The ADVISOR

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

5600 Fishers Lane,
Rockville, Md. 20852

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"There is only one way to achieve happiness on this terrestrial ball, and that is to have either a clear conscience, or none at all."

—Ogden Nash

TO OUR FRIENDS AND ASSOCIATES:

With this first issue of *The ADVISOR*, the National Institute for Occupational Safety and Health initiates a long-needed newsletter service. It is intended for distribution to everyone who is interested or involved in the NIOSH mission. *The ADVISOR* is not intended to provide a complete overview of national developments in occupational safety and health, but it will describe currrent NIOSH activities, projects, and accomplishments which are of broad interest. The Office of Public Information will issue this publication on an approximately monthly, albeit irregular, basis.

This introductory issue contains basic information about the Institute's priorities, its organizational structure, research activities, and other announcements of general interest. The scope of *The ADVISOR* will include any and all major NIOSH activities at its various sites across the Nation. This will keep its editor busy — and you better informed!

Herbert M. Hohn, Director
Office of Public Information

NIOSH INVESTIGATES OPERATING ROOM HAZARDS

NIOSH is actively studying the problem of excessive numbers of miscarriages and other health hazards among female operating room personnel. According to Dr. Joseph K. Wagoner, Director of NIOSH's Division of Field Studies and Clinical Investigations, past research studies, including studies by Stanford University, have indicated a significantly higher rate of spontaneous miscarriages among female operating room personnel than among general duty nurses. "We suspect that this phenomenon is associated with exposures by nurses, anesthetists, technicians and others to the various types of anesthetic agents used in the operating room environment," Dr. Wagoner stated.

Studies by other groups have demonstrated teratogenic responses (fetal anomalies) in animals following exposures to anesthetic agents such as halothane and nitrous oxide.

On June 7-9, NIOSH was the sponsor of a three-day workshop on operating room hazards, conducted in Salt Lake City, Utah. Participants included scientific investigators in the field of anesthesiology and representatives from the American Hospital Association, American Society of Anesthesiologists, the American Association of Nurse Anesthetists, Association of Operating Room Nurses, the Environmental Hygiene Laboratory of the U.S. Army, and Public Health Service hospitals.

Results of the meeting included the recommendation that NIOSH should develop recommended work practices and criteria governing occupational exposures to waste anesthetics. Preliminary recommendations were also made concerning the use of special venting devices on anesthesia machines and the need for exposed personnel to be made aware of the potential hazards.

NIOSH REQUESTS INFO ON CARCINOGENS

In preparing for the development of criteria documents for a number of suspected carcinogenic substances, NIOSH has issued a public request for relevant information or data not readily available in the open scientific literature. The request was made in a recent edition of the Federal Register. The suspected carcinogens, announced by Dr. Charles H. Powell, Director of the Office of Research and Standards Development, are as follows:

2-Acetylaminofluorene
para-Aminobiphenyl
Benzidine and its salts
3,3' Dichlorobenzidine
4-Dimethylaminoazobenzene
alpha-Naphthylamine
beta-Naphthylamine
4-Nitrodiphenyl
N-Nitrosodimethylamine
beta-Propiolactone
bis(Chloromethyl) Ether
Chloromethyl Ether
Dimethyl sulfate
4,4' Methylene bis(2-Chloroaniline)

Information concerning any of the above substances, with accompanying documentation, is particularly desired in the following general areas: (1) establishment of safe exposure levels and safe work practices; (2) establishment of biological standards; (3) engineering controls; (4) specifications for personal protective equipment; (5) methodology for air sampling and analysis; (6) medical examination needs, including diagnostic tests; (7) procedures for controlling workplace environment; (8) types of recordkeeping required; and (9) warning devices and labels. Information or data on these and/or other relevant points should be submitted within 90 days to: Assistant Director for Research and Standards Development, National Institute for Occupational Safety and Health, Room 10-28, 5600 Fishers Lane, Rockville, Maryland 20852.

NIOSH HOLDS CINCINNATI AWARDS CEREMONY

The Cincinnati Convention Center was the site of the first anniversary celebration and awards ceremony for NIOSH. The ceremonies were held on June 9 and were attended by nearly all NIOSH Cincinnati staff.

Associate Director for NIOSH's Cincinnati Operations, Dr. Edward J. Fairchild, presided at the ceremonies, which included an address by NIOSH Director Dr. Marcus M. Key. Also participating and presenting remarks were United States Congressman William J. Keating, Ohio State Senator Stanley J. Aronoff, Mayor of Cincinnati Thomas A. Luken, Dr. Raymond R. Suskind, Kettering Laboratory of the University of Cincinnati and Ronald J. McCann, Department of Labor (OSHA). The awards were presented by Mr. Lee W. Smith, Assistant Surgeon General and Director of Personnel Operations, United States Public Health Service Commissed Officers Corps.

Public Health Service Commendation Medals were presented to NIOSH's Dr. Joseph K. Wagoner, Director of the Division of Field Studies and Clinical Investigations, and Dr. Victor E. Archer, Medical Director at Salt Lake City's laboratory facility. Both men were presented commendation medals in recognition of their contributions to the epidemiologic study of health hazards in the uranium mining industry. Their work has focused upon excessive rates of respiratory cancers among uranium miners and has resulted in the publication of a monograph entitled, "Radon Daughter Exposure and Respiratory Cancer — Quantitative and Temporal Aspects."

NIOSH scientists, Howard E. Ayer and Dr. Lewis J. Cralley, were each presented the Public Health Service Meritorious Service Medal. Mr. Ayer was recognized for his contributions to worker health through his research into human exposures to airborne particulates in occupational environments. Dr. Cralley was presented his award in recognition of his research into developing safe worker exposure levels to such potential occupational hazards as uranium, asbestos, silica, beryllium and diatomaceous earth dust.

NIOSH Chief Toxicologist, Herbert E. Stokinger, received a Superior Service Award for his valuable contributions to the knowledge and practice of industrial toxicology.

Forty-five NIOSH staff members were presented with Length-of-Service awards including 30-year awards to Mr. Earle P. Shoub, Deputy Director of NIOSH's Appalachian Laboratory for Occupational Respiratory Diseases, and Mr. Vernon B. Perone, industrial hygienist at the Cincinnati Laboratories.

CRITERIA DOCUMENTS — CURRENT SCHEDULE

Dr. Charles Powell, Director of the National Institute for Occupational Safety and Health's Office of Research and Standards Development, has announced planned completion dates for recommended standards now being prepared by his staff. These documents are the NIOSH recommendations for standards which are forwarded by HEW to the Department of Labor's Occupational Safety and Health Administration (OSHA) for review, promulgation, and enforcement.

The first criteria document, on occupational exposure to asbestos, was produced by NIOSH and transmitted by HEW to the Department of Labor in early February. It later appeared in published form* and has been issued by OSHA as a standard, following review and modification.

Others in an advanced state of preparation and expected to be transmitted during this fiscal year (by the end of June) are for noise, carbon monoxide, and beryllium. Those expected to appear by the end of September are for: cotton dust, heat stress, ultraviolet radiation, silica, mercury, and bis(chloromethyl) ether.

Other areas for which criteria documents are under development, but for which completion dates cannot yet be given, include: benzene, lead, trichloroethylene, parathion, cadmium, fibrous glass, chromic acid, arsenic, toluene, sulfuric acid, and sulfur dioxide.

Several criteria documents on biological standards — giving permissable levels of specific toxic substances in blood and urine — are expected to be completed within Fiscal 1972, also. Announcements will be made as to publication dates for these when they are known.

1972 TOXIC SUBSTANCES LIST BEING ASSEMBLED

The 1972 *List of Toxic Substances* is currently being edited by Dr. Herbert E. Christensen, Chief of the Toxicity and Research Analysis Branch, Office of Research and Standards Development. Such an annual revision is required of NIOSH under the terms of the Occupational Safety and Health Act.

The 1972 edition of the *List* will contain many more substances than its 1971 predecessor, which included about 8,000 items. It will give, for each substance listed, its synonyms, dose effects, toxic levels, and literature citations. The new list will also have a different format that will make for easier reading.

The 1972 *List* will be more comprehensive in that it will contain more neoplastic chemicals, including teratogens and mutagens — substances associated with abnormal cell growth and cancer. More pesticides will be identified by their trade

* *Criteria for a Recommended Standard/Occupational Exposure to Asbestos* can be obtained from the Office of Public Information, NIOSH, 1014 Broadway, Cincinnati, Ohio 45202.

names. Chemical Abstracts Service registry numbers — unique numbers positively identifying each substance — are being entered and will appear for many of the entries. Also being entered are Wiswesser line notations, which are alphanumeric notations for the three-dimensional configurations of the molecules. Being linear, these notations can be coded for placement in computer memories, making possible speedy machine searches for substances having specfied chemical properties.

An announcement will be made in a later issue of *The ADVISOR* of the availability of the 1972 *List of Toxic Substances*.

NIOSH AND ITS RESEARCH PRIORITIES

In setting its research priorities, NIOSH is initially considering accident hazards and health hazards on separate basis (see "Safety" story elsewhere in this issue). The priority system for occupational health research utilizes a rating technique based upon a linear relationship of the following variables:

1. Number of workers exposed to a given health hazard
2. Professional evaluations of the relative toxicity of a given substance
3. Documented number of cases of disease from a given substance
4. Amount of the substance produced and used each year
5. Estimates concerning decreased or increased usage of the substance

A priority system for accident hazards alone is being developed under contract with Arthur D. Little, Inc., in Cambridge, Massachusetts. A review of on-going job safety research has already been completed by that organization; eventually, approximately 100 safety research project priorities will be identified for NIOSH consideration. When the desired level of sophistication is reached, the health and safety priority-setting system may ultimately be merged.

The top research priorities for producing recommended standards (criteria documents) as of this writing concern the following substances: beryllium, carbon monoxide, noise, heat stress, cotton dust, ultraviolet radiation, lead, silica, and mercury. Criteria for a recommended standard on asbestos were transmitted to the Department of Labor in February of this year — the first to be developed by NIOSH under the Occupational Safety and Health Act.

Job hazard surveillance activities carried on by NIOSH's Office of Health Surveillance and Biometrics, which is under the direction of Mr. Vernon Rose, will eventually provide substantial input into safety and health priorities. The National Occupational Hazard Survey, for example, is a two-year study of all non-agricultural industries covered by the Act. This program involves on-site visits to plants across the nation by specially trained surveyors. It includes interviews with plant management personnel and walking tours of plant premises in order to enumerate the types of chemicals and physical agents in the workplace and numbers of workers exposed.

The statistical sample of workplaces to be surveyed was designed in cooperation with the Bureau of Labor Statistics, U.S. Department of Labor, and encompasses approximately 8,200 establishments. When the survey is completed in the fall of 1973, NIOSH will have a detailed and reliable description of in-plant conditions for the bulk of the American working population. The data will be on an industry-, occupation-, and hazard-specific basis.

Another method of identifying previously unrecognized hazards for input into the NIOSH priority system is through a systematic review of available data on disease prevalence. The Illness and Injury Surveillance Branch of the Office of Health Surveillance and Biometrics is directed by Dr. J. William Lloyd, and is the focal point for such record studies. Data sources include existing occupational safety and health literature, vital statistics data, Social Security Administration disability data, and worker population data gathered from selected industries, labor unions, and government agencies. Such record studies, focusing upon a variety of occupations, are now underway in Dr. Lloyd's Branch.

For example, British and American data show that dentists have a relatively high rate of suicide; data from other sources suggest an excess of leukemia and certain neurological diseases among members of this profession. Because of the recognized long-term, low-level exposure of dentists to mercury and radiation, a large-scale study of the mortality experience of American dentists is being undertaken by NIOSH in collaboration with other government agencies and the Temple University School of Dentistry.

Similarly, a review of the literature has suggested that benzene exposure could result in an excess of leukemia cases among printing pressmen. With the cooperation of the International Printing Pressmen and Assistant's Union, NIOSH has gathered mortality records and is undertaking a detailed analysis.

Similar analyses are being done for heavy construction machinery operators and stationary engineers in cooperation with the International Union of Operating Engineers. Other mortality studies now in progress concern steelworkers, workers exposed to cutting oil mists, and sheet metal workers.

These record studies raise warning flags by calling attention to unusual morbidity or mortality patterns among selected worker populations. Consequently, these studies often stimulate the development of new research efforts that focus upon specific hazards in specific industries.

Such warnings of previously unknown or undocumented occupational dangers can then be confirmed or disproved by epidemiological research in the field. NIOSH's Division of Field Studies and Clinical Investigations directed by Dr. Joseph K. Wagoner, is the focal point of these studies — the subject of an article in the next issue of *The ADVISOR*.

NIOSH AND "SAFETY"

As many of our readers know, the National Institute for Occupational Safety and Health was formed around the organizational structure of the former Bureau of Occupational Safety and Health of the Public Health Service. The Bureau's program had focused primarily on health hazards — as opposed to those problems which result in trauma — or accident hazards. Since its establishment, NIOSH has increased its in-

volvement and expertise in the area traditionally referred to as "occupational safety" or occupational injury prevention.

The importance of its expanded mission was recognized by NIOSH when it established the post of Assistant Director for Safety, and proceeded to fill it with Mr. Alfred C. Blackman, former Managing Director, American Society of Safety Engineers. As Assistant Director for Safety, Mr. Blackman is responsible for policy guidance of NIOSH injury prevention and control involving all research, experimentation, training and technical assistance. He also coordinates NIOSH's activities in this area with those of the Department of Labor.

NIOSH's role in accident prevention continues to deepen through the addition of new personnel, the initiation of new research projects, and through the development of new training and education programs.

To increase the safety engineering competence of the NIOSH Office of Research and Standards Development, under Dr. Charles H. Powell's direction, Dr. Char Mahrok, previously a safety engineer and compliance officer with the Department of Labor's Occupational Safety and Health Administration, has been added. Dr. Mahrok's role will be to coordinate the safety efforts of the Office of Research and Standards Development — the NIOSH focal point for developing recommended standards.

Similarly, the Division of Technical Services, under Dr. Bobby Craft, has recently added Mr. Jim Walters to its staff. Mr. Walters was previously Chief of the Program Development Branch, Bureau of Product Safety, Food and Drug Administration, and brings to NIOSH a rich professional background in the safety field. Within the Division of Technical Services, he is undertaking the formulation of an Accident Prevention Services Branch. Under his direction, this Branch will serve as the NIOSH focal point for technical assistance and consultation concerning control techniques for reducing industrial accidents and other related service functions.

A priority-setting scheme for conducting accident and injury research is being developed under contract (see "Priority" story this issue), and eventually 100 or more research project priorities will be identified. In the meantime, NIOSH has already embarked on a number of research projects directly pertinent to the problem of occupational accidents.

One such project, being undertaken by the Behavioral and Motivational Factors Branch, Division of Laboratories and Criteria Development, seeks to determine how behavioral science concepts and methods can be utilized to improve industrial safety and health practices. This project seeks to develop model accident-control plans for industry, based upon known psychological and motivational principles. The plans will be tailored for application to three high-accident industries and evaluated for their effectiveness. Another facet of this study will demonstrate techniques for modifying behavior and correcting faulty work habits of employees in high-risk jobs.

A NIOSH grant to Villanova University is resulting in the development of protective shields for eyes, face, and body, particularly suitable for laboratory workers who deal with potentially explosive substances.

The biomechanics of lifting are being studied by the Physiology and Ergonomics Branch, Division of Laboratories and Criteria Development. NIOSH is evaluating the physical stresses which occur to individuals during materials handling and lifting in both static and dynamic work situations. This work is being conducted under contract by the Center for Safety, New York University.

The Industrial Hygiene Services Branch, Division of Technical Services, is investigating the head protection requirements of the coal mine environment and will develop prototypes for protective devices.

At NIOSH's Morgantown facility (the Appalachian Center for Occupational Safety and Health), a testing and certification laboratory is being established. This laboratory will serve as the focal point for respirator testing, and will soon begin to test and certify other personal protective equipment for which OSHA standards exist. Included among the categories of personal protective equipment being considered for testing are: hats, glasses, shoes, belts and harnesses, protective clothing, and earplugs. Industrial hygiene measuring equipment will also be tested and approved, such as gas detector tubes, dust sampling equipment, etc.

The NIOSH Division of Training presently offers an expanding variety of courses running from three days to two weeks in length. The course topics are various, ranging from industrial hygiene engineering to occupational health nursing. This Division provides a one-week course in laboratory safety, training safety managers, laboratory staff, and related workers in preventing accidents. It includes a review of plumbing, electrical and other appropriate standards, materials handling and disposal, etc.

Under the Office of Extramural Activities, directed by Dr. Allan Stevens, an increasing number of grants are being awarded to colleges and universities to develop and support educational programs which will provide needed qualified personnel, both professional and paraprofessional. One of the new programs is being carried out by Indiana University of Pennsylvania, and will produce graduates from a four-year program with baccalaureate degrees in industrial hygiene and safety. A NIOSH-supported project at New York University's Center for Safety is training selected graduates from appropriate disciplines for professional careers in the control of occupational hazards. NIOSH estimates that the present lack of manpower needed to effectively carry out the purposes of the Occupational Safety and Health Act includes 5,000 to 10,000 safety professionals.

As NIOSH continues to grow and expand, new research and training projects will be undertaken, with emphasis on occupational injury prevention. New personnel will be added to further increase NIOSH competency in this area.

In discussing NIOSH's broad responsibilities in safety and health, Assistant Director for Safety, Mr. Al Blackman stated, "We seek to exert better control over the environment in which individuals must work. This includes not only hazards associated with machinery and other types of tools, but also chemical substances and those hazards referred to as physical agents, such as noise, vibration, and radiation. Consequently, the artificial line of demarcation between occupational injuries and occupational illnesses will probably disappear in the future. In the meantime, we'll continue to vigorously attack the overall problem on all fronts, including the area we now refer to as 'occupational safety'."

BLURBS

*** For those interested, a general overview of the NIOSH research program is contained in a guest editorial by Herbert Hohn in the *Journal of Safety Research,* June 1972/ vol. 4/no. 2. The Journal is published quarterly by the National Safety Council.

*** The President's Report on Occupational Safety and Health, describing progress by OSHA and NIOSH in implementing the Occupational Safety and Health Act of 1970 during the first year, is currently available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The price is $1.75 each. Stock number is 2915-0011.

*** Enclosed with this issue of *The ADVISOR* is a listing of NIOSH service personnel by name, organizational unit, address and phone number. We hope it comes in handy.

*** The next ssue of *The ADVISOR* will be somewhat less introductory, containing items concerning specific research undertakings, the current status of the NIOSH Testing and Certification Laboratory in Morgantown, West Virginia, the activities of the Division of Field Studies and Clinical Investigations, et al.

*** If you're finshed reading this issue, why not pass it on to someone who may also be interested in NIOSH's activities, and/or encourage them to write to us for additional information, publication lists, directories, etc. Thanks.

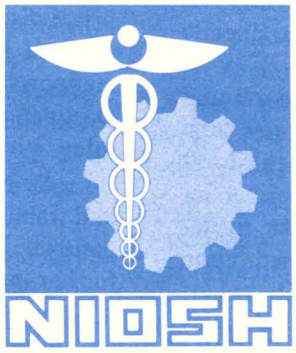
*** NIOSH Director, Dr. Marcus M. Key, was presented the Meritorious Service Award by the American Conference of Governmental Industrial Hygienists at the ACGIH Annual Banquet, May 16 in San Francisco. The NIOSH Deputy Director, Mr. Edward J. Baier, was presented with a plaque by the American Industrial Hygiene Association honoring him for his 3 years of service as AIHA Secretary, on May 18 at the AIHA Banquet in San Francisco.

*** Mary Louise Brown, Chief of NIOSH's Health Maintenance Branch, Division of Training, was elected to the Board of Directors of the American Nurses' Association at its recent convention in Detroit. Miss Brown also chairs the Subcommittee on Nursing's Contribution to the Health of Workers, Permanent Commission and International Association of Occupational Health.

MORE TO COME

We hope that this first trial issue of *The ADVISOR* contained something of value for each one of you on the receiving end. We'd be pleased to hear your reactions if you care to write or call us. The NIOSH Office of Public Information has recently added a couple of staff members, and we hope to be of increased service to all of you who are interested in following the various goings-on in the National Institute for Occupational Safety and Health. Let us know how else we can be of service.

Staff, Office of Public Information
NIOSH



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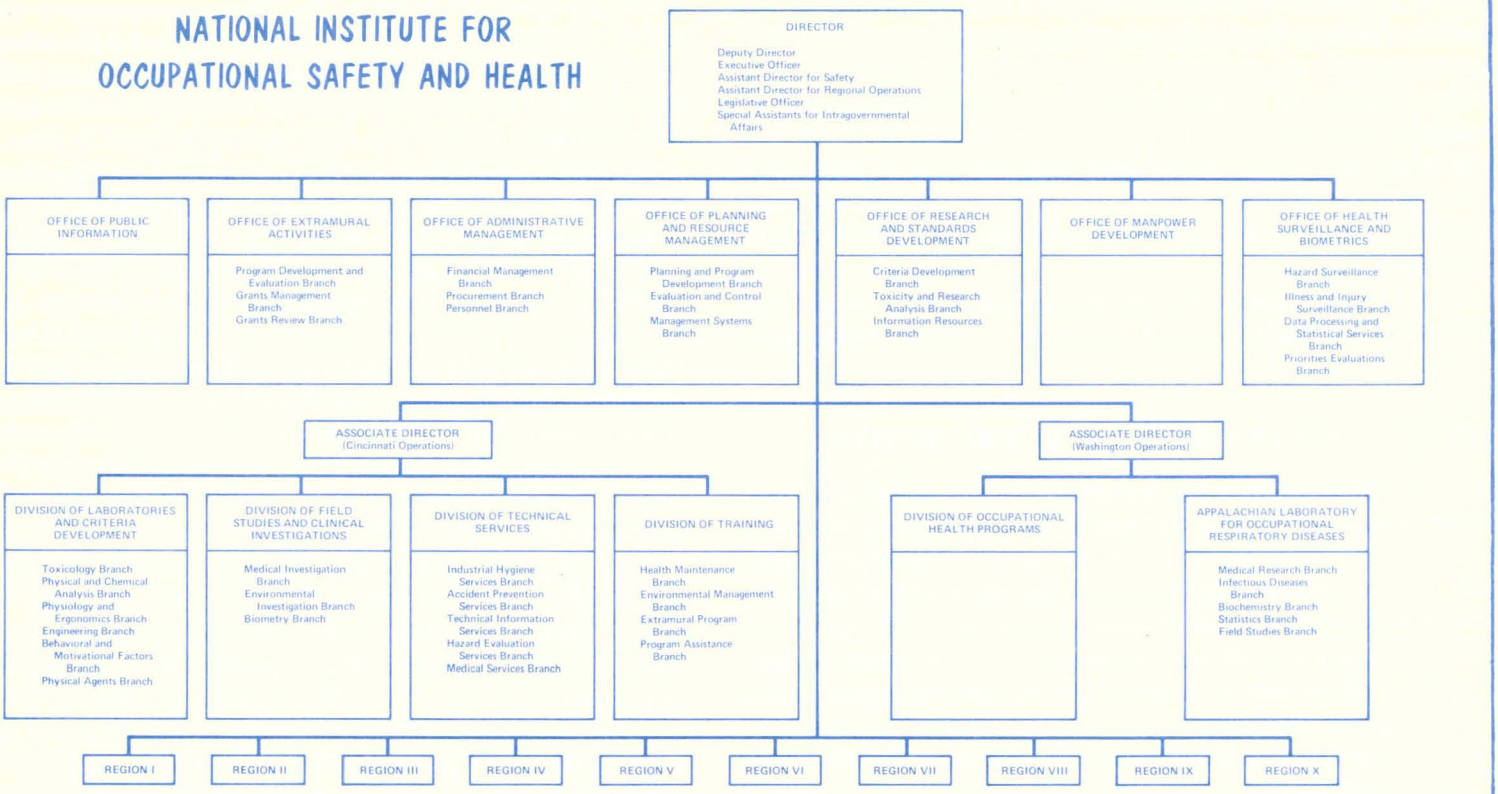

HEADQUARTERS

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CINCINNATI LABORATORY

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APPALACHIAN LABORATORY

Appalachian Center for Occupational Safety & Health
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