

COPY.

No. 705

New York, June 1, 1934.

Medical Supervision of
Employees Working with
Tetraethyl Fluid

Standard-Vacuum Oil Company
Refined Oil Division
Shanghai.

Gentleman:

We are attaching a copy of a letter written by Dr. A. W. Schoenleber, Medical Director of the Standard Oil Company of New Jersey, to Mr. G. S. Walden of this Company, which we believe you will find self-explanatory. We are quoting below the memorandum which Dr. Schoenleber mentions in the last paragraph of his letter:

1. No employee will be permitted to handle tetraethyl lead until he has had a special examination by a well-qualified Doctor and has been found to be in good physical condition.
2. Employees working with tetraethyl fluid must be re-examined every three months while they continue work. The Doctor selected for making these examinations should be informed of their purpose and should be acquainted with the high toxicity of tetraethyl fluid. If he has had no experience with the product, he should be given access to such information as is available. It is especially important that he be informed that tetraethyl lead differs from all other lead compounds in that it is very rapidly absorbed by the skin and also by the lungs through the inhalation of vapors. The purpose of the quarterly examination is to detect early signs of lead absorption or of other physical defects which lower resistance and make one more susceptible to lead poisoning. Cases which absorb very small amounts of tetraethyl lead may show all the signs and symptoms of ordinary lead poisoning, some of the early symptoms being insomnia, loss of appetite, pallor, easy fatigue and loss of weight. A characteristic early sign is stippling of red blood cells and for that reason the Doctor should be requested to make blood examinations. A lead line may appear on the gums and the blood pressure may be low. The Doctor's attention should, however, be called to the fact that acute lead poisoning may result from relatively brief contact with the concentrated fluid and that in such cases we find all the symptoms of an acute lead encephalitis.
3. Any employee showing signs or symptoms of lead poisoning should be relieved from work which brings him in contact with tetraethyl lead. Any employee physically below par or suffering from any disability should be relieved from

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- " work bringing him in contact with tetraethyl lead until he has completely recovered.
4. A report of all employees relieved from work on this account should be submitted to the New York office and transmitted to the Medical Department."

Kindly take whatever action is necessary to see that the instructions given above are observed rigidly and to the letter.

Yours very truly,
STANDARD-VACUUM OIL COMPANY

signed A. G. May.

AGM/R

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COPY.

Mr. G. S. Walden
Standard-Vacuum Oil Company
26 Broadway.

New York, May 2, 1934.

Dear Mr. Walden,

In compliance with your request, I called on the Marketing Managers at Hongkong, Singapore and Shanghai. I informed them of the arrangement by which this office was now available for advice on all matters of medical and sanitary interest and that employees returning from the Orient to New York were welcome to call upon us for physical examinations, such treatment as we can provide and professional advice.

From a purely medical standpoint, there is apparently very little we can do for the local groups except to advise the management regarding the medical aspects of certain cases which may be brought to our attention. Apparently all of the foreign Marketing groups in the Orient are being provided with some medical service at Company expense, though the plans apparently vary in different localities. The general rule seems to be that the Company pays for such medical service as can be given by a Doctor in his office or in a patient's home, but does not provide for hospital service or operations except for industrial accidents. In one locality, however, the Company pays for all medical and hospital service required by foreign employees. As a general rule, there are no designated Company doctors, employees being permitted to select their own physician and the Company paying the bill as submitted if it seems reasonable. In some localities, however, such as Hongkong, the work is done on a contract basis by an arrangement with one of the local clinics. In all instances, however, the cost seems to be very reasonable and in the larger centers excellent service is available.

Native employees are everywhere cared for in accordance with the laws and customs of the country. As a general rule, the medical service covers only industrial accidents, though in the case of certain more valuable employees the Company may pay the cost of special examination or treatment if this appears advisable.

At Soengei Gerong the Marketing Division has a Case & Can Plant employing over 100 men. I understand that this Plant may in the future be operated by the Refinery, in which case the employees would, of course, receive the same medical service as those now working at the Refinery. If this plan is not put into effect, then there should be some definite understanding regarding the medical treatment of these employees. At the present time they are not permitted to call on the Medical Department without an order from their foreman who apparently restricts the cases as far as possible to work accidents, acting of course on the assumption that costs must be kept to a minimum. However, with Company Hospital facilities

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available and employees working under exactly the same conditions as those in the Refinery, it seems that there should be no discrimination and that arrangements should be made by which they can receive exactly the same treatment for themselves as is extended to the Refinery group.

There are very few foreign Marketing employees in Sumatra, but in view of the fact that the Marketing employees elsewhere receive medical service at Company expense, it would seem that they should have the same access to the Company Medical Department and the hospital at Soengei Gerong as do the foreign employees of the N.K.P.M. It may, of course, be necessary for accounting purposes to make a reasonable charge for such service. The best arrangement would be on an annual basis rather than charging for individual service. I feel also that the Marketing employees and their families living in Java and other parts of the Dutch East Indies should have access to the Soengei Gerong Hospital at reasonable rates should they desire this service.

At the request of Mr. Schultz, I accompanied Mr. Bourne to the Company camp located on an island near Singapore (I am unable to recall the name). The Company maintains a small camp, there being 2 foreign families and about 75 natives living thereon. The foreign quarters are excellently situated and present no sanitary problems. The native camp is a considerable distance from the foreign quarters. While the buildings are old, they are fairly satisfactory from a sanitary standpoint. A few defects were noted which were called to Mr. Bourne's attention and immediately ordered corrected. At one time there was considerable malaria on the island, but in recent years there have been very few cases. Drainage and oiling is being done by the Company under the general direction of the Government sanitary service. A native dresser is employed who cares for all minor conditions and looks after sanitation. A Government Health Officer makes occasional inspections.

The handling of tetraethyl lead was discussed with Mr. Schultz at Hongkong. While at the present time no tetraethyl lead is being used in this district, it was thought advisable to discuss the matter in view of the possibility that it might be used in the near future. The detailed necessary precautions were discussed with the Engineering and representatives of the Sales Department. At the present time ethyl gasoline already mixed is being supplied to the Army Air Service at Canton. I was informed that no warning as to the danger of using such gasoline has been issued and the wisdom of issuing such warning was discussed. There was some hesitancy about calling attention to the dangers for fear of losing the trade, but a representative of the Company will observe the method in which it is being handled at the present time and if there is any danger of repeated contact by a given individual then it is considered advisable that warning be issued for Company protection.

At Shanghai I discussed the question of mixing tetraethyl lead with gasoline with Mr. Twogood and representatives of the

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Gasoline and Engineering Department. Time did not permit an inspection of the equipment, but the plans were carefully reviewed, the standard equipment as designed by the Ethyl Gasoline Corporation is in use and apparently operating satisfactorily. The mixing is done in the open and all necessary routine precautions are being observed, the only criticism being that the nearest place where one can take a bath is about 300 feet away. However, a can of kerosene is always kept on hand at the point of the greatest exposure. The actual handling and opening of drums of tetraethyl lead is done by a foreign employee who wears gloves and a head-cover. No instructions had been received regarding medical supervision and I suggested that employees working with tetraethyl lead be sent to a reputable Doctor for a thorough examination and that in the future no employee be assigned to this work until he has been examined and declared to be in excellent physical condition. Employees who are working with tetraethyl lead should be re-examined once every three months, the examination to include a blood examination for stippling of red cells and the Doctor selected should be thoroughly informed regarding the dangers of tetraethyl lead and the early symptoms for which he should be on the lookout. I also advised that any employees working with this product who had any suspicious symptoms whatever or became below par in any way should immediately be taken off the job.

At the present time ethyl gasoline is supplied only for aviation purposes and the cans are said to have a warning notice regarding the dangers of the product.

Plans were under consideration for mixing lead with gasoline on a small scale in Peking. The standard apparatus as designed by the Ethyl Gasoline Corporation would not be used and the mixing would be done manually. I advised very strongly against this procedure because of the great danger of handling the fluid in any other way than a closed and fairly foolproof system such as adopted by the Ethyl Gasoline Corporation.

I find that while the office had considerable information regarding the dangers of tetraethyl lead and complete instructions as to the method of actually handling the fluid, they had no instructions whatever regarding the medical supervision of employees working therewith, nor any instructions regarding the early symptoms and action to be taken if employees suffer any ill-effects. I would suggest that such information be furnished to all localities where tetraethyl fluid is handled. I am enclosing a memorandum showing the type of information which I believe it advisable to submit.

Very truly yours,

AWS/ECB.

A. W. SCHOENLEBER.

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