

FILE NAME: Ford (FD)

DATE: 1973-1975

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DOCUMENT DESCRIPTION: Letters to and from Mt. Sinai School of Medicine



W. Dale Compton
Vice President
Scientific Research

Ford Motor Company
20000 Rotunda Drive
Dearborn, Michigan 48121

October 23, 1973

Professor Irving J. Selikoff, M.D.
Department of Community Medicine
Mount Sinai School of Medicine
City University of New York
5th Avenue and 100th Street
New York, New York 10029

Dear Professor Selikoff:

I am pleased to advise you that the Department of Community Medicine has been selected for renewal of the Ford Motor Company Grant for the academic year 1973-1974. Enclosed is a Ford Motor Company check in the amount of \$5000 to City University of New York.

As previously, the purpose of the grant is to assist and encourage research at the doctoral level. The funds are intended to be used in innovative ways which will help strengthen your graduate research program in asbestos toxicology and related areas. Your use of the funds is unrestricted within the general purpose of the grant. However, some or all of the funds may be used for fellowship purposes, provided each award is identified as a Ford Motor Fellowship and offers a minimum stipend of \$2500 per academic year for the recipient.

We would like Dr. Roy Gealer of our Scientific Research Staff, Chemical Engineering Department, to be the focal point for interaction between your Department and the Ford Motor Company.

Dr. Gealer joins me in expressing our pleasure in being able to continue the support of your research program.

Yours very truly,

009912

W. Dale Compton

cc Chancellor Robert J. Kibbee
Dr. Roy Gealer
L. J. Brennon, Corporate Contributions

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The sticky note shown below was written
by Barry Castleman and attached to the
page immediately following this one along
the right margin at the spot marked on the
next page with an **X**

US
Using
Ford
\$ for
Oracle
study
12/73

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Dear Dr. Solikoff:

We are interested in your project and we would be pleased to meet with you to discuss in more detail how we might be able to assist in the evaluation of possible indicated environmental control measures and in providing additional information on brake lining materials other than asbestos.

With best regards.
15 JAN 74 10:01

Original Signed By
Duane L. Block, M. D.

011523



Inter Office

Scientific Research Staff

March 8, 1974

To: W. D. Compton

cc D. L. Block M. Humenik/J. E. Mayer
E. Eichen L. Roslinski
S. Gratch/J. V. Petrocelli P. E. Toth

009906

Subject: Brake Maintenance Shop Workers Dust Exposure -- Mount Sinai School of Medicine Investigation

The Department of Community Medicine of the Mount Sinai School of Medicine, City University of New York, is initiating an investigation into possible health hazards associated with respirable particles to which workers in brake maintenance and repair shops may be exposed. In prior communications, D. L. Block, M. D., Director of Employee Health Services, Personnel and Organization Staff, and E. Eichen, Manager of Central Laboratory Services, had discussed with Professor Irving J. Selikoff of Mount Sinai the possibility of some degree of Ford assistance in this investigation. A meeting, arranged by Drs. Block and Selikoff to pursue this further, was held on March 1. Present from Mount Sinai were Drs. Arthur M. Langer and Duncan Holliday. Present from Ford, in addition to Drs. Block and Eichen, were P. E. Toth and L. Roslinski of Employee Health Services, and A. E. Anderson and R. L. Gealer of Scientific Research Staff.

The Mount Sinai people indicated that their objective is to sample and examine qualitatively and quantitatively (for asbestos and other materials) the particulates suspended in the air of brake maintenance shops in New York City and to establish the degree of hazard involved through blood analysis, radiographic, morbidity, and mortality studies of an identified group of workers. While they have sampled and plan to sample the air in a large number of shops, only a few samples have been examined to date. Results were presented of a preliminary examination for asbestos of filters which sampled the air during (1) the cleaning of an old brake assembly and (2) the grinding of new brake linings. Examination by optical microscopy using the procedure specified by the National Institute for Occupational Safety and Health (NIOSH) showed 0.0 fibers/cc of air for the first sample and 2.7-3.9 fibers/cc for the second. The current maximum allowable exposure (5 hours average) is 5 fibers/cc but is scheduled to be lowered to 2 fibers/cc. The NIOSH optical microscopy method counts only fibers greater than 5 microns in length. Examination of these samples was also performed by transmission electron microscope (TEM) at 10,000X using the procedure developed at Mount Sinai (low temperature ashing of the filter followed by rubbing out on a glass slide and transferring to the TEM grid) and counting all visible asbestos fibers. This study indicated

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W. D. Compton

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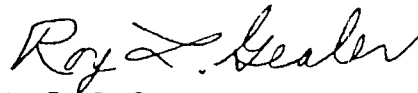
March 8, 1974

0.5-1.0 microgram asbestos/cu. m of air for the first sample and 30-40 microgram/cu. m for the second (note the different units). The level of asbestos in the ambient air of New York City has been measured in the range of 0.001-0.1 microgram/cu. m.

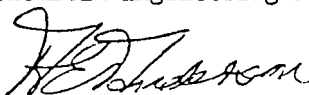
The Mount Sinai people were particularly interested in learning about the other possible constituents of brake dust, e.g., lead, to guide their studies of health effects on the workers. We provided information on the kinds of substances which could be present, stressing that while nearly all brake linings contain chrysotile asbestos, the other constituents vary with formulation and thus while a given material may be present at times, it may not be present in the air sample from a particular few brakes. We indicated that brake wear dust may contain not only ingredients initially present in the linings, but also organic and inorganic substances created as a result of chemical reactions of constituents at the rubbing interface, e.g., forsterite forms as a decomposition product of chrysotile asbestos. Iron, iron oxide, and road dust also would be present.

We stated that it would be preferable to classify the workers according to operations performed, since the amounts and types of exposure should be different in cleaning old brake assemblies, handling new linings and grinding new linings to size.

The main interest of the Mount Sinai representatives at this meeting appeared to be to gain information to guide their medical evaluations of brake workers -- no specific active participation by Ford was suggested.



R. L. Gealer
Chemical Engineering Department



A. E. Anderson
Mechanical Research Department

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MOUNT SINAI SCHOOL OF MEDICINE
of The City University of New York
FIFTH AVENUE AND 100TH STREET • NEW YORK, N.Y. 10029



Department of Community Medicine

April 8, 1974

Dr. Roy Gealer
Ford Motor Company
The American Road
Dearborn, Michigan 48121

Dear Roy:

Enclosed you will find a brief summary concerning our research over the past year on brake decomposition products.

I trust that this is the information you requested. If you have any further questions, please don't hesitate to call me.

Sincerely,

Arthur M. Langer, Ph.D.
Associate Professor of Mineralogy

AML:jm
Enc.

Roy - Note that this is a very broad
treatment of what we're doing and
what will be done.

000237

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Inter Office

Scientific Research Staff

April 19, 1974

To: J. J. Harwood

Circulation copy: W. D. Compton
S. Gratch
J. V. Petrocelli

Subject: SRS Research Grant -- Mount Sinai School of Medicine, City University of New York

This grant is being utilized in an investigation of possible health hazards associated with respirable particles of asbestos and other substances to which workers in brake maintenance shops may be exposed. The study includes the compiling of morbidity and mortality experience with such workers (and will include clinical examinations), and the quantitative characterization of the brake dust and work environment.

Some results obtained to date are described in the attached informal report provided by Arthur M. Langer, Associate Professor of Mineralogy at CUNY. They plan to continue the clinical studies and extend the dust characterization to the substances which are present other than asbestos.

Investigators participating in this work (besides CUNY staff) include Dr. Mary Wolf, post-doctoral student working in electron microscopy and instrumentation; Robert Klimentidis, graduate student working in mineralogy and instrumentation; and Joan Humphries, undergraduate student helping with sample preparation.

R. L. Gealer
Chemical Engineering Department

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Brake-Drum Decomposition Products-Current Research Areas

March, 1973 - March, 1974

The Environmental Sciences Laboratory is currently studying asbestos exposure in workmen who repair and service brake-linings. Although the area of investigation focuses on passenger vehicles, we are also incorporating studies involving large-passenger and commercial-type vehicles as well. It is the purpose of this research to obtain information regarding asbestos exposure in the automotive maintenance and repair, specifically among men repairing brakes.

We will simultaneously conduct retrospective and prospective health studies on such individuals. We are now gathering data concerning past morbidity and mortality experience. Workmen currently employed in these trades will be examined clinically and followed to determine prevalence and incidence of specific diseases. A cohort of these workmen is currently being developed by our research group.

In addition to the human disease experience, we will also include quantitative characterization of their work environment. Work in this area is currently being done. We have obtained data concerning light microscopic-electron microscopic characterization of dust aerosols liberated from such repair work. We have determined already that, in some instances, a light microscopic observation indicating no asbestos present in the atmosphere may actually conceal several micrograms of asbestos fiber. These particles are visible only by electron microscopy. We are presently characterizing the environments created during the removal of old brake-drums, i.e., "blowing-off" of decomposed brake-shoe dust and the refitting of brake-shoes onto drums by means of grinding techniques. We have dust counts of the ambient environment, in such localities before, during and after brake maintenance and repair. Some of these levels approach and compare with occupational exposures to asbestos.

In addition to the characterization of the atmosphere in this environ-

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ment, we are characterizing the recovered dust as well. The mineralogical characterization of such materials has been underway for the past year and some interesting information has been already gathered. Some of these are: some asbestos fiber does survive the braking cycle; in some fibers, although the morphology of the asbestos is retained, it appears to be physically degraded; selected area electron diffraction patterns indicate a great amount of "disorder" in surviving fibers suggesting an interfibril rotation of individual units; a host of other materials are present in the brake-drum dust which include a range of silicate phases, only some of which are apparently "crystalline"; other materials are present in the dust which are presently uncharacterized. We are currently, and will in the future, characteriz^{ing} these materials by means of electron beam instrumentation.

On the basis of a careful literature search we are convinced that the focus of disease risk, which may be present in individuals exposed to disintegrated brake-drums, should not be centered primarily on the asbestos as an agent. It is apparent that the brake-drum dust consists of a number of silicate phases in addition to a number of inorganic materials incorporated as "modifiers". Some of these e.g. lead compounds, may have profound biological effects. Exposure to brake-drum dust may include possible hazards from asbestos, other silicate forms, modifying compounds, as well as the organic binders. Therefore, clinical work-ups of individuals exposed to brake-drum dust will have to take into consideration a number of interacting agents.

AML:jm

000240

9/16/74

10/20/74

The check for the University Research Grant for

City University of New York should be made out to:

Mount Sinai School of Medicine, Environmental Diseases Lab

The letter and check should be mailed to:

Prof. Irving J. Selikoff, M.D.
Environmental Diseases, Laboratory
Mount Sinai School of Medicine
City University of New York
111th Avenue and 100th Street
New York, New York 10029.

A copy of the letter may be mailed to:

Thomas C. Chalmers
Dean of the Medical School
Mount Sinai School of Medicine
City University of New York
111th Avenue and 100th Street
New York, New York 10029.

Roy

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Note: Selikoff indicates to me on 9/16/74 that about three weeks from now, they will begin examination of the first 30 brake shop workers (this work is in collaboration with UAW) for asbestos effects. Invited SAS representatives (2 or 3) to come out to discuss preliminary results in about November.

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W. Dale Compton
Vice President
Scientific Research

Ford Motor Company
20000 Rotunda Drive
Dearborn, Michigan 48121

September 17, 1974

Professor Irving J. Selikoff, M.D.
Environmental Sciences Laboratory
Mount Sinai School of Medicine
City University of New York
Fifth Avenue and 100th Street
New York, New York 10029

009893

Dear Professor Selikoff:

I am pleased to advise you that the Environmental Sciences Laboratory of the Mount Sinai School of Medicine has been selected for renewal of the Ford Motor Company Grant for the academic year 1974-1975. We will be forwarding a Ford Motor Company check in the amount of \$5000 to Mount Sinai School of Medicine.

As previously, the purpose of the grant is to assist and encourage research at the doctoral level. The funds are intended to be used in innovative ways which will help strengthen your graduate research program in Environmental Sciences. Your use of the funds is unrestricted within the general purpose of the grant. However, some or all of the funds may be used for fellowship purposes, provided each award is identified as a Ford Motor Fellowship and offers a minimum stipend of \$2500 per academic year for the recipient.

We wish to note that this will be the final grant renewal. As you may appreciate, we receive numerous university requests for participation in our grant program. Therefore, in order to optimize the distribution of our grant funds, we must consider rotation of grant recipients on a periodic basis.

We would like Dr. Roy Gealer of our Scientific Research Staff, to continue to be the focal point for interaction between your Department and the Ford Motor Company.

Dr. Gealer joins me in expressing our pleasure in being able to continue the support of your research program.

Yours very truly,


W. Dale Compton

cc Dean T. C. Chalmers
Chancellor R. J. Kibbee
Dr Roy Gealer ✓
L. J. Brennan, Corporate Contributions

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MOUNT SINAI SCHOOL OF MEDICINE
of The City University of New York
FIFTH AVENUE AND 100TH STREET NEW YORK N.Y. 10029



October 14, 1974

Department of Community Medicine

Dr. Roy L. Gealer
Chemical Engineering Department
Scientific Research Staff
Ford Motor Company
20000 Rotunda Drive
Dearborn, Michigan 48121

Dear Dr. Gealer:

Thank you very much for your letter of October 8, 1974, forwarding your check of \$5,000 in support of the research of the Environmental Sciences Laboratory. This will be of great help to us and we are most appreciative.

I expect to be in Europe, at the meeting of the international union against cancer for much of the rest of October. When I return, it might be of interest to discuss our initial findings of garage maintenance workers, particularly those doing brake repairs and maintenance.

Could you call me at your convenience early in November?

With warm regards.

Sincerely yours,

I. J. Selikoff
Irving J. Selikoff, M.D.
Professor

IJS/mm

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Inter Office

Scientific Research Staff

April 14, 1975

To: T. Cole

Subject: Exposure of Brake Maintenance Shop Workers to Brake Dust

On April 11, 1975, I received a telephone call from Prof. Irving J. Selikoff, Mount Sinai School of Medicine, City University of New York, regarding their investigation of possible health hazards associated with respirable particles of asbestos and other substances to which workers in brake maintenance shops may be exposed. He indicated that their examination of brake shop workers is turning up some disturbing findings relative to health effects (he didn't elaborate) and that some physicians out West had found brake shop workers well represented among lung cancer cases.

Prof. Selikoff would like to discuss these medical findings with appropriate representatives from the automobile companies and Johns-Manville Corp. at a private meeting in New York in the near future. He therefore asked that his invitation and intention to have such a meeting be brought to the attention of interested parties at Ford.

Roy L. Gealer
Roy L. Gealer

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Inter Office

Scientific Research Staff

June 12, 1975

To: D. R. Coulson

cc: T. Cole
S. Gratch

Subject: SRS Research Grant -- Mount Sinai School of Medicine, City University of New York

The grantee is utilizing the grant funds in its investigation of possible health hazards due to exposure of workers in vehicular maintenance shops to respirable particles of brake dust. Measurements were made of asbestos fiber in the air of several such shops in New York City; and lung X-rays, pulmonary tests, and blood tests were taken of garage workers.

The asbestos fiber concentrations were determined at various distances from different brake maintenance operations, including the cleaning of drums by blowing with an air jet, brake lining grinding, and brake lining beveling. (The Mount Sinai people recognize that vacuum-brush cleaning of brake drums is preferred to air jet blowing because of the clouds of dust raised by the latter method, and indicated that the larger shops in New York City are in fact converting to vacuum systems.)

The clinical tests were performed on 93 garage workers (not necessarily associated with the garages which were air-sampled), and the incidence of abnormalities in lung X-rays, pulmonary functions, and blood were assessed. Some of the examined workers regularly do brake work while some are exposed only occasionally or incidentally.

The investigation is headed by Dr. William Nicholson, a physicist on the staff of the Mount Sinai School of Medicine. Dr. Nicholson will forward details of the results of the study.

Ann Mackler, a M.S. mineralogist who is working toward her Ph.D. degree, is a participant in this work, along with CUNY staff members.

R. L. Gealer
Chemical Engineering &
Catalysis Department

ao

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The sticky note shown below was written by Barry Castleman and attached to the page immediately following this one along the right margin at the spot marked on the next page with an **X**

*Vacuum
Devices
Doyle*



Inter Office

JAN 23 4 33 PM '74

FIRE
SAFETY & SECURITY
Ford Marketing Corporation
Ford Customer Service Division
Service Research Center

January 21, 1974

Ms. L. B. Bates
Mr. J. R. Knauss ✓

cc: R. E. Donley
D. S. Fisher
R. I. Rice

Subject: Vacuum Approvals for Asbestos Dust Removal

Ref: J. R. Knauss Memo dated November 16, 1973
L. B. Bates note dated January 3, 1974

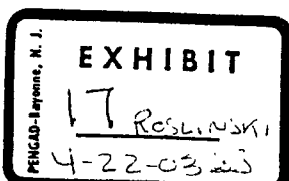
The subject of health-protective measures regarding airborne asbestos particulates was first brought to our attention through an employee suggestion submitted by Mr. Charles Bertram on 1-18-73 (FCS72-678). We concurred in the suggestion of using a vacuum for removal of brake lining dust (containing asbestos particulates) and have experimented with various cleaners to accomplish this purpose. The subject suggestion was resubmitted 1-8-74. We believe that an award should be forwarded to Mr. Bertram in the near future.

Upon receipt of Mr. Knauss' memo, we are taking the appropriate steps to properly identify the current unit being used for this purpose. Noted precautionary measures are also in place, particularly in removing and cleaning the vacuum unit. We would like to defer obtaining a Sears product until such time Rotunda will offer adapters to our product line.

A meeting was held today with Mr. J. Doyle, who is our Rotunda supplier, and both the retrieval characteristics and catcher bag integrity of the Rotunda cleaners were reviewed. Our effectiveness has been marginal in terms of cleaning brake assemblies and leads us to conclude that unique brushes, hoses and/or other attachments would probably improve the performance. Mr. Doyle will research these areas and submit recommendations that could be incorporated into the Rotunda Vacuum Cleaner product line.

It would be appreciated if any testing data that the General Services Office has been able to accumulate, be forwarded to Mr. Rice for possible incorporation with Mr. Doyle's efforts.

O. V. Julien



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