

**PLAINTIFF'S
EXHIBIT**

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1963

Annual Report

Medical Department

Ethyl Corporation

April 9, 1964
Cincinnati, Ohio

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Annual Medical Report

1963

Introduction

The year of 1963 was a year of expansion and growth for the Ethyl Corporation, and there is ample evidence that it was also a year of progress for the Medical Department. Significant results were produced in several areas of responsibility. At the same time, high level of medical care was maintained for all Ethyl employees. Of equal or of greater importance during the year, there was a striking change in the Ethyl Medical Department personnel that undoubtedly affected its progress.

Change In Personnel

Dr. Frank Princi, Medical Director, died suddenly on September 18, in Cairo, Egypt, while he was on an extended trip through Europe, the Middle East, and Africa for the International Division. Dr. Robert T. P. deTreville, Assistant Medical Director, resigned as of February 1, to accept the position as Managing Director of the Industrial Hygiene Foundation in Pittsburgh, Pennsylvania. Dr. Lester W. Sanders, who had been a consultant to the Medical Department following his retirement, terminated his agreement on July 1. Dr. George Roush, Jr. accepted a position as staff physician on February 1 and was appointed Assistant Medical Director and Acting Medical Director on October 14. Dr. Richard Green completed his first year of formal training in Industrial Medicine at the Kettering Laboratory in the Spring of 1963, and then he returned to Baton Rouge to resume his

duties as a staff physician at the Baton Rouge plant. In the fall of 1963, Dr. T. R. Robinson of Baton Rouge came to the Kettering Laboratory for his first year in Industrial Medicine.

General

Production Plants and Detroit Laboratories:

Medical surveillance at Baton Rouge, Houston, and Detroit was continued in accordance with the accepted general Medical Department practice covering periodic examinations, counselling, and treatment of occupational and non-occupational conditions. No special problems related to working conditions were noted at any of these locations. No occupational diseases were seen and at the end of the year, only one man was on lead restriction (Houston).

A problem of increasing importance to the Company concerns the disability cases that lead to early retirement. Approximately 92 cases for early retirement have been processed at Baton Rouge and with the average age of 48 at that plant, this problem can be anticipated to become increasingly important rather than to become less important.

At Houston, four employees died suddenly during the year from coronary occlusion; this fact serves to point out that Houston has also an aging population and, therefore, Houston will soon be involved in early retirement cases.

At both Houston and Baton Rouge the nursing coverage has been decreased. This decrease in professional service has necessitated a change in operating procedures but has not led to apparent unsatisfactory medical coverage.

Closing of the Pittsburg Plant:

The closing of the Pittsburg Plant and the clean-up of the plant was ac-

complished without any medical problems. At the time of the closing of the Pittsburgh office, eight employees had cases which were pending with the insurance carrier for Workmen's Compensation.

Medical Surveillance of Ethyl Employees not at Production Plants:

Annual physical examinations are available to all Corporation employees in the field and these examinations are conducted on a purely voluntary basis. The only examination that is required of these employees is the pre-employment examination. The examinations which are fairly comprehensive are conducted by salaried physicians of the Corporation or by consultants located in the general areas of the Regional and District offices or wherever Ethyl employees are concentrated. There are 12 consultants whose services are required regularly, and approximately 20 who are only used occasionally or rarely. The work of these physicians is on a fee-for-service basis. In addition, the medical staff at Baton Rouge, at Houston, and the staff located in Cincinnati conduct periodic examinations on the Field and Testing Laboratory personnel in their respective areas.

The Terminal at Oakland, California, was visited and examinations were done by the Ethyl Corporation physician while he was on the regular visit to customer company installations in that area. All of the personnel at the Wilmington, California and Everett, Washington Terminals were examined by consultants. Examinations of the personnel at the Edge Moor Terminal at Wilmington, Delaware were made by the Company physicians of the New York office. At the Wilmington, California and Edge Moor Terminals urinary specimens were submitted by employees for lead determinations. During the past year, the results of these analyses were all within normal limits. E-00233

With very few exceptions, the entire personnel in the Testing Labora-

tories were also examined during the year. All the employees at the Houston, Tulsa, and Long Beach Laboratories were examined. Twenty of 26 employees at the Yonkers Testing Laboratory and all except two of the Kansas City Laboratory were examined. Similarly, in the field, practically the entire personnel in the Sales and Service Departments were provided physical examinations. A few retirees also presented themselves for their yearly physical appraisal.

In 1963, influenza immunizations were provided to all employees in the field and approximately 45% received the vaccine.

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Service to the Sales Department, / Research and Development Department and
the Public Relations Department:

Customer Service:

In 1963, 234 visits were made to refineries or blending installations for the purpose of examination and approval of personnel concerned with the blending of "Ethyl" antiknock compounds. This total includes some revisits to refineries where personnel changes required additional blender examinations. It has been the continued goal to work with refinery medical departments and, where possible, with personal physicians of the individual blenders to maintain good working relationship with all concerned. Considerable effort was made to space the visits to customer companies so as to allow a reasonable time between our visit and that of our competitor's medical staff. In a number of instances, refinery managements have requested that where there is more than one supplier that the medical staff of the suppliers visit on alternate years.

During 1963, a number of medical directors of customer companies were contacted to review for them the purpose and goals of the blender medical examinations. It was felt that with the obvious austerity program in the refineries

they would see an advantage if men could be examined locally when they were on their scheduled shift, and they could, therefore, save considerable overtime payment. Given the option, however, most of those contacted wanted Ethyl to continue as it had in the past. It should be noted, however, that where periodic examinations by the customer company are done, and this is often done on a fee basis, the work done by the Ethyl Medical Department results in a saving to the customer of from \$100.00 to as much as \$1000.00 yearly at some refineries. The companies that are now conducting their own medical examinations are Standard Oil Company (N.J.), Standard Oil Company (California), Union Oil Company, some installations of Socony, Cities Service, and Continental Oil Company.

Some of the sales meetings conducted by the Ethyl Corporation for customer companies were attended by representatives of the Medical Department and attempt was made to schedule regular visits for medical examinations to coincide with these sales meetings.

Service to Product Service Division:

The program of preparing toxicity data sheets on Ethyl products has continued. Data sheets have been prepared on thirteen Ethyl products. They were supplied to Product Service for distribution to customer companies. A summary of the toxicity data on current Ethyl products was prepared for the Materials Manual. This information was distributed to all Ethyl physicians and contains more detailed information than is available on the data sheets prepared for Product Service.

Close liaison has been maintained with the Labeling Committee. This resulted in a query on the standing by its members of current labeling practices.

Services to the Sales and the Research and Development Department:

Several animal toxicity studies have been completed at Kettering Laboratory on new products (ARA-1, AN-228, APR-319, ALA-1, 733-PDA-50, AWA-29). The data obtained has been used to establish labeling and shipping requirements and toxicity data sheets were prepared on 13 chemicals.

The 702 toxicity and metabolism studies for the petition to the Food and Drug Administration have been continued at the Kettering Laboratory. Some adverse reactions were observed which preclude the filing of an application for use of 702 as a direct food additive. However, approval as an additive to poultry feed remains promising. One of these adverse effects constitutes a previously unknown and striking bio-chemical effect that could have a significant application as a drug for human use. Use patents have been filed for 702 and many related Ethyl compounds to cover this potential application. There are plans to pursue this highly interesting lead with further studies at Kettering Laboratory as well as with Robert Olson of the University of Pittsburgh. Dr. Olson has competence in the area of this drug application.

Interim toxicity reports have been submitted to the Food and Drug Administration to permit the present extension of 702 to continue as an additive to resins used in food containers. The original petition was filed by Ethyl's customer, Pennsylvania Industrial Chemicals Company.

Export Division - International Division:

At the end of 1963, there were 17 contract medical consultants to the Ethyl Corporation and most of these physicians were located in South America. In addition, there were eight physicians with whom liaison was maintained but with whom no contract had been written at the request of the refinery concerned.

Negotiations are now in progress to write seven additional contracts so that the necessary medical coverage can be maintained with expanding operation. It is anticipated that this group of contract physicians will continue to grow. Liaison is maintained with these physicians by periodic mailing of medical information, and it is noteworthy that annual reports for 1963 were received from 14 of our 17 contract physicians and from 5 of the 8 "non-contract" consultants.

During the summer of 1963 a 4-week tour was made to refineries throughout South America, and in addition to interviews with refinery managements, many of the consultant physicians were visited. They were very interested and were most anxious to learn any new concepts regarding the toxicology and medical practices relative to TEL. Any change in the medical studies to be required on TEL workers can be more easily sold to the physicians and they in turn can convince their respective managements. This visit to South America was prompted by the genuine concern of several Argentine refineries regarding the medical surveillance of blenders.

Preliminary meetings have been held with the representatives of the International Division to discuss the medical aspects of the European project and a trip to Europe has been planned. Dr. Princi made a 1-month trip through Europe, the Middle East, and Africa as an advance guard for this organization.

In January of 1963, a tentative "Guide to Ethyl Medical Consultants" was distributed to all foreign consultants. It was well written and satisfied a great need in this important work. It is anticipated, however, that a permanent and more attractive form of this Guide will have to be written that will not have the obvious temporary-appearance of the 1963 edition. This work is being co-ordinated with the Product Service Division. It should be mentioned that the current Guide has already gotten into the hands of other interested medical authorities

outside of the Company and we have received requests for reprints.

Public Relations:

1. The Lead Symposium:

In early 1963, a Lead Symposium was held at the Kettering Laboratory and the Medical Department played an important role in making it a successful venture. Many authorities participated in presenting the most recent information on lead and will provide a useful and prestige-gaining source of information for the Ethyl Corporation.

2. The Tri-City Survey:

This survey was completed during 1963 and the Cincinnati study was completed with the cooperation of the Medical Department.

3. Publications:

The Immediate Toxicity of 733-PDA-50 and AWA-29 with Reference to Their Qualifications as Class B. Poisons - July 8, 1963.

The Toxicity of Solutions of Dibutyltin Sulfide in Motor Oil When Applied Repeatedly Upon the Skin of Rats - September 30, 1963.

Lead Symposium - February 25-27, 1963 (Compiled by the staff of the Central Medical Department working in cooperation with the Kettering Laboratory)

- a. Natural Occurrence of Lead, by deTreville, Robert T.P.
- b. Clinical Organic Lead Intoxication, by Sanders, Lester W., Sr.

Hygienic Guide Series: Tetraethyllead. Am. Ind. Hyg. Assoc. Jr. 24: 423-6 (July-August), 1963.

Diggs, D.R., Hesselberg, H.E., Ludwig, J.H. and Maga, J.A.: Program for the Survey of Lead in Three Urban Communities. J. Air Pollution Control Assoc. 13:228-32 (May), 1963.

Kehoe, R.A.: The Hygienic Aspects of the Production and Use of Lead Antiknock Compounds. J. Air Pollution Control Assoc. 13:314-23 (July), 1963.

Kehoe, R.A., Cholak, J., McIlhinney, J.G., Lofquest, G.A. and Sterling, T.D.: Potential Hazard of Exposure of Lead. II. Further Investigations in the Preparation, Handling, and Use of Gasoline Con-

taining Tetramethyllead. Arch. Environ. Hlth 6:255-72 (February), 1963.

Ball, H.K. : A New Approach to Leaded Gasoline Sludge Disposal. Petrol. Refiner. 42, No. 5:147-8, 1963.

Davis, R.K., Horton, A.W., Larson, E.E. and Stemmer, K.L. : Inhalation of Tetramethyllead and Tetraethyllead. A Comparison of the Effects in Rats and Dogs. Arch. Environ. Hlth. 6:473-9 (April), 1963.

Springman, F., Bingham, E. and Stemmer, K.L. : The Acute Effects of Lead Alkyls. Oral Administration of Tetramethyllead, Tetraethyllead, Trimethyllead Chloride, Triethyllead Chloride and Diethyllead Dichloride to Rats. Arch. Environ. Hlth. 6:469-72 (April), 1963.

Kehoe, R.A., Cholak, J., Spence, J.A. and Hancock, W. : Potential Hazard of Exposure to Lead. I. Handling and Use of Gasoline Containing Tetramethyllead. Arch. Environ. Hlth. 6:239-54 (February), 1963.

Feldhake, C.J. and Stevens, C.D. : The Solubility of Tetraethyllead in Water. J. Chem. Eng. Data 8:196-7 (April), 1963.

Princi, F. : Air Pollution - Facts and Fables: J. Occupational Med. 5: 461, (October), 1963.

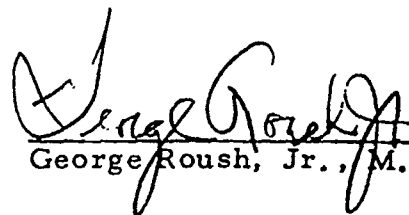
Roush, G. : Hygiene Aspects of Disposal of Sludge from Leaded Gasoline Storage Tanks. Transactions National Safety Congress, Vol. 19:15, 1963.

Summary

There were important personnel changes in the Medical Department during this year and this has undoubtedly influenced the work done by the Department. Despite these changes, there are no apparent defect in the operation of the Medical Department throughout the Corporation. This is due partially to the organizational procedure established by Dr. Princi and partially to the work done by each member of the medical staff. The Production Plants are operating without problems of any urgency; good occupational medicine practice is being followed and with apparent excellent results. Customer service is being provided satisfactorily and the medical problems of Product Service and the RandD Division are being handled without apparent difficulty.

There are several projects that will be pursued again in the coming year:

1. Dr. Lester W. Sanders has completed his reports on the "State of Health of Certain Petroleum Workers." It is planned that this paper will be published soon and it should serve as a basis for talks with other "Ethyl Producers" concerning the discontinuance of the medical examinations of blenders.
2. The medical program of the Plastic Division will be organized consistent with the medical policy of the Ethyl Corporation.
3. The medical aspects of the European phase of the International Division will be studied and a satisfactory medical program will be developed.
4. Careful co-ordination will be instituted to provide for good medical back-up for the new plants at Baton Rouge, Houston, and Canada. At the time of the start-up of new plants, a critical period exists both for serious traumatic as well as poisoning accidents.
5. The further development of 702 as a drug for human use will be carefully monitored.


George Roush, Jr., M.D.