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INSULATION HYGIENE PROGRESS REPORTS

FROM THE INSULATION INDUSTRY HYGIENE RESEARCH PROGRAM

Irving J. Selikoff, M.D., Program Director

Vol. 2, No. 3

Fall 1970

Available Soon— The Disposable Respirator

At last—adequate respiratory protective devices will soon be available to insulation workers. Several companies are now producing disposable respirators which will both provide protection and be acceptable to workmen.

In one test conducted by the Insulation Industry Hygiene Research Program (IIHRP) of a commercial model manufactured by the Minnesota Mining and Manufacturing Co., the worker acceptance was very high. Favorable comments on such matters as breathing resistance, weight, interference with vision, and comfort exceeded unfavorable ones by three or four to one. Previous tests with this respirator demonstrated its ability to meet the Bureau of Mines standards.

Other Commercial Models

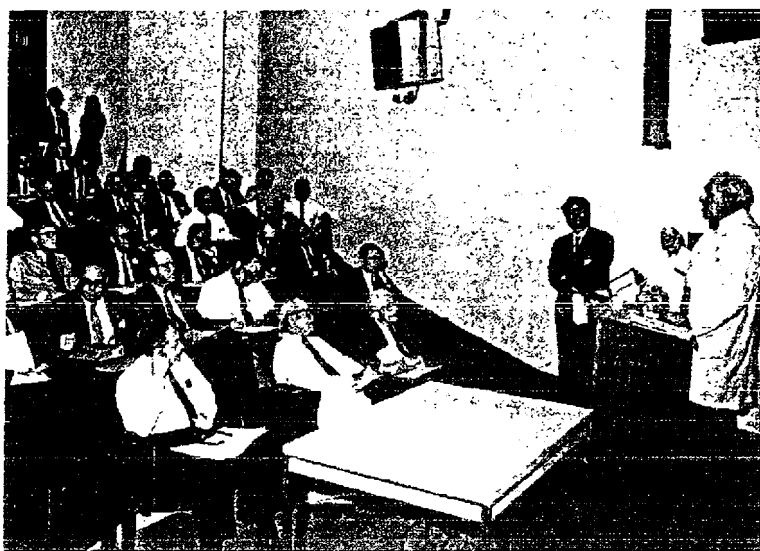
In addition to the respirator already field tested, the IIHRP will soon be field testing other commercial models for use in asbestos insulation work.

The tortuous journey to a commercially available disposable respirator began at Mount Sinai's Environmental Sciences Laboratory nearly two years ago. At a meeting then with safety equipment manufacturers, the need for respirators suitable for use in the construction industry, and particularly in insulation work, was put forward.

Single-Use Only

Because of the extreme difficulty of operating a good respirator-maintenance program on construction sites, single-use respirators were a necessity. Moreover, many states required that only U.S. Bureau of Mines approved respirators be used.

(Continued on page three.)



Dr. Irving J. Selikoff (l.) and Dr. Y. Suzuki (2d r.) of Mount Sinai's Environmental Sciences Laboratory addressed the participants of the post graduate course on asbestos disease.

World's First Course in Asbestos Effects

As a historic first in occupational medicine, The Mount Sinai School of Medicine presented a four-day post-graduate course during June on all aspects of the health effects of asbestos. The course was given to 43 physicians and scientists from all regions of the U.S. and six other countries including England, Wales, Germany and Canada.

The program was under the direction of Professor Irving J. Selikoff, Director of the Environmental Sciences Laboratory of Mount Sinai.

All the Worker's Problems

Extensive presentations were made and discussions held on all clinical aspects of asbestos disease including patient management, x-ray diagnosis, pulmonary function analysis, and pathology. Epidemiology of asbestos-related disease in both occupational

and environmental circumstances was also discussed.

The full spectrum of problems facing the insulation worker was presented including description of insulation operations especially contributing to high dust levels. Industrial Hygiene procedures found to reduce these levels such as the use of efficient dust collectors, plastic cement bags, coated calcium silicate block, and appropriate face respirators were also demonstrated.

Trips to Construction Sites

The course included field trips to see the application of thermal insulation material at both large and small construction sites in New York and New Jersey, arranged by Jacob Novak and James Mulhearn, International Vice Presidents of the Asbestos

(Continued on page two.)

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PURPOSES OF THE INSULATION INDUSTRY HYGIENE RESEARCH PROGRAM

1. To develop improved methods for minimizing exposure of insulation workers to dusts and fumes encountered in their work.
2. To disseminate knowledge of these improved methods of dust control wherever they may be applied advantageously and to offer cooperation, advice and assistance toward their universal adoption.

World's First Course in Asbestos Effects

(Continued from first page.)

Workers Union.

Visits to the world's largest asbestos mine in Quebec, Canada and to an asbestos manufacturing plant in Manville, New Jersey, were arranged through the cooperation of the Johns-Manville Corporation.

A Day in the Lab

Those interested in the laboratory aspects of asbestos sampling and extracting from tissue and air as well as electron microscopic studies of the pathology of lung tissue reaction to inhaled asbestos fibers spent a day in the laboratories of Mount Sinai School of Medicine's Environmental Sciences Laboratory.

Each day at lunchtime speakers discussed broad aspects of environmental and occupational health. One of them, Dr. René Dubos, Professor of Pathology and Microbiology at Rockefeller University, spoke on "Ecological Perspectives of the 1970's".

Frank and Open Discussion

Dr. Douglas H. Lee, Associate Director of the National Institute of Environmental Health Sciences, and Dr. Marcus Key, Chief, Bureau of Occupational Safety and Health of the Public Health Service, were other

featured speakers.

Dr. Selikoff commented with pleasure on the diversified background of the participants and on the frank and open discussions held among themselves and with the faculty.

Unions Sponsor M.D.s

"We had physicians sponsored by local unions of the Asbestos Workers," he said, "representatives of the National Insulation Contractors Association, and medical directors of asbestos manufacturing companies all meeting together with a single purpose—to improve the health of the asbestos worker."

"It's also noteworthy that more than a dozen registrants were representatives of the Public Health Service or various State Departments of Health. This demonstrates an increasing awareness by federal and state agencies of the multiplicity of problems facing Asbestos Workers."

What The Class Said:

"The most informative course I have ever attended."—H. Blejer, M.D., California Dept. of Health.

"Enjoyable and stimulating."—W. Smither, M.D., Medical Director, Cape Asbestos Co., London.

"Superb seminar."—G. Campbell, M.D., Coordinator, Mississippi Regional Medical Program.



Prof. René Dubos (c.) of Rockefeller University speaking during a discussion at the asbestos disease course.

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Disposable Respirators Will Be Available Soon

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But no Bureau of Mines schedule existed that was suitable for disposable respirators. Hence no approved models were commercially available.

In the research towards the goal of making disposable respirators available, the IIHRP has helped arrange field tests in which members of Local 17 in Chicago of the Asbestos Workers participated by wearing respirators and giving their observations of the desirable and undesirable features of the devices. These trials and results were extremely helpful in assisting manufacturers to devise equipment which is as unobjectionable as possible and still effective.

Bureau of Mines Criteria

An important recent development has been the action of the U.S. Bureau of Mines in issuing a schedule listing criteria for approval of disposable single-use respirators. This approval schedule lists essential requirements which respirators must meet. Among the requirements are efficiency of dust removal, resistance

to breathing, and adequacy of face fit. The criteria insure that all respirators will give adequate protection.

Another significant development now taking place is the preparation of an American National Standards Safety Guide for protection against asbestos-containing dust. This standard is being written by a subcommittee of the American National Standards Institute's Committee on Respirators.

When to Wear Them

The subcommittee, chaired by Duncan Holiday of the IIHRP, is composed of representatives of regulatory agencies, the International Association of Heat and Frost Insulators, the Insulation Contractors Association, respirator manufacturers, and research and university groups.

The standard developed will detail circumstances in which respirators should be worn, and also give guidance in selection of respirators and any information which is necessary for the operation of a respiratory protection program.

Certain operations, however, produce so much dust that more protection is required than can be obtained by half-mask respirators. One such condition is the tearing out of insulation aboard ship in confined spaces.

Air-Conditioned!

A battery-operated device which supplies filtered air to the respirator and is suitable for use in extremely dusty conditions was recently tested by the IIHRP at the World Trade Center in New York. This equipment was developed by Prof. William Burgess at the Harvard School of Public Health working in cooperation with the American Iron and Steel Institute.

It is not yet commercially available, but many units have been constructed and are being tested in several industries. The device is lightweight and will operate for eight hours on one battery charge. Full field tests are planned and will be reported on in a later issue of *Insulation Hygiene Progress Reports*.

HELP WANTED

—AGAIN

There is a reservoir of talent, knowledge and expertise in the insulation industry, that has barely been tapped—that of the Asbestos Worker. His knowledge of problems and perhaps solutions that he has found effective should be available to the entire industry.

In the development of practical solutions for the dust problems in insulation work, comments and suggestions of members of the International Association of Heat and Frost Insulators and Asbestos Workers have been of prime importance.

In field trials of respirators, dust collectors, or new cement mixing methods, the effectiveness of each procedure was tested against the experience of the men involved.

In future issues of *Insulation Hygiene Progress Reports* we would like to feature comments, suggestions, and ideas of asbestos workers throughout the country.

We welcome your help. We need your help. Please send any comments or suggestions you may have to me at Mount Sinai School of Medicine in New York City.

I. J. Selikoff, M.D.
Program Director



A battery-powered air supply respirator is worn by Duncan Holiday during efficiency tests. For this test two air-sampling pumps are attached to his belt.



The battery pack and air filtration unit of the air-supplied respirator. This respirator is for use only in extremely dusty conditions.

Plastic Cement Mixers Are The Next Thing

Dr. Fred L. Pundsack, Vice President for Research and Development of Johns-Manville Corporation, will market their line of asbestos cement in plastic bags beginning in September.

These bags will allow water to be added and the cement to be mixed inside the bag. A previous study by the IHRP demonstrated that dust levels could be reduced to one tenth that of standard tub or bucket mixing methods.

No Extra Equipment Needed

The bags used are suitable for use with conventional bag-filling equipment. Thus they can be introduced industry-wide with no additional investment in plant equipment.

The IHRP has made available to all manufacturers of asbestos cement, samples of the bag used by Johns-Manville as well as information on the effectiveness of its use.

"Experience Valuable"

Dr. William J. Nicholson, IHRP Program Coordinator, stated: "The clear benefits to insulation workers will only come through industry wide acceptance of this mixing method. As in any variation of trade practices, practical experience will undoubtedly have much to contribute in the rapid introduction of this important safety measure."



A plastic mixing bag containing asbestos cement being filled with water through a valve at the top of the bag.



Charles Collins, President of Local 30 of the Asbestos Workers Union, cutting calcium silicate block during the powered hand-saw trials at the Hoffman Air Systems plant in Syracuse, New York.

Saber Saw May Answer The Sawdust Problem

The insulation application trade has a sawdust problem. The hand-saw—most commonly used tool by asbestos workers—generates significant dust, and such saws cannot yet be fitted with suitable dust-control devices.

Tests Show Less Dust

As an alternative to extensive

handsawing, the IHRP is currently investigating cutting devices which can be fitted with portable dust control units. One such unit offering possibilities for dust reduction is the saber saw. Preliminary tests have shown that a saber saw fitted with the proper blade and appropriate dust collector can reduce the level of dust produced when calcium silicate materials are cut.

These early trials also demonstrated that only heavy-duty saws would be suitable. Currently studies are under way to determine the right combination of saw, blade, and dust collector for standard cutting jobs.

Don't use Hand for Band

Because of the size of existing dust collectors, the use of a saber saw thus equipped would be limited to power-house work and on industrial sites having well-localized insulation applications.

A word to the wise: powered hand saws should not be used as a substitute for band saws which can be equipped with dust collectors of greater efficiency (see *Insulation Hygiene Progress Reports* Vol. 1, No. 4).