

ETHYL CORPORATION

INTER-OFFICE
CORRESPONDENCE

TO Dr. R. A. Kehoe

ADDRESS Cincinnati

FROM Mr. O. B. Lewis

ADDRESS New York

SUBJECT

DATE January 14, 1943

Attached hereto is a copy of the notes I made at the two meetings I went to with you.

I have forwarded copies of these two reports to Ray Bevan and trust this is as you would have it.

With best regards,

Yours very truly,



O. B. LEWIS

WB

KE 0006872

MEETING HELD JANUARY 11, 1944
FOR
THE CALIFORNIA TEXAS COMPANY AND THE TEXAS COMPANY

Present at this meeting were:

Cal-Tex - Mr. W. H. Pinckard, Vice President
Mr. J. R. Keith, Research & Developing Dept.
Mr. F. Aldinger, Chief Engineer

Texas Co. - Mr. O. B. Small, Supt. of Caribbean Division
Mr. F. Hallager, Supt of Operations

Ethyl Corp. - Mr. O. B. Lewis
Dr. R. A. Kehoe (also Asso. Ethyl)

This meeting was called at the request of Dr. R. A. Kehoe upon his return from England and the Near East. He stated that he wished to get the managements of the oil companies operating abroad together for a discussion of some new phases of hazards associated with the handling of leaded gasoline.

Dr. Kehoe explained to those present that the enlarged hazards is a result of the wider distribution of leaded gasoline, which in turn has occurred because of the war. He felt that the California Texas Company would be interested in his report on the Bahrain installation. He discussed this and made several points such as the difficulty of operating with the former installation and securing uniform blends in tank ship compartments because of the long connecting pipe line and because of the lack of check of the finished gasoline. For this reason he felt that concentrations of gasoline higher than allowable might well be found in some compartments. While on the subject of tank ships, Dr. Kehoe mentioned that he had discussed this matter with operators in England and made a draft of regulations to cover safety in cleaning and repair operations. He stated that he had a cable that this had been found acceptable with a few exceptions which were being forwarded at this time.

He produced a small booklet to cover the tank cleaning problem and sundry new problems such as pipe line operations, garage and filling station tanks, and rail and road tank waggons. It was his suggestion that we print sufficient copies of these in this country and give them to the oil companies operating abroad for as wide-spread distribution as possible. He pointed out that most of the instructions were already probably being followed, but with new operators and many new stations, it would be wise to re-circulate this booklet. (It is now being distributed

to the management with the request that they inform Ethyl Corporation how many copies they will require for the above purpose.)

The second part of Dr. Kehoe's talk had to do with conditions as he found them in can filling establishments. He stated that many cases of lead intoxication and some nine deaths had occurred because of rapid evaporation of gasoline in hot climates. Because of the war conditions ventilation was faulty and temperatures ran up to 116 - 130 degrees F. He found atrocious spillage in several plants with practically complete evaporation, meaning that the lead content of the gasoline was also left in the atmosphere with the evaporated gasoline, thus giving exposure to both toxic substances.

Another factor in the lead intoxication of workmen was the additional lead concentrations (4.8 cc per gallon) in aviation fuel. This compares with 2 cc of lead for 80 octane fuel handled at similar installations. There was some gasoline intoxication reported in the installations where 80 octane gasoline was being handled. At all of these installations ventilation was entirely inadequate.

It was Dr. Kehoe's opinion that the lead cases had become severe in the third week of exposure and that there would have been a good chance for recovery if the men had been taken off the work at any time up to the second week. He suggested that, where it was necessary to work men under conditions of lead exposure, it would probably be advisable to work them one week and put them on other work where no lead exposure could occur for a period of two weeks, or some such relative lengths of time. As to avoiding gasoline toxicity, it would seem more advisable to shorten the period of rotation to something in the magnitude of two hours on a job where exposure occurs and then two hours off.

Mr. Aldinger mentioned that they were building a drug plant in Bahrain and several of the men stated that they might also have to fill cans at this point. For this reason the visit was most timely and they are anxious to get a copy of Dr. Kehoe's regulations on this matter so that the design of their installation could take advantage of his suggestions. They suggested that possibly using rubber gloves might protect the men's hands, but Dr. Kehoe felt that this material had drawbacks and that the matter might be solved by using proper skin creams. He mentioned, however, that the large exposure was not through the skin but through inhalation. He felt that the transportation of flimsy or any other leaking containers should also be carefully watched as it was possible that somewhat similar conditions to the can filling spillage and evaporation might occur in other parts of the world under present war conditions.

As a peace-time regular operation in a standard plant he felt that these hazards would be very greatly reduced or might even be non-existent.

KE 0006374

Meeting Held January 11, 1944

For

Socony-Vacuum

Present at this meeting were:

Mr. J. L. Risinger - Socony-Vacuum
Mr. E. H. Staber - Director, Standard Vacuum
Mr. L. C. Hamlin)
Mr. T. E. Anderson)
Mr. H. F. Merrill) Standard Vacuum Sales & Engineering
Mr. N. F. Tarbox)
Mr. O. B. Lewis - Ethyl Corp.
Dr. R. A. Kehoe - Ethyl Corp. & Asso. Ethyl Ltd.

This meeting was called at the request of Dr. R. A. Kehoe upon his return from England and the Near East. He stated that he wished to get the managements of the oil companies operating abroad together for a discussion of some new phases of hazards associated with the handling of leaded gasoline.

Joe Risinger, Director of Safety for the Socony-Vacuum group met Dr. Kehoe and myself and we had a brief discussion before going into the meeting room. He inquired about the cleaning of tank ships which had come to his attention from his own tank ship operators. Dr. Kehoe mentioned to him that one reason for an additional hazard from leaded gasoline was that these ships seemed to be in continual instead of intermittent service. He mentioned that a study was now being made of potential hazards, but that in his opinion the repair work was the most important and at least should be investigated.

We then went into the meeting room where Dr. Kehoe did the talking, and he made two main headings for his presentation as he had at the meeting for the California Texas Company and The Texas Company earlier in the day. In discussing the more widespread use of gasoline and the tank cleaning problem, Mr. Staber mentioned that he had recently had a case of some trouble in tank cleaning in India. Dr. Kehoe showed that qualitatively the problem was the same but that because of the far reaching ramifications of the war and the gasoline tankage necessary to carry this on he felt that it would be wise to forward instructions to all foreign operators even though this be to a certain extent a repetition of information we had already supplied them. Mr. Staber stated that Standard Vacuum had already forwarded the American Petroleum Institute booklet B to all their foreign stations but he indicated that they were entirely willing to forward this additional information and that this seemed to be a good idea.

Coming to the discussion on can filling, the talk followed very much the lines of that in the previous mentioned meeting. It was pointed out that drum filling operations, at least as far as Dr. Kehoe had observed, presented no hazard.

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It is the filling of five gallon drums in cans down to smaller sizes and through many different types of nozzles not suited to the cans where the spillage occurs leading to the possibilities of huge evaporation. Under high temperatures it would be theoretically possible, he stated, for the percentage of tetraethyl lead in the atmosphere to be as high as the percentage of tetraethyl lead in the gasoline. He stated that five milligrams of tetraethyl lead per liter at 25 degrees C (77 degrees F) would be enough to give a fatal result in approximately 30 minutes.

Mr. Staber stated that there will be a good deal of can filling in India, and such installations are now being constructed. His company has some patents for "underseal" filling which entirely eliminates spillage and evaporation. However, as Dr. Kehoe pointed out, he felt that the regular installations in many cases were safe but it was the necessity for using both improvised equipment and whatever cans were available that had lead to the trouble. Nevertheless, he agreed that the "underseal" filling idea of Standard Vacuum was excellent.

Dr. Kehoe mentioned several additional problems that had come to his attention in England such as the fact that the British have no filters on Army cook stoves and that trouble had been encountered from lead. Also, as a word of caution, he had found out that when tanks had been cleaned of leaded gasoline to the extent that they could safely store alcohol it could not be assumed that they had been cleaned sufficiently for the storage of most soluble oils such as edible oils somewhat soluble to tri-ethyl salts.

Mr. Brewster was introduced and asked to see Dr. Kehoe about a matter in France. Mr. Maxwell and Mr. Alden, attorneys, interviewed Dr. Kehoe briefly about legal matters in this country.

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