October 20, 1955

Commander L. A. Roupp, U.S.N.
Design Superintendent
Portsmouth Naval Shipyard
Portsmouth, New Hampshire

Dear Commander Roupp:

I am sorry that Mr. Johnson and I were unable to see you when we visited your installation last month to discuss the safe handling and usage of Monsanto's hydraulic fluid, Pydraul 150. It is felt, however, that our discussions with Messrs. [redacted], Armitage, Hockenbell, Davis and Murray were beneficial. Certainly, your associates were most kind and hospitable.

Attached are copies of correspondence which refer to the safety of use of Pydraul 150 and which include information which served as a basis for our discussions. Copies of several of the enclosed were left with your personnel at the time of our visit but are also included herewith to make your file complete. The following summarizes, I believe, our verbal discussions.

Monsanto-sponsored toxicological research on hydraulic fluids was initiated in 1949--several years before usage aboard Navy vessels was considered. At that time, one fluid of primary interest was Pydraul F-9. Experiments were designed at the Kettering Laboratory, University of Cincinnati (an independent laboratory of world-wide eminence) to compare the relatively non-toxic properties of Pydraul F-9 with other well known fluids which had been used for years by industry (and by the Navy) without adverse health effects. Attached to Page 19 of Enclosure #1, our Pydraul F-9 booklet, is a discussion and interpretation of the results of these studies.

Several years later, the Navy was provided with samples of Pydraul F-9 for experimental purposes. Composition of the fluid was not revealed by Monsanto because of a patent situation. We eventually disclosed, however, that the fluid did contain a chlorinated biphenyl which Naval research laboratories had detected following chemical analysis. Certain personnel within the Navy immediately raised the question of the potential health hazards incidental to any use of such a compound aboard Navy vessels. The individuals who raised these questions were not trained or experienced in the field of medicine or toxicology. We subsequently provided the

Bureau of Medicine and the Committee on Toxicology of the National Research Council, which serves in a consulting capacity to Buked with the detailed reports and all information concerning the Kettering studies. At our suggestion, a survey was conducted by a representative of the NRC Committee, a representative of Kettering Laboratory, and Navy personnel aboard an aircraft carrier in an attempt to evaluate potential hazards from Pydraul type fluids. Air samples were collected to determine the amount of fluid vapor to which aircraft personnel would be exposed. Although the fluid in use was not a Pydraul type, certain conclusions could be reached. Based on the data obtained with the type of fluid in use, the representative from the Kettering Laboratories, Dr. Joseph F. Treon, concluded that the use of Pydraul F-9 under similar conditions would not constitute a health hazard.

It was subsequently learned that a newer fluid, Pydraul 150, met the specifications for certain Navy uses and this product then became of interest. As indicated in Enclosure #2, the composition of Pydraul 150 is somewhat similar to that of Pydraul F-9 but does not contain the same components. As indicated in this letter which was sent to Captain Bennet in the Bureau of Ships, it was our conclusion that Pydraul 150 could be handled and used with no more precaution than is afforded other hydraulic fluids insofar as toxicity considerations are concerned. Enclosures #3 and #4 indicate that again in the case of Pydraul 150 as with Pydraul F-9, some concern was evidenced within the Navy Department. Enclosure #5 reports that again the Committee on Toxicology of the NRC was asked for an opinion. Enclosure #6 indicates the current status of our exchange of information with the Bureau of Medicine and the NRC Committee.

It was reported at the time of our visit to Portsmouth that there had been two incidents during your experimental or developmental work with Pydraul 150. In one instance, one of your engineers was accidentally subjected to a stream of Pydraul 150 squirted into his mouth under pressure. The individual reported some irritation and soreness of the throat for several weeks. It appeared at the time of our visit that there had been no other symptoms. We suspect that had any other hydraulic fluid, regardless of type, beeninvolved, similar symptoms or worse might have been experienced.

The second instance involved a worker who had developed a skin rash on his arms following the handling of Pydraul 150. All of our animal and human testing and industrial experience with the Pydraul type fluids--and specifically with the components of Pydraul 150--lead us to believe that such rashes or skin effects would be quite unexpected. It is true, of course, that a certain percentage of the population will show a sensitivity

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to almost any normal compound whether the material be a food, cosmetic, petroleum product, or industrial chemical. As your associates indicated, this one worker might well have developed a rash from causes not associated with his employment.

I regret that there has been some delay in forwarding this communication to you. Unfortunately, I have had to be out of the office a great deal since my return from the East. I trust that this delay has not inconvenienced you or your staff.

If I can be of any further assistance to you, please let me know.

Very truly yours,

Elmer P. Wheeler
Assistant Director
Medical Department

EPW:SMB

Enclosures

cc Mr. R. G. DosRochers } U.S. Navy at Portsmouth
Mr. Leonard L. Murray }
Mr. L. T. Johnson — Monsanto Sales (Everett, Mass.)
Dr. R. E. Kelly

bcc Mr. F. H. Langenfeld