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UNITED STATES DISTRICT COURT
EASTERN DISTRICT OP NEW YORK

In re "AGENT ORANGE" PRODUCT **LIABILITY** LITIGATION.	MDL No. 381 (JBW)
ANNA M. LILLEY, SURVIVING **wife** of JOHN LILLEY, JOHN **W.** JEANNIE D., THOMAS R., DEBBIE L. and WARD C. **LILLEY,** all **minor** children of JOHN LILLEY, deceased by ANNA M. **LILLEY,** their mother and next friend, Plaintiffs, -against- DOW CHEMICAL COMPANY, MONSANTO COMPANY, HERCULES INCORPORATED, DIAMOND SHAMROCK CORPORATION, THOMPSON HAYWARD CHEMICAL COMPANY, NORTH AMERICAN PHILLIPS CORPORATION **and UNIROYAL** MERCHANDISING COMPANY, **Defendants.**	**CV 80-2284**

MEMORANDUM, ORDER, AND JUDGMENT

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APPEARANCES:

Robert C. **Taylor, Jr.,** Ashcraft **& Gerel,** Washington, C.D.

Attorney **for Plaintiffs**

Leonard Rivkin, Rivkin, Leff, Sherman 6 Radler, Garden City, New York; Philip Pakula, Townley & **Updike,** New York, New York; Wendell **B. Alcorn, Jr.,** Cadwalader, **Wickersham** & Taft, New York, New York; William Krohley, Kelley, Drye & Warren, New York, New York; Thomas Beck, Arthur, Dry & **Kalish,** New York, New York; Bruce **Hecker,** Shea & Gould, New York, New York, of counsel; David R. **Gross,** Budd, Larner, Kent, Gross, **Picillo** & Rosenbaum, New **York,** New York; Paul V. **Esposito, Lewis,** Overbeck & Furman, Chicago, Illinois; Henry G. Miller, Clark, Gagliardi & Miller, White Plains, New York

Attorneys for Defendants

Arvin Maskin, Department of Justice, Washington, D.C.

For Third-Party Defendant **United States**

WEINSTEIN, Ch. J.s

Anna Lilley sues on behalf of her deceased husband John Lilley, a Vietnam Veteran. (The Lilleys are sometimes individually and jointly referred to as "plaintiff."). Defendants are seven chemical companies that manufactured the herbicide Agent Orange for use in Vietnam. They have moved to dismiss and for summary judgment. As in the cases of the veterans who opted out of the class, summary judgment of dismissal must be granted. See In re "Agent Orange" Product Liability Litigation, ____ F. Supp. ____ (E.D.N.Y. May 8, 1985).

I. INTRODUCTION

Based on all the information available in this case and in the related MDL litigation, we can assume that plaintiff might establish that the government as well as the defendant chemical companies knew that Agent Orange contained dioxin. The government and defendants undoubtedly knew before the spraying began that dioxin was a highly toxic chemical that might pose dangers to those exposed. Plaintiff can probably show that defendants knew that Agent Orange was to be sprayed in higher concentrations than recommended by the manufacturers for safe commercial

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use of similar hericides, creating additional dangers to those on the ground. Plaintiff could also convince a trier that defendants were aware that packaging Agent Orange in drums without warnings was likely to lead to handling in ways contrary to safe usage, such as spillage on personnel and failure to wash and change clothing promptly after exposure.

There is also reason to believe that plaintiff could adduce evidence lending support to a contention that neither the government nor the chemical companies met a responsibility to conduct proper experiments and tests before production and use, to reveal promptly the dangers and to take adequate precautions by warnings and the like. In this respect the case arguably resembles the asbestos litigation where substantial contentions of cover-up and carelessness have been made. See P. Brodeur, "Annals of Law--Asbestos," The New Yorker (June 10, 17, 24, July 1, 1985).

Finally, on the basis of the record, there is evidence of plaintiff's exposure to Agent Orange. It occurred while he was in Vietnam.

Thus plaintiff could establish enough to withstand a motion for summary judgment directed to the first leg of any tort claim--defendants' wrongful act violating a right of plaintiff. Whether the rule is couched in terms of traditional negligence or strict liability we may assume for the purposes of this motion that defendants violated an obligation they owed to plaintiff.

Plaintiff's difficulty is with establishing the second leg of a tort claim--damage to plaintiff caused by defendants' wrongful conduct. Causation cannot be established on the basis of information presently available. It cannot be shown that John Lilley's illness and death were caused by exposure to Agent Orange. On the evidence available no trier could be permitted to find for plaintiff. At this point any analogy to many of the asbestos or other similar toxic tort cases--where there is a clear linkage between the product and a disease--ends.

Under these circumstances, there is no need to consider whether the risks to those on the ground from spraying would have been greater than the risks from ambushes or other enemy action had Agent Orange

never been used. Speculation about what the President and other high government officials would have done if they had known of the possible dangers, or what the manufacturers would or should have done if the government ordered the spraying of Agent Orange with full knowledge, becomes legally irrelevant.

Although lack of proof of causation requires that the complaint be dismissed, attorneys for plaintiffs in this and related MDL cases did not bring a frivolous suit requiring them to pay defendants' attorney fees under Rule 11 of the Federal Rules of Civil Procedure. See Eastway v. City of New York, ____ F.2d_____(2d Cir. 1985). The plaintiffs' attorneys in this multidistrict litigation have made a valuable contribution by discovering and revealing evidence supporting the first leg of their claim--defendants' and the government's knowledge of the dangers in using Agent Orange and their failure to take reasonable precautions. That the scientific studies completed after they brought suit failed to support their theories of causation is hardly a reason for punishing the lawyers.

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As a result of this litigation, future members of the armed forces may be protected by "sunshine" legislation, Defense Department regulations, and manufacturers' practice requiring disclosure of new and dangerous chemical processes. The importance of this and related Agent Orange litigation to veterans and to the public argues strongly against denominating the complaint in this case frivolous and burdening counsel with Rule 11 sanctions.

A long latency period may ultimately reveal some causal relationship between exposure to Agent Orange and adverse health effects in those exposed and in their children. If and when such a connection is shown the issue of compensation should be addressed by the government. This court must decide the case on the evidence presently available.

II. PROCEDURAL BACKGROUND

Plaintiff opted out of the class previously certified by this court in a suit against the defendant chemical companies. In re "Agent Orange" Product Liability Litigation, 506 F.Supp 762, 787-792 (E.D.N.Y.

1980), modified, 100 F.R.D. 718 (E.D.N.Y. 1983), mandamus denied, 725 F.2d 858 <2d Cir.), cert. denied, ___U.S.__, 104 S.Ct. 1417, 79 L.Ed.2d 743 (1984). After settling with members of the class on May 7, 1984, defendants moved on July 24, 1984 for summary judgment in the opt-out cases and a number of cases brought by civilians.

The court granted the opt-out plaintiffs repeated adjournments and opportunities for discovery to obtain evidence in opposition to the motion. On December 10, 1984, the court heard oral argument on defendants' motions. Defendants offered overwhelming proof that no causal connection exists between exposure to Agent Orange and development of miscarriages or birth defects. In response, the veterans' wives and children produced no evidence sufficient to create an issue of material fact on causation. See also In re "Agent Orange" Product Liability Litigation, 603 F.Supp. 239 (E.D.N.Y. 1985) (dismissing claims of wives and children against government). The court adjourned consideration of the majority of the opt-out veterans' claims to enable counsel to produce additional evidence of causation.

Counsel for the opt-out plaintiffs submitted materials by Doctors Samuel S. Epstein and Barry M. Singer. Oral argument was heard on April 15, 1985. The court issued an opinion granting defendants' motion for summary judgment on May 8, 1985. In re "Agent Orange" Product Liability Litigation, ___ F.Supp. ___ (E.D.N.Y. 1985).

In the Lilley case, plaintiff produced the affidavit of Dr. Bertram Warren Carnow on October 18, 1984. On December 10, 1984, the court denied summary judgment. Defendants' motion to reargue was granted on February 6, 1985. Expedited discovery occurred and oral argument was heard on April 15, 1985.

On May 14, 1985, the court issued an order granting plaintiff an added thirty days to submit additional proof of exposure and additional medical evidence. Plaintiffs' counsel submitted the affidvit of Mrs. Lilley's brother-in-law John Comeaux on June 12, 1985. Defendants' counsel submitted John Comeaux's supplemental affidavit and an accompanying memorandum of law on June 13, 1985.

III. FACTS

More discovery has occurred in the **Lilley** case than in any other opt-out case. **Still,** as the deposition of plaintiff Anna Lilley **demonstrates,** little is known about John **Lilley's** medical background and exposure history. **Plaintiff's expert,** Dr. Bertram **Carnow,** relies on information supplied by Mrs. Lilley, some of Mr. **Lilley's** medical records, and studies of animal and industrial exposure to dioxin. He concludes that Agent Orange caused John **Lilley's** illness and death. Defendants contest causation, relying primarily on **epidemiologic** studies, the depositions of Mrs. Lilley, the affidavits of John Comeaux and the affidavits of two experts.

A. Information on John Lilley

John Lilley grew up in western Pennsylvania. He entered what subsequently became the Air Force in 1947 at the age of seventeen. According to **Mrs.** Lilley, her husband received specialized training in the use of chemicals and gas and instruction on how

to be an airplane mechanic. Dep. of Anna Lilley at 81. During his years in the service, John Lilley worked primarily as an airplane mechanic. **Id.** at 36, 57. He "tore engines apart." Id. at 83. Mr. **Lilley's** main workplace was Andrews Air Force Base, and he commuted home on weekends. Id. at 51, **54, 84.**

He had several tours of duty abroad, including service in Germany, England, Japan, Korea and Vietnam. He worked as a cargo inspector in Vietnam from April 1966 through April 1967. There he inventoried cargo and assisted in loading and unloading it onto airplanes.

Dr. Carnow states that Mr. Lilley "was not exposed to any spraying nor did he handle any chemicals" other than in Vietnam. Carnow Aff. at **2.** Mrs. **Lilley's** deposition makes clear that she would not have been aware of her **husband's** exposure to chemicals. See **generally** Lilley Dep. at 85 & **passim.** According to Mrs. Lilley, whatever John **Lilley's** assignment, "he would be * * * on top secret * * * [and] never knew where he was going until he boarded the plane and opened the envelope." **Id.** at 47.

Dr. Carnow also states that Mr. Lilley told Mrs. Lilley "that he did handle drums of Agent Orange extensively and that he did get some of the chemical on him from ruptured or defective containers." Mrs. Lilley, on the other hand, repeatedly stated that "he could never tell me what was in the containers." Id. at 36; see also id. at 42, 44, 161.

Mrs. Lilley testified at her deposition that she first learned that Agent Orange may have been in the containers her husband handled sometime after his death. She was told this by her brother-in-law, who had worked with John Lilley in Vietnam. Id. at 41-42. There are indications in Mrs. Lilley's deposition that the chemicals handled by her husband and her brother-in-law included chemicals other than Agent Orange. See, e.g., id. at 45 ("[t]he boys never knew what they were handling, all they knew it was chemicals * * * supposed to kill the mosquitos or something over there"); id. (describing "red, green, blue" seals on barrels); id. at 161 ("chemicals my husband [used] * * * to spray for the bugs").

The affidavit of Mrs. Lilley's brother-in-law, John C. Comeaux, is more explicit about the material John Lilley handled in Vietnam. Mr. Comeaux served as a flight engineer and cargo inspector in Vietnam, frequently working with John Lilley. Comeaux Aff. ¶¶ 5-7.

Mr. Comeaux "cannot clearly recall the color of the various bands used" on the barrels he and Mr. Lilley handled. They emptied the 55-gallon drums into larger aircraft tanks for use on C-123 aircraft as part of Operation Ranch Hand. Aff. ¶ 7. The material in the drums, which Mr. Comeaux "understood * * * to be for defoliating the jungle, killing the tall grasses and occasionally for destroying enemy crops," "was constantly spilling" on Mr. Comeaux and Mr. Lilley. Aff. ¶¶ 7-8. A film of what Mr. Comeaux believes to have been Agent Orange developed on the water when it rained. Rainwater flooded the barracks and Mr. Lilley and Mr. Comaux were forced to wade in it. Aff. ¶ 7. Mr. Comeaux concludes that "John Lilley was exposed to Agent Orange and possibly other herbicides." Aff. ¶ 10 (emphasis supplied). John Comeaux's supplemental affidavit filed at the request of defendant Monsanto

states that he has "no personal knowledge of the contents of the barrels we handled" and that he does "not know * * * whether the barrels in fact contained the herbicide known as Agent Orange." Supp. Aff. ¶¶ 3-5.

Dr. Carnow notes that after returning from Vietnam, Mr. Lilley had blister-like lesions on both lower legs which were then diagnosed as shingles. He also complained of a red rash which would later result in brownish patches on his skin. Carnow Aff. at 2; see also Dep. of Anna Lilley at 27. He had difficulty holding a hammer because of numbness in his hands. Finally, he had a cough and sore throat, which were apparently cured by a tonsillectomy. Id. at 64.

Mr. Lilley retired from the Air Force after twenty years of service in August 1967. Upon returning to civilian life he worked for Aircraft Armaments Company, a manufacturer of grenades, machine guns and shells. Lilley Dep. at 62-63. Dr. Carnow states that during his subsequent occupation, Mr. Lilley "never handled any toxic chemicals including solvents or pesticides." Carnow Aff. at 2. This conclusion is

presumably based on Mrs. Lilley's statement that "[t]hey didn't have chemicals down there." Lilley Dep., at 63. While employed at Aircraft Armaments, Mr. Lilley replaced light bulbs and fixed air conditioners. Id.

With respect to Mr. Lilley's personal habits, Dr. Carnow states that, according to Mrs. Lilley, Mr. Lilley did not smoke or drink. Aff. at 2. Mrs. Lilley's deposition reads:

> Q: At any time since you have known your husband, did he ever smoke?
>
> A: Well, I don't know what he did. He started one time and went back off of it and broke himself of it.
>
> Q: Was he ever advised by a doctor in the military to stop smoking?
>
> A: I don't know. He never told me.

Dep. at 98. Mr. Lilley, however, "admitted to smoking 1 pack per day for the last 30 years * * *." Medical Record, USPHS Hospital (12/10/70) submitted as Exhibit "B" to Aff. of Edmund H. Sonnenblick, M.D., In Support of Defendant's Motion to Dismiss and for Summary Judgment.

Dr. Carnow also relies on information from Mrs. Lilley to conclude that Mr. Lilley never contracted hepatitis or infectious mononucleosis and did not take any medication regularly. Carnow Aff. at 2. She gave Dr. Carnow an abbreviated family history: Mr. Lilley's father died of a stroke in his 50s or 60s. His mother had cancer of the uterus or cervix. He has five sisters, all of whom are alive and well. There is no history of any leukemias or other cancers in the family. Aff. at 3.

Mrs. Lilley notes that she had a stillbirth after five months' gestation in 1969. She became pregnant again several months later and after a full-term pregnancy gave birth to an eight pound, five ounce baby. The boy has developed rashes on about 13 occasions, diagnosed as Scarlet Fever, German Measles, and other infectious diseases. The child also suffers from a lung disorder. Aff. at 3.

After Mr. Lilley's return from Vietnam, he received medical attention twice: once in April 1966 for a boil on his scrotum, and once for a sore throat in May 1967. His retirement examination in August 1967

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showed a normal electrocardiogram, no significant findings on the physical examination, and no complaints. He was 6 feet tall and weighed 180 pounds. His blood pressure was 120/84 and he was thought to be in excellent health. Aff. at 3.

In September 1970 at the age of 40, Mr. Lilley was diagnosed as having poorly differentiated lymphocytic lymphoma, nodular type. He was treated with various medications and told that he had only six months to live--although fortunately he lived longer. Carnow Aff. at 3. He had a spleenectomy in 1970 after the diagnosis of lymphosarcoma was made.

Dr. Carnow notes that the progression of Mr. Lilley's disease was from poorly differentiated lymphocytic lymphoma, nodular type, to mixed histiocytic-lymphocytic, nodular type, to lymphosarcomatous leukemia. Aff. at 3. Mr. Lilley died on January 28, 1976. According to Dr. Carnow, the autopsy report shows a lymphosarcomatous leukemia with various other findings, all related to the cancer diagnosis. Aff. at 3.

A hospital discharge summary dated February 17, 1975 shows that Mr. Lilley had just suffered a myocardial infarction. He had had a previous myocardial infarction in 1973. Dr. Carnow concludes that Mr. Lilley's lymphosarcoma was caused by exposure to Agent Orange during his tour of duty in Vietnam. He further states that John Lilley's myocardial infarction "was also the result of absorption of these chemicals into his body and the development of chronic chemical intoxication as a result." Carnow Aff. at 5. Cf. Tr. at 183 (Hearings March 5, 1985) ("medical evidence would suggest that if somebody had occluded arteries, that person did not die from Agent Orange exposure") (remarks of Plaintiffs' Management Committee member David Dean).

Assuming, based on the Comeaux affidavits, that Mr. Lilley was in fact exposed to Agent Orange, there is insufficient evidence to support Dr. Carnow's opinion that such exposure caused Mr. Lilley's lymphosarcoma and myocardial infarctions. Dr. Carnow relies on insufficient information about Mr. Lilley's background and personal habits. What little information is available makes clear that Mr. Lilley

was exposed to a wide variety of carcinogens during his lifetime. The only medical records submitted make no mention of Agent Orange. The inapposite scientific studies described by Dr. Carnow do not support the claim of causation.

B. Review of Scientific Literature

To reach his conclusion that Agent Orange caused Mr. Lilley's lymphosarcoma and myocardial infarctions, Dr. Carnow relies primarily on a number of studies conducted on animals and workers exposed to dioxin.

1. Studies Relied upon by Dr. Carnow

These studies, previously submitted by plaintiffs, have been discussed in the court's prior opt-out opinion. In re "Agent Orange" Product Liability Litigation, ____ F.Supp. ____ (E.D.N.Y. May 8, 1985). Many of the studies involved laboratory animals subjected to extreme exposures with unknown human significance; some, such as the Swedish studies by Hardell and his colleagues, have never been replicated,

and involved chemicals in addition to the constituents of Agent Orange. See, e.g., L. Hardell, et al., "Malignant Lymphoma and Exposure to Chemicals, Especially Organic Solvents, Chlorophenols and Phenoxy Acids: A Case-Control Study," Br. J. Cancer (1981), Ex. 66 to Plaintiffs' Supplemental Memorandum in Support of Plaintiffs' Opposition to Defendants' Motion for Summary Judgment. Others involved chronic or acute industrial exposures different from the exposures in Vietnam.

The studies cited by Dr. Carnow do not establish any cause and effect relationship. For example, Dr. Carnow relies heavily on three animal studies – Van Miller, Lalich, et al., 1977, Kociba, et al., 1978, and Toth et al., 1979 – that he states "have demonstrated the carcinogenicity of TCDD in rats and mice." Carnow Aff. at 5. The Van Miller study, however, concludes that more research is necessary into the mechanisms of TCDD's action before any conclusions can be drawn as to the carcinogenity of TCDD even in laboratory animals. See Van Miller, et al., "Increased Incidence of Neoplasms in Rats Exposed to Low Levels of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin," 9 Chemosphere

537, 543 (1979), Ex. 5 to Plaintiffs' Supplemental Memorandum.

As the Toth study concludes, the results of animal studies cannot be extrapolated to humans:

> Until more is known about the people who have been exposed to them, the carcinogenicity of **2,4,5-T** and structurally related chemicals in humans cannot be evaluated.

Toth, et **al.,** "Carcinogenicity testing of herbicide **2,4,5-trichlorophenoxyethanol** containing dioxin and of pure dioxin in Swiss mice" 549 (1979), Ex. 7 to **Plaintiffs'** Supplemental Memorandum. See also Hall & Silbergeld, "Reappraising Epidemiology: A Response to Mr. Dore," 7 Harv. **Envtl.** L. Rev. 441, 442-43 & **n.18** (1983) (laboratory animal studies less persuasive than epidemiologic **studies).**

In the **Kociba** study, neoplasms were found only in those animals fed sufficient quantities of the chemical to cause severe, acute toxic effects. The study concluded:

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> In **summary,** data collected in the study reported herein indicate that doses sufficient to induce severe toxicity increased the incidence of some types of neoplasms in **rats,** while reducing the incidence of other types. No increase in neoplasms occurred in rats receiving sufficient **TCDD** during the **2-year** study to induce slight or no manifestations of toxicity.

Kociba, et al., "Results of a Two-Year Chronic Toxicity and Oncogenicity Study of **2-3-7-8-Tetrachlorodibenzino-**p-Dioxin in **Rats,"** 46 Toxicology and Applied Pharmacology 279, 302 **(1978),** Ex. 3 to **Plaintiffs'** Supplemental Memorandum.

Dr. **Carnow's** discussion of human studies avoids any mention of the epidemiologic studies conducted on Vietnam Veterans actually exposed to Agent Orange and their offspring. Instead, he relies on studies involving industrial exposure, small cohorts and different chemical compounds. He does mention Sarma and Jacobs, who reported in 1981 three cases of soft-tissue sarcomas in Veterans presumed to have been exposed to Agent Orange. Sarma and Jacobs concluded that more studies are needed:

> **Soft-tissue sarcomas** are rare neoplasms. If there **is** a true risk of these neoplasms in veterans who served in **Vietnam,** follow-up studies should be able to define it. If there is an increased risk of **malignant** disease in these **veterans,** then a more critical question that has to be addressed is: Are the defoliants **causative,** or is some other unidentified environmental factor responsible, acting alone or in concert with the defoliants?

Sarma and Jacobs, "Thoracic Soft-Tissue Sarcoma in Vietnam Veterans Exposed to Agent **Orange"** 1109 (letter **to** the editor), Ex. 79 to **Plaintiffs'** Supplemental Memorandum.

Dr. Carnow also cites a number of studies involving occupational exposures. He refers to four cases of soft-tissue sarcomas reported by Honchar and Halperin in **2,4,5-T** workers and three additional cases reported subsequently. He fails to mention the later findings that of these seven cases, three had no known exposure to chlorophenols and two others were not soft-tissue sarcomas at all, but rather more common carcinomas. Thus, only two of the original seven cases of. **soft-tissue** sarcomas remained after reevaluation. They had no statistical **significance.** See Fingerhut,

et al., "Review of Exposure and Pathology Data for Seven Cases Reported as Soft Tissue Sarcoma Among Persons Occupationally Exposed to Dioxin-Contaminated Herbicides," Exhibit 2 to Defendants' Supplemental Memorandum in Support of Motion to Dismiss And/Or for Summary Judgment.

The Swedish soft-tissue studies cited by Dr. Carnow--Eriksson, et al. 1979; Hardell, et al. 1981 --involved exposure levels different from those at issue in this case. The Erikson study concludes that:

> exposure to phenoxy acids may constitute a risk factor in the development of malignant mesenchymal tumors of the soft tissue, and . . . the risk is not limited to 2,4,5-trichlorophenoxy acids which, like certain chlorophenols, may contain polychlorinated dibenzodioxins and dibenzofurans, but also to other phenoxy acids.

Eriksson, et al., "Case Control Study on Malignant Tumors of the Soft Tissue and Exposure to Chemical Substances," 76 Lakartidningen 18, Ex. 64 to Plaintiffs' Supplemental Memorandum (emphasis supplied). The Hardell study acknowledges:

> There are no epidemiological or other reports that have firmly established a correlation between cancer and previous exposure to phenoxyacetic acids in human beings.

Hardell, et al., "Case-Control Study: Soft-Tissue Sarcomas and Exposure to Phenoxyacetic Acids or Chlorophenols," 39 Br. J. Cancer 711, 711 (1979), Ex. 63 to Plaintiffs' Supplemental Memorandum. These Swedish studies have not been replicated by other investigators. One court has explicitly found the Hardell studies flawed. See, e.g., Palmer v. Nova Scotia Forest Industries, 60 N.S.R. (2d) 271, 352-53, 2 D.L.R. (4th) 397 (1983).

The follow-up studies of the BASF accident similarly are not evidence of any causal relationship between exposure to dioxin and stomach cancer:

> There is a possibility that some members of the BASF cohort were exposed to other unknown occupational hazards before or after the dioxin accident....Because of the small size of the cohort and the small absolute number of deaths from any

> particular cause, the results of this study do not permit any definite conclusions concerning the carcinogenic effect of dioxin exposure.

Thiess, Frentzel-Beyme and Link, "Mortality Study of Persons Exposed to Dioxin in a Trichlorophenol-Process Accident that Occurred in the BASF AG on November 17, 1953," 3 Am. J. Industrial Medicine 179, 188 (1982), Ex. 71 to Plaintiffs' Supplemental Memorandum (emphasis supplied).

The Hardell lymphoma studies also fail to establish any causation. Hardell's 1979 letter in Lancet concludes:

> Proof of a relation between malignant lymphoma of histiocytic type and exposure to phenoxyacetic acids or chlorophenols or any comment on the possible mode of action of these chemicals and their impurities must await epidemiological and immunological studies of malignant lymphoma.

Hardell, "Malignant Lymphoma of Histiocyctic Type and Exposure to Phenoxyacetic Acids or Chlorophenols," The Lancet 55, 56 (Jan. 6, 1979), Ex. 65 to Plaintiffs'

Supplemental Memorandum (emphasis supplied). The subsequent study by Hardell does not provide such proof. The conclusion is:

> As regards the present investigation, it suggests, in summary, that exposure to organic solvents, chlorophenols and/or phenoxy acids constitutes a risk factor for the incidence of malignant lymphoma. The mechanism of this is unclear, although a conceivable mode of action may consist, for example, of immunologic depression, which is described for dioxins, especially TCDD, or mutagenic effects by phenoxy acids which were demonstrated in some test systems . . . .

Hardell, et al., "Malignant Lymphoma and Exposure to Chemical Substances, Especially Organic Solvents, Chlorophenols and Phenoxy Acids" 15, Ex. 66 to Plaintiffs' Supplemental Memorandum (emphasis supplied).

Nor do the Bishop and Jones or Olsson and Brandt studies provide such proof. Bishop and Jones found two cases of lymphoma of the scalp among 158 workers who were exposed to pentachlorophenol containing hexachloro and octachloro dibenzodioxins, but who were also exposed "to other chemicals including

aromatic hydrocarbons, among them benzene." Bishop & Jones, "Non-Hodgkin's Lymphoma of the Scalp in Workers Exposed to Dioxins," The Lancet 369 (Aug. 15, 1981), Ex. 72 to Plaintiffs' Supplemental Memorandum (emphasis supplied). Olsson and Brandt noted five cases of lymphomas of the skin among 123 males suffering from non-Hodgkin's lymphoma. Four of these five, but only seven of the remaining 118, reported exposures to herbicides containing phenoxy acids. The authors then speculated about the skin cancers only:

> Phenoxy acids are chemically related to chlorophenols and our results, together with the observations of Bishop and Jones, may suggest a relation between cutaneous presentation of [non-Hodgkin's lymphoma] and occupational exposure to this type of chemical. Like cholorophenols, phenoxy acids may be contaminated by dioxins and it is also possible that exposure to such impurities is relevant to the findings made by Bishop and Jones and by us.

Olsson & Brandt, "Non-Hodgkin's Lymphoma of the Skin and Occupational Exposure to Herbicides," The Lancet 579 (Sept. 12, 1981) (emphasis supplied), Ex. 70 to Plaintiffs' Supplemental Memorandum.

In sum, the various studies discussed by Dr. Carnow do not support his firm conclusion that exposure to Agent Orange caused John Lilley's lymphosarcoma. The authors of these studies acknowledge that more research is necessary and that no more than a suggestion or vague association may be hypothesized at present. Dr. Carnow does not discuss the directly relevant epidemiologic studies conducted on exposed Vietnam veterans.

2. Studies of Relevant Population Group

The epidemiologic studies conducted on veterans exposed to Agent Orange in Vietnam have been extensively discussed in prior opinions. See, e.g., In re "Agent Orange" Product Liability Litigation, 597 F.Supp. 740 (E.D.N.Y. 1984) (fairness of settlement); In re "Agent Orange" Product Liability Litigation, _ F.Supp. ___ (E.D.N.Y. May 8, 1985) (granting summary judgment against plaintiffs who opted out of the class action). This research was designed to determine the direct effects of exposure on servicepersons and the indirect effects of exposure on spouses and children of servicepersons. No acceptable study to date of Vietnam

veterans and their families concludes that there is a causal connection between exposure to Agent Orange and the serious adverse health effects claimed by plaintiff.

Chloracne and porphyria cutanea tarda are the only two diseases that have been recognized by Congress as having some possible connection to Agent Orange exposure. Arguably there has been some proof that this plaintiff suffered from chloracne on his return from Vietnam. But see In re "Agent Orange" Product Liability Litigation, 597 F.Supp. 740, 856 (E.D.N.Y. 1984) (of all Vietnam veterans, no chloracne and two porphyria cutanea tarda cases are recognized as having a connection with Vietnam, but not necessarily with Agent Orange); Veterans Administration, Adjudication of Claims Based on Exposure to Dioxin and Ionizing Radiation, 50 Fed. Reg. 15848, 15849-50 (April 22, 1985). This is, however, a death action and chlorachne has not been claimed to be a precursor of the cancer and heart disease from which plaintiff allegedly died. At most it is evidence of exposure to Agent Orange, a fact that may be assumed for purposes of this motion.

The studies have been negative with respect to effects on veterans' health. The Air Force study is one of the most intensive examinations to date of the effect of Agent Orange on exposed veterans. See Air Force Health Study, An Epidemiologic Investigation of Health Effects in Air Force Personnel Following Exposure to Herbicides (February 24, 1984) (Ranch Hand II Study--1984 Report). This study utilized 1,024 matched pairs of men for analysis. Id. at v. Essentially all those who had participated in the fixed wing spraying and who could be located were studied. The conclusion was negative. In summary,

> This baseline report concludes that there is insufficient evidence to support a cause and effect relationship between herbicide exposure and adverse health in the Ranch Hand group at this time.

Id. at iii. Significantly, "no cases of chloracne were diagnosed clinically or by biopsy." Id. at iii, XV-9.

The small Ranch Hand sample and other factors, particularly the length of time it takes for

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most cancers to develop, support the conclusion that more work is needed before any firm conclusion can be reached respecting morbidity. Id. at v. The authors suggest a 20-year mortality follow-up study. Id. at v., XVIII-1-3.

The Ranch Hand Study authors state that "[i]n full context, the baseline study results should be viewed as reassuring to the Ranch Handers and their families at this time." Id. at iii; see also id. at XIV-4 to XIX-9. Even if we assume that plaintiff was part of the Ranch Hand operation, this study offers no solace to him. It is at best inconclusive. See In re "Agent Orange" Product Liability Litigation, 597 F.Supp. 740, 788 (E.D.N.Y. 1984).

Other studies of the relevant population group fail to establish a causal connection between exposure to Agent Orange and development of the diseases that afflicted John Lilley. See, e.g., Agent Orange Advisory Committee to the Texas Department of Health, Guy R. Newell, Chairman, Development and Preliminary Results of Pilot Clinical Studies 13, 15-19 (March 26, 1984); Lawrence, et al., Mortality Patterns

of New York State Vietnam Veterans, 75 AJPH 277, 279 (1985). The comprehensive three-part Australian study is similarly negative. Australian Veterans Health Studies, The Mortality Report (1984). A comprehensive study by the Centers for Disease Control may be available after mid-1989. See Centers for Disease Control, Protocol for Epidemiologic Studies of the Health of Vietnam Veterans (November 1983); but cf. McIntyre, "End to Dioxin Study Fund Asked," Newsday, May 1, 1985, at 25, col. 1 (White House scientist Alvin L. Young, a toxicologist, recommends that no further research on Agent Orange should be funded "because research has failed to show it causes cancer or birth defects in humans").

C. Expert Affidavits Submitted by Defendants

In support of their motion for summary judgment, defendants submitted affidavits from Dr. Edmund H. Sonnenblick and Dr. Edward A. Smuckler. Dr. Sonnenblick, who is Chief of the Caridology Department at Albert Einstein Medical School, addresses the question of whether John Lilley's myocardial infarctions resulted from exposure to Agent Orange.

A review of Mr. Lilley's medical records, Dr. Carnow's testimony and sources, and the scientific literature convinces him that the infarction was unrelated to Agent Orange. John Lilley was a member of an age, race and sex group that was at risk for myocardial infarction. Sonnenblick Aff. f 9. In addition, John Lilley's medical history includes several known risk factors for myocardial infarction: a 30-year history of cigarette smoking, hyperchloresterolemia, and parental stroke. Aff. ¶¶ 18-20. Even Dr. Carnow acknowledges that these factors may enhance the risk of heart disease, Carnow Dep. at 36.

Dr. Sonnenblick notes that no scientific study has found an association between coronary artery disease and exposure to Agent Orange, 2,3,7,8-tetra-chlorodibenzo-p-dioxin or any other form of dioxin. Aff. f 13. According to Dr. Sonnenblick, the "list of scientific materials which support the opinions of plaintiffs' experts" does not include any reference to literature that addresses this purported association. Aff. f 12. The Ranch Hand Mortality and Morbidity

Studies did not find any increased incidence of coronary artery disease or myocardial infarction among persons exposed to Agent Orange in Vietnam. Aff. f 14.

Dr. Sonnelblick states that:

> "[w]ithout studies demonstrating an excess incidence of myocardial infarction among persons in John Lilley's age group who were exposed to Agent Orange, there is no basis for the opinion that John Lilley's myocardial infarction was more probably than not caused by his exposure to Agent Orange, since there would be no basis for distinguishing his condition from the 'background' incidence of such disease."

Aff. 1 16. Given the lack of an increased incidence of heart disease in veterans exposed to Agent Orange and the existence of risk factors in John Lilley's own background, Dr. Sonnenblick concludes that Dr. Carnow's opinion lacks any "scientific, factual or logical basis." Aff. f 22.

Dr. Smuckler addresses the claim that Agent Orange exposure caused John Lilley's lymphoma. Dr. Smuckler is Chairman of the Department of Forensic

Pathology at the University of California at San Francisco Medical School. His areas of research and publication include chemically-induced cancer and the effects of exposure to chlorinated dioxins and related compounds.

Dr. Smuckler has also reviewed the records, documents and testimony submitted by plaintiffs. He notes that according to the Third National Cancer Survey: Incidence Data, National Cancer Institute Monograph 41, March 1975, attached as Exhibit B to his affidavit, for every 100,000 white males aged 40-44, 4.1 new cases of lymphocytic lymphoma occur each year. The prevalence of the disease is higher. Aff. f 11. Although the etiology of lymphomas is "largely unknown," "[t]here are certain recognized associations that have been established between some agents and the development of lymphomas in humans and animals." Aff. II 13-14.

Dr. Smuckler states that one agent recognized as increasing risk of lymphoma is benzene. Aff. I 16. Mr. Lilley is likely to been exposed to benzene in his many years as a flight engineer and airplane mechanic.

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Dr. Smuckler points out that there is an established link between this occupation and an increased incidence of lymphoma and leukemia. Aff. 1 24 & Exhibit C. Exhibit C contains articles on the increased incidence of lymphoma among those exposed to benzene and "An Occupation Health Survey of Selected Airports" conducted by the Center for Disease Control. This survey warns that airplane maintenance employees risk exposure to a number of toxic substances: carbon monoxide, aluminum oxide, stoddard solvent, kerosene, nonflammable halogenated solvents, alkaline solutions, cleaners, vapor degreasers containing chlorinated hydrocarbons, metal oxide fumes and phosgene (from welding), x-radiation (from electrom beam welding), metal and nitrogen oxides (from metal spraying), benzene (from paint stripping), and a variety of other potentially hazardous substances. See Larsen, "An Occupational Health Survey of Selected Airports," passim, published by Center for Disease Control, National Institute for Occupational Safety and Health (1974). Exhibit C also includes an article, "The Radiation Hazard from Contaminated Aircraft," which suggests that aircraft maintenance personnel are at increased risk of radiation exposure.

Dr. Smuckler has reviewed the list of scientific materials that allegedly support plaintiffs' expert. He found no references to any association between exposure to Agent Orange in Vietnam and development of malignant lymphoma. He has also reviewed the Ranch Hand studies, which find no increased incidence of lymphomas among Vietnam Veterans exposed to Agent Orange. Aff. ¶¶ 19-20. Dr. Smuckler notes that the only reference cited by plaintiff that involves lymphoma is Hardell's study of agricultural and forestry workers who were exposed to a number of chemicals. Aff. ¶ 21. As already pointed out, Dr. Hardell himself conludes that his investigation "only suggests that exposure to organic solvents, chlorophenols and/or phenoxy acids constitutes a risk factor for malignant lymphoma." Hardell, "Malignant Lymphoma and Exposure to Chemicals," 43 Br. J. Cancer 169, 175 (1981) (emphasis supplied); cf. Palmer v. Nova Scotia Forest Industries, 60 N.S.R. (2d) 271, 352-53, 2 D.L.R. (4th) 397 (1983).

Dr. Smuckler concludes that "[c]onsidering the following uncontroverted facts:

a. there is no established association between exposure to Agent Orange and increased incidence of **lymphoma;**

b. there is no evidence **of** an excess incidence of lymphoma in Vietnam veterans;

c. lymphoma is a neoplastic disease that occurs in the general United States population;

d. the etiology of **lymphomas** is largely unknown; and

e. John **Lilley's** medical and occupational history demonstrates other risk factors for cancer generally and **lymphoma/leukemia specifically;**

there is no **scientific,** factual or logical basis to permit or support the conclusion that it is more probable than not that John **Lilley's** malignancy was caused by his alleged exposure to Agent Orange in Vietnam.

Aff. ¶ 29.

IV. LAW

Defendants assert a number of legal grounds for dismissal. All defendants claim that plaintiff has not created an issue of material fact regarding

causation, that plaintiff has failed to show who caused the harm alleged, and that the government contract defense bars recovery. In addition, defendant Monsanto moves to dismiss claiming that the applicable statute of limitations bars recovery.

A. Evidence of Lack of Causation

To prevail defendants must show that there can be no genuine issue of material fact regarding exposure to Agent Orange as a cause of John Lilley's disease. In re "Agent Orange" Product Liability Litigation, ____ F. Supp. ____ (E.D.N.Y. May 8, 1985). Plaintiff must rebut with competent, nonconclusory evidence. Fed. R. Civ. Proc. 56(e).

1. Epidemiologic Studies

The epidemiological studies conducted by the federal, state and Australian governments are admissable under Federal Rule of Evidence 803(8)(C), the public records and reports exception to the hearsay rule. In re "Agent Orange" Product Liability Litigation, ___ F. Supp. ___ (E.D.N.Y. May 8, 1985),

slip op. at 42-47; see also Ellis v. International Playtex, Inc., 745 F.2d 292 (4th Cir. 1984); Kehm v. Proctor & Gamble Manufacturing Co., 724 F.2d 613, 617-20 (8th Cir. 1983). As previously pointed out, the Ranch Hand, Australian and other studies "alone demonstrate that on the basis of present knowledge, there is no question of fact: Agent Orange cannot now be shown to have caused plaintiffs' numerous illnesses." In re "Agent Orange" Product Liability Litigation, supra, slip op. at 47.

The Ranch Hand study is particularly relevant to the instant case. John Lilley allegedly worked in Vietnam as part of Operation Ranch Hand. See Comeaux Aff. at ¶ 7. He was associated with the very group considered in the Ranch Hand study. No increase was found in lymphosarcoma, lymphoma or myocardial infarction among former Ranch Handers.

2. Dr. Carnow's Affidavit

Plaintiff attempts to overcome the unavailability of any general evidence of causation with "particularistic" proof in the form of Dr. Carnow's affidavit. See generally, Rosenberg, "The Causal Connection in Mass Exposure Cases: A 'Public Law' Vision of the Tort System, 97 Harv. L. Rev. 849, 855-59 (1984). Dr. Carnow concludes that "Agent Orange is the likely cause of [John Lilley's] malignancy and death at well above the '50 percent certainty level.'" Aff. at 7, This opinion must be considered in light of Federal Rules of Evidence 403, 702 and 703. See also Fed. R. Ev. 101, 104(a); Weit v. Continental Illinois National Bank and Trust Co., 641 F.2d 457, 467 n.38 (7th Cir. 1981) (Rules of Evidence apply to summary judgment motions), cert. denied, 455 U.S. 988, 102 S.Ct. 1610, 71 L.Ed.2d 847 (1982); In re Japanese Electronic Products Antitrust Litigation, 723 F.2d 238, 260 (3d Cir. 1983) (in limine rulings on admissibility appropriate even when not required by Rule 104), cert. granted, 105 S.Ct. 1863, 85 L.Ed.2d 157 (1985).

(a) Rule 702

Rule 702 of the Federal Rules of Evidence provides for opinion testimony by experts "if scientific, technical or other specialized knowledge will assist the trier of fact to determine a fact in issue" and the witness is "qualified as an expert by knowledge, experience, training or education * * *." The court must first determine whether the expert is sufficiently qualified in his or her field to be allowed to testify. Frazier v. Continental Oil Co., 568 F.2d 378, 383 (5th Cir. 1978). Doubts about whether the proffered evidence is helpful to the trier should be resolved in favor of admissibility. In re Japanese Electronic Products Antitrust Litigation, 723 F.2d 238, 279 (3d Cir. 1983), cert. granted, 105 S.Ct. 1863, 85 L.Ed.2d 157 (1985). Finally, courts must assess the admissability of testimony based on a novel scientific technique by balancing the relevance, reliability, and helpfulness of the evidence against the likelihood of waste of time, confusion and prejudice. United States v. Downing, 753 F.2d 1224 (3d Cir. 1985); United States v. Williams, 583 F.2d 1194, 1198 (2d Cir. 1978), cert. denied, 439 U.S. 1117, 99

S.Ct. 1025, 59 L.Ed.2d 77 (1979); Symposium, "Science and Rules of Evidence," 99 F.R.D. 188, 229-234 (1984).

In their motion for reargument and other papers, defendants urge that Dr. Carnow is unqualified to testify because he has allegedly given contradictory testimony in various cases involving the effects of exposure to dioxin on humans and because of his general lack of credibility. There has been no dispositive proof that Dr. Carnow has committed perjury in the course of the present case. See Harre v. A.H. Robins Co., Inc., 750 F.2d 1501 (11th Cir. 1985). Defendants also cite Dr. Carnow's opening remark at his deposition--"I have just one statement. I'd like to know who is going to take care of my fees in this case"--as rendering him unqualified under the Federal Rules. See Carnow Dep. at 6, discussed in Defendants' Second Supplemental Memorandum in Support of Motion to Dismiss And/Or for Summary Judgment.

Defendants' arguments address the weight of Dr. Carnow's testimony and not its admissability. The Federal Rules of Evidence assume that rigorous cross-examination will alleviate concern about expert

testimony that is contradictory or overly influenced by the prospect of monetary gain. The jury, not the judge, decides whether these considerations have so tainted an expert's opinion as to make it unworthy of belief.

Under Rule 702, the court must merely determine whether Dr. Carnow is sufficiently qualified to testify. He received his degree in medicine from the Chicago Medical School, is board certified in occupational medicine and has had extensive professional experience in occupational and environmental medicine. Dr. Carnow belongs to a number of professional organizations and writes for professional journals. Defendants' contention that Dr. Carnow has on several occasions failed the internal medicine board examination does not preclude him from testifying. He will be considered an expert.

The other elements of Rule 702 analysis – helpfulness and appropriate methodology – are equally satisfied by Dr. Carnow's testimony. His opinion is directed toward one of the most important issues in this protracted litigation – causation – and would

therefore assist the trier of fact. Breidor v. Sears Roebuck and Co., 722 F.2d 1134, 1139 (3d Cir. 1983). Dr. Carnow's general scientific technique of inference from animal and other studies is acceptable. In re "Agent Orange" Product Liability Litigation, ___ F.Supp.____, - (E.D.N.Y. May 8, 1985), slip op. at 50-51, 53-54; United States v. Downing, 753 F.2d 1224, 1237 (3d Cir. 1985); United States v. Williams, 583 F.2d 1194, 1198 (2d Cir. 1978), cert. denied, 439 U.S. 1117, 99 S.Ct. 1025 (1979).

Compliance with Rule 702 does not suffice. Rule 703 also must be considered.

(b) Rule 703

Rule 703 of the Federal Rules of Evidence limits the "facts" and "data" upon which an expert may rely to those "reasonably relied" upon "by experts in the field." It provides:

> The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to him at or before the hearing. If of a type reasonably relied upon by

> experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence.

Dr. Carnow does not base his conclusion about the cause of John Lilley's death on observation. Instead, the doctor relies on anecdotal information from Mrs. Lilley and on some medical records. Under Rule 703, the court must determine whether such reliance is "reasonable."

The cases interpreting this requirement have already been discussed in detail. In re "Agent Orange" Product Liability Litigation, ____ F.Supp. ____, ____-____ (E.D.N.Y. May 8, 1985), slip op. at 55-77; see also Hoeing, "Drawing the Line on Expert Opinions," New York Law Journal, May 22, 1985 at 1, col. 1 (reviewing recent cases).

The reasonable reliance requirement means that an expert may not base his or her testimony on hearsay that would not be used by other experts in the field. In re Swine Flue Immunization Products Liability Litigation, 508 F. Supp. 897, 904 (D. Colo. 1981), aff'd sub nom. Lima v. United States, 708 F.2d

502 (10th Cir. 1983); see also United States v. Cox, 696 F.2d 1294, 1297 (11th Cir.), cert. denied, 104 S.Ct. 99, 78 L.Ed 2d 104 (1983); Dallas & Mavis Forwarding Co., Inc. v. Stegall, 659 F.2d 721, 722 (6th Cir. 1981).

Dr. Carnow has never examined John Lilley. Instead, he relies almost exclusively on hearsay information about Mr. Lilley's symptoms, personal habits and medical background. The confused recollection of Mrs. Lilley about the few things she believes Mr. Lilley told her before his death is not the kind of information physicians customarily rely upon in diagnosing illness. See Slaughter v. Abilene State School, 561 S.W. 2d 789, 791 (Tex. 1977) (doctor's testimony predicated upon both hearsay and personal knowledge admissable); Smith v. Tennessee Life Insurance Co., 618 S.W. 2d 829, 832 (Tex. Civ. App. 1981) ("report of private investigators is not * * * the type of hearsay data that a doctor can rely upon in forming his expert opinion"). We do not have the kind of reliale statements about direct observation of actions, contemporaneous statements and symptoms usually related by a spouse. Cf. Fed. R. Ev., Rules 803(1)(2)(3)(4), 805. Mrs. Lilley had little or no

contact with her husband for long periods of time and made no direct observations about his work or its effects upon him.

While perhaps less self-serving than the plaintiff checklists rejected in the previous opt-out opinion, see In re "Agent Orange" Product Liability Litigation, ____ F.Supp. _____ (E.D.N.Y. May 8, 1985), Mrs. **Lilley's** recollections about John Lilley's past statements are **insufficiently** trustworthy to form the basis of an expert opinion. Plaintiff has not submitted evidence that Dr. Carnow or any other physician would rely on similar information in rendering a diagnosis. In reJapanese Electronic Products Antitrust Litigation, 723 F.2d 238 (3d Cir. 1983), **cert.** granted, 105 S.Ct. 1863,85 **L.Ed.2d** 157 (1985).

Dr. Carnow asserts that he also relied in forming his opinion on John Lilley's medical records during Air Force Service, hospital discharge summaries and the autopsy report. See **Aff.** at **2.** Use of medical records to corroborate the "patient's" statements could alleviate the problem of unreliable hearsay. **O'Gee** v. Dobbs **Houses,Inc.,** 570 F.2d 1084, 1089 (2d Cir. **1978); cf. Ferebeev.** Chevron Chemical **Co.,** 736 **F.2d** 1529, **1535**

(D.C. Cir.) (treating physicians' reliance on test results and physical examination of patient to conclude illness caused by exposure to paraquat), cert. denied, 105 S.Ct. 545, 83 L.Ed. 2d 432 (1984). The only medical records available to the court were submitted by the defendants. They fail to enhance the basis of Dr. Carnow's opinion.

These records nowhere mention "Agent Orange" or chlorachne. One record indicates that John Lilley admitted to smoking a pack of cigaretts daily for thirty years, which suggests the unreliability of Dr. Carnow's information that Mr. Lilley was a nonsmoker. Moreover, plaintiffs' expert in the related opt-out cases has stressed that quitting smoking is the "most effective single action you can take" to avoid developing cancer. S. Epstein, The Politics of Cancer 473 (Anchor Press ed. 1979); cf. Air Force Health Study, An Epidemiologic Investigation of Health Effects in Air Force Personnel Following Exposure to Herbicides X-17 (Project Ranch Hand II Study) (Feb. 1984) (finding a "borderline significant association between systemic cancer and smoking in both groups, demonstrating the sensitivity of the analyses to the effects of this

known carcinogen"). The fact that a family history of lymphosarcoma is not recorded in the medical records does not show the non-existence of such a family history. Mr. Lilley's mother had cervical or uterine cancer. See Carnow Aff. at 3.

Thus, Or. Carnow's reference to medical records does not serve to make his reliance on Mrs. Lilley's statements about her husband reasonable. Given the difficulty of establishing which of the myriad potentially hazardous substances that John Lilley probably was exposed to during his lifethat may have caused his cancer, precise information about his exposure history, personal habits and medical history is crucial in forming an accurate opinion. Since there is no record supporting his theory, Dr. Carnow's proposed testimony lacks any basis in fact, See In re "Agent Orange" Product Liability Litigation, _____F.Supp.____, _____(E.D.N.Y. May 8, 1985) (cases interpreting this aspect of Federal Rule of Evidence 703).

Courts excluding expert opinion for lack of adequate basis often note that it is speculative or without any factual foundation. Merit Motors, Inc. v.Chrysler Corp., 569 F.2d 666, 671-73 (D.C. Cir. 1977) ("To hold that Rule 703 prevents a court from granting summary judgment against a party who relies solely on an expert's opinion that has no more basis in or out of the record than [this expert's] * * * would seriouslyundermine the policies of Rule 56."); see also Pennsylvania Dental Association v. Medical Service Association, 745 F.2d 248, 262 (3d Cir. 1984), (affirming exclusion of conclusory expert affidavit not based on evidence in the record), cert.denied, 105 S.Ct. 2021, 85 L.Ed. 2d 303 (1985); Barris v. Bob's Drag Chutes & Safety Equipment, Inc., 685 F.2d 94, 101-02 n.10 (3d Cir. 1983) (trial court properly excluded expert testimony as to strength of fibers in harness where no showing that expert relied on facts or data from plaintiff's other expert); United States v.Various Slot Machines on Guam, 658 F.2d 697, 700 (9th Cir. 1981) (summary judgment appropriate where opposition to motion consisted of expert opinions without factual basis).

Most important, Dr. Carnow fails to consider the relevant epidemiologic studies conducted on Vietnam Veterans. This omission is particularly incomprehensible in Mr. Lilley's case, since he was allegedly associated with the very group considered in the Ranch Hand Study. See Air Force Health Study, An Epidemiologic Investigation of Health Effects in Air Force Personnel Following Exposure to Herbicides (February 24, 1984) (Ranch Hand II Study--1984 Report). As already noted, the Air Force Study found no increased incidence of lymphosarcoma among Ranch Handers. Id. at X-6, Table X-5 (Morbidity Site Specific Verified Systemic Malignant Neoplasms). Dr. Carnow's claim that Agent Orange exposure caused Mr. Lilley's mycardial infaction is similarly without support. See id. at XVI-1-21 ("[c]entral cardiovascular system abnormalities * * * showed no statistically significant Ranch Hand-comparison group differences, but did reflect a strong correlation to increased age and, to a lesser degree heavy past smoking."); see also Smuckler Aff. (describing risk

factors for coronary artery disease present in John Lilley's history).

Dr. Carnow states that the incidence rate for deaths from lymphosarcomatous leukemia in the population at large "in white males age 40 years in the period 1959-69 was 2 to 3 per 100,000" which he concludes is "relatively rare." Aff. at 4. He further notes that certain factors--geographic location, familial history, exposure to radiation, and immuno-suppression--increase the risk of developing lymphosarcoma.

Dr. Carnow's data is generally borne out by the literature. See, M.M. Wintrobe, G. Lee, D. R. Boggs, T.C. Bithell, J. Foerster, J.W. Athens, J.N. Lukens, Clinical Hematology 1449--83 (1981) (cause of lymphoma or leukemia unknown, but time-space clustering, environmental factors, familial disease and ethnic differences important). A more recent survey finds a higher incidence than does Dr. Carnow of the disease for Mr. Lilley's age group--4.1 per 100,000.

See "Third National Cancer Survey: Incidence Data," National Cancer Institute Monograph 41, March 1975 (attached as Exhibit B to Smuckler Aff.). In contrast to the association Dr. Carnow finds between exposure to Agent Orange and lymphosarcoma, "with the exception of gamma irradiation and benzene and related hydro carbons, no firm relationship of such factors to disease has been established." Wintrobe, et al., supra, at 1477; J. Aleksandrowicz & A. Skotnicki, Leukemia Etiology; Ecological Prophylaxis of Leukemia 47-69 (1982) (ionizing radiation and benzene are leukemogenic agents).

Commentators stress what Dr. Carnow ignores--that the etiology of leukemia and lymphosarcoma is unknown. See, e.g., Wintrobe, supra, at 1471; see also, F.W. Gunz, "The Etiology of Leukemia" (Introduction), VII Series Haematologica 91-93 (1974) (describing leading etiologic hypotheses, including the element of personal susceptibility); cf. J.R. Durant & R.V. Smalley, The Chronic Leukemias:Chemistry, Pathophysiology, and Treatment 54-55 (1972) (only difference between lymphosarcoma and

lymphatic leukemia is extent of involvement and organs affected).

The uncertainty surrounding the etiology of lymphosarcoma underscores the central problem with Dr. Carnow's testimony: he applies a causal hypothesis without any scientific support and excludes other potential causes without any factual basis for doing so. John Lilley's long career "tearing engines apart" makes it far more likely that exposure to benzene or radiation from contaminated aircraft caused his lymphosarcoma. See, J.L. Kulp & J.L. Dick, "The Radiation Hazard from Contaminated Aircraft," 4 HealthPhysics 133-56 (1960), attached as Exhibit C to Aff. of Edmund A. Smuckler, M.D., In Support of Defendants'Motion to Dismiss or for Summary Judgment. It is impossible to pinpoint which of the many personal, familial and environmental factors--alone or in combination--is responsible. See Aleksandrowicz & Skotnicki, supra, at 72-85 (arguing that naturally occurring carcinogens such as mycotoxins may play a role in leukemia); S. Epstein, The Politics of Cancer 19 (Anchor Press ed. 1979).

In conclusion, there are no facts that rationally support Dr. Carnow's opinion. The only information available on John Lilley is sketchy and unreliable. Dr. Carnow's assumption that Mr. Lilley was exposed to no toxic substance other than Agent Orange during his lifetime is baseless. Dr. Carnow's information about Mr. Lilley's family history and personal habits is suspect. The only relevant epidemiologic studies, which were conducted on the very group with whom John Lilley apparently served, are entirely negative. Cf. Perry v. United States, 755 F.2d 888, 891 (11th Cir. 1985) ("'somewhere along the line you have to show some kind of statistical relation to make that connection valid.'"). Dr. Carnow's resort to inappropriate studies of animals and workers exposed during industrial accidents, see supra III.B.1, cannot redeem his unfounded opinion. The Carnow affidavit would be excluded at trial under Rule 703 of the Federal Rules of Evidence. See Fed. R. Ev. 104(a); cf. Anderson v. City of Bessemer City, 105 S.Ct. 1504, 84 L.Ed.2d 518 (1985) (clearly erroneous standard applies to district court ruling).

(c) Rule 403

Federal Rule of Evidence 403 requires the court to exclude relevant evidence "if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury * * *." A determination to exclude such evidence lies within the trial court's discretion. Jackson v. Johns-Manville Sales Corp., 750 P.2d 1314, 1319 (5th Cir. 1985).

The unfounded assumptions and speculation underlying Dr. Carnow's testimony reduce its probative value to a point approaching zero. American Bearing Co., Inc. v. Litton Industries, Inc., 729 F.2d 943, 950 n. 14 (3d Cir.), cert. denied, 105 S.Ct. 178, 83 L.Ed.2d 112 (1984). Establishing the testimony's low probative value would embroil the jury in a protracted and fruitless inquiry into complex issues. See City of New York v. Pullman, 662 F.2d 910, 915 (2d Cir. 1981), cert. denied, 454 U.S. 1164, 102 S.Ct. 1038, 71 L.Ed.2d320 (1982). The false aura of

scientific infallibility surrounding Dr. Carnow's opinion makes the court particularly reluctant to admit it. Id. The likelihood that admitting Dr. Carnow's opinion would waste the trier's time is particularly disturbing in a litigation that has already dragged on for many years. See Weit v. Continental Illinois National Bank andTrust Co., 641 F.2d 457, 467 (7th Cir. 1981), cert.denied, 455 U.S. 988, 102 S.Ct. 1610, 71 L.Ed.2d 847 (1982). On balance, then, Dr. Carnow's testimony would be excluded under Rule 403 even if it were competent under Rule 703.

3. Defendants' Affidavits

The affidavits of Doctors Smuckler and Sonnenblick confirm the unreliability of plaintiff's expert testimony. As discussed supra III C, defendants' experts support the conclusion that the scientific literature to date offers no basis for concluding that exposure to Agent Ornge caused John Lilley's lymphosarcoma and coronary artery disease. The doctors further suggest that John Lilley's smoking, high chloresterol, family history and occupational

exposure to benzene and radiation are more likely causes of Mr. Lilley's illness and death.

The opinions of Doctors Smuckler and Sonnenblick would be admissable at trial. They are reputable physicians with a high degree of expertise in their respective areas. Fed. R. Ev. 702. In contrast to Or. Carnow, they take into account the entire body of relevant scientific literature, including the Ranch Hand and other studies of exposed veterans. While obviously not plaintiff's treating physicians, (who, if they are available, have not been relied upon by plaintiff or defendants), defendants' experts have considered the relevant medical records, which are submitted as exhibits to their affidavits.

B. Appropriateness of Granting Summary Judgment

The court has scrutinized all of the evidence relevant to John Lilley's claim with great care. See In re "Agent Orange" Product Liability Litigation, ___ F.Supp.____,_____(E.D.N.Y. May 8, 1985), slip. op. at 110-111; Tabatchnick v. G.D. Searle & Co., 67 F.R.D.

49, 55 (D.N.J. 1975) (careful screening of expert opinion on causation "especially important when the subject is emotionally charged, as it is here."); cf. Manual for Complex Litigation 2d S 21.4.8 at 21-60-61 & nn. 117-20 (Draft. Feb. 1985). Defendants have met their burden of showing that no genuine issue of fact exists.

For purposes of deciding this motion, the court has assumed, based on John Comeaux's affidavit, that Mr. Lilley was exposed to Agent Orange in Vietnam. The rash and subsequent discoloration that John Lilley developed on his legs upon returning from Vietnam may have been chloracne. See S.L. Moschella & H.J. Hurley, 2 Dermatology 1714-15 (2d ed. 1985); A. Rook, D.S. Wilkinson, F.I.G. Ebling, eds., Textbook of Dermatology 1726-28 (1979); but cf. Ranch Hand Study at XV-3 ("chloracne, following mild to moderate exposures, is classically found in skin areas on the temples, eyes/eyelids, and ears. * * *"). Chloracne is a fairly reliable indicator of exposure since it appears shortly after contact with the suspected chemical (even though it tends to disappear thereafter). In re "Agent

Orange" Product Liability Litigation, 597 F.Supp. 740, 794-95 (E.D.N.Y. 1984).

Plaintiff's lawsuit, however, does not rest on damage from chloracne. Cf. Tr. at 182 (March 5, 1985) (remarks of Plaintiffs' Management Committee Member David Dean) ("chloracne without disability not compensable"). It rests on the far more serious diseases of lymphosarcoma and myocardial infarction. The epidemologic studies and affidavits relied upon by defendants make clear that no rational jury could conclude that exposure to Agent Orange caused John Lilley's illness and death.

Plaintiff's attempt to create a material issue of fact with conclusory allegations and inadmissable expert testimony must fail. Fed. R. Civ. Proc. 56(e). It is well-settled that a litigant opposing summary judgment "'may not rest upon mere conclusory allegations or denials' as a vehicle for obtaining a trial." Quinn v. Syracuse ModelNeighborhood Corp., 613 F.2d 438, 445 (2d Cir. 1980); see In re "Agent Orange" Product Liability

Litigation, ____ F.Supp. ____, ____ - ____ (E.D.N.Y. May 8, 1985), slip op. at 98-109 (citing numerous cases in the Second and other Circuits elaborating on this requirement).

Summary judgment is even more appropriate here than in the other opt-out cases because extensive discovery has been conducted in the Lilley case and it is highly unlikely that any new evidence of substance can be obtained. See Grumman Allied Industries, Inc. v. Rohr Industries, Inc., 748 F.2d 729, 740 <2d Cir. 1984); Schering Corp. v. HomeInsurance Co., 712 F.2d 4, 10 (2d Cir. 1983); Weit v.Continental Illinois National Bank & Trust Co., 641 F.2d 457, 464 (7th Cir. 1981), cert. denied, 455 U.S. 988, 102 S.Ct. 1610, 71 L.Ed. 2d 847 (1982). The court granted plaintiff every reasonable opportunity to present a case by granting adjournments and requesting additional information. It has taken into consideration all the evidence from all related M.D.L. cases that could possibly support plaintiff's causal hypothesis.

Considering all of the evidence and potential evidence, there is no question that a directed verdict would be entered at the close of plaintiff's case. National Industries, Inc. v. Republic National Life Insurance Co., 677 F.2d 1258, 1265 (9th Cir. 1982). It is uncontroverted that John Lilley was a member of the general population at risk of contracting the diseases that he did, that no study of veterans exposed to Agent Orange in Vietnam shows an increased incidence of these diseases, and that no treating physician linked John Lilley's illness to Agent Orange exposure. Compare Ferebee v. Chevron Chemical Co., 736 F.2d 1529 (D.C. Cir.), cert. denied, 105 S.Ct. 545, 83 L.Ed.2d 432 (1984). Under the circumstances, defendants are entitled to judgment as a matter of established tort law. See Johnston v. United States, 597 F.Supp. 374, 412 (D. Kan. 1984); Allen v. United States, 588 F. Supp. 247, 416-443 (D. Utah 1984); see also Miller v. National Cabinet Co., 8 N.Y.2d 277, 289, 204 N.Y.S.2d 129, 138, 168 N.E.2d 811 (1960).

Granting summary judgment in this case does not involve issues of credibility or demeanor. The

documents and studies submitted to the court establish that there can be no question of fact as to whether Agent Orange caused plaintiff's illness and death. Cf. Anderson v. City of Bessemer City, 105 S.Ct. 1504, 1512, 84 L.Ed. 2d 518 (1985).

C. Other Grounds for Granting the Motion

Even if plaintiff could show a causal link between Agent Orange and John Lilley's illness, several other legal difficulties preclude recovery. These include the Maryland statute of limitations, (see In re "Agent Orange" Product Liability Litigation, 597 F.Supp. 740, 800-816 & Appendix E (E.D.N.Y. 1984)), the inability to demonstrate which defendant caused harm, (id. at 819-833), and the government contact defense. See, e.g., In re "Agent Orange" Product Liability Litigation, 534 F.Supp. 1046 (E.D.N.Y. 1982); In re "Agent Orange" Product Liability Litigation, 597 P.Supp. 740, 795-96 (E.D.N.Y. 1984); Koutsoubos, Spiros v. Boeing Vertol, 755 F.2d 352 (3d Cir. 1985). In view of the court's finding on causation, there is no need to further explore these issues. See the discussion in

In re "Agent Orange" Product Liability Litigation, * F.Supp. (E.D.N.Y. May 8, 1985).

V. CONCLUSION

Summary judgment is granted. The complaint is dismissed without costs, disbursements or attorneys fees. This memorandum constitutes a final judgment.

SO ORDERED.

Jack B. Weinstein
Chief Judge, U.S.D.C.

Dated: Brooklyn, New York
July 3, 1985