

September 19, 1956

Hydraulic 150

Dr. Joseph P. Treon
The Kettering Laboratory
College of Medicine--Eden Avenue
University of Cincinnati
Cincinnati 19, Ohio

Dear Joe:

Thank you for your letter of September 13 with reference to the paper you gave at the Gordon Research Conference. I am sorry that I haven't had an opportunity to duplicate this, but inasmuch as you are going to publish it, I am sure that a couple of reprints will suffice. If, in the meantime I have the opportunity to discuss this subject before our executive group, I will ask your kind permission to borrow the copy again for a short period along with selected slides. I am returning the copy you sent me herewith.

We left the Navy personnel last Thursday with a feeling of really having accomplished something. Unless Commander Siegel reneges on his word, the shipyard at Portsmouth should be notified by the Bureau of Ships this week that they are to equip a submarine presently under construction for trial use of *Hydraulic 150*. The submarine is scheduled for completion early in January and shortly thereafter the usual trial runs at sea will be made. At our suggestion, *Hydraulic 150* will be in the hydraulic system for raising and lowering the radar mast. One or two industrial hygienists will be on board to collect air samples in an effort to determine what levels of Aerosol might be present.

Siegel was to determine whether or not Alex Munton, the Navy industrial hygienist assigned to the Portsmouth base, would collect and analyze the samples; whether Munton would collect the samples for analysis by the Navy Medical Research Institute in Washington; or whether the Navy Medical Research people would do both the collection and analysis.

To avoid the question of confusing the analytical results because of the presence of chloride ion from other sources, it appears desirable to use an alternate method of analysis of the samples. Mickey Alpert suggested that a U.V. method might be appropriate. There was mention made of looking for phenyl radicals or phenolic groups in the samples. Knowing the composition of *Hydraulic 150*,

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can you suggest a suitable method for the Aroclor determination which would not include interference from the other major constituents? Obviously if there is interference and the total number of phenyl groups is calculated as Aroclor, it would be possible to get erroneously high results.

As shown in my attached letter to Commander Siegel, I have asked that he or his people consult with you about an appropriate method. Since the tests are not to be made until January, there should be ample opportunity to develop a satisfactory test. On the other hand, I don't think we want Mamri to proceed with some proposed analytical method that is going to confuse the situation when we're at the point where we seem to have accomplished something.

In my plea for a use test, I had to point out, of course, that all of the data indicate that none of the men in the submarine could suffer any ill effects from such a test. My argument was based on the animal data which, in my opinion, indicate that under any "livable" conditions in a submarine for a period of several days, one week, or one month, there would not be sufficient Aroclor concentrations to cause any harmful effect. As might be expected, Siegel accepted this with the reservation that they would be subjecting the submarine crew to "experimental" procedures. He implied that because of this he would have to get approval of clearance from higher medical authority. His reluctance to agree that such approval would be forthcoming and his inability to decide who would do the air sampling and analysis were enough to prohibit the Bureau of Ships personnel present from picking up the telephone to call Portsmouth and order immediate conversion of the submarine for the fluid. Side, Langenfeld, and I, and the BuShips people present tried to convince Siegel that the whole matter could be settled then and there. The latter, however, was firm in his "uncertainty" but promised to give approval for the test within two weeks.

Siegel appreciated a copy of your letter and all present are looking forward to receiving your results on the two remaining experiments with the fluid. Actually, of course, the use test will also be most valuable from the standpoint of odor levels and whether or not the scrubbers remove Aroclor vapors in the recirculation of the air.

I again tried to get you aboard the submarine to participate in the air sampling but was unsuccessful.

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I am returning the copy of your photograph of the Aresator saturation of vapor experiments which you requested. Thanks again for your very prompt completion of the letter report which I was able to deliver to Siegel.

Sincerely,

Elmer P. Wheeler
Assistant Director
Medical Department

EPW:dh

Enclosures 2

Attachment

cc Mr. Frank Langenfeld
Mr. Robert Sido

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