratio of at least 3 to 1. When the B.O.H.S. Committee was looking for information on dust exposure and hazard to health, the only figures available on dust levels were these fibre counts collected over the years by the industry and the figures were given to the Committee along with the health records of the people exposed.

As most of you are aware, the B.O.H.S. standard eventually recommended was in the form of a total permitted exposure to asbestos dust expressed as dust concentration multiplied by time of exposure. The figure for chrysotile was 100.fibre-years per ml. and was put forward as the exposure limit if not more than 1% of those exposed were to get the first signs of asbestosis. This allowed 10 years exposure at 10 fibres/ml., 20 years exposure at 5 fibres/ml., and so on. It was suggested that the standard should not be used for levels above 10 fibres/ml., because little was known about the effects of high exposure even for short periods of time.

As the chrysotile standard has become widely known, a misunderstanding has arisen to the effect that fibres less than 5 μ m long are not hazardous in any way. There is, of course, a lot of medical evidence pointing to the view that the longer fibres are of special significance biologically, but there is nothing about the figure of 5 μ m. It was arbitrarily chosen many years ago and has continued as the lower limit for counting for historical reasons. It is therefore more correct to think of the fibre count as an

index to exposure but the range of fibre sizes in an asbestos dust cloud does not change much for the different industrial processes, and the figure we use is still a reliable measure of the health risk. It has the added advantage that it represents more than 90% of the total weight of asbestos, and also it ensures that only asbestos fibres are counted.

When the Factory Inspectorate was considering how to incorporate dust standards into the 1969 Asbestos Regulations, the report of the B.O.H.S. Committee was conveniently available. In making use of the report the Inspectorate did two things:-

1. They assumed that the asbestosis hazard from amosite and anthophyllite was the same as for chrysotile and therefore made the limits the same for all three types.
2. They decided that the limits for crocidolite (blue asbestos) should be ten times more strict.

Little useful comment is possible on the first of these, because although the B.O.H.S. is at present looking at the possibility of a separate standard for amosite, nothing has emerged so far, so the assumption is a reasonable one in the circumstances. The adoption of the separate limit for crocidolite is also understandable, in view of its strong association with mesothelioma, but to set it at one-tenth of the chrysotile figure cannot be justified. These limits are derived for asbestosis only and a dose response relation between crocidolite and mesothelioma has not yet been established. We can only assume that the Factory Inspectorate were determined that extra special precautions should be observed in handling crocidolite and in this they have succeeded.

In deciding what should be the safe level of dust concentration below which the substantive clauses of the Asbestos Regulations should not apply, the Factory Inspectorate have taken the figure calculated from the B.O.H.S. Standard related to exposure over a whole working lifetime i.e. 50 years. This, of course, gives the well-known threshold limit value (T.L.V.) of 2 fibres/ml. In the region between 2 and 12 fibres/ml. (originally 10, but raised to 12 for transatlantic reasons), the action required will depend on the level and duration of the exposure i.e. the B.O.H.S. concept of an exposure calculated as a product of dust concentration and time is to be followed. Where concentrations above 12 fibres/ml. are inevitable, then full personal protection must be worn, however short the exposure in time.

The way in which the Factory Inspectorate intend the dust concentration to be measured is also important. The first assessment is based on a 10 minute sample taken in, or as close as possible to, the workers' breathing zone. If the result is less than 2 fibres/ml., then the Regulations are not applied. If it is between 2 and 12 fibres/ml., then a repeat sample is taken, but of 4 hours duration, or a series of samples, designed to give a 4 hour time-weighted average. It is on this longer sample that any action will be based, representing a considerable concession in most cases, because the average exposure of any particular worker over 4 hours is generally much lower than that indicated by short period samples. When the 10 minute exploratory sample is above 12 fibres/ml., a repeat 10 minute sample must be taken. If this is also above 12, then full personal protection is called for if the job conditions cannot be improved. It must be remembered also that the total exposure idea does not apply in this case - full protection is required even if the exposure is only one hour per week.

The adoption by the Factory Inspectorate of the 2 fibres/ml. T.L.V. for safe working is reflected also in their system of approval for dust respirators. Dealing first with ori-nasal or half-face respirators, the cartridge filter is generally very efficient indeed (99% or better) but the weakness lies in the uncertain seal between the face of the wearer and the edge of the mask. In most cases this reduces the overall efficiency to about 95% i.e. 5% or 1/20 of the dust will penetrate to the inside of the facepiece. If this is not to be more than 2 fibres/ml., then the concentration outside must not be above 40 fibres/ml. and half-face respirators are therefore only approved up to this figure. For positive pressure respirators, where filtered air is pressure-fed to the face of the wearer the fit of the facepiece is less important, and the only limitation is in the efficiency of the filter itself. This is about 99% i.e. 1% or 1/100 penetrates, and so these respirators are approved only for situations where the concentration is not more than 200 fibres/ml. One full-face pressure-fed respirators is approved for use above this level, otherwise it is necessary to provide hoods or helmets fed by a supply of fresh air.

07/11/55

Finally, the standard has also been used in defining the dust concentration permitted in the exhaust from vacuum cleaners and in filtered air from an asbestos process which is being recirculated. The criterion here is that the dust in the recirculated air should make no significant contribution to the overall dust level in the workroom, and therefore a limit of 0.2 fibres/ml., i.e. 1/10 of the T.L.V., has been specified.

The member companies of the A.R.C. have recognised that many asbestos users have neither the equipment nor the technical experience to check their own situation by carrying out dust counts. They have therefore made available to their customers a dust sampling service, and where necessary, engineering advice. This has been well received and has no doubt resulted in many companies continuing to use asbestos when they would otherwise have been so daunted by the Regulations as to abandon it.

07/11/95

THE SITUATION IN HOLLAND

072597

Mr. A.R. Kolff van Oosterwijk. C.V.A. Holland

HEALTH AND ASBESTOS: SITUATION PAST AND PRESENT IN HOLLAND.

The first case of asbestosis was officially recorded in Holland around 1934. Since there was at that time hardly any nationally important producer or user of asbestos goods in Holland the attention paid to this isolated case was negligible. For the same reason no special legislation was introduced.

After the Second World War this situation of relative unconcern slowly changed as more and more cases of asbestosis were discovered, although the total number remained small. Most of these cases were also found to occur in the insulation contracting field. It was in this period that the major companies producing or using asbestos containing products began to introduce periodical medical inspection of those employees who could be considered to be frequently exposed to asbestos dust. The factory inspectorate also gradually paid more and more attention to the situation. Their activities were directed toward advising on dust suppressing methods and on protective measures to be taken for personnel exposed to dust. There was hardly any general publicity on the biological effects as asbestosis was considered to be an occupational disease which could only be contracted after many years' exposure to high dust concentrations. This situation radically changed after the publication in 1968 of a thesis by Dr. Stumphius wherein the author describes his experiments on the occurrence of asbestos bodies in lung tissue and the occurrence of mesothelioma among the male population of a small region of the Netherlands centred around a major shipyard. He came to the conclusion that a large part of the population must have been exposed to small concentrations of asbestos dust because of the frequent occurrence of asbestos bodies in lung tissue. More far-reaching, however, is his other conclusion that a correlation exists between the exposure to (small) concentrations of asbestos dust and the occurrence of mesothelioma. This publication at once caused a stream of publicity where some or perhaps most news channels went so far as to suggest that the whole population was at risk. Without going further into this publicity uproar, it is important to note that several more serious actions resulted from Stumphius' research and the following publicity.

These were:

- a. the formation of a research committee to study the biological effects of asbestos by T.N.O., the semi-governmental research establishment in the Netherlands. After a general survey of the asbestos problem this committee has now started several research projects i.e.
 1. epidemiological research of relation between occurrence of mesothelioma and exposure to asbestos.
 2. occurrence of asbestos dust in outside air.
 3. the generating of asbestos fibres during braking.
 4. the development of apparatus for the detection and counting of asbestos fibres in outside air.
- b. The factory inspectorate started an intensive medical inspection of all workers who could be presumed to be exposed to asbestos dust. The first part of this inspection concerning mainly workers in the asbestos industry and in the insulation field has been concluded. It is now intended to extend this inspection to other industries which are not obviously connected with asbestos.

It is also the object to repeat these inspections during regular intervals in the future.

The factory inspectorate has recently published a booklet called "Working with Asbestos". Herein a short survey is given of the use of asbestos, its biological effects, the permitted dust concentration, the necessary protective measures and some substitute materials. That part of the booklet which gives an outline of the protective measures to be taken when working with asbestos is comparable to the guides as published by the Asbestosis Research Council. Although this booklet is not backed by the necessary special legislation the factory inspectorate is in the position to enforce the introduction of certain measures advised in it. In the very near future factory inspectors will visit all industries using asbestos and asbestos containing goods and will rigorously check whether the working conditions comply with the requirements as set out in the booklet.

There is at present in preparation legislation on the use of asbestos. This however will take a long period of time before completion as it is difficult to formally fit it in existing legislation.

It may, however, be expected that within a year the use of crocidolite will be forbidden while there is a possibility that the use of asbestos containing materials in the insulation trade will be prohibited. These measures cannot be taken onesidedly as they could cause economical and technical repercussions.

It is therefore usual that the industries concerned and the trade unions are officially consulted before such a decision is made. The unions have reacted sharply and they have in fact contributed in no small way toward the adverse and often irresponsible publicity given to the biological effects of asbestos. It is their ultimate aim to obtain a complete ban on the use of asbestos and asbestos containing goods.

As this is of course at present impossible, they have now tried another approach i.e. to include in the collective labour agreements a clause forbidding the use of asbestos in all its forms in the industries falling under these collective agreements. As this new demand is still under consideration, it is too early yet to comment but we feel that a dangerous development is under way here.

- d. As is usual under these and similar circumstances, a large number of organisations become interested. Perhaps, characteristically of Holland, is that in our country we feel that no problem can be tackled efficiently without forming as many committees as possible.

Besides the committee and organisations already mentioned there are the following committees (or organisations) which are also involved in some way or another in the problem of asbestos:

1. Asbestos Committee Netherlands Society of Safety Engineers.
2. Asbestos Committee of the Industries located in Amsterdam.
3. Asbestos Committee Society of Insulation Contractors.
4. Safety Institute.
5. Contact organisation of Workers in the Building Industry.
6. Safety Department of National Health Administration.

DISCUSSION ON PAPER BY MR.A.R. KOLFF VAN COSTERWIJK, CVA HOLLAND

MR.W.P. HOWARD
AIC, UK

Question: Regarding your mention of the possibility of a ban on asbestos in Holland - would this include asbestos cement?

Answer: No - only asbestos for insulation.

DR.S. HOLMES
ARC, UK

Dr. Holmes here pointed out that the measurement of asbestos in the general atmosphere had progressed. The ARC in the UK had produced results using very sophisticated methods showing that levels are surprisingly low - in the order of 10^{-7} gms. per cubic metre i.e. 1 millionth part of the level regarded as negligible.

M. ROBERT JOIN
CSA FRANCE

Question: Is there a general public consciousness of the "risk" in Holland?

Answer: I think NOT.

072600

REPORT OF THE WEST GERMAN DELEGATION

Herr G.C. Schmidt. Secretary Wirtschaftsverband Asbest. e V.

Shortly after the danger involved in the exposure to airborne asbestos dust became known, the German asbestos manufacturing companies, together with the so-called Berufsgenossenschaften (employer's liability insurance corporations covering industrial diseases and accidents) and the local Factory Inspection Authorities, began to develop precautionary measures to overcome this problem.

Statutory requirements defining the maximum acceptable dust concentrations do not yet exist for the asbestos industry. However, the united efforts of the Berufsgenossenschaften, the industrial medicine experts, and the local Factory Inspection Authorities have come to certain agreements which are voluntarily observed by the companies.

These agreements are strictly observed, because a quickly growing number of reported cases of asbestosis might motivate the insurance companies to raise the premiums proportionally or even progressively. Due to the high occupational risk the premiums are already rather steep - the asbestos manufacturing companies in some cases have to pay ten times the normal premium. After the war and in the Sixties they therefore doubled their efforts to control the dust and minimise the risks by installing exhaust ventilation systems.

As already mentioned, the government and the insurance companies have arrived at mutual agreements based on the experience of the past years. The asbestos industry has accepted such agreements, although they are not yet binding. In case of non-observance of the peril points, the violator cannot be punished. These peril points are defined as follows:

1 mg/m³ total dust concentration
if the asbestos content amounts
at least to 50 weight-percent

072501

should not be exceeded. This limit is practically equivalent to a respirable dust concentration of 0.15 - 0.40 mg/m³.

In addition, the individual asbestos manufacturers - to the extent that they are members of a so-called Berufsgenossenschaft that is aware of the health risks of asbestos dust - have developed private guidelines for the medical supervision of employees exposed to dust. In most cases these persons are required to undergo x-ray examinations prior to their employment. If during a subsequent periodical examination asbestosis is diagnosed, the employee will be retired and the Berufsgenossenschaft must pay him a pension.

As requested by the insurance companies and the authorities, the current agreements and recommendations shall be integrated into a legally binding Regulation, which is in its meaning and effect comparable to the Asbestos Regulations of our British friends.

Probably in the autumn of 1972, this so-called "Unfallverhütungsvorschrift zum Schutz gegen gesundheitsgefährlichen mineralischen Staub" - a safety regulation for the protection against health hazards caused by mineral dust - is expected to come into effect in Germany. A group of experts, including some from the asbestos industry, worked for two years on this Regulation.

This Regulation shall apply to all factories which handle materials containing asbestos or free crystalline silicic acid. These factories must give notice to their so-called Berufsgenossenschaft and the local Factory Inspection Authority.

All factories, in which asbestos dust is created, must institute appropriate measures for dust suppression and control. Such precautions may be in the field of construction of buildings, design of machinery and apparatus, and installation of exhaust ventilation equipment.

070102

The Regulation stipulates the acceptable dust levels as follows:

If the asbestos fibre content is below 10%, the total dust concentration may not exceed 2.0 mg/m^3 ;

if the asbestos fibre content is between 10 and 50%, the total dust concentration may not exceed 1.5 mg/m^3 ;

for an asbestos fibre content above 50% the acceptable total dust concentration is limited to 1.0 mg/m^3 .

These peril points have still provisional character until the final limits - the so-called MAK values - are available. MAK means maximum acceptable dust concentration at a work place. A special committee is currently working on these limit values assisted by experts of the asbestos industry.

According to the Regulation only particles are defined as being asbestos fibres, which are of a length greater than 3μ and which have a length/diameter ratio of at least 3:1. If we multiply the number of particles by the number of asbestos fibres and divide the product by 100, we receive the asbestos coefficient. The asbestos coefficient may not be greater than 10.

People employed in the asbestos manufacturing industry are required to undergo periodical medical examinations every 3 years. Prior to their employment an authorised physician must carry out initial examinations and certify that there are no medical objections to such employment. The costs of such examinations must be borne by the manufacturer. He must also keep health records on all employees.

Full particulars on the scope of examinations may be found in the Guideline for Medical Examinations. This Guideline can be taken as a supplement to the Unfallverhütungsvorschrift and among its requirements includes

general physical examinations,
x-ray of the thoracic organs
and analytical tests to diagnose a lung restriction.

It also gives details about medical findings which should give rise to objections to employment.

I mean, Gentlemen, we have already the right feel for our internal dust problem in the German asbestos industry. The environmental problem with its partially unknown hazards and diseases which are difficult to diagnose does, however, still exist. This is the greatest of our worries, because we cannot solve this problem ourselves. This is mainly the problem of the physicians.

My colleagues representing all German producer groups are well prepared to answer any questions arising from this report.

072604

DISCUSSION ON PAPER BY MR.G.C.SCHMIDT, MVA & WAV.

MR.A. PALOMKI
AIG, FINLAND

Question: Can you explain how the Threshold Limit Values are applied?

Answer: If the fibre content of the product is less than 10% the TLV is 2 milligrammes per cubic metre.

If the fibre content of the product is 10%-15% of the total, the TLV is 1.5 milligrammes per cubic metre.

Above this percentage, the TLV is 1 milligramme per cubic metre.

MR.A.R. KOLFF VAN OOSTERWIJK
CVA, HOLLAND

Question: How is the concentration measured?

Answer: At the present by a Konimeter, but a better method is needed.

Question: Why do you have the relationship between the percentage content and the Threshold Limit Values?

DR.S.HOLMES
ARC, UK

Answer: The reason is basically that if a gravimetric method of dust measurement is used the percentage of asbestos in the total dust is significant. However, in the UK we do not like the Konimeter and have advised against its use, in favour of the membrane method.

MR. W. JOHNSEN
AIG, DENMARK

Question: Is there not a significant difference between the mixed dust in a factory and the composition of the product?

Answer: Yes - but no conclusions have been reached on this problem.

DR.D.W. HILLS
CHAIRMAN, ARC, UK

Question: How do current practices in German factories compare with the standards required by the proposed regulations?

VARIOUS GERMAN RESPONDENTS

Answer: I can quote one A/C factory where the level is up to 2.5 mg. per cubic metre but we cannot comment on all factories as the level varies.

In brake lining factories, we do not yet have continuous monitoring but short term checks indicate that the position is satisfactory.

Millboard manufacturers appear to be meeting the TLVs but on textiles the position is difficult to define.

MR.A.A.CROSS
ARC, UK

Question 1: Are the same TLVs proposed for all types of asbestos?

Answer: Yes.

Question 2: What happens if you exceed the TLV?

Answer: This is forbidden, but we are very near to them anyway.

072505

THE SITUATION IN FRANCE

M. Robert Join General Secretary. Chambre Syndicale d'Amiante

1. Several bodies in France are concerned with the industrial health and hygiene problems:

Factory Inspectorate

Social Security

Industrial Medicine

Institut National de Recherche et de Sécurité (an association for the prevention of occupational accidents and diseases, comprised of representatives of employers and employees).

2. There is no particular national regulation concerning the working conditions in the asbestos industry similar to the British Regulations of May, 1969. The only general prohibition, applicable in the industry, concerns employment of young people under 18 in some dusty occupations - handling of raw asbestos, carding, spinning.
3. There exists, however, a local regulation of 1965, drafted by the Factory Inspectorate and the Social Security Branch of Normandy, in co-operation with Chambre Syndicale de l'Amiante, called "Recommendations concerning the working conditions in the asbestos industry". Despite its title - Recommendations - this document is in fact compulsory for all the firms dealing with asbestos within the jurisdiction of the Social Security Branch of Normandy - and there is an important concentration of firms in this area. The "Recommendations" concern the premises and their cleaning, prevention and individual protection measures, medical control and information of workers of the possible risk; a level of general dust is set, but no asbestos dust level.

Although the National Social Security Office has the possibility of extending local recommendations to the whole of the national territory, this has neither been done nor proposed since the Normandy Recommendations came into force.

4. Asbestosis has been recognised in France as a compensable occupational disease since 1949, distinct from silicosis with which it was previously merged.

Under "Table 30 of Occupational Diseases" no diagnosis of asbestosis can be made, unless the three following conditions are gathered - radiological signs, functional troubles, asbestos bodies.

No other than heart complications is recognised.

5. When a worker thinks he is entitled for compensation, it is his responsibility to file his claim with the Social Security. After a technical inquiry concerning period of occupation, exposure to dust etc... the file is forwarded to the Factory Inspectorate and then, according to the duration of exposure to dust, to an agreed specialist in pneumoconiosis, or to a panel of three experts who take the decision whether or not to compensate.

A procedure of appeal provides employees and employers with all safeguards.

Beside the human aspect of the question, the employer has a direct financial interest in keeping the number of compensable cases and the amount of compensations at as low as possible a level since his Social Security contributions for occupational accidents and diseases are based, wholly or partly, upon the amount of compensations paid to his own workers during the previous three-year period. It is therefore in his interest to take all necessary prevention measures which the Social Security Administration may support financially, either by low rate of interest loans, or by reducing the rate of his contributions.

This system has never been argued inside the Social Security National Technical Committee where Social Security, employers and employees are represented.

6. There are comparatively few compensated cases for asbestosis. The number can be estimated at about 120-130, at varying rates.
7. To our knowledge, it is not anticipated that the present position will be modified shortly.
8. Chambre Syndical de l'Amiante follows closely these questions.

It organises meetings of factory doctors and manufacturers allowing for mutual information and fruitful exchanges of views.

It has, inter alia, set up recommendations on the medical control of workers, taken part in the drafting of the Normandy Recommendations, organised in 1964 the first international congress on asbestosis in Caen, secured the assistance of medical experts who take part in international medical meetings, established information documents for the use of its members on the procedure of compensation of occupational diseases, obtained from Institut National de Recherche et de Sécurité approval on a method of dust sampling, and, recently, it has favoured the foundation of Comité Français d'Etudes et de Recherches sur les Effets Biologiques de l'Amiante (COFEREBA).

As may be seen, lack of regulations does not imply lack of control, and does not prevent the industry from constantly working for an improved safety of workers.

070609

DISCUSSION ON PAPER BY M. ROBERT JOIN - CSA, FRANCE

MR. J. VAN HAAGEN

Question:

Can you clarify the position of the Normandy Regulations?

Answer:

France has a total of 14 Social Security Districts. Only Normandy has a Social Security Office with Asbestos Regulation. The Normandy Regulations have been in force since 1965.

The question of regulations for asbestos has never been raised at a national level as the asbestos industry in France is below the accident rate for most industries.

MR. W. JOHNSON
AIG, DENMARK

Question:

How do you measure airborne asbestos under the Normandy Regulations?

Answer:

Particle standards are not specified. The level is 300,000 particles of all dust per litre, using soluble membrane filter method.

070310

THE SITUATION IN SCANDINAVIA

Mr. A. Palomäki A.I.G. Finland

NOTE:

The situation in each of the four Scandinavian countries differs. Mr. Palomäki presented these differences in relation to Asbestos Regulations, Threshold Limit Values and requirements for medical examinations, in three tables.

072611

072012

TABLE 1

ASBESTOS REGULATIONS IN SCANDINAVIA

Country	The name of regulations	Regulation valid from	Regulation rules and practical precautions.	Prospective regulations, remarks
Denmark	Safety precautions when working with asbestos and materials containing asbestos	1970	dust collecting, medical examinations, inspection by the local factory inspectors, dust precautions are also controlled by the own equipment of the work.	An inquiry is going on in the Danish Parliament. Danish Factory Inspectorate is discussing dust hazards when working with asbestos materials in insulation.
Finland	A Safety and Health Act	1958	dust collecting, medical examinations, inspection by the local factory inspectors once a year, the inspectors give rules	New rules for handling asbestos and materials containing asbestos will be given by the authorities in 1972.
Norway	The circular No. 235/1962, directions for preventing asbestosis.	1962	dust collecting, medical examinations, inspection by the factory inspectors, by the State once a year	New rules in preparation.
Sweden	A Workers' Protection Act	1949	issued rules by the circular dust collecting, medical examinations inspection by the labour inspectors, general rules for working with asbestos have been given by the authorities in 1964.	A full reconstruction is going on and a new act will appear successively as from 1972.

072613

TABLE 2

ASBESTOS REGULATIONS IN SCANDINAVIA
Threshold Limit Values of Airborne Asbestos Dust

Country	Number of Fibres (particles) 5um per cm ³	Valid from	Remarks or prospective steps
Denmark	In principle the threshold limit values same as those applied in the <u>United Kingdom</u>	1970	These limit values not revealed in the regulation
Finland	In principle the threshold limit values same as those applied in 1970 in the <u>USA</u> : 12f./cm ³ .	1970	New limit values will be confirmed in 1972, quite similar to the latest <u>American</u> values.
Norway	200 particles/cm ³ (a total concentration). TLV have not been fixed. The Norwegian general rules refer to 200p/cm ³ like TLV in the <u>USA</u> at that time.	1962	The authorities are working for new limit values.
Sweden	No threshold limit values have been fixed.	1964	New rules for handling of asbestos and products containing asbestos are in hand. These will contain in all likelihood limit values similar to those now valid in <u>United Kingdom</u> .

TABLE 3

CURRENT REGULATIONS IN SCANDINAVIA
Medical Examinations Established by the Regulations

Country	Name of Regulations	Valid from	Medical Examinations	Remarks
Denmark	Safety precautions when working with asbestos	1970	In connection with TB-examination once a year by x-ray of all employees X-ray findings lead to clinical examination and full scale x-ray.	Suspect cases are followed up yearly or once in three years.
Finland	A Safety and Health Act and its regulation of medical examination.	1971	Preliminary examination latest in one month after employment: x-ray and lung function. Subsequent examinations once a year or once in three years.	Minimum x-ray size: 100 x 100mm.
Norway	Directions for preventing asbestosis.	1962	Preliminary examination before employment: x-ray included. Subsequent examinations once a year.	X-ray examination of suspected and exposed persons every 5 years.
Sweden	Royal Proclamation: Medical examination to prevent workers for certain injuries	1949 and 1971	Preliminary examination within one month after employment and then once a year.	X-ray examination and lung function.

DISCUSSION ON PAPER BY MR. A PALOMKI, AIG, FINLAND

M. ROBERT JOIN
CSA, FRANCE.

Question: You say that the TLV in the Norwegian Regulations is 200 particles per c.c. Is this asbestos or all dust?

Answer: All dust.

HERR SCHAEFFER
WAV, GERMANY

Question: Do you have a time allowance for a preliminary medical test?

Answer: Yes - 2 months.

Comment: In Germany it must be before employment

MR. W. JOHNSON
AIG, DENMARK

Comment: In Sweden one month's grace is given for x-ray and lung function tests on new employees.

MR. G.C. SCHMIDT
WVA & WAV, GERMANY

Question: Who pays the cost of the examination?

Answer: The employer.

073615

BRIEF REVIEW OF CURRENT AND PROSPECTIVE REGULATIONS IN ITALY

Sig. A. Calamandrei, Associazione Naz. degli Industriali Amiantieri

Currently in Italy the processing of asbestos is classified as harmful to health, but there are no specific provisions establishing a dust limit in the working environment.

The existing norms only prescribe a medical examination for the worker before he is hired, followed by an annual check up from the I.N.A.I.L. ("Istituto Nazionale per gli Infortuni sul Lavoro" - National Institute for Insurance against Labour Accidents) including x-ray examination for every individual working in the asbestos industry.

In the event of asbestosis being diagnosed, a pension is allocated to the individual who has contracted it, and whose working capacities have been reduced by over 21%. This is increased in amount as the disease increases in severity.

Furthermore, all employees in the asbestos industries are granted an additional wage amounting to £0.70 = per working hour. Moreover, the asbestos manufacturers are responsible for paying an extraordinary insurance for asbestosis which figures as 4% on the salary.

The great outcry about the danger of asbestos manufacturing, outside of the present provisions and laws, began some time ago including both the mining of the mineral and the manufacturing processes.

The E.N.P.I. ("Ente Nazionale per la Prevenzione degli Infortuni" - National Organisation for Accident Prevention) has been studying the problem for some time and has drawn up a plan of norms which should regulate the matter.

Article 6 of the said norms states:

"Defense against dust. In those lines of manufacture which normally give rise to dust formation, the employer is held responsible for adopting suitable measures for inhibiting as much as possible the development and diffusion of

dust in the working environments and thus containing its concentration below certain maximum levels, which - considering their harmful effects - are to be established by decree from the Ministry of Labour and Social Welfare, prior to the approval of the Permanent Advisory Committee for Accident Prevention and Labour Hygiene, according to article 393 of D.P.R. April 27, 1955 - No.547."

The Ministry of Labour, which is responsible for establishing the maximum level of dust concentration in the working surroundings, has never expressed itself in this regard.

Contacts were made by our Association at Government level, through the "Istituto Superiore di Sanita"(Higher Institute of Health).

The results of these exchanges showed that the problem is not properly represented and that much more importance is being given to rumours and minor events which have been blown out of proportion often by economic and conventional reasons rather than actual facts, studied and documented by competent persons.

072617

DISCUSSION ON PAPER BY SIG. A. CALAMANDREI, ANIA, ITALY

MR. W. JOHNSON
AIG, DENMARK

Question: I understand that you have to pay additional compensation to every worker if any asbestos comes into the establishment.

Answer: Yes.

DR. W. J. SMITHER
ARC, UK

Question: Do you use local Chrysotile Asbestos?

Answer: Yes. We also use Crocidolite but the regulations do not differentiate on this.

Question: How many post mortem results on workers' mortality are available?

Answer: Not many - say 20%.

076113

INTRODUCTION FOR MR. W.P. RAINES

REVIEW OF CURRENT AND/OR PROSPECTIVE REGULATIONS - U.S.A./CANADA

Now may I introduce Mr. Raines, who has come a very long way to be here. I am especially glad that he is present because the situation which his Association faces is extraordinarily difficult, probably more so than in any other country. It goes without saying that the pattern of legislation in U.S.A. is certain to have a profound effect throughout the world. We shall all listen to Bill Raines' account of current events with the greatest interest.

072619

BRIEF REVIEW OF CURRENT AND PROSPECTIVE REGULATIONS - USA

Mr. W.P. Raines, IAI/NA

I. Brief comment on overlapping jurisdictions of federal, state and municipal governments.

II. Protecting the Worker

A. Federal Government

1. Occupational Safety and Health Act.
 - a. General provisions vis a vis asbestos.
 - b. Present threshold limit value of 12 fibres per cubic centimetre.
 - c. Labour Union/Selikoff pressures to lower TLV to 2 fibres.
 - d. Prospective move to 5 fibres level.
 - e. Union/Selikoff pressures for "emergency standard" of 2 fibres.
2. National Institutes for Occupational Safety & Health(NIOSH)
 - a. Emergency studies on asbestos and fibre glass.
 - b. Investigation of "epidemic" of mesothelioma among workers in Manville, New Jersey area.

B. State Government

III. Protecting the General Public

A. Federal Government

1. Clean Air Act
 - a. Asbestos declared "hazardous substance" by Environmental Protection Agency (EPA)
 - b. Asbestos emissions standards
 - i. Development
 - ii. General Content
 - iii. Next Steps
 - c. Studies of asbestos in brake linings and in asbestos/asphalt paving.
 - d. Studies to develop ambient air measurement techniques
 - e. Probable future revision of asbestos emissions standards based on numerical limits

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2. Water Pollution Control Act

- a. In Congress sponsored by Muskie and backed by Nixon.
- b. Possible effects on asbestos.
- c. Present action under 1899 law.

3. Toxic Substances Control Act

- a. In Congress - probably stalled until 1972
- b. Possible effects on asbestos
- d. Crocidolite "rumour".

B. State Governments

1. Ban on Spraying Asbestos Fireproofing:

Illinois
New York

2. Illinois Proposed Regulations

- a. Illinois Pollution Control Board
- b. General content of proposed regulations - especially ban on asbestos in brake linings.
- c. Hearings and testimony.
- d. Outlook
- e. Other states watching closely.

C. Municipal Governments

1. Ban on Asbestos Spraying:

New York City
Boston
Philadelphia
Chicago

2. Control of Asbestos Spraying:

San Francisco

3. Interest in Banning Asbestos in Brake Linings:

New York City.

07201

DISCUSSION ON PAPER BY MR. W.P. RAINES, AIA/NA USA

MR. D.W. HILLS
ARC, UK

Comment: You suggested in your paper that the US Asbestos Industry would agree to a 5 fibres per c.c. maximum TLV.

Answer: The 5 fibre figure was agreed as a reasonable level by engineering and medical authorities and by the Government Levels Committee. Remember that the Unions are pressing in the US for a level of 2 fibres per c.c. There is also an allowance for peaks of 10 fibre

HERR SCHAEFER
WAV GERMANY

Question 1: Is the Illinois ban in effect, or is it in preparation?

Answer: I have just heard that asbestos in brake linings has not been banned but spray has.

Question 2: Are States' rights superior to City, and so on?

Answer: A State can go further than the Federal Authority and a City can go further than the State.

MR. M.F. HOWE
AIC, UK

Question: Is legislation against water pollution likely to affect asbestos cement water pipes?

Answer: No, the legislation applies to waste disposal, but I would not guarantee anything. Dr. Selikoff at present maintains that asbestos cement pipes are safe.

M. ROBERT JOIN
CSA, FRANCE

Question: How has the US friction materials industry reacted to the Illinois situation? Can it rely on substitutes?

Answer: Originally it looked like nonsense, but now alternatives appear to be possible. We do not know what the Automobile industry said to the Board. General Motors resisted the Board but would not testify.

07/11/71

ATTACKS ON ASBESTOS

The substance of the papers dealing with Attacks on Asbestos and the defence of their positions by industries concerned in various countries have been covered by the summaries of these papers circulated before the Conference.

In discussions at the Conference additional points were made and these are appended.

We have in addition included the summary of the paper given by Mr. W.P. Raines on the situation in the USA and Mr. W.P. Howard's paper on action taken in the United Kingdom.

07.6.73

ACTION TAKEN IN THE UNITED KINGDOM TO DEFEND ASBESTOS

Mr. W.P. Howard, Secretary, Asbestos Information Committee UK

At the last European Conference two years ago we explained what the Asbestos Information Committee was, why it had been formed and the kind of things we do. I do not propose to go over old ground or to repeat the points which were made on that occasion. What I would like to do for the most of this talk is to describe some of the things we have done in the past two years since we last met, during which time we have been operating against the background of new Asbestos Regulations.

In conclusion I shall outline the way in which our working arrangements have developed.

What have we done?

We have been engaged in two kinds of activity. First of all positive work, constructive work stressing the virtues and advantages of asbestos, and secondly defensive work which has consisted largely of correcting the false impressions left in people's minds by misleading accounts of the asbestos/health issue.

First then - the positive action.

Let us start with our advertising campaigns.

This advertisement comes from our 1970 campaign. The theme we adopted was "where would we be without asbestos" and the three advertisements for this series dealt respectively with safety at sea, the safety of buildings, and safety on the road. They appeared in the more serious and authoritative newspapers like the Financial Times, Daily Telegraph, Sunday Times

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The Guardian and Scotsman as well as in some key magazines and technical media - New Society, Management Today, New Scientist, Engineering, Engineer, Building, Architects Journal and Shipbuilding. At the same time we put in the journals read by industrial safety officers an advertisement which explained that advice on the practical aspects of the new Asbestos Regulations was available in a whole range of literature from the Asbestosis Research Council. It also encouraged safety officers with particular problems to get in touch with the Council direct.

At the present time British papers are carrying our 1971 campaign. This is our fourth annual campaign. Its theme is "asbestos - it's a natural". In English this is a clever play upon words. You must take my word for that. Again we are dealing with safe braking, with fire protection and with safety at sea. We are using the same range of opinion-forming newspapers and magazines and technical media as before. We think that this particular advertisement, which deals with safety at sea, is a particularly effective one because it underlines the isolation of a people at sea, and hence the importance of using materials in ship construction which resist fire.

Our next positive step was the production of the film "Why Asbestos?" which you have all seen. This has been a very successful venture. 86 separate copies have been sold with an English commentary, 52 in the United Kingdom and 34 overseas. We have plans as you know for German and French versions which the German and French asbestos industries are now discussing. It may interest you to know that 12 copies have been placed in film libraries in this country and that as a result 44,000 people have already seen the film. When one adds to these 12 copies the audiences that must have seen the other 40 copies circulating in this country, you can imagine the impact. The audiences that have seen the film include technical colleges, universities and schools, safety officers and professional people like architects and engineers, as well of course as customers of the industry. For the benefit of lay viewers, like school children, we produced for distribution at film showings, a leaflet entitled "Why Asbestos?" We also find this booklet useful to send through the post to general enquirers and produced, in order to stimulate interest in showings of the film, a small 4-page leaflet which describes the film and gives various technical details about it.

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Only this week we have started shooting a new film, dealing with the subject of fire protection. It will be called "Fire at Work" and is being sponsored by the Asbestos Information Committee and two companies which have a special interest in fire protection; one of them a manufacturer of fire extinguishers and the other of ventilation equipment. The film will cover the use of asbestos to control fire. It will show the use of fire protective clothing, asbestos fire blankets and the protective use of asbestos building materials. The commentary has been written in collaboration with the Fire Protection Association. This new film will be ready in the New Year and copies will be available to you, if you would like to buy them.

Another field for positive action has been in the editorial columns of the press. We have produced, in conjunction with the Press Association, a feature article which explains how asbestos is used to save life. This article has already appeared in 17 newspapers throughout Britain, though each newspaper has treated it in its own way. We have cleared world copyright of this article in case any of you wish to make similar use of it. We have also taken the opportunity to encourage articles like this one in the Leicester Mercury "What would we do without asbestos?". We have given considerable publicity to the publication of the Asbestosis Research Council's Control and Safety Guides and we are currently working with the Financial Times in the production of a special survey on asbestos. This will occupy at least four pages of the newspaper and will resemble an earlier survey we arranged in the Times.

Now for some of our defensive steps.

Those have been aimed at putting the health situation into perspective wherever it is publicity misrepresented. We have had to do this work in the context of the new Asbestos Regulations and also against the ' and of a continual series of references in newspapers to inquests of who have died of asbestos diseases. This map gives an indication of the extent of these adverse references. Every dot on it represents a reference to a coroner's report in a local newspaper.

A basic activity has been to produce an armoury of literature which deals with some of the recurrent criticisms and questions which we have been subjected. You know the booklet entitled "Asbestos - Safety and Control"; we have just produced the third edition of it. It has been very helpful to sales representatives and industry managers in giving them an authoritative point of view to put across in the face of ill-founded anxieties.

We have also produced a new edition of our leaflet entitled "Asbestos - Public not at Risk". This deals with some of the more general criticisms which are levelled against the Asbestos Industry for polluting the environment.

Next a booklet on a particular point which is involved in these environmental arguments. "Asbestos bodies - their significance". This leaflet explains the difference between asbestos and ferruginous bodies and the importance of being quite sure that the bodies found in the lungs of many city dwellers really do contain asbestos and not some other mineral.

To ensure that our own representatives and our customers do not overlook the availability of literature on particular subjects, we have set out all the important pamphlets together in an order form, which is easy to complete and easy for our offices to deal with.

Literature is very valuable for a number of reasons. First it ensures that the arguments which different members of the Industry use are consistent. Secondly, literature covers the main points of our argument comprehensively - nothing important is left out. Thirdly, literature just because it has been properly produced and printed carries an authority which a letter or the spoken word somehow does not seem to enjoy.

This does not mean of course that we have not bothered to use the spoken word. On the contrary, we have been quite active on this front. We have formed an AIC Speakers Panel whose members have now addressed 70 different groups of safety officers. These safety officers are people on whose advice our customers often rely for detailed explanation of the Asbestos Regulations. We have addressed some 80% of the safety officers in the

country on the practical steps which can be taken to continue the use of asbestos products but in such a way that workers use them safely.

These posters are freely available to any asbestos user who wants to educate his workers in safe practices.

We have in this field also continued to give television training to senior directors in the industry. Training a man for television, under realistic studio conditions, gives him very much more confidence to project what he has to say. This precaution has paid off as you will see from the clip which we are now going to show you from a BBC television programme which was screened last year.

A year ago we came to the conclusion that the market for solid preformed insulation products was largely lost for asbestos. Naturally we did not want the same thing to happen with building materials generally, and so with the marketing managers of our building material companies we formed a building materials study group to see what positive steps could be taken to make sure that architects and builders did not suffer from any misunderstanding of the facts surrounding the use of asbestos. We produced two publications as a result of our discussion. The first was a simple card which explained that buildings which incorporated asbestos were perfectly safe from the point of view of the occupants, whether these were schoolchildren, hospital patients, or office workers. On the back of this card we showed in graphic form the levels of dust count which were considered safe for employees of the asbestos industry and demonstrated that even the highest dust count which had been experienced in buildings incorporating asbestos were a long way below the level which would be considered acceptable for a worker engaged in the industry over a 50 year period. We also produced for architects a leaflet entitled "Asbestos and Health in Perspective".

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We have encouraged over the years people with enquiries on asbestos or on asbestos and health to telephone or write to our London office, which is in the offices of our public relations consultants, Hill & Knowlton. In the last two years alone we have answered over 1,000 such enquiries. Some we have been able to deal with by sending them the appropriate literature, to others we have written letters dealing with specific points, others we have passed over to the Environmental Control Committee of the Asbestosis Research Council.

Yet in spite of all the work we have done, and it has been considerable, we remain under attack. A few months ago we had another onslaught on a television programme, this time mounted by one of the commercial television companies, and directed by the same young man who directed a similar TV programme for the BBC, the one you saw two years ago.

We have also seen the publication, as you have, of "The Doomsday Book" which contains some very misleading pages on asbestos. We produced a long critique on this book, sent it both to the author and to the publishers, unfortunately without receiving from either a satisfactory answer to the points which we have raised. However when some of the distortions from "The Doomsday Book" were repeated in newspapers and magazines our letters to the editors have put the record straight.

The rebuttal of press criticism has in fact continued to be an important part of our work. At least once a month we find that some newspapers or magazines is saying foolish and misleading things about asbestos products: for example, that the home handyman is at risk from the use of asbestos cement sheet, or that the whole community is in danger because drinking water has been delivered via asbestos-cement water pipes, or that we are all at risk because millions of vehicles use asbestos in their brake linings, or because tens of thousands of buildings use asbestos in their construction. These attacks are by far the most dangerous. We know that there is no medical risk from the use of asbestos products. On the contrary, they are used to protect the public from fire or from road accidents and so on. It seems to us essential that this particular lie is nailed whenever it appears. one result of the many comments that have been made on the pollution of the

environment by asbestos has been that we have thought it sensible to join the National Society for Clean Air. We have nominated a representative to sit on the Council so that we shall be in a position to challenge at source any misleading comments which look as if they may be emanating from this source and also to suggest a proper line to take should the subject be raised as a possible matter for a paper at a conference or for representations to Government.

I should like to conclude by pointing four morals which emerge from our experience over the past four years with this kind of work. The first is that it takes up time and it takes up staff. We, as you know, retain public relations consultants and I want to emphasise that this is of considerable value, but you must not think that the role of a consultant is to save you doing the work. If you have a consultant, part of his role is to stimulate you into doing the kind of things which have to be done and this will certainly mean that you spend very much more time and deploy more staff on handling the information problems surrounding asbestos than you would without a consultant. This has certainly been our experience. It is also of course useful to have independent advice from a consultant, who sees problems more from the public's point of view than we do ourselves.

Secondly, we have found it convenient to allocate the prime responsibility for particular sectors of work to particular officers of our member companies. One company, for example, looks after the advertising, another coordinates literature and film making and draft letters to editors, another looks after exhibition work, displays and posters, and so on.

Thirdly, we have come to the conclusion that it is no good relying simply on being on the defensive. It is necessary to propagate the value of asbestos in a very positive way and this means not only spending time and making staff available, but spending money: on advertising, on film and on literature. We cannot expect people to make a fair assessment of the value of asbestos in relation to the difficulties that attend its use if they have not been told that it is valuable, and why it is valuable.

We have only ourselves to blame if we have not projected those advantages to the kind of people who are making the important decisions.

Finally, a point that differs from the views that some of you have expressed, we must project the same positive message in each of our respective countries. This is because the problem is becoming more and more an international one. Science knows no frontiers nor do modern media of communications. "The Domsday Book" was a good example of a publication which was first produced in America but has since appeared in many languages in all our countries and has done us some damage in all of them. The book contained many of the false, invalid arguments for the belief that asbestos seriously pollutes the urban environment. These are arguments that we must challenge whenever and wherever they appear. We saw yesterday how our American friends defeated a ban on asbestos in brake linings. The stand made by one's country's asbestos industry must be supported by the others.

Fortunately, we have a good case. Asbestos is unique. It does save lives. It does prevent the worst results of fire. Provided we make sure that other people know this we may be confident in the future of our industry.

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BRIEF REVIEW OF ATTACKS ON ASBESTOS AND OUR DEFENSES

Mr. W.P. Raines, Secretary AIA/NA

I. Attacks

A. Labour Unions - Selikoff -- OSHA

1. Pressure for "emergency standard"

B. Labour Unions - Selikoff - American Cancer Society

1. Major epidemiological study
2. Large funding
3. A.C.S. ability to gain attention

C. Labour Unions - Selikoff - and Local Agitation

1. Manville, New Jersey
2. Waukegan, Illinois
3. Toronto, Canada

D. Gastrointestinal Cancer

1. "Natures" article and Canadian scientists
2. Selikoff's position - no risk from ingestion

E. Selikoff and Predictions of "Epidemics"

1. World War II Shipyard Workers and Mesothelioma
2. Patterson, New Jersey Amosite Plant and "Neighbourhood" dangers.

F. Selikoff and Other "Threats" to General Public

1. Women's Coats from Italy
2. Anti-freeze
3. Talc
4. School children and modelling compounds

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G. Press - Radio - Television Interest

1. CBC-TV(Canada)
2. New York City Channel 13
3. NEW YORKER Magazine and Paul Brodeur
4. BUSINESS WEEK Magazine
5. Newspapers
6. Radio

H. Customer Alarm

I. Ralph Nader

J. Further Government Action
(Previously Discussed)

II. Defenses

A. Work with Federal, State and Municipal Government Officials

1. Federal EPA
2. Federal Department of Labor
3. NIOSH
4. Congress
5. State Governments

B. Present Testimony at Important Hearings

1. Federal EPA
2. Key States

C. Strengthen AIA/NA

1. Add new members
2. Internal seminars

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D. Prepare Literature

1. Supervisors
2. Salesmen
3. Customers
4. Others

E. Seek More Effective Ways to Get Objective Treatment by Press, TV

1. Spokesmen
2. Prepared TV Clips
3. Rebuttal

F. Publicise Favourable Information

1. McDonald Study, etc.
2. Results of Industry Tests on Products Wear, Emissions
3. Essential uses of asbestos

POINTS FROM DISCUSSIONS FOLLOWING PAPERS ON ATTACKS AND DEFENSES

<u>MR. GRIEVE</u> <u>AIC, UK</u>	<u>Question:</u>	Could I ask what the situation is in Finland?
<u>MR. PALONEN</u> <u>FINLAND</u>	<u>Answer:</u>	Shipbuilders are using asbestos, but are waiting for the availability of substitutes.
<u>M. ROBERT JOIN</u> <u>FRANCE</u>	<u>Comment:</u>	Referred to the construction of a car ferry in a French yard in which the use of asbestos was banned.
<u>MR. A. R. KOLFF VAN</u> <u>OOSTERWIJK</u> <u>HOLLAND</u>	<u>Comment:</u>	Referred to a car ferry built in a Netherlands shipyard for Townsend, in which asbestos spray was specified.
<u>MR. A. A. CROSS</u> <u>ARC, UK</u>	<u>Comment:</u>	We should clarify what precisely we mean when we say insulation. In the UK this means thermal insulation and not cabin boards. Dr. Grut, of the Danish Inspectorate, gave the impression in Helsinki that while there were substitutes for asbestos in thermal insulation there were no substitutes yet for asbestos based cabin boards. Dr. Grut has also registered that he was impressed by the performance of dust suppressed cloths.
<u>MR. W. JOHENSEN</u> <u>DENMARK</u>	<u>Comment:</u>	There was often confusion between asbestos cement sheets and cabin boards. The edge "grinding" effect was believed to create dust and this was the reason for the ban on asbestos cabin boards in some areas.

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FINAL COMMENT AND SUMMARY

Mr. M.F. Howe, Conference Chairman

I shall not attempt any detailed summing up. It would be impossible to summarise $1\frac{1}{2}$ days of discussions in a few minutes. If I may, I propose instead to express my main thoughts after listening to all the Conference discussions.

1. Wide Range of Experiences

A very wide range of situations clearly exists. At one extreme there is a relatively tranquil situation in countries such as Belgium, Italy, Germany and France. At the other end, we have the embattled situations in U.S.A. and in Britain. The other countries represented fall somewhere between these two extremes.

2. Tranquillity only Temporary

Listening to the growing problems facing the asbestos industries in America, Holland, Denmark - and, of course, Britain - I believe that sooner or later the tempo will increase in all areas. In my opinion, it will be sooner rather than later. I would earnestly counsel all of you to prepare now for greater Government interest and intervention, and for much stronger publicity attacks. You will find, as we and our American colleagues have found that time is not on your side.

3. Regulations.

As to future Government Regulations, it goes without saying that if you, through your asbestos organisations, can participate in the preparation of those Regulations that is highly desirable. If you cannot participate directly, the next best thing is to ensure the opportunity to comment freely on the draft Regulations at an early

stage. We in the U.K. were uniquely fortunate in having an active and reputable body like the A.R.C. in existence when the Regulations were in contemplation. Without the A.R.C., and remember this is an industry-created body, the British Regulations would have been far more severe. That is a point which you should all contemplate when deciding the future direction of your various asbestos organisations and here may I refer to the offer of T & N assistance made last night by Mr. Hardie. That offer is made also by BBA, Cape and the other component companies of the A.R.C.

4. Information Matters

As to information matters, here also I am convinced that, where calm now prevails, it may not prevail for much longer. The attacks may originate (and quite suddenly) from medical journalists or medical experts in your own countries, or they may spring from the writings and statements of men outside like Dr. Selikoff and Rattray-Taylor or could be inspired by Trade Unions. The attacks may be directed firstly at selected products like asbestos spray or insulation, or they may be directed at asbestos usage as a whole. In my opinion, they will relate to environmental fears to a growing extent.

5. Look to Your Defences

I would urge you all to look to your defences now. For example -

- a. Have you the right sort of organisation to deal with the coming attacks? (The New York T.V. film has shown how strong, how unfair and how damaging they can be.)
- b. Have you an action committee and will it have adequate responsibility and resources, both financial and of technical-medical character?
- c. Will your committee be ready to meet attacks at all points, whether the points be asbestos cement, asbestos textiles, asbestos insulation, brake linings? (It must be apparent that no asbestos usage can be regarded as safe from attack).

- d. Very important, have you selected a Bill Raines or a Wilfred Howard as your secretary-cum-spokesman and is he properly trained in this task?
- e. Have you contact with Public Relations Consultants who can give you sound P.R. advice and have they knowledge of the extent of your likely problems - both occupational and environmental?
- f. Have you suitable literature(perhaps like "Asbestos - Safety and Control") ready for when it is needed?

None of this is cheap, either in terms of money or of executive time, but I believe that it is indispensable. And please remember that the A.R.C. and the A.I.C. either as bodies or through the component companies are ready to help with advice and information in any way and at any time.

6. "Sleeping Dogs"

Please do not think that I am being critical of what your organisations have done so far. The maxim "let sleeping dogs lie" has a good deal in its favour when the tempo is slow and public and press interest is light. But sleeping dogs wake up suddenly and use their voices and their teeth. And when they are awake they will not sleep again! That is a lesson which we have learned in Britain and I am sure the AIA/NA has learned in U.S.A. We have learned the painful way and perhaps we can save you some pain. You must prepare in advance.

CONCLUSION

Now to my concluding remarks. I certainly hope that you feel, as I feel, that our Conference has been full of interest and well worthwhile. If that is the generally held view you may well feel that a second International Conference should take place at some time in the future - perhaps in 18 months or 2 years' time. I should welcome views about this after you return

home. If there is support for another Conference we in the A.I.C. will be happy to take the initiative again, whether or not it should be held in Britain. If we hold a second Conference, I have an uneasy feeling that more than 11 countries will want to be represented!

In the meantime, I hope and believe the close friendships forged in those two days will help all of us. On behalf of the A.I.C. and the A.R.C. may I again repeat our wish to help you in any way that we can.

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APPENDIX

INTERNATIONAL CONFERENCE OF
ASBESTOS INFORMATION BODIES
24TH AND 25TH NOVEMBER 1971

List of Delegates

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Mr. G. Engelmann	Eternit G.m.b.H., Neuss.
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Malines.

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