DEPARTMENT OF DEFENSE

OFFICE OF THE UNDER SECRETARY OF DEFENSE PERSONNEL & READINESS

DEPUTY UNDER SECRETARY FOR PROGRAM INTEGRATION

INFORMATION MANAGEMENT OFFICE

CHEMICAL WEAPONS EXPOSURE PROJECT

SUMMARY OF ACTIONS AND PROJECTS

1993 – 2007

SUMMARY FOR 1994

This report was prepared at the request of the Office of the Under Secretary of Defense for Personnel and Readiness, Information Management Office. It summarizes the efforts of the Department of Defense to identify, collect, archive, and forward to the Department of Veterans Affairs the names of DoD personnel exposed to chemical, biological, or nuclear agents during research, testing, and transportation of subject agents.

Information was extracted from current and archived files containing official letters, memoranda, technical and administrative reports, task force and work group reports, Congressional briefings, news paper articles, and from the corporate memory of the preparer. Major source documents that define the efforts undertaken from 1993 to 2004 are included at tabs to the report. Submitted September 26, 2007. Addendum added May 2008.

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1994

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SUMMARY FOR 1994

I Chemical Weapons Exposure Study

By January, 1994 the IRM Office had identified and verified tests using human subjects at thirteen military sites to include the Naval Research Laboratory in Washington, D. C. Over 2,000 names were retrieved from this location. The other site that yielded names, Edgewood Arsenal north of Baltimore, MD, was also a major records repository; as was Dugway Proving Ground in Utah, both a test site and major records repository. Among the testing sites were locations that were no longer military posts, such as Bushnell Field in Florida and Camp Sibert in Alabama. Tab B1 is a January 1994, list of Chemical Weapons Testing Sites Using Human Test Subjects.

By April of 1994 the major DoD records repositories that had been verified and the holdings reviewed, including Rocky Mountain Arsenal outside of Denver, Colorado. Tab B2 is a list of the repositories and an accounting of the record holdings at each site. Also by April 1994, the full preliminary draft of the Chemical Weapons Site Location Database was provided to DoD by the CBIAC, operated by Battelle Memorial Institute. The database was immediately made available to the VA, and during the year several more copies were sent over to the Compensation & Pension Service. The report was divided into sites with verified human exposures, and sites with verified testing, transportation, handling and storage. It was to be used by the VA to corroborate veterans' claims in incidences where there were no personnel or medical records available. A draft copy of the report is stored digitally in the P&R IM Office at Digital Archive ZLP.1A.59. It was not reproduced for inclusion in this document because of the size of the document. A sample of the summary run from the database is at Tab A13 Binder I.

II Human Exposure Personnel Database and Site Location Database

As soon as names were found, they were extracted and sent to the VA, i.e. some 2300 names from the tests at the Naval Research Laboratory were the first to be provided to the VA during 1993. They were also maintained in a preliminary database. Early in 1994 the OASD (P&R) IRM Office had brought on board a fulltime Army chemical officer to assist in the search for and extraction of names, and developing the personnel database. The CBIAC was still compiling the Site Location Database, and an additional $100,000 had been put on the contract in order to get a more detailed database.

Various kinds of records were found that aided in the identification of names of test subjects, and locations and dates of tests. From research and testing facilities such as the Naval Research Laboratory and Dugway Proving Ground there were extractions from operational test documents and scientific notebooks. Tab B3 is a copy of a formerly classified technical report from the Naval Research Laboratory. Although it does not contain names of test subjects, it clearly states the dates and purpose of the tests, and

where the subjects came from. In the case of a veteran who could place himself there by date, verification of possible exposure to a chemical agent would be greatly assisted. Tab B4 is a copy of a June, 1944 Army Special Order of Commendation with the names and Service numbers of test subjects who participated in chemical warfare tests during September and October of 1943. Tab B5 is a copy of two military volunteer medical records documenting test participation at Dugway Proving Ground and at Edgewood Arsenal. Unfortunately, this type of documentation was rarely found at research sites or at records repositories like the National Personnel Records Center. Tab B6 is a fully documented civilian employee exposure from Huntsville Arsenal (now Redstone), Alabama in 1942. Again, these kinds of records were rarely located, either because the individuals did not report the injuries because they considered them minor, or a report was not completed nor filed in the personnel folder, or the records were lost or destroyed.

One of the major lists of names provided to the VA during 1994 was the listing of personnel from the incident at Bari Harbor, Italy. A German raid on the harbor resulted in the sinking of several ships carrying mustard gas. The chemical mixing with the water when containers were damaged resulted in chemical burns to many of the survivors who were in the water. These were merchant marine and military personnel. This information had been requested very early in 1993 by the Acting Secretary of the VA in the letter at Tab A2 Binder I. There were 469 names provided to the VA in September, 1994. The cover memorandum, list of Bari Italy names, and notes of explanation are at Tab B7.

III Proposed Consolidation with Human Radiation Research Review

Information arose in mid to late 1993 that there had been ionizing radiation experiments conducted in Federal agencies using human test subjects. Among those agencies were DoD, Health and Human Services (Institute of Medicine), and even the VA was found to have had a SECRET Atomic Medicine Program at one time. To respond to the need to identify test participants and preserve documentation on the testing programs, the Secretary of Defense signed a letter dated January 7, 1994 appointing the Assistant Secretary of Defense (ASD) for Atomic Energy as the focal point for this effort. The Deputy Secretary was named as the senior department official responsible for the project. A copy of the letter is at Tab B8. As a result of the letter the Radiation Experiments Command Center was created, and undertook a search for radiation experiment records and test subjects much like the ongoing Chemical Weapons Exposure Study. Congressional hearings held during 1994 often included testimony on both human test subject programs. As a result there was an interest in combining the two efforts, but that did not happen. Tab B9 is a copy of a package staffed to the Under Secretary of Defense for Personnel and Readiness (formerly the ASD (P&R)) to request the Deputy Secretary of Defense to consolidate the two programs and allot extra funding to accomplish the common tasks.

IV Congressional Actions and Hearings 1994

Congressman Porter Goss

Congressman Porter Goss championed the cause of the World War II mustard gas test subjects. Concerned that the newly focused attention on the radiation test subjects would overshadow the plight of the chemical weapons test subjects, he wrote to President Clinton on January 4, 1994. His letter reminded the President of the pledge he had made in his January 1993 letter (Tab A5) that this issue would not be treated as business as usual. He also requested the President's support for his newly introduced HR 1055, legislation to require DoD to locate and give commendations to the mustard gas test subjects. On January 31, 1994 President Clinton wrote a letter in responded to the letter from Representative Porter Goss. The President commended him for his persistence on this issue, and stated that regulations were in place to allow the VA to complete processing of veterans' claims. He also assured Congressman Goss that the Secretary of Defense and the Secretary of Veterans Affairs were cooperating to identify the test subjects. Tab B10 is a copy of Congressman Goss's letter to the President, a letter forwarding a copy of it to Congressman Ike Skelton, Chairman of the House Armed Services Committee (HASC) Subcommittee on Military Forces and Personnel; and a copy of President Clinton's response. Tab B11 is an extract from the original HR 1055 with the wording requiring the commendations. Tab B12 is a copy of an April 15, 1994, letter from the DoD Acting General Counsel, responding to Congressman Ronald Dellums', Chairman of the HASC, request for the DoD position on the requirement for the commendations. DoD concurred with the proposed legislation, but cautioned about the passage of time and the dispersion of records making it improbable that all the participants could be identified and notified.

Although HR 1055 was never passed, the Fiscal Year 1995 National Defense Authorization Act Conference Report did include a *Sense of Congress* that the mustard agent test subjects should receive commendations from the Department of Defense, they should be notified about their exposure to chemical agents, and provided information on options for health care for related disabilities. Congressman Goss immediately wrote to SECDEF in September 1994. He urged him to follow through on the *Sense of Congress*. A copy of the language was enclosed in his letter, which is at Tab B13 with a copy of the letter to SECDEF.

Congressional Hearings

In 1994 there were several hearings concerning Government experiments using human test subjects and the status of programs set up to identify and compensate the participants, and to locate and maintain documentation on these tests.

February 2, 1994: A hearing was held by the House Judiciary Committee, Subcommittee on Administrative Law and Government Relations. Testifying for DoD was the ASD for Atomic Energy; for VA their General Counsel testified; and on the

secret *LSD* project at CIA, MKULTRA, was the Director, Center for the Study of Intelligence. Also testifying was Congressman Porter Goss, who championed the chemical weapons test subjects, and later served as the Director of the CIA. Also testifying was one of the authors of *Veterans at Risk*, and an individual who had been an *LSD* test subject. Copies of the Hearing Agenda, Witnesses and Panel Members, and the testimonies of these individuals are at Tab B14.

February 10, 1994: A hearing was held by the HASC Subcommittee on Military and Personnel. Testifying for DoD was the DASD for Requirements and Resources, now the DUSD Program Integration. Ms. Fites was giving an update on the status of actions being taken by DoD on the Chemical Weapons Exposure Study. Also testifying was Congressman Porter Goss, who had introduced H. R. 1055 to direct DoD to issue commendations to each person exposed to mustard agent during WWII. Copies of their testimonies are at Tab B15. Ms. Fites' actual testimony extracted from the Congressional record precedes her prepared remarks.

April 27, 1994: A hearing was held on Experiments Using Human Test Subjects. A briefing book was found, but no testimony or any reference to whether the hearing was a Senate or House hearing. The briefing book was not reproduced since the contents of the April briefing book are included in the major briefing book mentioned below for the September 28, 1994 hearing on the same subject.

May 6, 1994: A hearing was held by the Senate Veterans Affairs Committee concerning Open Air Testing, Mustard/Lewisite, Persian Gulf, Processing Service Medical Records. The DASD Program Integration was back-up to the ASD Health Affairs. An extract of the Daily Digest of Senate committee reports for May 6 is at Tab B16.

September 28, 1994: A hearing was held by the Committee on Government Oversight and Operations. It was the Oversight Hearing on Cold War Era Human Subject Experimentation. The DASD Program Integration testified. An extract of the Daily Digest for House committee reports for September 28 is at Tab B17. Although the testimony for the DASD was not located, a complete copy of the briefing book was found. The briefing book is a complete history of the Chemical Weapons Exposure Study up to that time in 1994, and is of such importance that it was included in this report in its entirety in as an addendum to Section B Summary for 1994. The book contains such items as: the Listing of Personnel Present in Harbor at Bari, Italy; U. S. Army Drug Testing Programs Involving Human Test Subjects 1950-1979; copy of an historical record on a History of the University of Chicago Toxicity Laboratory; and samples of the types of historical documents searched at the National Personnel Records Center, and the military installations where testing was conducted. The Alphabetical Index of Topics and the Alphabetical Listing of Topics, with summary descriptions of those major topics, are at Tab B18. As stated, the Hearing on Experiments With Human Test Subjects Briefing Book for September 28, 1994 is an addendum to this report directly after the tabs.

V. General Accounting Office

In August 1994 GAO was directed to testify at the September 28 hearing discussed above. On August 19, 1994 a meeting was held with GAO concerning the efforts on the Chemical Weapons Exposure Study. The notes from that meeting and the GAO entrance letter are at Tab 19.

VI DoD/VA Reinvention Partnership and Information Exchange

On February 10, 1994, the Secretary of the VA wrote to SECDEF concerning recurring disclosures of secret tests and experiments on military personnel, citing the radiation, chemical, and *LSD* tests. He suggested a joint DoD/VA group be appointed to work on these issues specifically. He designated the Under Secretary of the VA as the point of contact in VA and requested a similar point of contact from DoD to work on putting this group together. A copy of the letter is at Tab B20. At some point there must have been interim correspondence agreeing to the VA proposal, because on April 30, 1994, the Deputy Secretary of Defense wrote to the Deputy Secretary of VA fully supporting a DoD/VA Reinvention Partnership. The letter further stated that DoD considered their members on the DoD/VA Non-Medical Benefits Task Force to be the appropriate personnel to sit on the Reinvention Partnership group. A copy of the membership of the Non-Medical Benefits Task Force was enclosed in the letter. A copy of the letter from DEPSECDEF to VA is at Tab B21. A subsequent partnership agreement was drawn up and signed by the Secretaries of Defense and Veterans Affairs on June 30, 1994. A copy of the DoD/VA Reinvention Partnership is at Tab B22. On August 26, 1994, a copy of the DoD/VA Reinvention Partnership agreement, with descriptions of joint projects like the Chemical Weapons Exposure Study, was forwarded to the Office of Management and Budget (OMB) in a Best Practices—Project Progress Report. A copy of the August 26 package to OMB is also at Tab B23.

On April 7, 1994, the Secretary of the VA sent a letter to SECDEF with an attachment enumerating difficulty VA had experienced with getting verification of veterans exposures to chemical agents such as mustard gas and Lewisite. At issue was that VA was expecting a list of names and exposure information by the end of 1993, and a full accounting had not been forthcoming. Also, they requested that DoD collect all the records and consolidate them into a single location. On June 16, 1994, the Under Secretary for Personnel and Readiness replied to this letter stating that there was no single repository of exposure information so the response had been delayed while DoD conducted research to answer. An attachment to the letter responded to each of the VA facts stated in the April 7 letter, specifically that DoD had not committed to a date at the end of FY93, and that it had been clearly stated in Congressional hearings that location and collection of the information would take years. A copy of the April 7, 1994 VA letter to SECDEF is at Tab B24. The June 16, 1994 DoD response from the USD (P&R) is at Tab B25.

VII Closing Out the Year

During the remainder of 1994 the search for records with names of test subjects continued, as did compilation of the Personnel Database. One of the issues that arose during 1994 was the issue of individual *"privacy."* Some of the records found related issues that some former Service members may not want shared with families and survivors. Issues of that nature were treated with discretion. The other privacy issue that was also a concern was the appropriate way to obtain records to locate and communicate with the veterans who names were found. Once names were found, if the VA did not have a match, it was necessary to commence a search for status (living or deceased) and obtain a current address.

These issues and others were facing the program as it closed out a year of very active Congressional inquiry. However, the Information Management Office would be less directly involved in the WWII Chemical Weapons Exposure Project, and would be become more involved in the issue of chemical exposures and medical agent testing on Service members from the Persian Gulf Conflict. On December 8, 1994 the Committee on Veterans Affairs released a report titled *Is Military Research Hazardous to Veterans' Health? Lessons Spanning a Half Century*. This report addressed not only the mustard gas and lewisite testing in the 1940's, and the *LSD* tests starting in the 1950's; but went on to address the loss of farm stock from Dugway Proving Ground nerve agent tests in the 1960's, and the most recent controversy over the use of investigational drugs such as pyridostigmine bromide and botulinum toxoid on troops in the Gulf War. The findings and conclusions of the report cited many deficiencies in the DoD human subject experiments over the last fifty years. Among those issues were intentional exposure of subjects to harmful substances, failure to comply fully with ethical standards when using human test subjects, and failure on the part of both DoD and the VA to provide adequate medical follow-up to these test subjects. A full copy of the report from the Committee on Veterans' Affairs is at Tab B26.

In very late1994 or in early 1995, the Chemical Weapons Exposure Study was moved from the IRM Office to the Defense Manpower Data Center (DMDC). Most of the official files from the IRM Office went with the Chemical Weapons Officer to DMDC.

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Chemical Weapons Exposure Project Summary of Actions and Projects 1993-2008

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TAB B1

January 94 Air

Chemical Weapons Testing Sites Using Human Subjects

Naval Research Laboratory, Washington, D. C.
Naval Training Center, Great Lakes, IL
Camp LeJeune, NC
Edgewood Arsenal, MD
Bushnell Field, FL
Fort Pierce, FL
San Jose Island, Panama Canal Zone
Camp Sibert, AL
Dugway Proving Ground, UT
Camp Polk, LA
Gulfport, MS
El Centro, CA
Fort Richardson, AK

B1

CHEMICAL WEAPONS STUDY TRAVEL SCHEDULE

1ST QUARTER FY-94

NOV 1-3 DUGWAY PROVING GROUND
REVIEW ADDITIONAL PERSONNEL RECORDS ON CHEMICAL AND BIOLOGICAL TESTING

HAMED/TIDWELL

NOV 8-10 EDGEWOOD ARSENAL
REVIEW 100 LINEAR FEET PAPER, 7000 SETS MICROFICHE, DATABASE OF 2000 RECORDS

HAMED/HANSEN

NOV 15-19 ROCKY MOUNTAIN ARSENAL, COLORADO
REVIEW 6,000 REELS MICROFILM, 23,000 SCANNED DOCUMENTS

HAMED/HANSEN/HAKENSON

DEC 6-9 CHEMICAL CENTER & CHEMCORPS MUSEUM, ANNISTON, AL
REVIEW 735 FEET PAPER, BOOKS, AND STUDY MANUALS

HAMED/HANSEN/HAKENSON

TAB B2

RECORDS REPOSITORY CONTENTS OF SITES VISITED

Dugway Proving Ground

Technical Library holds over 60,000 documents, mostly paper.
Records Holding Area Contains Over 400 Boxes of Material Including Scientific Notebooks (Over 6,000 paper records)

Aberdeen Proving Ground/Edgewood Arsenal

8,465 linear feet (filing cabinets and boxes), paper
29 linear feet index cards
6,776 reels of microforms
288 gigabytes electronic records
Some of this documentation is located at Rocky Mountain Arsenal

U. S. Army Training Command Chemical Center, Fort McClellan, AL

735 linear feet (filing cabinets and boxes), paper
Large Library collection of books, manuals, etc.

U. S. Army Medical Research and Development Command, Ft. Detrick, MD

100 linear feet (filing cabinets and boxes), paper
7000 sets of microfiche
200 minutes of film media

Naval Research Laboratory

11 Scientific Notebooks from 1942-45 (2,300 names extracted)
Large volume of technical reports, papers, etc.

Washington National Records Center, Suitland, MD

13 Boxes of Army Surgeon General Files
Over 100 linear feet (filing cabinets and boxes) of Army Chemical Corps Records

National Personnel Records Center, St. Louis, MO

Extensive collection of personnel and organizational files from early 1900's to present
fire in 1973 destroyed: Army personnel records, 1912 - 1960
USAF personnel records, 1947-1963
(to date, have completed about 20% reconstruction of records)
Extensive collection of morning reports and unit information

University of Chicago

82 Boxes of Records from Vice President for Special Projects from WWII DoD Contracts

CBIAC (Chemical Warfare/Chemical & Biological Defense Information Analysis Center) Edgewood, MD

Responsible for collection, review, analysis, appraisal and summary of available CW/CBD information and data and for providing these data to interested users in support of DoD CW/CBD research and development.

RECORDS REPOSITORY CONTENTS OF SITES VISITED(cont)

Rocky Mountain Arsenal, Denver, Colorado

10,184 linear feet paper
29 linear feet index cards
6,776 reels of microforms

TAB B3

UNCLASSIFIED

~~CONFIDENTIAL~~ SERIAL No. 33

~~22 December 1943~~ (5) 627 400 (18) NRL/~~Report No.~~ P-2208 (19)

NAVY DEPARTMENT

~~Report on~~

(6) Chamber Tests with Human Subjects
I. Design and Operation of Chamber
II. Initial Tests of Navy Issue Protective Clothing Against H Vapor.

(7) Chem 9 NA

NAVAL RESEARCH LABORATORY
ANACOSTIA STATION
Washington, D. C.

Number of Pages: Text - 39 Tables - 22 Plates - 30

~~Authorization~~ (16) Project S47/41, "Maintenance, Bureau of Ships", dated 16 December 1940; Bureau of Ships letter S-S77-3(Dz), Serial 811 of 19 December 1940.

Date of Tests: August 1943 - November 1943

~~Submitted~~ by: (10)

William E. Taylor, Jr., ~~Associate Chemist~~

(11) 2: pp. 43

Homer W. Carhart, and ~~Chemist~~

(12) 37 +

(13) Chem 15 NA

L. Eugene Daily, ~~Lt. Comdr. (MC), USN~~

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~~CONFIDENTIAL~~

UNCLASSIFIED

TABLE OF CONTENTS

ABSTRACT

This report is divided into two sections. The first deals with the design, calibration and operation of a chamber for the exposure of human volunteers to the vapors of chemical warfare agents. The construction of the chamber is such that the temperature, relative humidity and concentration of vapor of the chemical warfare agent can be controlled closely over a wide range of conditions.

The second part deals with the testing of Navy issue S-145 impregnated Arnzen protective clothing, protective ointments and masks. Men dressed in water suspension, solvent and solvent + ZnO impregnated clothing have been exposed to H vapor at CT's ranging from 200 to 2500. A series of tests is in progress in which men dressed in the three types of suits have been exposed repeatedly to H vapor at a CT of 1200. No significant difference has been found in the protection afforded by these three types of suits. The effects of leakage of H through the suits is discussed.

The irritancy of S-461 and S-330 Protective Ointment when applied to the face, ears and neck of the men before exposure has been compared. S-330 is far less irritating than S-461.

The rubber of the gas mask face-pieces and connecting tubes absorbed enough H after 12 to 15 exposures to cause conjunctivitis, laryngitis and erythema of the face. The connecting hoses have been encased in impregnated cloth sleeves, and no break has been observed after 16 exposures.

A screening test has been run on the CT's required to cause burns of different degrees of severity on the bare skin of the arm.

AUTHORIZATION

1. This work was authorized under Project 547/41, "Maintenance, Bureau of Ships," dated 16 December 1940. The problems which were proposed for study were given in Bureau of Ships letter S-S77-2 (Dz), Serial 811 of 17 December 1940.

STATEMENT OF PROBLEM

2. This investigation was undertaken to design, calibrate and study the operation of a gas chamber for the exposure of human volunteers to the vapors of chemical warfare agents, and to evaluate Navy Issue Impregnated Protective Clothing and Masks when exposed to H vapor, and test the irritancy of Protective Ointments.

KNOWN FACTS BEARING ON PROBLEM

3. At present the Navy is issuing single layer protective clothing which requires suitable testing against vesicant vapors on human beings. Newer developments in protective devices also require extensive testing before they can be adopted. Therefore, it is essential to test such items as clothing, masks, ointments, etc. under carefully controlled conditions so that proper evaluation can be made of existing protecting measures, and to test newer developments still in the experimental stages.

4. TDMR #731 from CWS, Edgewood Arsenal, Md. describes chamber tests on subjects protected only by impregnated shorts. Complete protection against H vapor was afforded to the scrotal area by the impregnated shorts whereas burns of casualty severity resulted on other areas of the body from exposure to 315 to 600 mg. min./m^3 (CT).

THEORETICAL CONSIDERATIONS

5. The use of a properly constructed gas chamber for testing protective equipment against chemical warfare agent vapors is the best available method which will most closely simulate actual field trials and yet be operated under conditions which can be controlled critically. The whole body or, by suitable use of proper protection, any area of the body can be used for testing. The temperature, humidity, concentration of vesicant vapor and length of exposure can be varied at will in the chamber so that any type of condition can be achieved. Relatively high temperatures and humidities have been used in the tests actually carried out so far since the human skin is more sensitive to H vapor under these conditions. It can be assumed that if protective devices, such as clothing, prove to be adequate in these tests they will also be adequate under more temperate conditions.

PREVIOUS WORK DONE AT THIS LABORATORY

6. No gas chamber work has been done previously at this Laboratory.

EXPERIMENTAL WORK

I. GAS CHAMBER DESIGN, CALIBRATION AND OPERATION

GENERAL DESCRIPTION

7. The NRL gas chamber consists of a lead-lined room built as an addition to the laboratory building. It is designed as a static chamber, i.e., no air is passed through the chamber during a test, but the air in the chamber is continually circulated and volatilized agent is added as required to maintain the desired concentration. The volume of the chamber is such as to conveniently accommodate a maximum of ten subjects engaged in moderate activity, and construction is according to the following general specifications.

8. Size: Inside dimensions are 10 ft. by 15 ft. and 12 ft. high, giving a volume of 1,800 $ft.^3$ or 50 $m.^3$.

9. Construction: The chamber is of transite covered frame construction insulated with rock wool. The floor is concrete and is provided with a center drain. The ceiling and walls are lined with lead, all joints being soldered.

10. Entrance: Entrance to the chamber is made through an antechamber approximately 5 ft. by 3 ft. and 7 ft. high. Doors of both the inner chamber and the antechamber are 2'6" by 6'8", open outward, and are weatherstripped and gas proof.

11. Observation Window: This window, approximately 12" by 18", is located near the entrance to the antechamber. It is a single pane, double window with a dead air space between.

12. Porch: An open porch of frame construction is built on to the gas chamber and the laboratory as an approach to the chamber entrance. The roof contains two skylight windows for lighting, and an exhaust fan, General Electric Spec. 272905-1, is mounted in the roof near the antechamber door for ventilation.

13. Exhaust System: An exhaust blower, Buffalo Limit Load Conoidal Fan, size #2, single width, Type LL, clockwise, with direct connected 1/2 H.P. 220-volt motor, is mounted in a gas proof compartment in one corner of the chamber. This compartment is approximately 42" by 30" and 36" high, with a door to the outside for access to the blower. A 12" diameter sheet metal duct extends through the compartment wall 2" into the chamber. The duct opening is equipped with a removable sheet metal cover.

TABLE XI (Cont'd)

Summary

Relative Humidity

Average = 67% Maximum = 71% Minimum = 63%

CT

Actual CT = (60 x 20.4) = 1224

II. INITIAL TESTS OF NAVY ISSUE PROTECTIVE CLOTHING AGAINST H VAPOR

SUBJECTS

75. There has never been any difficulty in getting volunteers for the experiments despite the fact that only two inducements were offered; i.e., leave and liberty—change of scenery. However, these facts definitely support the assumption that leave and new surroundings are still uppermost on the average sailor's priority list. Financial remunerations, which seem to play an important part in the rewards offered to volunteers in other countries, i.e., England, Canada, Australia, etc., have never been considered by us nor asked for by the men.

76. It has been impressed on the men that they are not "guinea pigs". They are told that they are expected to use their heads as well as their bodies; and if they do not understand anything to ask questions, these questions being answered in a simple and non-technical language.

77. During their stay at this activity, which varies from one to four weeks, the men pick up an amazing amount of gas warfare fundamentals and, if this is supplemented by a moderate amount of instruction, they leave with a basic amount of knowledge of defensive gas warfare which should be sufficient for the duties required of an enlisted man in the Navy Defensive Gas Warfare Program. The fact that has been most obvious throughout these experiments is that when the men first begin the work they should not be told too much. If they are, it sets up a fear reaction that remains for varying lengths of time and definitely affects their "virgin" runs in the chamber, and, occasionally, requires a removal from the chamber before the run is completed. However, after the first two runs in the chamber, the men become veterans and can be told almost anything without affecting their morale.

78. The men take any resulting casualty extremely well. Even the hospital cases, who, on a few occasions, were incapacitated for a month or so, were not upset and even volunteered for further trials.

79. Occasionally there have been individuals or groups who did not cooperate fully. A short explanatory talk, and, if necessary, a slight verbal "dressing down" has always proven successful. There has not been a single instance in which a man has refused to enter the gas chamber. Our opinion is that the men who have come through this program are much better equipped both mentally and physically to withstand gas warfare if and when it comes.

Physical Examination and Requirements

80. Emphasis must be placed on physical fitness. If not, the experiments are doomed to failure due to inability of the man to remain in the suits and masks and perform effectively when exposed to the high temperature and humidity of the chamber. The so-called false positive readings, due to physical unfitness, such as conjunctivitis, laryngitis, nausea, shock, etc., can easily be mistaken as gas manifestations. Another common symptom, headache, may be attributed to the tight mask straps, etc., when it is actually due to a systemic condition not caused by the chamber. In this connection, it may also be said that it is impossible to give the men liberty during a regular series of experiments and expect them to be in good physical condition the next morning; there always are a few that imbibe too freely and stay ashore too late to be in good condition for the experiments the next day. Because of the above conditions, a thorough physical examination is performed by the Medical Officer, particular attention being paid to the parts of the body most liable to be affected by the gas, i.e., the skin, eyes, genitalia, throat, etc. Many abnormalities are noted and also brought to the man's attention before he enters the chamber. This prevents false interpretations by both the examiner and the men.

81. As a supplement to the actual physical examination complete blood counts, urinalysis, and temperatures are taken; the work being done by qualified laboratory technicians. Blood counts are repeated after a cumulative CT of 4800. The history of each man is briefly checked by the Medical Officer, emphasis being placed on asthma, allergy, hay fever, skin diseases, etc. At this time, a quick psychological impression is also obtained.

82. Upper respiratory infections are the most common disabling factors, and if objective symptoms are present, the man is not sent into the gas chamber. Immediate treatment is instituted and it is usually possible to use the man in a later experiment. This procedure also applied to any other minor physical disability.

83. No man is sent into the chamber without the Medical Officer's approval. Occasionally, at this point, malingerers and psychoneurotics are discovered. These cases have all been handled so far by minimizing their symptoms and then sending them into the chamber.

GENERAL PROCEDURE FOR CHAMBER TESTS

84. Each man exposed in the chamber was equipped with the following:

a) Navy diaphragm masks, Mark III.
b) Impregnated Arnzen protective suits.
c) Standard Navy underwear (unimpregnated).
d) Impregnated cotton socks and impregnated elbow length wool gloves.
e) Overshoes (Arctics).
f) Protective ointment for face and neck.
g) Impregnated undershorts for exposure to CT's above 1000. (Heavy cotton rib-knit underwear cut off at knee and rolled to give gas-tight fit.)

85. The impregnated Arnzen protective suits used in these tests were of three types.

a) Water suspension - Impregnated in a Navy Portable Plant with a water suspension at room temperature using the following formula: 100 S-145/75 CP/25 ZnO/3.75 PVA/0.75 Daxad 11/0.15 Duponol ME/9 Pigment, with enough water added to give a bath containing approximately 10% S-145.

b) Solvent - Impregnated in a Navy M-1 Plant with a solution of S-145 in tetrachloroethane at 55°C.

c) Solvent + ZnO - Impregnated in a Navy M-1 Plant with a solution of S-145 in tetrachloroethane containing 15% ZnO based on the weight of S-145 at 35°C.

86. The physically fit men chosen for a given test were instructed in the use of the gas mask and then checked with masks on in an atmosphere containing a high concentration of a lachrymator (CN). This was done to make sure the masks fitted properly without leakage. The men wore dungarees in this test to avoid subsequent contamination of the chamber atmosphere.

87. The men then dressed in protective clothing under close supervision to insure gas-tight seals at waist, face, ankles and wrists. Unimpregnated underwear was put on first, then impregnated shorts, followed by suit, socks, arctics, ointment, gloves and mask. Protective ointment was applied to the neck and face extending just inside the edge of the mask facepiece. A final inspection was made of masks and clothing just before the men entered the chamber.

88. Before each chamber test, qualified persons were required to sign a log attesting to the satisfactory condition of the following: (a) canisters, (b) active chlorine content of clothing, (c) concentration of agent in the chamber, (d) physical condition of the men, (e) proper adjustment of protective clothing and masks.

89. The men entered the chamber through the antechamber in groups of five. The chamber was operated under conditions considered average for the tropics, namely, 90°F, 65% Relative Humidity (R.H.).

90. Continuous visual and audio communication was maintained between the officer in charge and the men in the chamber. Every five minutes each man was required to move to a position on the opposite side of the chamber, otherwise they were permitted to move about at will. The time of each exposure was one hour, after which the men left the chamber and remained in the open five minutes to aerate their clothing and then removed their masks and gloves. The clothing was worn an additional four hours, outdoors in the shade on warm days and in a room at 75-80°F on cold days. During this time the men were not exercised but were allowed to move about freely.

91. Clothing was removed and the men were examined immediately and at subsequent twenty-four hour intervals, the areas most vulnerable to H vapor being closely checked. The face and neck were examined for evidences of ointment irritation.

EXPERIMENTAL RESULTS

Test No. 1 - Irritancy of Impregnated Arnzen Suits

92. In order to determine the irritancy of the Protective Clothing under severe conditions, ten men with full equipment were subjected to a temperature of 96°F and 81% R.H. in the chamber for one hour. Five of the men wore Arnzen suits impregnated with S-145 by the water suspension process, and the other five men wore Arnzen suits impregnated by the solvent process (without ZnO). S-461 Protective Ointment (15% Cl^+) was applied to the neck and face at the edges of the mask before the test. The results are summarized in Table XII. The outside temperature was 90°F and the R.H. was 37%.

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SERIAL NO. 41

Navy Department - Office of Research and Inventions

CHEMISTRY DIVISION - PROTECTIVE CHEMISTRY SECTION

14 August, 1945

CHAMBER TESTS WITH HUMAN SUBJECTS
IX. BASIC TESTS WITH H VAPOR

J. H. Heinen, Lt MC(S) USNR
H. W. Carhart
W. H. Taylor
B. N. Stolp, Lt. USNR
J. C. Conner, Jr., Lt(jg) USNR
N. M. Clauson, Lt(jg) MC USNR

~~Report P-2579~~ NRL 2579

~~CONFIDENTIAL~~

Approved by:

Dr. W. C. Lanning, Head, Protective Chemistry Section

Dr. P. Borgstrom
Superintendent, Chemistry Division

Rear Adm. A. H. Van Keuren, USN (Ret.)
Director, Naval Research Laboratory

Preliminary Pages	a - d
Numbered Pages	28
Plates	17
Distribution List	

NRL Problem P-60-3

ABSTRACT

This report describes the results of exposures to H vapor of men wearing ordinary clothing and unprotected except for masks and, in some cases, protective shorts, over a wide range of exposure conditions. Various methods for the evaluation of the results obtained are presented and discussed.

The severity and locations of burns from a given CT of H vapor were markedly influenced by the temperature of exposure. At low temperatures (70° F.,) active sweat secretion and H vapor burns were predominantly in the axillary and genital regions. At high temperatures (90° F.), both sweating and H vapor burns were generalized. The threshold temperature for generalized sweating, and consequent increased susceptibility to H vapor, was approximately 85° F. for lightly clothed, resting men. Variation in relative humidity had the most pronounced effect on susceptibility to H vapor at 85° F.

Conditioning of the men before exposure, either artificially or because of climatic conditions, had a significant effect on the reactions produced from exposure to H vapor. Suppression of sweating by application of aluminum chloride to the axillae prior to exposure, reduced the severity of the resulting H burns. The application of lanolin to the skin prior to exposure had no effect on the resulting H burns, whereas wetting of the skin with artificial sweat increased the severity of the burns.

The scrotal region was the most vulnerable area of the body to H vapor and would be the most important area in the production of casualties. It was found that ulcerated and crusted lesions of the penoscrotal region required from three to four weeks to heal with the men at bed rest.

KEY WORDS

Aluminum Chloride, Antiperspiants, Chamber tests, Human subjects
H vapor, Mustard gas, Chemical warfare, Clothing, Erythema, Exposure, Humidity, Persistance, Contamination, HN vapor, Impregnated clothing, Lanolin, Levenstein H, Nitrogen mustard, Physiological effects, Toxic agents, Vesicants.

b

23. Individual variation. A simple test to predict how a given individual will react to H vapor has not been developed. The influence of this variable must still be minimized by using as many men as possible in each test.

B. Previous Work Done at this Laboratory.

24. NRL Report No. P-2208 dated 22 December 1943 contains a description of the design and operation of a chamber for exposing human subjects to known concentrations of H vapor under controlled conditions of temperature and humidity. NRL letters to BuShips, C-S77-2(459-BWC), C-459-604 dated 20 October 1944 and C-S77-2(459-BWC/WHH), C-459-119/45 dated 10 March 1945, include a preliminary report on the effects of CT, temperature, and relative humidity on the reactions of men exposed to H vapor when wearing ordinary clothing. In the present report, all the basic tests with H vapor carried out at this Laboratory to May 1945, are summarized.

EXPERIMENTAL PART

Part I - Procedure.

A. Basic Tests with H Vapor.

25. Basic tests, as defined at this Laboratory, are tests with vesicant vapors carried out on men wearing ordinary clothing and unprotected except for masks and, in some cases, protective shorts.

(1) General Procedure for Basic Tests.

26. Test subjects. The men used in these tests were volunteer Naval personnel from USNTC, Bainbridge, Maryland, and were usually seamen second class, from eighteen to twenty years of age who had just completed their "boot" training. Most of their homes were in the Atlantic Seaboard States, both north and south of Washington, D. C. All men received a routine physical and laboratory examination (blood and urine) and only those approved by a medical officer participated in the experiments. At the end of the tests, the men were granted special leave and an entry was made in their service records attesting their attendance at this activity. Recently, authorization has been granted for the commanding officer to give commendation to especially deserving individuals.

27. Clothing. During chamber exposure, the men wore standard issue skivvy shirts and Nainsook shorts, watch caps, blue denim shirts, dungaree pants, standard socks and shoes. Shirt collars were buttoned and shirt sleeves were buttoned at the wrist. All men wore ND Mark III or IV masks. In some of the tests, the Nainsook shorts were replaced by CO-2 impregnated shorts. These latter were of the rib-knit type, impregnated by the aqueous process, and contained about 0.5 mg. Cl^{+}/cm^{2}. In all tests since 1 January 1945, the men have worn suspenders made of carbon coated cloth (August model). The protection afforded by these suspenders causes a subjacent area of relatively normal skin which contrasts with the erythematous areas and facilitates observations (Fig. 36, Plate 10). Subjects dressed for a basic test are illustrated in Fig. 1, Plate I.

28. The chamber. The chamber has been described in detail in NRL Report No. P-2100. Briefly, it is 10 feet by 15 feet by 12 feet high and has a volume of 1800 ft.^{3}. It is operated as a static chamber, no air being passed through during a test, but the air present is kept in motion (average velocity = 2.0 m.p.h.) by suitable fans.

29. Concentration of agent. Volatilized redistilled thiodiglycol mustard was introduced into the chamber as needed to establish and maintain the desired concentration on the basis of Northrop titrimeter analyses (bromine method) which were made every five minutes. The average concentrations of H vapor in this series of tests varied from 1.67 to 11.7 micrograms H/liter.

30. Time of exposure. All basic tests were single exposure tests. In all cases the time of exposure was 60 (± 2) minutes except the two tests at CT 60 in which the exposure time was thirty minutes.

31. CT. CT represents the product of the concentration of the agent and the time of exposure; and where the units are not expressed, is understood to be in microgram minutes per liter. In this series of tests, the CT employed was varied from 60 to 700. A complete list of these CTs is presented in Table III.

32. Temperature and relative humidity (RH). The chamber temperature was elevated by electric heaters, and was lowered by means of ice. Humidification was accomplished by the introduction of steam; dehumidification, by the use of ice. Both temperature and humidity were regulated and recorded by a two-point Brown recording controlling potentiometer which operated through wet and dry bulb thermocouples. All temperatures given are dry bulb temperatures of the ambient air expressed in degrees Fahrenheit; Measurements of radiant energy effects have not been made.

33. Activity in the chamber. The men stood at ease in the chamber, but were required to change positions about every five minutes. No tests on the effects of exercise during chamber exposure are included in this series.

34. Activity before and after chamber exposure. In general, before and after chamber exposure, the men led a relatively sedentary existence with occasional mild athletics. In none of the tests in this series were the men assigned to strenuous work after chamber exposure.

35. Season and climate. The majority of the tests were performed as listed in Table III (Page 13), when the weather was relatively cool. Tests 2, 4, 8, 13 and 16 were carried out under the hot summer weather conditions of Washington, D. C. The chamber exposures were usually performed between the hours of 1000 and 1600, i.e. during the warmer part of the day. When the weather was fair, the men were allowed to be out of doors before and after chamber tests; when the weather was cold or inclement, the men were kept indoors at the conditions prevailing in the Laboratory.

36. Daily readings and the recording of data. The men were inspected daily by a medical officer for four to eight days or longer after exposure. To facilitate recording and subsequent use of data, subdivisions of the body surface were listed as ordinates on graph paper (one-quarter inch squares) and daily intensity readings for these areas were recorded as abscissae. A list of the body regions is given in Table I (page 10).

37. Photography. Kodachromes were taken of many of the groups of men used in the basic tests. These were usually taken on the fourth day after exposure; subsequent pictures were taken when deemed necessary. More satisfactory pictures were obtained after the skin had started to pigment since mild degrees of erythema did not show enough contrast on the pictures. It must be emphasized that kodachromes alone are not adequate records and that the daily readings are a more reliable reference for following the intensity of reaction. Inadequate illumination may lead to under-exposure of certain skin areas with a resultant apparent erythema which is an artefact. The prints which are included in the appendix were prepared by the Ansco "Printon" process. The larger ones were prepared from 4 x 5 inch transparencies; the smaller, from 35 mm. transparencies.

(2) Special Basic Tests.

38. Effect of environmental temperature immediately prior to chamber exposure. During the summer, the men were necessarily warm and often sweating at the time of entry into the chamber. When the weather was cool or cold, the men were usually indoors at a comfortable room temperature for one to two hours (or more) prior to exposure. Tests 24 and 25 (Table III) were carried out to see if precooling had any effect on the reactions from chamber exposure. Five men were exposed nude to a temperature of 55° to 60° F., approximately 65% RH, for over two hours prior to entering the chamber. Five other men remained clothed and at a comfortable room temperature, approximately 75° F. and 50% RH, for a similar period before exposure. Both groups donned fresh clothing, including CC-2 impregnated shorts, and were exposed in the chamber simultaneously to H vapor at CT 300, 90° F., 65% RH.

39. Use of aluminum chloride. To suppress axillary sweating, in Test 28 (Table III), a 25% aqueous solution of aluminum chloride was applied with a cotton pledget once daily to the left axillae of each man in the group for three successive days before he entered the chamber.

40. Use of lanolin. Since H is lipoid soluble, it was considered possible that the presence of sebum on the surface of the skin might influence the susceptibility of the skin to H vapor. To simulate sebum, lanolin (hydrated approximately 50%) was used. A thin film was applied shortly before entry to the chamber over an area of about thirty square centimeters on the forearm, posterior neck, and posterior shoulder of the men in Test 28, who were exposed to CT 500, 70° F., 48% RH. In a later test (Test 24), in which the men were exposed to CT 300, 90° F., 65% RH, lanolin was applied to the forearm, posterior shoulder, posterior neck, and left axilla. No men took showers for at least four hours after exposure in the tests in which lanolin was used.

41. Artificial wetting of the skin. On the basis of Dr. Renshaw's informal report on the effects of H vapor on simulated wet, sweating skin, the following experiment was performed. Standard skivvy shirts were treated with paraffin wax so that a waxed strip about two inches wide extended vertically the length of the shirt in the midline front and rear.

One-half of the shirt was thoroughly moistened with artificial sweat,* the other half was left dry. These shirts were then donned by six men who also wore denim shirts and the usual clothing for basic tests (including CC-2 impregnated shorts). The environmental temperature was sufficiently low so that the men did not show generalized sweating prior to entry into the chamber. These non-sweating men were exposed to H vapor at CT 300, 70° F., 45% RH on 2 April 1945.

(3) Evaluation of Data.

42. Since it is impractical to present a detailed description of each subject in every test, an attempt has been made to present the data quantitatively so that the results may be more readily visualized. Each degree of reaction was given an arbitrary numerical value as follows:

0 = no reaction
1 = mild erythema
2 = moderate erythema
3 = intense erythema
4 = a. Erythema with edema
b. Maceration of axillary skin
c. Dry scaling of scrotum
5 = a. Vesicle
b. Numerous pinpoint vesicles
c. Crusting or ulceration of scrotum or axilla.

43. From these numerical values, three quantitative methods of treating data were devised which are considered in this report; (1) Maximum severity; (2) Total damage index; and (3) Percentage of exposed area affected. Special cases, such as lesions of the scrotum, are discussed separately.

- - - o O o - - -

FOOTNOTE:

* The synthetic sweat solution was prepared according to a formula supplied by Dr. Dana Burks and is approximately five times as concentrated as that secreted by the glands.

Constituent	Concentration gms. or cc./100 cc.
Sodium chloride	3.65
Ammonium acetate	0.33
Urea	0.47
Dextrose	0.085
Potassium chloride	0.48
Magnesium chloride	0.036
Potassium dihydrogen phosphate	0.045
Calcium carbonate	0.065
Lactic acid (85%)	0.1

Five drops each of formic acid, acetic acid, butyric acid, propionic acid, methylamine and trimethylamine.

CONFIDENTIAL

44. Maximum severity. This method has been used at this Laboratory and has been described in previous letter reports (NRL letter C-S77-2(459-B5C) C-459-604 dated 20 October 1944). The average maximum severity recorded over a period of several days after exposure, regardless of the region of the body affected, was taken to represent the effect of the agent on the body under a given set of conditions. A satisfactory relationship between CT and intensity of reaction could be demonstrated using this method as long as all tests were conducted at 90° F., 65% RH. However, when the temperature and RH were varied, it was found that the maximum severity method was no longer applicable since men with an obvious difference in reaction to the agent might, nevertheless, have the same maximum reading. For example, one man might have as a maximum reading an intense erythema of the axillae with essentially no burns elsewhere and another man might have an intense erythema over most of his body. By the maximum severity method of evaluation, both men would be classified as the same. Figure 4, Plate 3 gives an illustration of this since the men who do not show generalized erythema did have intense erythema of the axillae.

45. Total damage index. Since it was observed that often men exposed to H vapor at various conditions of temperature and RH differed in their reactions mainly in the areas of skin affected rather than in the intensities of reaction, and since it is common knowledge that the total area of skin affected is a highly important factor in determining systemic reactions to thermal burns, it was felt desirable to obtain an approximation of the percentage represented by a given body region of the total area exposed in a test. In order to facilitate use of older data, the areas were combined in the manner shown in Table I. These areas were then marked off with ink in arbitrary fashion on ten men of various weights and statures. The regions were measured and their areas were calculated according to the simplest geometric form represented. Their sums represent the total area considered in the basic tests, and each region has been represented as a percentage of this sum. These percentages are called "area factors" and are listed in Table I. It is of interest that for any given man, this sum represents 73 ± 6% of his theoretical total body area as obtained from standard height-weight nomograms. Although these area factors represent only a crude approximation and are highly arbitrary, it is felt that they are useful in evaluating the data obtained from the basic tests.

46. In calculating the total damage index, the intensity scale mentioned in paragraph 42 was used. The intensity factor for a given area in a test represented the average maximum reading for that area for that group of men. The product of the intensity factor and the area factor described above gives the total damage for that area for the group under consideration. The sum of these products for the eighteen areas considered represents the total damage index. An example of the method employed is given in Appendix B. In order to compare data on men who wore protective shorts with data on those who did not, it was necessary to subtract from the final index the figures for those areas on the unprotected men which would have been covered had shorts been worn.

TAB B4

ARMY SERVICE FORCES
OFFICE OF THE CHIEF, CHEMICAL WARFARE SERVICE
Gravelly Point, Washington 25, D. C.

SPECIAL ORDERS)
)
NO. 152)

25 June 1944

1. The Chief of Chemical Warfare Service commends the officers and enlisted men who voluntarily submitted to tests conducted by the Medical Division. These men participated beyond the call of duty by subjecting themselves to pain, discomfort, and possible permanent injury for the advancement of research in protection for our armed forces. Those named below knowingly submitted to exposure to chemical agents for some period during the months designated:

September and October, 1943

PVT. EARL L. ALEXANDER, JR, 35704460
PVT. EDWARD A. ALTMAN, 33783419
PVT. CHARLES H. ANDRUS, JR, 19390663
PVT. WENDELL E. BAKER, 39915577
PVT. JOHN J. BERZELLINI, 13128126
PVT. BILLY B. BIGGS, 15311311
PVT. EDWARD M. BOROWSKY, 13127867
PVT. GEORGE L. BROCKELL, 12170[illegible]
PVT. WALTER E. BUTINSKI, 13174715
PVT. CASON J. CALLAWAY, JR, 11152203
PVT. CANON CHAM, 11136627
PVT. FRANK B. CAVANAGH, 11091921
PVT. WILLIAM J. CHUPKA, 13127969
PVT. WILLIAM J. CLARK, 12153623
PVT. WALTER E. COLEMAN, 32963757
PVT. ALFRED A. COOPER, 32962435
PVT. THOMAS A. CUSANO, 33782765
PVT. ERNEST W. DEWEY, 17176378
PVT. THOMAS N. DIORETANO, 36856221
PVT. PAUL G. DODD, 35756146
PVT. JAMES C. DORNER, 11154717
PVT. FRANCIS S. ZARNSHAW, JR, 35756216
PVT. WILLIAM B. ECKERT, 32915563
PVT. KURT J. EBEN, 32939806
PVT. WILLIAM H. EPES, 12126987
PVT. STANLEY G. FISHER, 33783307
PVT. ALFRED F. FELGENDREGER, 33782398
PVT. TERRALL C. FRANKS, 11154718

A

PVT. WILLIAM G. [illegible], [illegible]
PVT. [illegible] A. [illegible], [illegible]
PVT. [illegible] G. [illegible], [illegible]
PVT. [illegible] W. GREENE, [illegible]
PVT. [illegible] L. [illegible], [illegible]
PVT. JOHN J. [illegible], [illegible]
PVT. HAROLD L. [illegible], [illegible]
PVT. [illegible] HARRISON, [illegible]
PVT. ROBERT G. HARVEY, 31322943
PVT. ABRAHAM I [illegible] HEDAYA, [illegible]
PVT. HOWARD S. HOFFMAN, [illegible]
PVT. JOHN R. HOGAN, [illegible]
PVT. GEORGE A. HOWE, 35231150
PVT. ALBERT R. JASUTA, [illegible]
PVT. EARL T. JERVIN, 36856338
PVT. HARRY S. KATZ, 13174366
PVT. KENNETH R. KERN, [illegible]
PVT. ROBERT A. KINGSLEY, JR, [illegible]
PVT. EDGAR L. LANDAUER, [illegible]
PVT. JACK P. LEIGH, [illegible]
PVT. ANDREW T. LEISER, 19134193
PVT. ABRAHAM LEVINE, 32873220
PVT. LELAND D. LEWIS, 12130739
PVT. ROBERT J. LUNDBORG, [illegible]
PVT. AUGUST W. MAGNUSON, [illegible]
PVT. FOREST H. McDONELL, 35767511
PVT. HAROLD L. McWILLIAMS, 37528061
PVT. ALVIN C. MEEKER, 12209897
PVT. DAVID W. MORGAN, 37565078
PVT. RAYMOND N. MILLER, [illegible]
PVT. JULIUS H. [illegible]OBLEVSKY, [illegible]
PVT. THOMAS W. MULLER, 14091967
PVT. EUGENE F. MULLER, 35064911
PVT. JOSEPH P. MULVANNY, 36822930
PVT. WILLIAM S. MYERS, [illegible]
PVT. ALFRED J. O'BRIEN, [illegible]
PVT. ROBERT E. PARSLEY, [illegible]
PVT. WILLIAM C. PATTERSON, JR, 14091967
PVT. RICHARD R. PIERSON, [illegible]
PVT. VICTOR E. PIERCE, [illegible]
PVT. ALBERT E. PIKE, [illegible]
PVT. WILLIAM J. PIPOTA, [illegible]
PVT. CHARLES RIBAUDO, 32965270
PVT. DONALD L. ROBBIE, 37561828
PVT. JOSEPH O. SACHAR, [illegible]
PVT. TRAVIS P. SANDIDGE, 14091966
PVT. FRANK R. SAUTER, 37615817
PVT. CALVIN F. SCHMILLE, 37527956

TAB B5

Dugway, UT 8/44

1. VOLUNTEER, MEDICAL DIVISION, OC, CWS

[redacted] 11006252

Cpl. | SCU | 24

9999 | CWS

White Dr. 49 mo.

Date of Arrival Dugway, 5 Aug. 1944
Date of leaving Dugway, 12 Sept. 1944
This man volunteered and participated in tests conducted by the Medical Division, OC, CWS At Dugway Proving Ground, Tooele, Utah, 5 Aug.-31 Aug. 1944.

The details of these tests are classified information, filed in the Office of the Chief, Medical Division, OC-CWS.

16. NOT REQUIRED

17. No injury and no illness was produced. discharged no disease.

18. Place of treatment

19. Disposition

20. Date of disposition

21. Name of hospital

22.

23. [signature] 1st Lt. Medical Corps, U.S. Army.

Form 52
MEDICAL DEPARTMENT, U.S.A.
(Revised March 14, 1936)

Edgewood A

1. Volunteer, Med. Div. OC CWS

[redacted] 348235

Pvt. | D | 34M.T.R.Co.Grt. | 25

W | Ga.

Arrived EA, Md. 24Aug.

Departed EA, Md.

This man volunteered and participated in tests conducted by the Medical Divis OC-CWS at Edgewood Arsenal.

L.O.D. YES

16. NOT REQUIRED

17. Exposed to vesicant agent in the man chamber while wearing permeable protective clothing, & gas masks.

Developed slight erythema of back & chest.

18. Place of treatment

19. Disposition

20. Date of disposition

21. Name of hospital

22.

23. [signature] 1st Lt. Medical Corps, U.S. Army.

Form 52
MEDICAL DEPARTMENT, U.S.A.
(Revised March 14, 1936)

A

85

TAB B6

FORM CP - 50
(SUBSTITUTE FOR FORM 4a)

WAR DEPARTMENT
REPORT OF FIELD PERSONNEL ACTION

Huntsville Arsenal, Alabama
(Station)

October 5, 1942
(Date)

TO: Chief, Chemical Warfare Service, Washington, D. C.

9. C.S.C. REPO: SERIES: Permanent

1. NAME: James Edward Barber

10. CIVIL SERV AUTHORIT

2. NATURE OF ACTION: Change in Status (Within Grade Promotion)

3. EFFECTIVE DATE: October 16, 1942

11. APPROPRIA

	FROM	TO
4. POSITION	Chemical Plant Operator	Chemical Plant Operator
5. GRADE AND OR SALARY ALLOWANCES	Unol-15, $6.24 per diem	Unol-15, $6.72 per diem
6. BUREAU AND OR OTHER UNIT	Chemical Warfare Service	Chemical Warfare Service
7. HEADQUARTERS AND DUTY STATION	Huntsville Arsenal, Alabama	Huntsville Arsenal, Alabama
8. DEPARTMENTAL OR FIELD	X FIELD	X FIELD

12. DATE OF E: 8/4/22

13. SUBJ. TO R: YES X

14. IF SEPARAT LAST PAID T:

15. BUREAU AUT FOR ACTIO POSITIC

Orders M

REMARKS: Probational Appointment - December 29, 1941.

COPIES TO: (Check)

1. [ ] DISTRICT MANAGER - - TEMPORARY SERIES ONLY.
2. [X] CSC COPY ATTACHED - PERMANENT SERIES ONLY.
3. [X] EMPLOYEE
4. [ ] CIV. PERS. FIELD OFFICE - - CHANGE IN NAME OF GRADED EMPLOYEE ONLY.
   X File
5. [X] Payroll Department

16. TOM WILLIAMS, Captain,
Civilian Personnel Office

CIVILIAN PERSONNEL
DISEASE AND ACCIDENT FORM

Barber J. L. 546
SURNAME CHRISTIAN NAME MIDDLE NAME EMPLOYMENT NO.

211 Monroe St. Huntsville, Ala
HOME ADDRESS STREET NUMBER CITY COUNTY STATE

20 W single
AGE RACE MARITAL STATUS

HSM #1 —
PLACE OF EMPLOYMENT OCCUPATION AMOUNT OF SERVICE AT TASK

DISEASE:

INJURY, TYPE OF: LACERATION, PUNCTURE, BURN, CONTUSION, Etc.
Burn R.S.

PART INVOLVED AS HAND, FOOT, EYE, EAR, RIGHT OR LEFT
Rt. F. arm
/ wrist —

SEVERITY: MILD SEVERE

HOW WHEN WHERE INCURRED? PRODUCING AGENT
10/15 8-4 shift @ HSM #2 —
Was pulling grass at the time.
Don't know how it happened.

TREATMENT: R. @ Station Hospital
on 10/16 —
10/17 - STO (DSU) — 7 days.
Blister broken on wrist.

TREATED BY** N. Driscoll (R.N.)

DISPOSITION:

TREATED BY** M. C.

PLACE OF TREATMENT Disp #1 — Huntsville

10/18- STO + DSD . . . . Inverell
10/19/42 - STO + D.S.D. " F. Brown.
10-20-42. Sulfa. P.O. & D.S.D. " "
10-22-42 - Sulfa. P.O. + D.S.D. "
10.24-42. " " + D.S.D. "
10-25-42. " " " "Brown.
10-26-42. D.S.D. to arm. Brown.
10-29-42 - ST P.O + DSD + foot bum Inverell
10-30-42 - S.D. —
10/31/42 - D.S.D. to arm. Blanton

YEAR

INJURY	DISEASE
JAN.	JAN.
FEB.	FEB.
MAR.	MAR.
APR.	APR.
MAY	MAY
JUN.	JUN.
JUL.	JUL.
AUG.	AUG.
SEP.	SEP.
OCT.	OCT.
NOV.	NOV.
DEC.	DEC.

TOTAL TIME LOST:

DISEASExx
INJURYxx

DAYS OF TREATMENT---NO LOST TIME

DISEASE
INJURY

B

CIVILIAN-PERSONNEL
DISEASE AND ACCIDENT FORM

Barber James B# 599

SURNAME CIVILIAN NAME MIDDLE NAME EMPLOYMENT NO.

211 Monroe St. Pete

HOME ADDRESS STREET NUMBER CITY COUNTY STATE

20 W Single

AGE RACE MARITAL STATUS

HSMH#2 9 days

PLACE OF EMPLOYMENT OCCUPATION AMOUNT OF SERVICE AT TASK

DISEASE:

INJURY· TYPE OF: LACERATION, PUNCTURE, BURN, CONTUSION, Etc.

Diag: H.S. Burn rt

Great toe.

10-14-42
2nd Diag: HS burn rt forearm

PART INVOLVED AS HAND, FOOT, EYE, EAR, RIGHT OR LEFT

Rt. foot
2nd.Right Arm

SEVERITY MILD ✓ SEVERE

HOW WHEN WHERE INCURRED? PRODUCING AGENT

9-23-42 2 P.M. While
working on the 4 to 12
shift on 9-22-42 ?
got an H.S. burn on toe

TREATMENT: Just don't know
how it happened.
Blister Ruptured.
Dressed S.T.O. WJM

TREATED BY** R. N.

DISPOSITION:

TREATED BY** M. C.

PLACE OF TREATMENT

Sta. Hosp.

2nd. Injury- I have a red spot on my right arm, that looks like a HS burn but I don't know when I got it or how, noticed red spot 1st time today.
10/14/42 2nd. Injury Treatment.

Sulfathiazole dressed w/ V Pj
H.S. Burn Rt. Arm.
10-15-42 Dressed. WPM

YEAR

INJURY	DISEASE
JAN.	JAN.
FEB.	FEB.
MAR.	MAR.
APR.	APR.
MAY	MAY
JUN.	JUN.
JUL.	JUL.
AUG.	AUG.
SEP.	SEP.
OCT.	OCT.
NOV.	NOV.
DEC.	DEC.

TOTAL TIME LOST:
DISEASExx
INJURYxx

DAYS OF TREATMENT---NO LOST TIME
DISEASE
INJURY

D

TAB B7

OFFICE OF THE UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND
READINESS

SEP 1 3 1994

MEMORANDUM FOR Department of Veterans Affairs (BVA), ATTN: Lance Peterson
(211 Room 644 1800G), 810 Vermont Avenue, N.W.,
Washington, DC 20420

SUBJECT: Listing of Personnel From Incident at Bari, Italy on December 2, 1943

1. Reference our telephone conversation last week on the subject of Bari, Italy.

2. Enclosed is a listing of a spreadsheet listing personnel who were present in the harbor at Bari, Italy on December 2, 1943, when it was raided by German bombers. This data was assembled mainly from report files from the National Archives and the U.S. Coast Guard. Additions will be made to the list as new information is uncovered. The source file (Microsoft EXCEL spreadsheet) is available.

3. Also enclosed is an explanation of the data, its sources, and any special problems encountered in its assembly.

4. Please feel free to call me at (703) 696-8710 if you require any more information.

FREDERICK A. KOLBRENER
Colonel, Chemical Corps
Staff Chemical Officer

Enclosures
As stated

B7

Listing of Personnel Present in Ha. . at Bari, Italy on December 2, 1943

Ship Name	Name	First	Middle	Rating	Branch	Service No.	Date Atc	Reference	Status	Exposed?	SSAN
John Bascom	Ainsworth	Walter	J	S1c	V-6, USNR	629 67 51	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Anderson	Horace	W	GM3c	V-6, USNR	410 35 89	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Apland	Ross	H	S1c	V-6, USNR	730 93 65	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Baker	Reginald	J	S1c	V-6, USNR	202 89 83	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Balconis	Francis	A	S1c	V-6, USNR	710 36 99	11/3/43	RG 38, NA	WIA DH		
John Bascom	Bauer	Robert	F	S1c	V-6, USNR	306 22 23	11/3/43	RG 38, NA	WIA DH		
John Bascom	Behm	Arthur	A	S1c	USNR	306 24 52	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Benitz	Jesus	Leonides	Cook	Mer. Marine	Z 359 059	28	USCG Rcd	Repat		none
John Bascom	Bergman	Alfred		Deck Cadet	Mer. Marine	276 647	24	USCG Rcd	Repat		none
John Bascom	Bernhardt	Robert		S1c	USNR	280 05 48	11/3/43	RG 38, NA	WIA DH		
John Bascom	Bishop	Stanley		S1c	V-6, USNR	813 42 52	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Bliss	Darrell	E	S1c	V-6, USNR	629 63 79	11/3/43	RG 38, NA	WIA DH		
John Bascom	Borges	John		S1c	V-6, USNR	202 83 38	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Boyce	Robert	L	S1c	V-6, USNR	723 29 72	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Brandenstein	Warren		S1c	V-6, USNR	710 36 59	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Bright	Robert	J	S1c	V-6, USNR	202 85 77	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Bumgardner	Gerald		O.S.	Mer. Marine	Z 400 380	18	USCG Rcd	Repat		[redacted]
John Bascom	Campo	Gus	Anthony	Hoseman	Mer. Marine	Z 407 904	21	USCG Rcd	Repat		[redacted]
John Bascom	Carew	Warren		Bosun	Mer. Marine	Z 205 843	40	USCG Rcd	WIA		[redacted]
John Bascom	Carroll	Dallas	H	Wiper	Mer. Marine	Z 418 590	40	USCG Rcd	Repat		[redacted]
John Bascom	Casavant	Gabriel		Fireman	Mer. Marine	Z 354 924	21	USCG Rcd	Repat		[redacted]
John Bascom	Cheong	Ng		Messman	Mer. Marine	Z 303 832	30	USCG Rcd	Repat		[redacted]
John Bascom	Collazo	Jose	Maria	Utility	Mer. Marine	Z 237 434	41	USCG Rcd	Repat		[redacted]
John Bascom	Collins	Allen	G	3d Mate	Mer. Marine	Z 261 343	31	USCG Rcd	DH	Yes	[redacted]
John Bascom	Courcoumelis	John		O.E.	Mer. Marine	Z 272 761	17	USCG Rcd	Repat		[redacted]
John Bascom	Elin	Nicholas		1st Asst Eng	Mer. Marine	Z 59 116	28	USCG Rcd	KIA		[redacted]
John Bascom	Fox	Chester	D	S1c	V-6,USNR(SV)	850 83 20	11/3/43	RG 38, NA	WIA DH		
John Bascom	Franko	Theodore	M	S1c	V-6,USNR(SV)	821 71 39	11/3/43	RG 38, NA	WIA DH		
John Bascom	Furhman	Ray	E	Fireman	Mer. Marine	Z 318 349	22	USCG Rcd	WIA Repat		[redacted]
John Bascom	Goldstein	David		Cox	V-6, USNR	614 49 00	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Hamrick	Clinard	B	GM3c	V-6, USNR	656 17 60	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Heinse	Leroy	C	Engine Cade	Mer. Marine	146 036	23	USCG Rcd	Repat		[redacted]
John Bascom	Herrick	Dean	Martin	Ch, Engr	Mer. Marine	239 286	40	USCG Rcd	Repat		[redacted]
John Bascom	Hietman	Otto		Master	Mer. Marine	153 262		USCG Rcd	Repat	Yes	

John Bascom	Hughes	Anthony	J	1st Mate	Mer. Marine	Z 101 795	44	USCG Rcd	WIA		[redacted]
John Bascom	James	Albert	E	Steward	Mer. Marine	Z 68 546	38	USCG Rcd	Repat		[redacted]
John Bascom	Johnson	B	R	A.B.	Mer. Marine	Z 269 751	40	USCG Rcd	WIA		[redacted]
John Bascom	Kelch	Ralph	L	FM/WT	Mer. Marine	Z 400 460	18	USCG Rcd	WIA Repat		[redacted]
John Bascom	Kelly	Robert	T	SM3c	V-6, USNR	667 06 27	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Kettunen	Oliver	O	A.B.	Mer. Marine	Z 8 690	22	USCG Rcd	WIA		[redacted]
John Bascom	Kevess	Arthur	Sheppard	Radioman	Mer. Marine	Z 267 315	27	USCG Rcd	Repat		[redacted]
John Bascom	Kopperrud	Romeo	N	3d Asst	Mer. Marine	138 667	33	USCG Rcd	Repat		[redacted]
John Bascom	Kreimer	William	A	SM2c	V-6, USNR	612 36 51	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Lefkowitz	Charles		A.B.	Mer. Marine	Z 376 392	29	USCG Rcd	Repat		[redacted]
John Bascom	Lesesne	William	B	Purser	Mer. Marine	Z 208 346	38	USCG Rcd	WIA	Yes	[redacted]
John Bascom	Lipson	Roy		Jr. Radioman	Mer. Marine	Z 339 090	23	USCG Rcd	WIA		[redacted]
John Bascom	Lysk	Stephen	Charles	Deck Engr	Mer. Marine	Z 236 654	25	USCG Rcd	Repat		[redacted]
John Bascom	Margaritz	George		Wiper	Mer. Marine	Z 266 391	43	USCG Rcd	Repat		[redacted]
John Bascom	Mastronardi	Gene	J	RM3c	V-6, USNR	601 15 67	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	McCallum	Gilbert		Oiler	Mer. Marine	Z 255 310	29	USCG Rcd	Repat		[redacted]
John Bascom	Merkel	Stanley	A	3d Asst Engr	Mer. Marine	Z 152 930	24	USCG Rcd	MIA PD		[redacted]
John Bascom	Morales	Alberto	C	Oiler	Mer. Marine	Z 70 834	34	USCG Rcd	Repat		[redacted]
John Bascom	Myers	Albert		Messman	Mer. Marine	Z 369 691	17	USCG Rcd	Repat		[redacted]
John Bascom	Norton	Donald	L	S1c	V-6, USNR	611 67 58	11/3/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Raphael	Jacob		Fireman	Mer. Marine	Z 93 444	51	USCG Rcd	Repat		[redacted]
John Bascom	Rayburn	Chester		GM3c	V-6, USNR	662 68 29	11/3/43	RG 38, NA	WIA DH		
John Bascom	Robbins	Kenneth	Thomas	S1c	V-6, USNR	203 20 61	10/16/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Roberts	Lester	Frank	S1c	V-6,USNR(SV)	800 56 53	10/16/43	RG 38, NA	WIA DH		
John Bascom	Rochford	William	Anthony	S1c	V-6,USNR(SV)	811 37 62	10/16/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Ruddiman	Rodney	John	S1c	USN	606 92 80	10/16/43	RG 38, NA	WIA Repat	Probable	
John Bascom	Rudolph	William	Raphael	2d Mate	Mer. Marine	Z 118 382	49	USCG Rcd	Repat		[redacted]
John Bascom	Saari	Paul	William	Oiler	Mer. Marine	Z 5 552	19	USCG Rcd	Repat		[redacted]
John Bascom	Stephens	George	Henry	A.B.	Mer. Marine	Z 236 384	29	USCG Rcd	Repat		[redacted]
John Bascom	Stumpf	John	Lawrence	A.B.	Mer. Marine	Z 376 397	20	USCG Rcd	Repat		[redacted]
John Bascom	Sullivan	Marcellus		A.B.	Mer. Marine	Z 141 342	35	USCG Rcd	DH	Yes	[redacted]
John Bascom	Suon	Tan Yak		Messman	Mer. Marine	Z 303 834	40	USCG Rcd	WIA		[redacted]
John Bascom	Valle	Florentino		Cook	Mer. Marine	Z 133 461	26	USCG Rcd	Repat		[redacted]
John Bascom	Vesole	Kay	K	Ens	USNR	210513	11/3/43	RG 38, NA	WIA DH		
John Bascom	Vivas	Carlos	Albert	Cook	Mer. Marine	Z 73 794	37	USCG Rcd	Repat		[redacted]

John Bascom	Walden	Eugene		Utility	Mer. Marine	Z 401 688	25	USCG Rcd	Repat	[redacted]
John Bascom	Williams	Charles		2d Asst Engr	Mer. Marine	Z 161 731	33	USCG Rcd	WIA	[redacted]
John Harvey	Bailey	Wilford	A	Oiler	Mer Marine	Z 377 445	25	USCG Rcd	MIA PD	[redacted]
John Harvey	Barr	Kenneth	Edward	RM3c	V-6, USNR	615 89 75		RG 38, NA	MIA PD	NA
John Harvey	Bish	Arnold	Jay	S1c	V-6, USNR(SV)	822 42 95		RG 38, NA	MIA PD	NA
John Harvey	Blevins	Francis	A	Utilityman	Mer Marine	Z 377 865	19	USCG Rcd	MIA PD	[redacted]
John Harvey	Braun	Carl	H	1st Asst Engr	Mer Marine	228 409	52	USCG Rcd	MIA PD	[redacted]
John Harvey	Brennan	Lawrence	O	A.B.	Mer Marine	Z 91 376	24	USCG Rcd	MIA PD	[redacted]
John Harvey	Brewer	Charles	Edward	S1c	V-6, USNR	602 33 72		RG 38, NA	MIA PD	NA
John Harvey	Brewer	Roy		S1c	V-6, USNR(SV)	855 60 46		RG 38, NA	MIA PD	NA
John Harvey	Brodie	Marvin	W	Engine Mdsp	Mer Marine	274 723	21	USCG Rcd	MIA PD	[redacted]
John Harvey	Brooks	Walton	N	O.S.	Mer Marine	Z 244 740	20	USCG Rcd	MIA PD	[redacted]
John Harvey	Bruyn	Johan	Barand	S1c	V-6, USNR	726 72 29		RG 38, NA	MIA PD	NA
John Harvey	Cahill	James	L	Deck Cadet	Mer Marine	274 792	18	USCG Rcd	MIA PD	[redacted]
John Harvey	Carter	Guy	A	Jr. Engr	Mer Marine	029 270	23	USCG Rcd	MIA PD	[redacted]
John Harvey	Cronin	James	Francis	S1c	V-6, USNR	245 82 10		RG 38, NA	MIA PD	NA
John Harvey	Croxton	Cecil	C	A.B.	Mer Marine	Z 336 094	31	USCG Rcd	Died in fall	18-Nov-43 [redacted]
John Harvey	Deem	Luther	D		Mer Marine	Z 276 317 ?	38	USCG Rcd	MIA PD	
John Harvey	Desmarias	Philip	Joseph	S1c	V-6, USNR(SV)	806 72 97		RG 38, NA	MIA PD	NA
John Harvey	Dolan	Harold	F	Wiper	Mer Marine	Z 291 464	38	USCG Rcd	Repat	[redacted]
John Harvey	Doland	James	Albert	Cox	V-6, USNR	706 06 42		RG 38, NA	MIA PD	NA
John Harvey	Dounetos	Michael	John	GM3c	V-6, USNR	204 72 19		RG 38, NA	MIA PD	NA
John Harvey	Driscoll	William	Gerard	S1c	V-6, USNR(SV)	801 92 95		RG 38, NA	MIA PD	NA
John Harvey	Duerr	Thomas	E	Carpenter	Mer Marine	Z 383 270	19	USCG Rcd	MIA PD	[redacted]
John Harvey	Farnsworth	Frank Jr.	Eugene	GM3c	V-6, USNR	204 96 41		RG 38, NA	MIA PD	NA
John Harvey	Fellman	Frederick	J	Ch Steward	Mer Marine	Z 336 434	44	USCG Rcd	MIA PD	[redacted]
John Harvey	Fletcher	Marshall	A	2d Cook/Bkr	Mer Marine	414 021	22	USCG Rcd	MIA PD	[redacted]
John Harvey	Flynn	Less	U	Night Baker	Mer Marine	Z 284 906	35	USCG Rcd	Paid Off	21-Oct-43 [redacted]
John Harvey	Francis	Russell	A	Messman	Mer Marine	Z 170 241	21	USCG Rcd	Repat	[redacted]
John Harvey	Fulton	Jasper		2d Cook	Mer Marine	Z 396 298	41	USCG Rcd	MIA PD	[redacted]
John Harvey	Gabriel	Peter	P	Fireman/WT	Mer Marine	Z 23 901	19	USCG Rcd	Repat	[redacted]
John Harvey	Gawlak	Joseph	Francis	S1c	V-6, USNR(SV)	807 88 19		RG 38, NA	MIA PD	NA
John Harvey	Gentile	John	Lawrence	S1c	V-6, USNR(SV)	802 18 41		RG 38, NA	MIA PD	NA
John Harvey	Giannetti	Domenic	Joseph	S1c	V-6, USNR	762 11 87		RG 38, NA	MIA PD	NA
John Harvey	Glauche	Richard	B	Deck Cadet	Mer Marine	276 197	19	USCG Rcd	MIA PD	[redacted]

John Harvey	Gloddy	Richard	Paul	S1c	V-6, USNR	573 23 32		RG 38, NA	MIA PD	NA	
John Harvey	Goodwin	John	W	Utilityman	Mer Marine	Z 226 715	26	USCG Rcd	MIA PD		[redacted]
John Harvey	Gore	Lloyd	E	Messman	Mer Marine	Z 174 113 D2	32	USCG Rcd	Repat		[redacted]
John Harvey	Gronquist	John	L	3d Officer	Mer Marine	260 629	42	USCG Rcd	MIA PD		[redacted]
John Harvey	Harrison, Jr.	Baylis	W	Utilityman	Mer Marine	Z 358 005	22	USCG Rcd	MIA PD		[redacted]
John Harvey	Hopkins	Leroy		2d Asst Engr	Mer Marine	Z 997 738 D1	29	USCG Rcd	MIA PD		[redacted]
John Harvey	Howard	Bob		A.B.	Mer Marine	Z 203 939	22	USCG Rcd	MIA PD		[redacted]
John Harvey	Hutton	George	W	Utilityman	Mer Marine	Z 358 358	29	USCG Rcd	MIA PD		[redacted]
John Harvey	Jones	Robert	F	Fireman/WT	Mer Marine	Z 110 725	26	USCG Rcd	MIA PD		[redacted]
John Harvey	Justis, Jr.	Alvin	H	Engine Mdsp	Mer Marine	276 147	18	USCG Rcd	MIA PD		[redacted]
John Harvey	Kaukola	Toive	Jacob	GM3c	V-6, USNR	305 40 67		RG 38, NA	MIA PD	NA	
John Harvey	Killen	Robert	Bruce	S1c	V-6, USNR	604 73 98		RG 38, NA	MIA PD	NA	
John Harvey	Knowles	Edwin	F	Master	Mer Marine	150 908		USCG Rcd	MIA PD		
John Harvey	Kuhns	Dale	Edward	S1c	V-6, USNR(SV)	862 34 69		RG 38, NA	MIA PD	NA	
John Harvey	La Chapelle	Willard	E	3d Cook	Mer Marine	Z 315 356	35	USCG Rcd	Paid off	21-Oct-43	[redacted]
John Harvey	Linehan	Patrick	Francis	S1c	V-6, USNR	762 10 64		RG 38, NA	MIA PD	NA	
John Harvey	Main	John	G	Oiler	Mer Marine	Z 380 090	28	USCG Rcd	MIA PD		[redacted]
John Harvey	Majewsky	Stephen	M	Deck Engr	Mer Marine	Z 389 878	44	USCG Rcd	MIA PD		[redacted]
John Harvey	Meade	Shelton	C	O.S.	Mer Marine	Z 381 421	21	USCG Rcd	MIA PD		[redacted]
John Harvey	Morgan	Charles		Purser	Mer Marine	228 791	40	USCG Rcd	MIA PD		[redacted]
John Harvey	Mrvan, Jr	John		Fireman/WT	Mer Marine	Z 400 581	24	USCG Rcd	MIA PD		[redacted]
John Harvey	Nannery	Joseph		A.B.	Mer Marine	Z 99 393 D1	28	USCG Rcd	Repat		[redacted]
John Harvey	Noel	Joseph	Henry	S1c	V-6, USNR	642 63 90		RG 38, NA	MIA PD	NA	
John Harvey	Nuckels	Clifford	Sherles	S1c	V-6, USNR	641 24 62		RG 38, NA	MIA PD	NA	
John Harvey	Odland	Thorval	A	Bosun	Mer Marine	Z 285 706	51	USCG Rcd	MIA PD		[redacted]
John Harvey	Paloso	James	Raymond	S1c	V-6, USNR(SV)	823 54 06		RG 38, NA	MIA PD	NA	
John Harvey	Panter	Leo		Radio Opr	Mer Marine	Z 162 063	33	USCG Rcd	MIA PD		[redacted]
John Harvey	Reilly	John		1st Officer	Mer Marine	000 544	51	USCG Rcd	MIA PD		[redacted]
John Harvey	Sadler	Leroy	F	A.B.	Mer Marine	Z 90 556	28	USCG Rcd	MIA PD		[redacted]
John Harvey	Shattlers	David	Edward	S1c	V-6, USNR	644 65 05		RG 38, NA	MIA PD	NA	
John Harvey	Smith	Carl	W	O.S.	Mer Marine	Z 291 873	26	USCG Rcd	MIA PD		[redacted]
John Harvey	Smith	Glenn	Earl	S1c	V-6, USNR(SV)	825 07 07		RG 38, NA	MIA PD	NA	
John Harvey	Smith	Robert	M	Wiper	Mer Marine	Z 229 085	33	USCG Rcd	MIA PD		[redacted]
John Harvey	Spitz	Michael	J	Ch Cook	Mer Marine	Z 152 844	53	USCG Rcd	MIA PD		[redacted]
John Harvey	Stanton	Andrew	Daniel	S1c	V-6, USNR	762 27 68		RG 38, NA	MIA PD	NA	

John Harvey	Stasevitch	Eifim		Baker/2d Ck	Mer Marine	Z 144 888	48	USCG Rcd	Deserter	7-Oct-43	[redacted]
John Harvey	Suter	Edward	M	A.B.	Mer Marine	Z 284 643	34	USCG Rcd	MIA PD		[redacted]
John Harvey	Thompson	George Jr.		Lt(jg)	D-V(S) USNR			RG 38, NA	MIA PD	NA	
John Harvey	Toth	Michael		Messman	Mer Marine	Z 90 614 D5	39	USCG Rcd	Repat		[redacted]
John Harvey	Warden	richard	D	Oiler	Mer Marine	Z 317 750	22	USCG Rcd	MIA PD		[redacted]
John Harvey	Warner	Harold	J	A.B.	Mer Marine	Z 291 749	27	USCG Rcd	Off ship	11-Oct-43	[redacted]
John Harvey	Wheeler	Paul	E	Utilityman	Mer Marine	Z 355 276	21	USCG Rcd	MIA PD		[redacted]
John Harvey	White	John	J	Ch Engr	Mer Marine	089 232	38	USCG Rcd	MIA PD		[redacted]
John Harvey	Wilson	George	William	SM3c	V-6, USNR	710 63 97		RG 38, NA	MIA PD	NA	
John Harvey	Young	Myron	E	2d Officer	Mer Marine	157 502	42	USCG Rcd	MIA PD		[redacted]
John L. Motley	Abrams	Albert		Messman	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Adams	J	F	CPL	US Army	Unknown		USCG Rcd			
John L. Motley	Aeschliman	L	V	SGT	US Army	Unknown		USCG Rcd			
John L. Motley	Alberts	D	S	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Albrecht	E	A	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Alterice	Patrick	Angelo	SM3c	USN	250 78 83	9/13/43	RG 38, NA	MIA		
John L. Motley	Altman	C	B	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Anderson	G	R	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Bagdonas	John	F	O.S.	Mer. Marine	Unknown		USCG Rcd	WIA DH		Unknown
John L. Motley	Bailey	Kenneth	C	2LT	US Army	O-1589675		RG 24 NA	MIA PD		
John L. Motley	Belanger	Ernest		Fireman/WT	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Billington	R	R	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Bird	Francis	L	Wiper	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Bloomberg	Melvin	H	Radioman	Mer. Marine	Unknown		USCG Rcd	WIA DH		Unknown
John L. Motley	Bognacki	Charles	John	Cox	V-6, USNR	647 07 41	9/13/43	RG 38, NA	MIA		
John L. Motley	Brown	C	F	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Buchler	Anthony		A.B.	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Buck	Lee	D	Messman	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Cagliardi	Joseph		Bosun	Mer. Marine	Unknown		USCG Rcd	WIA DH		Unknown
John L. Motley	Cannella	J	G	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Chase	James		O.S.	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Chmiel	E	J	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Cleary	J	J	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Clinger	Charles		PFC	US Army	Unknown		USCG Rcd			
John L. Motley	Coffman	Clarence	E	1st Lt	US Army	Unknown		USCG Rcd			

John L. Motley	Connolly	N	F	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Contreras	Antonio	A	Oiler	Mer. Marine	Unknown		USCG Rcd	WIA DH		Unknown
John L. Motley	Couillard	Joseph	P	1st Asst Engr	Mer. Marine	Unknown		USCG Rcd	WIA DH		Unknown
John L. Motley	Daniels	Edward Jr.	Hilton	RM3c	USN	274 87 35	9/13/43	RG 38, NA	Repat		
John L. Motley	Davis	Thomas	C.	GM3c	V-6, USNR	651 02 35	9/13/43	RG 38, NA	MIA		
John L. Motley	Deuman	E	F	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Dickinson	William	C	Oiler	Mer. Marine	Unknown		USCG Rcd	KIA		Unknown
John L. Motley	Filewicz	Chester	B	Utility	Mer. Marine	Unknown		USCG Rcd	Repat		Unknown
John L. Motley	Flammang	R	W	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Fontnette	Richard		Utility	Mer. Marine	Unknown		USCG Rcd	WIA DH		Unknown
John L. Motley	Fracassi	A	J	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Frohlich	William	George	S1c	V-6, USNR	653 02 20	9/15/43	RG 38, NA	MIA		
John L. Motley	Gearrey	Harry	T	Utility	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Gilbert	John	L	Utility	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Gill	Louis		2d Cook/Bkr	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Gillette	Robert	M	2d Asst Engr	Mer. Marine	Unknown		USCG Rcd	WIA DH		Unknown
John L. Motley	Grahm	C	A	PFC	US Army	Unknown		USCG Rcd			
John L. Motley	Harper	Thomas	Edward	Cox	USN	244 29 65	9/13/43	RG 38, NA	Repat	Unlikely	
John L. Motley	Hawks	C	W	PFC	US Army	Unknown		USCG Rcd			
John L. Motley	Hayes	D		PFC	US Army	Unknown		USCG Rcd			
John L. Motley	Healy	Patrick	Joseph	S1c	V-6, USNR	647 17 42	9/13/43	RG 38, NA	MIA		
John L. Motley	Heeman	Harry	J	Ch Engr	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Hillis	Henry	Clifford	S1c	V-6, USNR	630 85 16	9/27/43	RG 38, NA	MIA - Not	Aboard???	
John L. Motley	Holland	Donald	H	A.B.	Mer. Marine	Unknown		USCG Rcd	WIA DH		Unknown
John L. Motley	Howard	Edwin	D	Deck Cadet	Mer. Marine	Unknown		USCG Rcd	DFW		Unknown
John L. Motley	Husband	Alfred	Stanley	S1c	USN	311 82 49	9/13/43	RG 38, NA	MIA		
John L. Motley	Hutton	H	P	SGT	US Army	Unknown		USCG Rcd			
John L. Motley	Iannantouni	Joseph	P	3d Cook	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Jackson	Osmond		2d Cook/Bkr	Mer. Marine	Unknown		USCG Rcd	Repat		Unknown
John L. Motley	Jones	H	W	PFC	US Army	Unknown		USCG Rcd			
John L. Motley	Jouett	R	L	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Koetzle	W	J	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Krol	W	J	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Kuhn	Merle		T/4	US Army	Unknown		USCG Rcd			
John L. Motley	Kundsicz	Sygmunt		Oiler	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown

John L. Motley	Litton	Jay	F	Engr Cadet	Mer. Marine	Unknown		USCG Rcd	WIA DH		Unknown
John L. Motley	Lounsbury	Ivan	Burton	GM3c	V-6, USNR	648 32 43	9/13/43	RG 38, NA	WIA DH		
John L. Motley	Lowry	Albert	A	A.B.	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Martens	Paul		Ch Steward	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Martin	Garald	Lester	S1c	V-6, USNR	622 73 47	9/13/43	RG 38, NA	Repat		
John L. Motley	Mastrostefano	Menlio	A	2d Cook/Bkr	Mer. Marine	Unknown		USCG Rcd	Repat		Unknown
John L. Motley	Mauricio	Eugnio		Fireman/WT	Mer. Marine	Unknown		USCG Rcd	WIA DH		Unknown
John L. Motley	Mc Grath	Edward	Anthony	GM3c	O-1, USNR	406 84 36	9/13/43	RG 38, NA	MIA		
John L. Motley	McGinnis	E	C	CPL	US Army	Unknown		USCG Rcd			
John L. Motley	Misiononile	Louis	J	Messman	Mer. Marine	Unknown		USCG Rcd	KIA		Unknown
John L. Motley	Morrissey	John Jr.	Joseph	S1c(SM)	USN	202 73 34	9/17/43	RG 38, NA	MIA		
John L. Motley	Naszcniec	Frank	P	Maintenanc	Mer. Marine	Unknown		USCG Rcd	Repat		Unknown
John L. Motley	Niles	Graydon	B	Wiper	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Nugent	Thomas	Patrick	S1c	M-1, USNR	203 14 71	9/13/43	RG 38, NA	Repat		
John L. Motley	O'Brien	Patrick		Ch Mate	Mer. Marine	Unknown		USCG Rcd	KIA		Unknown
John L. Motley	Okolski	Stephen	Walter	S1c(SV)	V-6, USNR	801 43 69	9/13/43	RG 38, NA	WIA DH		
John L. Motley	Pelfrey	Deane	Greer	Cox	USN	356 60 16	9/13/43	RG 38, NA			
John L. Motley	Pilecki	Wallace	James	S1c(SV)	V-6, USNR	809 08 03	9/13/43	RG 38, NA	WIA DH		
John L. Motley	Pizzo	George	Dom	S1c(SV)	USN	808 61 41	9/13/43	RG 38, NA	WIA DH		
John L. Motley	Popielarczyk	Joseph	Anthony	S1c(SV)	V-6, USNR	801 39 20	9/13/43	RG 38, NA	MIA		
John L. Motley	Reedy	J	R	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Reel	F	W	CPL	US Army	Unknown		USCG Rcd			
John L. Motley	Revelo	Marco	Soto	A.B.	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Rokoszak	Bernard	Walter	GM3c	V-6, USNR	809 07 89	9/13/43	RG 38, NA	MIA		
John L. Motley	Rokoszak	Charles	Joseph	S1c(SV)	V-6, USNR	809 07 99	9/13/43	RG 38, NA	WIA DH		
John L. Motley	Sadowy	Philip		3d Mate	Mer. Marine	Unknown		USCG Rcd	WIA DH		Unknown
John L. Motley	Scallion	Gerald	Edward	S1c(I)	USN	807 29 89	9/13/43	RG 38, NA			
John L. Motley	Schneider	Louis		CPT	US Army	Unknown		USCG Rcd			
John L. Motley	Scotlas	Adam	Thomas	A.B.	Mer. Marine	Unknown		USCG Rcd	WIA		Unknown
John L. Motley	Seling	Horace	R	O.S.	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Servay	Andrew		Messman	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Shearer	Edward	H	3d Asst Engr	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Sherwood	Reuel II	E	Ens	D-V(s)USNR		9/13/43	RG 38, NA	WIA DH		
John L. Motley	Shipley	F	E C	PFC	US Army	Unknown		USCG Rcd			
John L. Motley	Smith	Carl		Deck Engr	Mer. Marine	Unknown		USCG Rcd	Repat		Unknown

John L. Motley	Sobieski	S	B	SGT	US Army	Unknown		USCG Rcd			
John L. Motley	Southwick	Enos		2LT	US Army	Unknown		USCG Rcd			
John L. Motley	Spatharos	Emanuel		Fireman/WT	Mer. Marine	Unknown		USCG Rcd	WIA DH		Unknown
John L. Motley	Stevens	George	Riley	S1c	V-6, USNR	761 78 36	9/13/43	RG 38, NA	MIA		
John L. Motley	Stone	Phillip Jr.	Henry	S1c	V-6, USNR	203 64 54	9/13/43	RG 38, NA	WIA DH		
John L. Motley	Strangulis	Martin		Ch Cook	Mer. Marine	Unknown		USCG Rcd	WIA		Unknown
John L. Motley	Sugg	R	O	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Taboada	Edwardo		A.B.	Mer. Marine	Unknown		USCG Rcd	WIA DH		Unknown
John L. Motley	Tardanico	Danial		S1c	V-6, USNR	809 07 92	9/13/43	RG 38, NA	MIA		
John L. Motley	Theriault	Raymond	Joseph	S1c	V-6, USNR	761 83 08	9/13/43	RG 38, NA	Repat		
John L. Motley	Thurmond	John	L	Clerk-Typist	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Trapasso	Thomas	Joseph	S1c	V-6, USNR	761 77 79	9/13/43	RG 38, NA	MIA		
John L. Motley	Tsimenis	Constantine		Master	Mer. Marine	Unknown		USCG Rcd	MIA PD		Unknown
John L. Motley	Waseck	Walter	William	GM3c	V-6, USNR	647 16 45	9/13/43	RG 38, NA	MIA		
John L. Motley	Williams	E	E	T/5	US Army	Unknown		USCG Rcd			
John L. Motley	Wilson	D	E	PVT	US Army	Unknown		USCG Rcd			
John L. Motley	Wittland	Harold	Lowell	S1c	V-6, USNR	668 63 73	9/13/43	RG 38, NA	WIA DH		
John L. Motley	Wozniak	Theodore		T/5	US Army	Unknown		USCG Rcd			
John L. Motley	Yewell	Fulton	E	2d mate	Mer. Marine	Unknown		USCG Rcd	MIA		Unknown
John L. Motley	Zahorsky	John		SM3c	V-6, USNR	650 48 50	9/13/43	RG 38, NA	MIA		
John L. Motley	Zemola	A	G	PVT	US Army	Unknown		USCG Rcd			
Joseph Wheeler	Aplinian	Edward		S1c	USNR	861 63 83		RG 38, NA	MIA		
Joseph Wheeler	Babbin, Jr.	John	J	FM.WT	Mer. Marine	Z411741	17	USCG Rcd	MIA PD	[redacted]	
Joseph Wheeler	Baggett	Edwin	B	A.B.	Mer. Marine	Z333188	19	USCG Rcd	MIA PD	[redacted]	
Joseph Wheeler	Bain	Donald	Ian	S1c	USNR	801 21 49		RG 38, NA	MIA		
Joseph Wheeler	Barnard	William	R	A.B.	Mer. Marine	Z117875	31	USCG Rcd	MIA PD	[redacted]	
Joseph Wheeler	Betten	Otto	J	Ch Engr	Mer. Marine	108 177	28	USCG Rcd	MIA PD	[redacted]	
Joseph Wheeler	Black	Troy	B	2d Cook/Bkr	Mer. Marine	Z332684	19	USCG Rcd	Repat	[redacted]	
Joseph Wheeler	Blome	Cornelius	F	Asst Cook	Mer. Marine	Z267888	22	USCG Rcd	MIA PD	[redacted]	
Joseph Wheeler	Brockway	George	W	Messman	Mer. Marine	Z405680	25	USCG Rcd	Repat	[redacted]	
Joseph Wheeler	Bunch	George	D	Deck Maint	Mer. Marine	Z288310	23	USCG Rcd	Repat	[redacted]	
Joseph Wheeler	Childress	Clarence	E	3d Asst Engr	Mer. Marine	Z53860	39	USCG Rcd	MIA PD	[redacted]	
Joseph Wheeler	Clyburn	Frank	Gregg	S2c	USNR	829 23 79		RG 38, NA	MIA		
Joseph Wheeler	Cooke	John	H	1st Asst Engr	Mer. Marine	Z240816	43	USCG Rcd	MIA PD	[redacted]	
Joseph Wheeler	Cowan	John	Dudley	S1c	USNR	833 57 43		RG 38, NA	MIA		

Joseph Wheeler	Devine	Carl	Buial	S1c	USNR	826 75 17		RG 38, NA	MIA	
Joseph Wheeler	Dragan	Jpseph	Michael	GM3c	USNR	642 14 84		RG 38, NA	MIA	
Joseph Wheeler	Drexler	John	Paul	S1c	USNR	817 54 08		RG 38, NA	MIA	
Joseph Wheeler	Feith	Dalck		2d Asst Engr	Mer. Marine	Z172 886	29	USCG Rcd	Repat	[redacted]
Joseph Wheeler	Gardner	Eugene	J	Oiler	Mer. Marine	Z379221	17	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Garner	Ralph	Andrew	S1c	USNR	829 31 08		RG 38, NA	MIA	
Joseph Wheeler	Gordon	John	Frederick	S1c	USNR	809 69 85		RG 38, NA	MIA	
Joseph Wheeler	Graney	William Jr.	Cahill	S1c	USNR	801 73 10		RG 38, NA	MIA	
Joseph Wheeler	Grech	Paul	V	Ch. Cook	Mer. Marine	Z158087	33	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Greene	James	William	S1c	USNR	832 72 94		RG 38, NA	MIA	
Joseph Wheeler	Gumbleton	George	Bernard	SM3c	USNR	607 47 49		RG 38, NA	Repat	Unlikely
Joseph Wheeler	Hickey	Gerald	F	A.B.	Mer. Marine	Z187229	30	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Holyoak	Arthur		O.S	Mer. Marine	Z381597	27	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Hooks	Joseph	F	Oiler	Mer. Marine	Z356847	20	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Hubbard	Robert	Lee	S1c	USNR	826 49 84		RG 38, NA	MIA	
Joseph Wheeler	Hunter	John	William	S1c	USNR	601 32 16		RG 38, NA	Repat	Unlikely
Joseph Wheeler	Jarrell	Edgar	Glenn	S1c	USNR	829 87 28		RG 38, NA	Repat	Unlikely
Joseph Wheeler	Johnson	Mark	W	Jr. Asst Purse	Mer. Marine	Z283367	27	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Lesniak	Joseph		A.B.	Mer. Marine	Z282010D1	25	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	List	Norman	Thomas	S1c	USNR	313 01 43		RG 38, NA	MIA	
Joseph Wheeler	Lundy	Edward	Joseph	S1c	USNR	600 79 73		RG 38, NA	Repat	Unlikely
Joseph Wheeler	Maher	Robert	J	Utility	Mer. Marine	Z444897	18	USCG Rcd	Repat	[redacted]
Joseph Wheeler	McAlpine	George	W	Utility	Mer. Marine	Z405820	32	USCG Rcd	Repat	[redacted]
Joseph Wheeler	McCarthy	Frederick Jr.		S1c	USNR	810 46 61		RG 38, NA	Repat	Unlikely
Joseph Wheeler	McFarlane	Roy	R	FM.WT	Mer. Marine	Z418065	20	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	McGuinniss	John	Joseph	S1c	USNR	810 45 21		RG 38, NA	Repat	Unlikely
Joseph Wheeler	McIntyre	Delmont	Verrill	S1c	USNR	205 88 53		RG 38, NA	Repat	Unlikely
Joseph Wheeler	McQueen	Robert	P	O.S	Mer. Marine	Z159962	28	USCG Rcd	Repat	[redacted]
Joseph Wheeler	Milam	Charles	Britton	S2c	USNR	575 28 65		RG 38, NA	Repat	Unlikely
Joseph Wheeler	Milller	Lyndahl	Andrew	Cox	USNR	627 24 38		RG 38, NA	MIA	
Joseph Wheeler	Morris	Carleton	D	Radio Opr	Mer. Marine	Z3484	42	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Morrissey	Patrick		Master	Mer. Marine	165 968	61	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Newkirk	Roy	J	1st Mate	Mer. Marine	Z101988D1	29	USCG Rcd	Repat	[redacted]
Joseph Wheeler	Nobles	Eugene		Bosun	Mer. Marine	Z97289	31	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Orange	Walter	C	Wiper	Mer. Marine	Z406666	33	USCG Rcd	Repat	[redacted]

Joseph Wheeler	Page	Don	D	Oiler	Mer. Marine	Z402005	22	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Rodenas	Toribio		Deck Engr	Mer. Marine	Z99770	36	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Rorie, Jr.	John	B	O.S	Mer. Marine	Z380477	21	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Rose	Richard	W	2d Radio Op	Mer. Marine	Z124544	25	USCG Rcd	Repat	[redacted]
Joseph Wheeler	Ross	Paul	M	Utility	Mer. Marine	Z360316D1	42	USCG Rcd	Repat	[redacted]
Joseph Wheeler	Rudnicki	Leonard	Anthony	S1c	USNR	805 48 75		RG 38, NA	Repat	Unlikely
Joseph Wheeler	Ryan	William	Joseph	S1c	USNR	761 93 29		RG 38, NA	MIA	
Joseph Wheeler	Schlubeck	Francis	B	Messman	Mer. Marine	Z405260	21	USCG Rcd	Repat	[redacted]
Joseph Wheeler	Sears	Daniel	W	3d Mate	Mer. Marine	Z8371	25	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Sebastian	George	S	O.S	Mer. Marine	Z380514	19	USCG Rcd	Repat	[redacted]
Joseph Wheeler	Sheldon	William	D	2d Mate	Mer. Marine	Z312580	53	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Swisher	Bernard	E	Messman	Mer. Marine	Z445023	18	USCG Rcd	MIA pd	[redacted]
Joseph Wheeler	Tait	William	M	O.S	Mer. Marine	Z337018	20	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Thomas	John Jr.	Perry	S1c	USNR	256 43 67		RG 38, NA	MIA	
Joseph Wheeler	VanHorn	Harry	Gustav	GM3	USNR	650 47 34		RG 38, NA	Repat	Unlikely
Joseph Wheeler	Walsh	John	P	Ch. Steward	Mer. Marine	Z235715	27	USCG Rcd	Repat	[redacted]
Joseph Wheeler	Weiss	William		FM.WT	Mer. Marine	Z272813	24	USCG Rcd	MIA PD	[redacted]
Joseph Wheeler	Willig	John	Richard	RM3c	USNR	647 05 85		RG 38, NA	Repat	Unlikely
Joseph Wheeler	Yambrisak	George		Wiper	Mer. Marine	Z322598	22	USCG Rcd	Repat	[redacted]
Lyman Abbott	Bijaczyk	Joseph	Edward	S1c	V-6,USNR	651 90 76		RG 38, NA	Repat	Yes
Lyman Abbott	Adamovicz	Stanley		Bosun	Mer. Marine	Z 260 668 D1	24	USCG Rcd	WIA DH	Possible
Lyman Abbott	Alvarez	Louis		S1c	V-6,USNR	707 77 81		RG 38, NA	Repat	Yes
Lyman Abbott	Armstrong	William	J	Ch Engr	Mer. Marine	228 935	54	USCG Rcd	WIA RS	Possible
Lyman Abbott	Baist	George	H	Cadet Engr	Mer. Marine	Z 362 052	19	USCG Rcd	WIA RS	Possible
Lyman Abbott	Baker	Earl		Oiler	Mer. Marine	Z 141 288	45	USCG Rcd		
Lyman Abbott	Belagh	Alexander	James	S1c	V-6,USNR	244 33 86		RG 38, NA	Repat	Yes
Lyman Abbott	Belobraydich	Victor	L	3d Cook	Mer. Marine	Z 336 428	36	USCG Rcd	WIA RS	Yes
Lyman Abbott	Binning	James	E	Jr Asst Purser	Mer. Marine	Z 357 768	31	USCG Rcd		[redacted]
Lyman Abbott	Brown	Michael		2LT	USA	1585981		RG 38, NA	KIA	NA
Lyman Abbott	Brown	Michael		CPT	US Army	O-1585981		USCG Rcd	KIA	
Lyman Abbott	Burt	Leo	E	A.B.	Mer. Marine	Z338 787	23	USCG Rcd	WIA	Possible
Lyman Abbott	Chason	Robert	L	Fireman/WT	Mer. Marine	Z 359 229	24	USCG Rcd	WIA RS	Possible
Lyman Abbott	Clegg	Harold		O.S.	Mer. Marine	Z 358 781	22	USCG Rcd	WIA RS	Possible
Lyman Abbott	Cook	Jack	Buris	S2c	V-6,USNR	829 76 66		RG 38, NA	Repat	Yes
Lyman Abbott	Crews	Clarence	T	A.B.	Mer. Marine	Z 100 383	35	USCG Rcd		[redacted]

Lyman Abbott	Crook	Jonas	B	Oiler	Mer. Marine	Z 380 222D1	20	USCG Rcd	WIA RS	Possible
Lyman Abbott	Dahlstrom	Carl	P.R.	Master	Mer. Marine			USCG Rcd	Retired	
Lyman Abbott	DeVore	Clyde	K	O.S.	Mer. Marine	Z 412 795	31	USCG Rcd	WIA RS	Yes
Lyman Abbott	Dinan	John	Joseph	RM3c	V-6,USNR	707 82 73		RG 38, NA	Repat	Yes
Lyman Abbott	Ebert	Charles	Louis	S1c	V-6,USNR	608 25 11		RG 38, NA	Repat	Yes
Lyman Abbott	Fairman	James		Oiler	Mer. Marine	Z 99 159	37	USCG Rcd		
Lyman Abbott	Fraticelli	Antonio	A	O.S.	Mer. Marine	Z 265 033	23	USCG Rcd	WIA	Possible
Lyman Abbott	Futch	Charles Jr.	Richard	S1c	USN	269 06 06		RG 38, NA	Repat	Yes
Lyman Abbott	Gilbert	Paul	V	Fireman/WT	Mer. Marine	Z 91 697	51	USCG Rcd	WIA RS	
Lyman Abbott	Goff	Landon	J	Messman	Mer. Marine	Z 249 255	23	USCG Rcd	WIA RS	Yes
Lyman Abbott	Grice	Paul		Ch Cook	Mer. Marine	Z 36 136	41	USCG Rcd	WIA	Yes
Lyman Abbott	Grotevant	Rexford	A	1st mate	Mer. Marine	Z 360 427	42	USCG Rcd	WIA	Unknown
Lyman Abbott	Hamlin	James	Austin	Cox	USN	263 52 21		RG 38, NA	Repat	Yes
Lyman Abbott	Hansen	Carl	W	Wiper	Mer. Marine	Z 242 847	37	USCG Rcd	WIA RS	Possible
Lyman Abbott	Harstick	Irvin	E	Utility	Mer. Marine	Z 377 705	19	USCG Rcd	WIA	Yes
Lyman Abbott	Helton	Coy	E	Utility	Mer. Marine	Z 383 614	20	USCG Rcd	WIA RS	Yes
Lyman Abbott	Henson	Jack	Allen	SM3c	V-6,USNR	630 76 71		RG 38, NA	Repat	Yes
Lyman Abbott	Hodak, Jr.	Peter	O	A.B.	Mer. Marine	Z 357 996	18	USCG Rcd	WIA	Possible
Lyman Abbott	Hurst	Sidney		Messman	Mer. Marine	Z 333 435	31	USCG Rcd	WIA RS	Unknown
Lyman Abbott	Krause	Leo	Lewis	GM2	V-6, USNR	651 02 48		RG 38, NA	WIA Repat	Yes
Lyman Abbott	Ledoux	Rosario	P	1st Asst Engr	Mer. Marine	Z 318 403	37	USCG Rcd	WIA	
Lyman Abbott	Leesnitzer	Elmer		Deck Engr	Mer. Marine	Z 126 144	44	USCG Rcd	WIA RS	Yes
Lyman Abbott	Libhart	Clifford	Glenn	GM3c	V-6, USNR	651 02 70		RG 38, NA	Repat	Yes
Lyman Abbott	Link	Bernard	G	O.S.	Mer. Marine	Z 247 589	21	USCG Rcd	WIA RS	Yes
Lyman Abbott	Lishman	Gordon	H	Utility	Mer. Marine	Z 192 665	25	USCG Rcd	WIA	Yes
Lyman Abbott	Lowry	Len	O	A.B.	Mer. Marine	Z 396414	27	USCG Rcd	WIA RS	Yes
Lyman Abbott	Lustri	Alfred	Armoned	S1c	V-6, USNR	710 67 97		RG 38, NA	KIA	Yes
Lyman Abbott	Luxton	Huey	Wade	S2c	V-6,USNR	833 50 22		RG 38, NA	Repat	Yes
Lyman Abbott	Maury	George	W	2d Asst Engr	Mer. Marine	BK 139 934	33	USCG Rcd	WIA RS	Yes
Lyman Abbott	Meissner	Donald	Kinney	S2c	V-6,USNR	605 25 06		RG 38, NA	Repat	Yes
Lyman Abbott	Mikusauskas	Anthony	V	3d Mate	Mer. Marine	Z 117 385	27	USCG Rcd	WIA	Unknown
Lyman Abbott	Miller	Paul	Frederick	S2c	V-6, USNR	653 59 51		RG 38, NA	Repat	Yes
Lyman Abbott	Mitchell	Henry	William	S2c	USN	826 21 07		RG 38, NA	Repat	Yes
Lyman Abbott	Newhauser	Michael	Fred	S2c	V-6,USNR	710 69 69		RG 38, NA	Repat	Yes
Lyman Abbott	Nicholls	Frank	H	3d Asst Engr	Mer. Marine	009 080	25	USCG Rcd	WIA RS	Yes

Lyman Abbott	Nielsen	John		S2c	V-6,USNR	710 69 57		RG 38, NA	Repat	Yes	
Lyman Abbott	Niewenhous	Charles	F	Cadet Deck	Mer. Marine	270 519	19	USCG Rcd			[redacted]
Lyman Abbott	Otembra, Jr.	Frank	J	2d mate	Mer. Marine	Z 42 641	25	USCG Rcd	WIA DH	NA	[redacted]
Lyman Abbott	Raymond	Donald	Edward	S1c	V-6, USNR	305 77 11	8/20/43	RG 38, NA	WIA Repat	Yes	
Lyman Abbott	Riley	Arthur	S	Wiper	Mer. Marine	Z 70 168	30	USCG Rcd	WIA	Possible	[redacted]
Lyman Abbott	Roark	James	Robert	GM3c	V-6,USNR	622 05 89		RG 38, NA	Repat	Yes	
Lyman Abbott	Salkay	Zoltan		Radio Opr	Mer. Marine	E 441 663	30	USCG Rcd	WIA RS	Yes	[redacted]
Lyman Abbott	Scarlett	Robert	Horace	S1c	V-3, USNR	640 17 22	8/19/43	RG 38, NA	Repat	Yes	
Lyman Abbott	Scholl	Lloyd	Grover	S1c	V-6,USNR	650 41 81		RG 38, NA	Repat	Yes	
Lyman Abbott	Sells	Earl	Howard	S1c	V-6,USNR	614 73 18		RG 38, NA	WIA Repat	Yes	
Lyman Abbott	Thomas	Ralph	J	Maint	Mer. Marine	Z 149 800	32	USCG Rcd	WIA RS	Yes	[redacted]
Lyman Abbott	Tischauer	Gene		Messman	Mer. Marine	Z 333 437	27	USCG Rcd	WIA RS	Yes	[redacted]
Lyman Abbott	Townsley	Everett	O	Fireman/WT	Mer. Marine	Z 101 049	38	USCG Rcd	WIA RS	Unlikely	[redacted]
Lyman Abbott	Tucker	Robert		A.B.	Mer. Marine	Z 375 718	21	USCG Rcd	WIA		[redacted]
Lyman Abbott	Walker	Murdock		Ens	D-V(S)USNR		8/10/43	RG 38, NA	Repat	Yes	
Lyman Abbott	Walker	Robert	G	2d Cook/Bal	Mer. Marine	Z 380 251	33	USCG Rcd	WIA RS	Yes	[redacted]
Lyman Abbott	Wells	Russell	Ross	GM3c	V-6, USNR	329 12 30		RG 38, NA	Repat	Yes	
Lyman Abbott	White	James	C	Ch Steward	Mer. Marine	Z 306 616	38	USCG Rcd		Yes	[redacted]
Lyman Abbott	Wilcox	Francis	Edgar	S2c	V-6,USNR	245 29 98		RG 38, NA	Repat	Yes	
Lyman Abbott	Wisniewski	Stanley	Adam	S2c	V-6,USNR	245 43 86		RG 38, NA	Repat	Yes	
Lyman Abbott	Yorecka	Milton		S2c	V-6,USNR	800 04 11		RG 38, NA	Repat	Yes	
Lyman Abbott	Ziminski	Walter	Francks	S2c	V-6,USNR	609 06 25		RG 38, NA	Repat	Yes	
On the Dock	Johnson	Charles		CPL	US Army	371 3833		Phone Call	Died 1979	Yes	Claim Open
Samuel J. Tilden	Adams	Claude	Jepthe Jr	GM3c	V-3, USNR	656 18 06	6/23/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Allison	Orin	C	Fireman/WT	Mer. Marine	Z 302 265		USCG Rcd	MIA PD	NA	[redacted]
Samuel J. Tilden	Alvarado	Delfin		2d Asst Engr	Mer. Marine	Z 55 700		USCG Rcd	MIA PD	NA	[redacted]
Samuel J. Tilden	Anderson	J	D	Ens	D-V(S), USNR		6/23/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Aponte	Juan	E	1st Asst Engr	Mer. Marine	Z 90 017		USCG Rcd	MIA PD	NA	[redacted]
Samuel J. Tilden	Appleton	Earl	R	3d Mate	Mer. Marine	276 109		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	Arkebower	Byron	T	Ch Engr	Mer. Marine	107 454		USCG Rcd	WIA Repat	Probable	[redacted]
Samuel J. Tilden	Barrett	Robert	Miles	SM3c	USN	386 20 27	7/7/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Barton	George	B	O.S.	Mer. Marine	Z 356 442		USCG Rcd	WIA	Probable	[redacted]
Samuel J. Tilden	Benedetto	Vito	Joseph	Messman	Mer. Marine	Z 237 893		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	Blair	Joseph	L	Master	Mer. Marine			USCG Rcd	Repat	Probable	
Samuel J. Tilden	Boczek	John	J	Fireman/WT	Mer. Marine	Z 355 356		USCG Rcd	MIA PD	NA	[redacted]

Samuel J. Tilden	Brown	Fred	W	Messman	Mer. Marine	Z 7 702		USCG Rcd	MIA PD		[redacted]
Samuel J. Tilden	Butts	Harold	J	O.S.	Mer. Marine	Z 356 539		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	Callis	James	M	Ch Mate	Mer. Marine	031 577		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	Carafotes	Charles		S1c	V-6, USNR	761 87 55	7/7/43	RG 38, NA	WIA Repat	Possible	
Samuel J. Tilden	Chernich	Peter	A	Jr. Engr	Mer. Marine	Z 407 179		USCG Rcd	MIA PD	NA	[redacted]
Samuel J. Tilden	Clurman	Samuel		A.B.	Mer. Marine	Z 65 868		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	Decker	George	Lewis	Unk	USN 1	800 31 18		USCG Rcd	Unk	Possible	
Samuel J. Tilden	Delegante	Alfred	Francis	S1c - PAX	USN 1	810 76 98		USCG Rcd	Unk	Possible	
Samuel J. Tilden	Dial, Jr.	Virgil	E	2d Cook	Mer. Marine	Z 357 832		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	DiGiroloma	Stephen	D	Oiler	Mer. Marine	Z 162 482		USCG Rcd	WIA Repat	Probable	[redacted]
Samuel J. Tilden	Donnelly	Robert	F	Engr Cadet	Mer. Marine	Z 333 542		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	Feliciano	Armando		Utility man	Mer. Marine	Z 401 001		USCG Rcd	Not at Bari	NO	[redacted]
Samuel J. Tilden	Ferenc	Josef		A.B.	Mer. Marine	Z 238 286		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	Files	Robert	A	2LT	US Army	O-1586573		USCG Rcd	Unk	Possible	
Samuel J. Tilden	Gallant	Harry	Robert	SM3c	V-6, USNR	377 94 70	7/7/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Gonzalez	Antonio		Messman	Mer. Marine	Z 401 866		USCG Rcd	Not at Bari	NO	[redacted]
Samuel J. Tilden	Hendy	Frederick	A	Bosun	Mer. Marine	Z 218 590		USCG Rcd	MIA PD	NA	[redacted]
Samuel J. Tilden	Hogen	Richard	E	Asst Cook	Mer. Marine	Z 357 777		USCG Rcd	WIA Repat	Probable	[redacted]
Samuel J. Tilden	Howard	Albert	E	O.S.	Mer. Marine	Z 249 631		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	Humpheries	George	Badger	GM3c	V-3, USNR	657 50 06	6/23/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Hupy	Lester	B	Steward	Mer. Marine	Z 293 277		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	Jorgenson	Robert	O	O.S.	Mer. Marine	Z 355 793		USCG Rcd	WIA DH	NA	[redacted]
Samuel J. Tilden	Kemp, Jr.	Albert	E	2d Mate	Mer. Marine	Z 170 693		USCG Rcd	WIA Repat	Probable	
Samuel J. Tilden	Kenney	Gordon	P	Oiler	Mer. Marine	Z 341 465		USCG Rcd	WIA Repat	Probable	[redacted]
Samuel J. Tilden	Keys	William	Howard	S1c	USN	256 79 59	7/7/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Koscal	Severn	C	Wiper	Mer. Marine	Z 336 304		USCG Rcd	WIA Repat	Probable	[redacted]
Samuel J. Tilden	Krause	Frank	M	O.S.	Mer. Marine	Z 384 018		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	Krupa	Henry	J	Fireman/WT	Mer. Marine	Z 273 149		USCG Rcd	MIA PD	NA	[redacted]
Samuel J. Tilden	Langley	Eddie	Jackson	S1c	V-6, USNR	656 66 95	6/23/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Leiner	Alexander		Carpenter	Mer. Marine	Z 303 191D1		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	Lund	John	R	Messman	Mer. Marine	Z 268 917		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	Madill	J	Stanley	Jr Asst Purser	Mer. Marine	255 120		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	Martin	Edward	Augustus	S1c	V-6, USNR	205 39 23	7/7/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Martin	Windel	Walter	S1c	V-6, USNR	617 75 42	6/23/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Martinez	Francisco		Wiper	Mer. Marine	Z 247 337		USCG Rcd	Repat	Probable	[redacted]

Samuel J. Tilden	McCoskey	Maurice	P	Deck Engr	Mer. Marine	Z 103 993	Left 7/43	USCG Rcd	Not at Bari	NO	[redacted]
Samuel J. Tilden	Meglio	Angelo		Oiler	Mer. Marine	Z 160 541		USCG Rcd	Not at Bari	NO	[redacted]
Samuel J. Tilden	Mitchell	Thomas	Howard	GM3c	USN	272 73 32	7/7/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Morse	Winston	Elbert	S1c	V-6, USNR	823 31 35	7/7/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Murphy	Joseph	W	Messman	Mer. Marine	Z 389 571		USCG Rcd	WIA Repat	Probable	[redacted]
Samuel J. Tilden	Nash	Albert		O.S.	Mer. Marine	Z 269 526		USCG Rcd	WIA Repat	Probable	[redacted]
Samuel J. Tilden	Nelson	Raymond	Edward	GM3c	USN	386 20 27	7/7/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Petroski	Edward	L	Radio Opr	Mer. Marine	Z 390 721		USCG Rcd	Repat	Probable	[redacted]
Samuel J. Tilden	Queen	D	B	S1c	V-6, USNR	657 40 61	7/7/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Romey	Morris	Joseph	RM3c	V-6, USNR	662 94 63	7/21/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Saluk	Roman		Ch Cook	Mer. Marine	Z 407 291		USCG Rcd	WIA Repat	Probable	[redacted]
Samuel J. Tilden	Shipman	Odell		S1c	V-6, USNR	677 09 97	7/7/43	RG 38, NA	WIA Repat	Possible	
Samuel J. Tilden	Shultz	Ralph	Edgar	S1c	V-6, USNR	552 61 07	6/23/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Stokes	William	Donald	S1c	V-6, USNR	668 23 34	6/23/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Tardif	Joseph	J	O.S.	Mer. Marine	Z 283 161		USCG Rcd	Not at Bari	NO	[redacted]
Samuel J. Tilden	Termotto	Peter	Anthony	S1c	V-6, USNR	710 26 27	6/23/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Tone	Francis	B	Engr Cadet	Mer. Marine	274 650		USCG Rcd	MIA PD	NA	[redacted]
Samuel J. Tilden	Turner	James	Hartford	S1c	V-6, USNR	634 53 89	7/7/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Van Note	Robert	Samuel	S1c	V-6, USNR	826 23 91	6/23/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Viereck	Philip	George	S1c	V-6, USNR	817 32 02	6/23/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Waltenmeyer	George	Milland	S1c	USN	244 33 17	7/7/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Waters	William	Walter	S1c	V-6, USNR	605 69 18	6/23/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Weimer	John		Deck Engr	Mer. Marine	Z 116 673		USCG Rcd	WIA Repat	Probable	[redacted]
Samuel J. Tilden	White	Benjamin	Charles	S1c	V-6, USNR	821 51 70	6/23/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Whitley	John	Fillmore J.	S1c	V-6, USNR	826 23 12	6/23/43	RG 38, NA	Repat	Possible	
Samuel J. Tilden	Witkowski	Leonard		S1c	V-6, USNR	805 25 77	7/7/43	RG 38, NA	WIA Repat	Possible	
Samuel J. Tilden	Young	Lawrence	William	S1c	V-6, USNR	612 62 87	7/7/43	RG 38, NA	Repat	Possible	

Key to Bari, Italy List Abbreviations

DFW - Died from Wounds

DH - Died in Hospital

Exposed? - Refers to confirmed mustard burns (Yes, No, Unlikely, Possible, or Probable)

KIA - Killed in Action

MIA - Missing in Action

NA - National Archives

PD - Presumed Dead

Repat - Repatriated to the United States

RG - Record Group

RS - Returned to ship

USCG Rcd - US Coast Guard Records

WIA - Wounded in Action

Note: Some U.S. Navy Armed Guards were reassigned to other ships for duty.

Notes of Explanation on the

List of Personnel at Bari, Italy During the Raid on December 2, 1943

1. This data was assembled mainly from files from the National Archives and the U.S. Coast Guard. No lists of passengers aboard or others present in the harbor that night have been located. Research yielded lists for Navy gunnery (U.S. Navy Armed Guards) personnel and Merchant Marine sailors aboard the ships and these personnel were added to the list. A list of Army personnel was located in the records for the S.S. *John L. Motley,* but whether these personnel were aboard at the time of the attack is not clear. The names are in this listing, but do not contain identifying service numbers. Identity of a few of the cargo security officers has been found and they are also listed. The source file is a Microsoft EXCEL spreadsheet.

2. The list is as accurate as can be assembled at the present time. It may omit personnel or might contain names of a few who were not in the harbor that night. One of the major problems with this incident is that at least three of the ships carried high explosives and exploded after being bombed. Consequently, there were huge numbers of casualties in the harbor resulting in utter chaos. Adding to that situation was the fact that one of the ships carried a SECRET cargo of mustard gas bombs. Casualties were taken to any one of four U.S. or Allied hospitals. There were few or no survivors from some of the vessels depending on their crew's and the U.S. Navy Armed Guards' shore leave status at the time of the attack. Hospital records for the Allied hospitals are not available and the single U.S. hospital's files have not yet been located. According to a book about the incident, hospital records at British hospitals were changed to remove references to mustard gas by order of Sir Winston Churchill.

3. It should be noted that the column headings are only on the first page, but are generally self-explanatory. The one anomaly is that under the column headed "Date Attached," one of two pieces of data might be found. In the case of the U.S. Navy Armed Guard gun crews the date they were attached to the ship is listed (if available). For the Merchant Marine sailors, their age at the time is given. The last page is a key to abbreviations used in the list. Service numbers were included for each military person (if found in documentation), but for the Merchant Marine sailors, their certificate of identification number is in the service number column. Social Security Account Numbers (SSAN) for the Merchant Marine were extracted from Shipping Articles. In three cases, the fact that personnel were discharged from the ship prior to arrival at Bari is reflected (*SS John Harvey*).

4. This list was assembled by Colonel Fred Kolbrener and Mrs. Cynthia Hansen, Information Resource Management Office, Office of the Under Secretary of Defense for Personnel and Readiness. They may be reached at (703) 696-8710 if you require any more information.

12:29 PM
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TAB B8

THE SECRETARY OF DEFENSE

WASHINGTON, DC 20301-1000

07 JAN 1994

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
DIRECTOR, DEFENSE RESEARCH AND ENGINEERING
ASSISTANT SECRETARIES OF DEFENSE
COMPTROLLER
GENERAL COUNSEL
DIRECTOR, OPERATIONAL TEST AND EVALUATION
ASSISTANTS TO THE SECRETARY OF DEFENSE
DIRECTOR OF ADMINISTRATION AND MANAGEMENT
DIRECTORS OF THE DEFENSE AGENCIES

SUBJECT: DoD Human Radiation Research Review

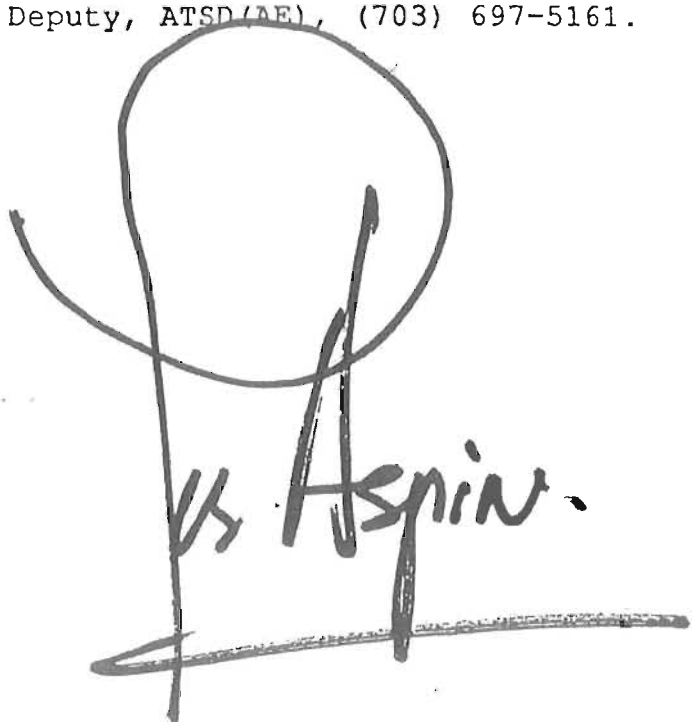
I have appointed Dr. Harold P. Smith, Assistant to the Secretary of Defense (Atomic Energy), as the DoD-wide focal point for the compilation and review of all Defense Department data or information related to ionizing radiation research with human subjects. He will work with the Interagency Working Group on this issue and coordinate our efforts with those of the other relevant agencies. I want to move quickly and thoroughly on this matter -- it should be given high priority.

The ATSD(AE) will chair a DoD working group to structure the process for data collection and analysis and development of a DoD overall plan of action. He will also be responsible for determining the outside organizations with which the Department has worked that might have such records, and the best way to preserve those records and obtain them for review. This ATSD(AE) led effort will be under the overall guidance of John Deutch, who is the senior department official responsible for this matter.

I request you take immediate steps to ensure that any documents or records in your office related to human ionizing radiation research are retained and not destroyed. This includes all letters, memoranda, reports, logs, handwritten notes, written procedures, and all other writings, as well as photographs, maps, and machine-readable materials. Your search should include all file indices of records retired to the Federal Records Center at Suitland, MD, or a search of those files at Suitland as appropriate. Please advise all persons responsible for routine document disposal procedures of the need to preserve these records.

Veterans who participated in atmospheric nuclear testing and the occupation of Hiroshima and Nagasaki are already included in the national Nuclear Test Personnel Review (NTPR) program and are not part of this effort.

Inquiries regarding this matter should be directed to Dr. Gordon K. Soper, Principal Deputy, ATSD(AE), (703) 697-5161.



TAB B9

MEMORANDUM FOR USD(P&R)
THROUGH PD(USD)

FROM: DASD(R&R)
Prepared by Norma St. Claire

SUBJECT: Consolidation Programs Collecting Data on Human Experimentation - ACTION MEMORANDUM

PURPOSE: To forward recommendation on consolidation of programs

DISCUSSION: You requested that we prepare a recommendation for consolidating programs on collection of data on human experimentation and exposures. The attached package provides the recommendation and an estimate of the required funding.

COORDINATION(S):

MEMORANDUM FOR DEPUTY SECRETARY OF DEFENSE

SUBJECT: Consolidating Programs Collecting Data on Human Experimentation

Secretary Brown has expressed distress that the VA does not yet have full information on veterans' exposures in the chemical, biological, and radiation experiments conducted by DoD in the decades following World War II. In part, the delays are unavoidable: because records are neither centrally located nor indexed, millions of pieces of paper and microfiche must be reviewed individually. Additional delays, however, result from the somewhat disjointed approach DoD has taken in our efforts to locate and review records. I recommend that we consolidate those efforts under the ATSD(AE), with sufficient resources to complete the work by the end of FY 1996.

Currently, three separate DoD programs collect information on human exposures.

1. Nuclear Exposures. The Nuclear Test Personnel Review was started in 1978, and has spent $200 million to date. It reports to the ATSD(AE).

2. Chemical/Biological Weapons Exposures. The effort was started in March of 1993, and has spent $100 thousand to date. My office has oversight for this effort.

3. Ionizing Radiation Exposures. The effort was started in January of 1994, and is funded for $13.2 million (FY 94 through FY 99). It reports to the ATSD(AE).

All three efforts collect and automate similar information. Many of the records on ionizing radiation and chemical and biological weapons experiments are stored in the same repositories.

I recommend that you consolidate all responsibility for search and automation of human experimentation records under the ATSD(AE), with $15 million additional funding in FY 1995-1996 ($7 million in FY 1995). That funding includes $8 million to search and catalogue the records, and $7 million to create and maintain automated data bases.

The attached memorandum from the Director, Joint Staff, indicates that the US Army and US Navy support consolidation of these efforts.

CHEMICAL AND BIOLOGICAL EXPOSURES
BACK-UP MATERIALS

Tab 1: Clinton Letter to Congressman Browder, February 19, 1993

Commitment to locate, treat, and provide benefits to veterans exposed to chemical weapons during human experimentation.

Tab 2: Perry Letter to Congressman Montgomery, March 9, 1993

Commitment to declassify chemical weapons testing information on human exposures and to locate and provide information on individuals exposed.

Tab 3: Perry Memorandum to Department, March 9, 1993

Guidance to Department to declassify information and to locate and provide information on individuals exposed.

Tab 4: Clinton Letter to Congressman Goss, January 31, 1994

Assurances that we have not forgotten about the chemical weapons exposures.

Tab 5: Memoranda from Army, and Navy, April, 1994

Concerns about lack of resources to adequately search records to identify individuals exposed to chemical and biological agents. (In response to proposed coordination package that would have confirmed the responsibilities of the Military Departments to search records and identify individuals exposed.)

Tab 6: Major DoD Repositories of Records on Human Experimentation Programs

Description of materials stored at each site.

FEB 23 1993

THE WHITE HOUSE

WASHINGTON

February 19, 1993

Dear Glen:

Thank you for your letters concerning trade and mustard gas.

First, let me address your concerns of the impact of the Uruguay Round on the textile industry. I have asked Ambassador Mickey Kantor, the U.S. Trade Representative, to conduct a thorough study of all aspects of the GATT negotiations. We will, of course, look at the textile issue, as well as the still incomplete negotiations on market access and agriculture, and the rule making provisions of the draft agreement that was prepared by GATT Director-General Arthur Dunkel.

As part of this review, we look forward to working closely with you and your colleagues in Congress and in the industry, as well as with other affected groups. I know that you hope, as I do, for a successful Uruguay Round that provides economic benefit to all Americans.

Secondly, I can assure you that the Department of Veterans Affairs (VA) is diligently attempting to identify veterans who may have been affected in mustard gas experiments during World War II. They are in the process of expanding the list of recognized long-term effects of mustard gas exposure and have relaxed requirements for evaluating mustard gas-related compensation claims. VA has established a toll free number (800-827-1000) that veterans or survivors of veterans who may have been exposed can use to contact the Department.

As you are aware, VA contracted with the National Academy of Science for the study that resulted in the report that you cited in your letter. Since that report was issued, VA has requested the Department of Defense (DoD) to cooperate and assist

03/08/93 09:55

in its effort to locate and provide benefits to affected veterans by providing the names, service numbers, type of test and the type of agent used during these experiments. They have also asked DoD to release the affected personnel from their oath of secrecy so that they are free to come forward and file a claim. Further, the Secretary of Veterans Affairs, Jesse Brown, has expressed his personal commitment to insure that the service men and women included in these experiments are identified and receive the care that they deserve.

I am informed that the House Veterans Affairs Subcommittee on Compensation, Pension, and Insurance will hold a hearing on March 10, 1993 at which both the Departments of Defense and Veterans Affairs will testify about plans for resolving this unfortunate period in our military history.

Be assured this will not be treated as business as usual. I have directed both Secretaries to expedite the process of locating, treating and providing other benefits that these loyal citizens have earned.

With best wishes,

Sincerely,

Bill

The Honorable Glen Browder
House of Representatives
Washington, D.C. 20515

THE DEPUTY SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

9 MAR 1993

Honorable G. V. (Sonny) Montgomery
Chairman, Committee on Veterans' Affairs
House of Representatives
Washington, D. C. 20515

Dear Mr. Chairman:

Thank you for your letter regarding the report "Veterans at Risk: The Health Effects of Mustard Gas and Lewisite," issued by the National Academy of Sciences Institute of Medicine. I read your letter, and Mr. Principi's, with great concern. As a result, I have taken action to respond to these critical issues affecting the health and entitlements of past service members, and to initiate full cooperation with the Department of Veterans' Affairs.

I have enclosed a copy of a memorandum to the Secretaries of the Military Departments, my staff, and other Department of Defense agencies, addressing the issues outlined in your letter and directing them to cooperate to the fullest in making this information accessible to the Department of Veterans' Affairs. I have also directed the Assistant Secretary of Defense (Force Management & Personnel) (ASD(FM&P)) to head a task force to monitor the performance and completion of these actions. I have directed that information be provided to the ASD(FM&P) by July 31, 1993. We plan to forward information to the Department of Veterans' Affairs as soon as possible. In addition, I am taking action to have this information made public so that past service members that have been hesitant to seek assistance will no longer be constrained by non-disclosure restrictions, such as written or verbal oaths of secrecy, concerning their exposure to chemical weapons substances.

As you know, I take these issues very seriously. The Department of Defense is committed to honoring the service and sacrifice made by the men and women who are serving, and have served, in the nation's military. We will continue to make every effort to cooperate with the Department of Veterans' Affairs in responding to the needs and providing entitlements to those who have served. Members of my staff will continue to work with your staff to ensure that we are responsive to the concerns you have raised.

Sincerely,

William J. Perry

Enclosure:
As Stated

THE DEPUTY SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

8 MAR 1993

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
ASSISTANT SECRETARIES OF DEFENSE
COMPTROLLER
GENERAL COUNSEL
INSPECTOR GENERAL
DIRECTOR OF OPERATIONAL TEST AND EVALUATION
ASSISTANTS TO THE SECRETARY OF DEFENSE
DIRECTOR OF ADMINISTRATION AND MANAGEMENT
DIRECTORS OF THE DEFENSE AGENCIES

SUBJECT: Chemical Weapons Research Programs Using Human Test Subjects

On January 6, 1993, the National Academy of Sciences Institute of Medicine published a report titled "Veterans at Risk: The Health Effects of Mustard Gas and Lewisite." Based on the findings of the report, Congressional inquiries, and requests from the Department of Veterans' Affairs, I am releasing any individuals who participated in testing, production, transportation or storage associated with any chemical weapons research conducted prior to 1968 from any non-disclosure restrictions or written or oral prohibitions (e.g., oaths of secrecy) that may have been placed on them concerning their possible exposure to any chemical weapons agents. I am also declassifying documents for all chemical weapons research studies conducted prior to 1968, with respect to the issues of personnel health and safety as specified below:

a. The location of each U. S. chemical weapons research program (chamber, field and patch) which used human subjects, the type of chemical(s) tested (e.g., sulfur or nitrogen mustard), and the start and finish dates of each test including preliminary research;

b. Identification of each military unit stationed at each research site during the testing period, and the name, service or social security number, and military unit of each individual known to have participated in a chemical weapons research or testing program (chamber, field, and patch); and

78073

c. The location of all facilities at which individuals participated in the production, transportation or storage of these chemical agents to include: the dates on which storage or production was begun and terminated; identification of each military unit stationed at each storage or production site; and the name, service or social security number, and military unit of each service member known to have participated in production, transportation, or storage of these chemical agents.

Secretaries of the Military Departments are tasked with the following actions:

a. Initiate procedures to fully cooperate in locating and providing the above specified information. Please ensure that the information is provided in such a way as to maintain the integrity of our records and meet Privacy Act requirements.

b. Initiate procedures to declassify documents with respect to the issues listed above for chemical weapons research studies conducted after 1968, including studies performed in support of other Federal agencies; and, release participants from any non-disclosure restrictions (e.g. oaths of secrecy) that may have been placed on them concerning their possible exposure to any chemical weapons agents during testing, production, or transportation of such chemicals. If there are any reasons that would prevent declassification of this material, those reasons should be provided to the Assistant Secretary of Defense (Force Management and Personnel) (ASD(FM&P)), in writing.

Information on the location, chemicals tested, and dates of each chemical weapons research program should be provided immediately. Personnel information should be provided to the ASD(FM&P) by July 31, 1993. Our goal is to provide information to the Department of Veterans' Affairs as soon as possible.

I fully recognize that some of this information may not be readily available. I expect a comprehensive search, however, to ensure that our current and former members receive the assistance and support to which they are entitled. I am directing the Assistant Secretary of Defense (Force Management and Personnel) to establish a task force to monitor the status of these actions. By March 31, Secretaries of the Military Departments should designate points of contact to Ms. Norma St. Claire, OASD(FM&P), (703) 696-8710.

William J. Perry

THE WHITE HOUSE

WASHINGTON

January 31, 1994

Dear Representative Goss:

I appreciate your recent letter concerning actions we are taking to compensate veterans involved in World War II experiments with mustard gas. The parallels with the recently uncovered radiation experiments are undeniable. I am strongly committed to finding the truth and dealing fairly with our veterans in both these areas.

The regulatory process regarding the mustard gas tests has been very lengthy. However, I am pleased to tell you that the Office of Management and Budget has now cleared regulations to permit the Department of Veterans Affairs to complete the processing of the veterans' claims for compensation. The proposed rules will be published for public comment shortly.

I also recognize the great importance of identifying and contacting those servicemen and women who participated in the mustard gas tests. The Secretary of Defense is working closely with the Secretary of Veterans Affairs to make pertinent DOD records available quickly. This effort is aimed at helping these deserving veterans apply for compensation.

Your energetic and persistent work on this issue has clearly made a tremendous difference for many men and women who will finally receive the compensation to which they are entitled. I will count on your continued support as we now pursue the truth with respect to other testing and experimentation in past decades.

Sincerely,

Bill Clinton

The Honorable Porter J. Goss
House of Representatives
Washington, D.C. 20515

HEADQUARTERS, DEPARTMENT OF THE ARMY
Assistant Deputy Chief of Staff for Operations and Plans
(Joint Affairs)

ARMY PLANNER DAMO-ZC
MEMO NO. 222-94
5 April 1994

MEMORANDUM FOR THE DIRECTOR FOR STRATEGIC PLANS AND POLICY (J-5), JOINT STAFF

SUBJECT: Proposed SECDEF Memorandum on Chemical and Biological Weapons Research Using Human Test Subjects

1. The Army cannot concur with the proposed memorandum as written (J-5 1837/424-01). The Army supports the need for the disclosure of information pertaining to human health and safety, but cannot support the implementation of this program as outlined in the proposed memorandum.

2. The Army recommends that the DoD management system established for human radiation testing information be expanded to include chemical and biological data. There are many similarities between the two programs. A combined program will ensure that DoD speaks with a single voice. It will make the most effective use of our limited resources, and provide the best support to public inquiries.

3. The tasking in the proposed memorandum exceeds the scope of the DoD role in the radiation testing issue. In some cases, Army and Navy data is intermingled in Army records. The Department of Agriculture, predecessors to the Department of Health and Human Services, and other governmental agencies were involved in this testing, and may have records of interest to the public. The system must be prepared to respond to the Freedom of Information Act requests for copies of actual reports that will follow the release of names.

4. The public affairs impact of the declassification of the biological test data may rival that of the Department of Energy radiation testing disclosures. We must be prepared for the public reaction, have a contingency plan to respond to a large volume of telephone calls, and high media interest.

5. The program cannot be adequately managed through the Chemical Weapons Exposure Study Task Force (CWEST), as proposed. The CWEST members do not have the requisite authority to task and commit resources for their Services. This program requires a management structure like the radiation testing program. It needs a senior-level steering group to initiate, focus, and monitor efforts; and subordinate action officer task forces to coordinate Service actions. Execution and interface with the

public must be managed by a full-time staff, like the Radiation Experiments Analysis Command Center.

6. The declassification guidance for biological warfare information needs to be given explicitly, rather than referring to previous chemical warfare declassification policy. The Army can assist by developing a suggested declassification language. Declassification should be coordinated with the Director for Negotiations and Implementation, Office of the Assistant Secretary of Defense for Nuclear Security and Counterproliferation, and the Department of State, due to its potential impact on arms control negotiations, and other international interests.

7. Release of the lysergic acid diethylamide (LSD) testing information must be expanded to include all other similar experiments. There were at least 114 additional FDA-approved and experimental chemical agents and drugs used in the human testing program between 1957 and 1975.

8. Centralized management at DoD level, and a management system like that in place for the DoD radiation information, will be key to the success of this program.

9. The Army point of contact is LTC Jackson, ODCSOPS, DAMO-FDB, (703) 697-1033.

HENRY A. ZIMON
Colonel, GS
Deputy to the ADCSOPS(JA)

DJS/N

DEPARTMENT OF THE NAVY
Office of the Chief of Naval Operations
Washington, D.C. 20350-2000

N86D2
NPM 140-94
01 April 1994

MEMORANDUM FOR THE DIRECTOR FOR STRATEGIC PLANS AND POLICY
(J-5/WTC) JOINT STAFF

Subj: PROPOSED SECDEF MEMORANDUM ON CHEMICAL AND BIOLOGICAL WEAPONS RESEARCH USING HUMAN TEST SUBJECTS J-5 1837/424-01 (U)

1. (U) Navy does not concur with the proposed memorandum that directs the Chemical Weapons Exposure Study Task Force (CWEST) to collect data on human testing.

2. (U) The CWEST was formed to identify the location of the records containing the pertinent test data. Since the information being sought concerned the effect chemical and biological agents had on humans, the CWEST membership came primarily from the medical community. As records were located, it was discovered that the custodians were not always from the medical arena. For example, many of the Navy's records are maintained by members of the Research and Development (R&D) community. The office of Assistant Secretary of the Navy, Research, Development and Acquisition (ASN(RD&A)) was not represented on the CWEST.

3. (U) Human testing is a politically sensitive topic and it would be prudent to consolidate efforts in one office allowing the Department of Defense to speak and act with one voice. The

Radiation Experiments Analysis Command Center (REACC) was created by the Office of the Assistant to the Secretary of Defense (Atomic Energy) (OASD(AE)) and collects the same type of data for radiological tests on humans. The current staff includes researchers (10), customer service representatives (10), data processing specialists (5) and administrative support. Initial start up costs for REACC are $3.7M. It appears that expanding REACC's charter to include chemical and biological data would be less expensive than attempting to modify the CWEST to complete the task.

---

4. (U) Incorporation of the above recommendation would satisfy Navy concerns.

R. F. JOHNSON
Captain, U.S. Navy
Assistant to the CNO
for JCS Matters

RECORDS REPOSITORY CONTENTS OF SITES VISITED

Dugway Proving Ground

Technical Library holds over 60,000 documents, mostly paper.
Records Holding Area Contains Over 400 Boxes of Material Including Scientific Notebooks (Over 6,000 paper records)

Aberdeen Proving Ground/Edgewood Arsenal

8,465 linear feet (filing cabinets and boxes), paper
29 linear feet index cards
6,776 reels of microforms
288 gigabytes electronic records
Some of this documentation is located at Rocky Mountain Arsenal

U. S. Army Training Command Chemical Center, Fort McClellan, AL

735 linear feet (filing cabinets and boxes), paper
Large Library collection of books, manuals, etc.

U. S. Army Medical Research and Development Command, Ft. Detrick, MD

100 linear feet (filing cabinets and boxes), paper
7000 sets of microfiche
200 minutes of film media

Naval Research Laboratory

11 Scientific Notebooks from 1942-45 (2,300 names extracted)
Large volume of technical reports, papers, etc.

Washington National Records Center, Suitland, MD

13 Boxes of Army Surgeon General Files
Over 100 linear feet (filing cabinets and boxes) of Army Chemical Corps Records

National Personnel Records Center, St. Louis, MO

Extensive collection of personnel and organizational files from early 1900's to present
fire in 1973 destroyed: Army personnel records, 1912 - 1960
USAF personnel records, 1947-1963
(to date, have completed about 20% reconstruction of records)
Extensive collection of morning reports and unit information

University of Chicago

82 Boxes of Records from Vice President for Special Projects from WWII DoD Contracts

CBIAC (Chemical Warfare/Chemical & Biological Defense Information Analysis Center) Edgewood, MD

Responsible for collection, review, analysis, appraisal and summary of available CW/CBD information and data and for providing these data to interested users in support of DoD CW/CBD research and development.

Rocky Mountain Arsenal, Denver, Colorado

10,184 linear feet paper
29 linear feet index cards
6,776 reels of microforms

THE JOINT STAFF
WASHINGTON, DC

Reply ZIP Code:
20318-0300

DJSM-377-94
7 April 1994

MEMORANDUM FOR THE UNDER SECRETARY OF DEFENSE FOR PERSONNEL AND READINESS

Subject: Proposed Secretary of Defense Memorandum on Chemical and Biological Weapons Research Using Human Test Subjects

1. As requested,* the Joint Staff has reviewed the subject memorandum and cannot concur in it as written. We support the need for the disclosure of information pertaining to human health and safety but not the method of implementation.

2. The US Army and US Navy recommend that the DOD management system established for human radiation testing information be expanded to include chemical and biological data. Many similarities exist and will make the most effective use of limited resources. Both Services agree that the current Chemical Weapons Exposure Study Task Force cannot manage the new expanded task that includes biological warfare agents and hallucinogenic compounds.

3. The public affairs impact of declassification of the biological test data requires an aggressive public affairs campaign. Open air testing of live biological simulants in the public domain has lead to previous litigation. The Joint Staff supports the disclosure of information to the public, but a proper management system must be established.

R. C. MACKE
Vice Admiral, USN
Director, Joint Staff

Reference:
* OUSDP&R memorandum, 24 March 1994, "Coordination on Proposed SECDEF Memorandum on Chemical and Biological Weapons Research Using Human Test Subjects"

TAB B10

PORTER GOSS
7TH DISTRICT, FLORIDA

430 CANNON BUILDING
WASHINGTON, DC 20515-0913
(202) 225-2536

COMMITTEES:
RULES
STANDARDS OF OFFICIAL CONDUCT

Congress of the United States
House of Representatives
Washington, DC 20515-0914

DISTRICT OFFICES:
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FT. MYERS, FL 33901
(813) 332-4677

3301 TAMIAMI TRAIL EAST
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NAPLES, FL 33962
(813) 774-8060

PUNTA GORDA
(813) 639-0041

January 4, 1994

The Honorable Bill Clinton
President of the United States
The White House
Washington DC 20500

Dear Mr. President:

As Americans react in horror to revelations about secret government experiments on unsuspecting citizens, your Administration has jumped to action with commendable speed and appropriate pledges to right the wrongs.

Your senior adviser, George Stephanopoulos, was quoted in this week's Washington Post as saying: "If these people were tested against their will. . . certainly something must be done to right that." Energy Secretary Hazel O'Leary has said "We cannot turn our back on our responsibility here. We have to do whatever is needed to make these people whole again." I agree wholeheartedly and am glad that timely and meaningful follow-up seems to be in the works.

In the process of reaching out to those people whose lives were forever altered by such tests, I hope you will not forget the plight of another group of American citizens who also became unwitting guinea pigs and suffered at the hands of their government. I refer to the more than 1700 naval trainees (and perhaps thousands of other American military personnel) who were used in secret Mustard Gas experiments conducted by the Department of Defense during World War II and later. These men, mostly 17 and 18 years old, were used in full-body gas chamber experiments designed to study the effects of lethal Mustard Gas, without their advance knowledge or consent -- and without proper medical follow-up or assistance. In addition, they were sworn to secrecy and threatened with courts martial if they divulged the nature of their exposure.

In its final report, "Veterans At Risk," issued in January of 1993, the National Academy of Science's Institute of Medicine concluded that "Although the human subjects were called 'volunteers,' it was clear from official reports that recruitment of the WWII human subjects, as well as those in later experiments, was accomplished through lies and half-truths." The report continues: "Most appalling was the fact that no formal, long-term follow-up medical care or monitoring was provided for any of the WWII human subjects . . ." Finally, the report recognizes that: "There can be no question that some veterans, who served our country with honor and at great personal cost were mistreated twice -- first, in the secret testing and second, by the official denials that lasted for decades."

610

For nearly 50 years, these men suffered in silence. Finally, after countless rebuffs by the federal bureaucracy, the Bush Administration opened the door for providing assistance and we have come to the point where the federal government has promised additional action. But even this process has become bogged down and real relief has been painstakingly slow in coming -- in fact, for most of these veterans, there has been no relief to date. Final rules for handling of these claims are still mired in red tape at OMB, even though your Department of Veterans Affairs announced one year ago that help was on its way.

As you wrote in a February 19, 1993 letter on the subject of righting the wrongs committed on these World War II veterans by the U.S. government, "be assured that this will not be treated as business as usual." While I am impressed with the speed with which your Administration has released information on the radiation experiments conducted on civilians, when compared with the bureaucratic stonewalling that has occurred in the case of Mustard Gas testing, any reasonable observer would conclude that there is a double standard for our men and women in uniform. As these veterans continue to receive form letters of denial from their government, should they assume that civilians exposed to radiation are a higher priority than veterans lied to by their government and exposed to lethal chemical gases?

Mr. President, I urge you to use the weight of your office to speed along recognition of these men, who continue to suffer from the actions of their government as they find obstacles at every turn in seeking recognition and medical attention. In addition to expediting final publication of the new VA regulations, I request your support for my legislation, HR 1055, to help locate and provide commendation for these men. This bill has more than 30 cosponsors, including the Chairman of the House Veterans Affairs Committee, Rep. Sonny Montgomery, but it remains dormant in a House Armed Services subcommittee.

Our men and women in uniform need to know that their government stands behind them and will look out for their best interests. And, when a wrong has been committed, these brave citizens need to know the government will do its best to make things right. We must not have a double standard for our armed services.

I appreciate your consideration of this request.

Sincerely,

Porter Goss
Member of Congress

PORTER GOSS
14TH DISTRICT, FLORIDA

330 CANNON BUILDING
WASHINGTON, DC 20515-0913
(202) 225-3536

COMMITTEES:
RULES
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JAN 05 1994

Congress of the United States
House of Representatives
Washington, DC 20515-0914

DISTRICT OFFICES:
2000 MAIN STREET
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FT. MYERS, FL 33901
(813) 332-4677

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NAPLES, FL 33962
(813) 774-2080

PUNTA GORDA
(813) 639-0051

January 4, 1994

Congressman Ike Skelton
Chairman/Subc. On Military Forces & Personnel
2120 Rayburn H.O.B.
Washington, DC 20515

Dear Mr. Chairman:

Given your past interest and involvement with this important issue, I hope you will take a careful look at the enclosed letter I have sent to President Clinton.

I am eager to ensure that the federal government makes good on its commitments without adopting an arbitrary double standard.

Thank you for you consideration and I appreciate any suggestions or assistance you might offer.

Kind regards,

Porter Goss
Member of Congress

enclosure

THE WHITE HOUSE

WASHINGTON

January 31, 1994

Dear Representative Goss:

I appreciate your recent letter concerning actions we are taking to compensate veterans involved in World War II experiments with mustard gas. The parallels with the recently uncovered radiation experiments are undeniable. I am strongly committed to finding the truth and dealing fairly with our veterans in both these areas.

The regulatory process regarding the mustard gas tests has been very lengthy. However, I am pleased to tell you that the Office of Management and Budget has now cleared regulations to permit the Department of Veterans Affairs to complete the processing of the veterans' claims for compensation. The proposed rules will be published for public comment shortly.

I also recognize the great importance of identifying and contacting those servicemen and women who participated in the mustard gas tests. The Secretary of Defense is working closely with the Secretary of Veterans Affairs to make pertinent DOD records available quickly. This effort is aimed at helping these deserving veterans apply for compensation.

Your energetic and persistent work on this issue has clearly made a tremendous difference for many men and women who will finally receive the compensation to which they are entitled. I will count on your continued support as we now pursue the truth with respect to other testing and experimentation in past decades.

Sincerely,

Bill Clinton

The Honorable Porter J. Goss
House of Representatives
Washington, D.C. 20515

TAB B11

Original HR1055

1 2 items CQ's WASHINGTON ALERT 02/08/94

HR1055 Goss (R-FL) 02/23/93 (60 lines)
Introduced in House

To direct the Secretary of Defense to issue a commendation to each individual exposed to mustard agents during World War II, and for other purposes.

Special typefaces used in this bill version:
// \\ Italic
!! !! Bold roman
Item Key: 2062

103D CONGRESS
1ST SESSION

H. R. 1055

To direct the Secretary of Defense to issue a commendation to each individual exposed to mustard agents during World War II, and for other purposes.

==========

IN THE HOUSE OF REPRESENTATIVES

February 23, 1993

Mr. GOSS (for himself, Mr. FRANK of Massachusetts, Mr. BROWDER, and Mr. BILIRAKIS) introduced the following bill; which was referred to the Committee on Armed Services

==========

A BILL

To direct the Secretary of Defense to issue a commendation to each individual exposed to mustard agents during World War II, and for other purposes.

//Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,\\

!!SECTION 1. ISSUANCE OF COMMENDATION TO INDIVIDUALS EXPOSED TO MUSTARD AGENTS DURING WORLD WAR II. !!

(a) IN GENERAL.--The Secretary of Defense shall issue to each individual described in subsection (b) a commendation in honorary recognition of the individual's special service, loyalty, and contribution to the United States.

(b) COVERED INDIVIDUALS.--An individual referred to in section (a) is an individual who, as a member of the armed forces or an employee of the Department of War, was exposed to mustard agents in connection with testing performed by the Department of War during World War II.

!!SEC. 2. NOTIFICATION OF EXPOSURE. !!

The Secretary of Defense shall notify each individual described in section 1 of the exposure described in such section, the possible health effects of the exposure, and the likely options available to the individual for medical treatment for health effects resulting from the exposure.

!!SEC. 3. AVAILABILITY OF INFORMATION.!!

The Secretary of Defense shall make available to the Secretary of Veterans Affairs any information of the Department of Defense regarding the exposure described in section 1, including the names of the individuals subjected to the exposure.

2 of 2 items CQ's WASHINGTON ALERT 02/08/94

HR3743 Frost (D-TX) 01/26/94 (346 lines)
Introduced in House

To provide for payments to individuals who were the subjects of radiation experiments conducted by the Federal Government.

Special typefaces used in this bill version:
// \\ Italic
!! !! Bold roman
Item Key: 9832

103D CONGRESS
2D SESSION

H. R. 3743

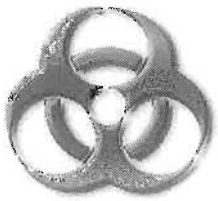
To provide for payments to individuals who were the subjects of radiation experiments conducted by the Federal Government.

==========

IN THE HOUSE OF REPRESENTATIVES

January 26, 1994

Mr. FROST introduced the following bill; which was referred to the Committee on the Judiciary



TAB B12

DEPARTMENT OF DEFENSE
OFFICE OF GENERAL COUNSEL
WASHINGTON, D.C. 20301-1600

15 APR 1994

The Honorable Ronald V. Dellums
Chairman, Committee on Armed Services
House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

This responds to your request for the views of the Department of Defense on H.R. 1055, 103d Congress, a bill "To direct the Secretary of Defense to issue a commendation to each individual exposed to mustard agents during World War II, and for other purposes."

H.R. 1055 would require the Secretary of Defense to issue a commendation to individuals exposed to mustard agents during World War II, and to notify these individuals of their exposure, the possible health effects of the exposure, and the options available to them for medical treatment for health effects resulting from the exposure. Further, if the bill were enacted the Secretary of Defense would be require to make available to the Secretary of Veterans Affairs any information regarding exposure to include the names of the individuals.

We fully support H.R. 1055. We do caution, however, that given the many years that have passed since some of these activities were carried out, and the format and dispersion of the records, it may not be possible for us fully to identify and notify all participants. In spite of the above obstacles, the Department of Defense is committed to doing everything possible to support the bill's provisions. We continue to pursue the review of records and we are determined to make as complete and thorough a review as possible and to share our findings with the Department of Veterans Affairs.

The Office of Management and Budget advises that, from the standpoint of the Administration's program, there is no objection to the presentation of this report for the consideration of the Committee.

Sincerely,

Stephen W. Preston
Acting General Counsel

TAB B13

PORTER GOSS
14TH DISTRICT, FLORIDA

330 CANNON BUILDING
WASHINGTON, DC 20515-0913
(202) 225-2536

COMMITTEES:
RULES
S RDS OF OFFICIAL CONDUCT

94 SEP -6 AM 9:23

Congress of the United States
House of Representatives
Washington, DC 20515-0914

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(813) 774-8060

PUNTA GORDA
(813) 639-0051

September 1, 1994

The Honorable William Perry
Secretary
Department of Defense
Office of the Secretary
Room 3E880
The Pentagon, 20301-1000

Dear Secretary Perry:

I am delighted that the House and Senate have included in the 1995 Defense Authorization bill (S. 2182) a small Sense of Congress provision based on HR 1055, legislation I introduced to provide commendation for victims of secret World War II mustard gas testing on military personnel. As you know, the DoD Authorization bill has made its way through the legislative process and now awaits the President's signature.

I write to urge you to follow through in providing recognition for the veterans of World War II who were used by their government as human guinea pigs 50 years ago. As you know, your department and the VA have been working to seek to identify and contact these veterans -- and I am grateful for all the cooperation in this effort. I enclose for your review the relevant section of S. 2182 and a recent letter of support from your department for the provisions of HR 1055.

It is my hope that a commendation issued by you as Secretary of Defense will begin to address the sense of betrayal and isolation that many of these men and their families still feel. My staff and I stand ready to assist you in any way we can to expedite this process.

Kindest regards,

Porter Goss
Member of Congress

PG:tea
enclosures

17848

B13

103D CONGRESS
2d Session
HOUSE OF REPRESENTATIVES
REPORT
103-701

NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 1995

CONFERENCE REPORT

TO ACCOMPANY

S. 2182

AUGUST 12, 1994.—Ordered to be printed

Final Legislation Mustard Gas
Sense of Congress on Commendation
(Original HR1055 Mr. Goss)

ɪcer or employee, or an employee of a con-
ıay be, at the end of the fiscal year.
)f cases in which an appeal was made from
ın tı ny or revoke a security clearance
ımb which the appeal resulted in the
)n of ıne security clearance.

E OF LOW-ENRICHED URANIUM AS FUEL FOR
'AR REACTORS.

F REPORT.—Not later than June 1, 1995,
shall submit to the Committees on Armed
d House of Representatives a report on the
ıium (instead of highly-enriched uranium)
reactors.

'PORT.—The report shall include an assess-

ges and disadvantages of the use of low-en-
ead of highly-enriched uranium) as fuel for
rs.
such use on the following:
g performance, ship displacement, and re-
ncluding the full range of plausible trade-
ıting performance, ship displacement, and
hat may result from such use.
tion costs and operating costs.
el cycles.
of the United States for the nonprolifera-
weapons, including the proposal of the
lobal ban on the production of fissile mate-
s.
tions of such use for current and future
r-powered naval vessels.
ity and effectiveness of safeguards under
lo riched uranium in relation to
ive f safeguards under naval fuel cy-
ed uranium.
heft or diversion of low-enriched uranium
les for low-enriched uranium in relation to
iversion of highly-enriched uranium under
highly-enriched uranium.
l savings that might be achieved, and the
costs that might be incurred, as a result of
ed uranium instead of highly-enriched ura-
il nuclear reactors.
ıal information that the Secretary of the
appropriate.

Subtitle F—Congressional Findings, Policies, Commendations, and Commemorations

SEC. 1051. SENSE OF CONGRESS CONCERNING COMMENDATION OF INDIVIDUALS EXPOSED TO MUSTARD AGENTS DURING WORLD WAR II TESTING ACTIVITIES.

(a) SENSE OF CONGRESS.—It is the sense of Congress that the Secretary of Defense should issue to each individual described in subsection (b) a commendation in honorary recognition of the individual's special service, loyalty, and contribution to the United States.

(b) COVERED INDIVIDUALS.—Individuals referred to in subsection (a) are those individuals who, as members of the Armed Forces or employees of the Department of War during World War II, were exposed (without their knowledge or consent) to mustard agents in connection with testing performed by the Department of War during that war.

(c) NOTIFICATION OF EXPOSURE.—The Secretary of Defense shall notify each surviving individual described in subsection (b) of—

(1) the exposure described in subsection (b);

(2) the possible health effects of the exposure that are known to the Secretary; and

(3) the likely options available to the individual for medical treatment for any adverse health effects resulting from the exposure.

(d) FURNISHING OF INFORMATION TO SECRETARY OF VETERANS AFFAIRS.—The Secretary of Defense shall provide to the Secretary of Veterans Affairs any information of the Department of Defense regarding the exposure described in subsection (b), including the names of the individuals described in subsection (b).

SEC. 1052. USS INDIANAPOLIS (CA-35): GALLANTRY, SACRIFICE AND A DECISIVE MISSION TO END WW II.

(a) FINDINGS.—Congress makes the following findings:

(1) The USS INDIANAPOLIS served the people of the United States with valor and distinction throughout World War II in action against enemy forces in the Pacific Theater of Operations from 7 December 1941 to 29 July 1945.

(2) The fast and powerful heavy cruiser with its courageous and capable crew, compiled an impressive combat record during her victorious forays across the battle-torn reaches of the Pacific, receiving in the process ten hard-earned Battle Stars from the Aleutians to Okinawa.

(3) This mighty ship repeatedly proved herself a swift, hard-hitting weapon of our Pacific Fleet, rendering invaluable service in anti-shipping, shore bombardments, anti-air and invasion support roles, and serving with honor and great distinction as Fifth Fleet Flagship under Admiral Raymond Spruance, USN, and Third Fleet Flagship under Admiral William F. Halsey, USN.

(4) This gallant ship, owing to her superior speed and record of accomplishment, transported the world's first oper-

TAB B14

HOUSE JUDICIARY COMMITTEE

SUBCOMMITTEE ON ADMINISTRATIVE LAW AND GOVERNMENTAL RELATIONS

HEARING ON GOVERNMENT SPONSORED TESTING ON HUMANS

FEBRUARY 2, 1994 2:00 P.M. 2237 RHOB

WITNESSES

The Honorable Edward Markey

The Honorable Martin Frost

The Honorable Porter Goss

The Honorable Leslie Byrne

PANEL

LLOYD GAMBLE
LSD test subject

ANDREW FROSINI
radiation test subject

NATHAN SCHNURMAN
mustard gas test subject

PANEL

DEPARTMENT OF ENERGY
Robert Nordhaus, General Counsel

DEPARTMENT OF JUSTICE
Frank Hunger, Assistant Attorney General, Civil Division

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Dr. Donald A. Henderson, Deputy Assistant Secretary for Health (Science)

(continued)

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Dr. Harold Smith, Assistant to the Secretary for Atomic Energy

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DEPARTMENT OF VETERANS AFFAIRS
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DR. JOHN RUNDO
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TESTIMONY BEFORE THE SUBCOMMITTEE ON
ADMINISTRATIVE LAW AND GOVERNMENTAL RELATIONS
FEBRUARY 2, 1994

MR. CHAIRMAN, MEMBERS OF THE SUBCOMMITTEE, I VERY MUCH APPRECIATE THE CHANCE TO COME BEFORE YOU TODAY. I APPLAUD YOUR DECISION TO OPEN TODAY'S HEARING UP TO INCLUDE DISCUSSION OF ALL SECRET GOVERNMENT TESTS, NOT JUST THOSE INVOLVING THE DEPARTMENT OF ENERGY AND RADIATION. I AGREE THAT THE GOVERNMENT HAS AN OBLIGATION TO ATTEMPT TO RIGHT THE WRONGS DONE BY ANY PAST TESTING PROGRAM.

IN THE FIVE YEARS THAT I HAVE BEEN WORKING TO BRING ABOUT JUSTICE FOR THE VICTIMS OF SECRET WORLD WAR II MUSTARD AND LEWISITE GAS TESTS ON U.S MILITARY PERSONNEL, THIS SUBCOMMITTEE HAS ALWAYS BEEN AN ISLAND OF ACTION IN THE SEA OF GOVERNMENT RED TAPE.

UNDER THE STEWARDSHIP OF THEN-CHAIRMAN BARNEY FRANK, YOUR SUBCOMMITTEE PROVIDED THE LAUNCH-PAD FOR REVOLUTIONARY CHANGES. I AM GRATIFIED THAT, AFTER NEARLY 50 YEARS OF DENIAL AND BUREAUCRATIC INACTION, THE GOVERNMENT HAS FINALLY ADMITTED ITS RESPONSIBILITY FOR CONDUCTING THESE SECRET TESTS WITHOUT THE FULL, INFORMED CONSENT OF ITS SUBJECTS AND THAT IT HAS BEGUN TO ASSIST VICTIMS SUFFERING FROM LONG-TERM HEALTH PROBLEMS.

THE FACTS ARE NO LONGER IN QUESTION: DURING WORLD WAR II, AMID FEARS OF AN ENEMY CHEMICAL ATTACK, THE UNITED STATES NAVY (AND LIKELY THE OTHER ARMED SERVICES AS WELL) EMBARKED ON A PROGRAM TO TEST THE EFFECTIVENESS OF PROTECTIVE CLOTHING AGAINST IMPREGNATION BY MUSTARD GAS AND LEWISITE. IN GATHERING THE NEEDED SUBJECTS FOR THESE TESTS, "VOLUNTEERS" WERE SOLICITED, UNDER THE GUISE OF TESTING "SUMMER CLOTHING" AND WITH THE ATTRACTIVE PROMISE OF EXTRA WEEKEND LIBERTY PASSES.

ONCE COMMITTED TO THE PROGRAM, THESE 17 AND 18-YEAR OLD TRAINEES SUDDENLY "CEASED TO BE VOLUNTEERS." THEY WERE FITTED WITH GAS MASKS AND SUITS, AND ORDERED INTO GAS CHAMBERS FOR REPEATED EXPOSURE TO LETHAL GASES. DOCUMENTATION CONFIRMS THAT THE TESTS WENT BEYOND STUDYING THE EFFECTIVENESS OF THE CLOTHING, AND MOVED INTO A STUDY OF HOW MUCH EXPOSURE A MAN COULD TAKE, THE INFAMOUS "MAN-BREAK" TEST. IN MANY CASES. THE PROTECTIVE EQUIPMENT FAILED.

WHEN THEY WERE NO LONGER NEEDED, OR WHEN THEY WERE TOO SICK TO CONTINUE, THE MEN WERE SENT BACK TO THEIR POSTS WITHOUT PROPER MEDICAL FOLLOW-UP. THEY WERE SWORN TO SECRECY AND THREATENED WITH COURTS MARTIAL IF THEY REVEALED THE TRUE NATURE OF THEIR EXPOSURE TO ANYONE, EVEN TO THEIR OWN PHYSICIANS. GIVEN THE CLASSIFIED STATUS OF THIS TEST PROGRAM, THE RECORD-KEEPING ABOUT WHO PARTICIPATED, LEVELS OF EXPOSURE AND INJURIES SUSTAINED IS WOEFULLY INCOMPLETE AND SOMETIMES NON-EXISTENT.

AFTER DECADES OF SILENCE, THESE MEN BECAME ILL AND SOME VENTURED TO SPEAK OUT ABOUT WHAT THEIR GOVERNMENT HAD DONE TO THEM. NOT ONLY HAD THEY BEEN LIED TO, BUT THEY HAD BEEN USED AS HUMAN GUINEA PIGS AND THEN DISCARDED. WHEN THEY SOUGHT REDRESS -- AND ASSISTANCE FOR THEIR MEDICAL PROBLEMS -- THEY WERE REBUFFED. FIRST CAME THE DENIAL, THEN THE STONEWALLING, THEN THE "GEE, WE WISH WE COULD HELP, BUT . . ." ACCORDING TO VA RULES, IN ORDER TO RECEIVE COMPENSATION FOR A DISABILITY, YOU HAD TO SHOW THAT THE MEDICAL PROBLEM WAS THE RESULT OF YOUR SERVICE. IN THE CASE OF THE MUSTARD GAS VICTIMS, WHO HAD NO PAPER TRAIL FOR THEIR PLIGHT, THIS WAS PRACTICALLY IMPOSSIBLE, A TRAGIC CATCH-22.

BUT A FEW PERSISTED, AND TODAY, ONE OF THE PIONEERS IN THIS CRUSADE IS HERE WITH US. NAT SCHNURMAN REFUSED TO ACCEPT THE DENIALS. USING HIS COMPUTER, HIS TELEPHONE AND HIS FREEDOM OF INFORMATION RIGHTS AS A U.S. CITIZEN, HE GATHERED BOXES AND BOXES OF RECORDS AND WAS ABLE TO PIECE TOGETHER ENOUGH EVIDENCE TO SHOW THAT HE AND THOUSANDS OF OTHERS HAD INDEED BEEN USED AS HUMAN GUINEA PIGS.

FINALLY, AFTER NATIONAL MEDIA ATTENTION, IN 1991 THE VA BEGAN TO CHANGE THE RULES TO HELP MUSTARD GAS VICTIMS. AT THAT TIME, VA ALSO COMMISSIONED A LONG-TERM STUDY INTO HEALTH PROBLEMS ASSOCIATED WITH EXPOSURE TO LETHAL GASES. IN 1993, WITH THE RELEASE OF THAT STUDY, ENTITLED "VETERANS AT RISK," THE DEPARTMENT OF DEFENSE OFFICIALLY RELEASED ALL PARTICPANTS OF THESE TESTS FROM THEIR OATH OF SECRECY. AND, JUST LAST MONTH, THE PROPOSED NEW RULES FOR EXPANDING THE LIST OF ILLNESSES ASSOCIATED BY THE VA WITH MUSTARD GAS EXPOSURE WERE PUBLISHED IN THE FEDERAL REGISTER.

IN MY OFFICE, WE HAVE HEARD FROM HUNDREDS OF MEN AND THEIR FAMILIES FROM AROUND THE COUNTRY. THEY ALL TELL SIMILAR TALES OF LIES, DECEPTION AND BETRAYAL. THEY NEED MEDICAL HELP; THEY WANT RECOGNITION; THEY DESERVE RESPECT AND GRATITUDE.

TODAY WE KNOW THAT GOVERNMENT'S USE OF UNWITTING SUBJECTS FOR POTENTIALLY HARMFUL STUDIES WAS NOT LIMITED TO THE MILITARY IN TIMES OF ACTUAL WAR. ENERGY SECRETARY HAZEL O'LEARY HAS SAID THAT GOVERNMENT HAS AN OBLIGATION TOWARD RADIATION VICTIMS -- I AGREE. BUT I THINK GOVERNMENT HAS AN OBLIGATION TOWARD <u>ALL</u> VICTIMS OF SECRET TESTS.

THANK YOU FOR YOUR PATIENCE AND YOUR INTEREST.

TESTIMONY REGARDING INSTITUTE OF MEDICINE REPORT,

VETERANS AT RISK: THE HEALTH EFFECTS OF MUSTARD GAS AND LEWISITE.

Prepared for:

United States House of Representatives
Judiciary Committee
Subcommittee on Administrative Law and Governmental Relations

February 2, 1994

Testimony given by:

David P. Rall, M.D., Ph.D.
Chairman
Committee to Survey the Health Effects of Mustard Gas and Lewisite
Institute of Medicine

Good morning Mr. Chairman and members of the Committee. I am Dr. David Rall and am testifying because I chaired an Institute of Medicine committee that surveyed the health effects of exposure to mustard gas and Lewisite--a study that was requested by the Department of Veterans Affairs when it was revealed that World War II servicemen were used as human subjects in gas chamber and field tests of these chemical warfare agents. I have brought with me summaries of our report, *Veterans at Risk: The Health Effects of Mustard Gas and Lewisite.*

In 1991, the Secretary of the Department of Veterans' Affairs (VA), Mr. Derwinski, requested the Institute of Medicine (IOM) to assemble a committee to survey the scientific and medical literature regarding mustard gas and lewisite. The purpose was to judge, on the basis of the literature, the strength of association between exposure to these agents and specific health conditions, and to identify gaps in the literature. The committee was further asked to recommend ways to reduce any gaps found. The study was requested because it had become clear that United States servicemen had been used as human subjects in a World War II testing program in which they were exposed to mustard agents (sulfur and nitrogen mustard) and lewisite. Some of these men, by 1990, were filing claims with the VA for service-related disability. Thus, an additional element of the IOM committee's statement of task was to hold public hearings through which affected veterans could inform the committee about their experiences in the tests and their subsequent health problems.

The study that resulted from this request was a difficult, but successful, one. At the time it began, the VA had already identified seven health conditions as causally related to mustard agent exposure, including chronic bronchitis, chronic asthma, laryngitis, emphysema, corneal opacities, keratitis, and chronic conjunctivitis. By the conclusion of the study, our committee was able to identify several new health conditions associated with exposure to these agents and to determine that the levels of exposure in the gas chamber and field tests conducted during World War II (and in later years) were sometimes equal to that experienced by soldiers in the battles of World War I.

The study, however, was one in which discoveries and revelations built upon one another in a complex way. Therefore, my presentation will follow the development of the committee's work. This approach is not to inform you of the study "process", but to put into context the intricate background and underpinnings of the committee's findings and recommendations. I would also like to point out that all the committee's findings and recommendations were subjected to a rigorous review process in which the draft report was examined by 10 individuals with appropriate expertise, appointed and supervised by the National Research Council's Report Review Committee.

The IOM study began in September 1991 and the committee met for the first time in January 1992. It was clear at this first meeting that an important challenge was the

state of the scientific literature. This literature was replete with information regarding the acute effects of mustard agents, but was sorely lacking in information about the long-term consequences of exposure. To counterbalance these gaps and take full advantage of the information available, the committee focused on several areas. First, the assessment of the actual exposure levels in the gas chamber and field tests became important. The committee also looked at related literature including data about second cancers resulting from the use of nitrogen mustard as a cancer chemotherapy agent. We also examined other lung irritants and the connection, or lack of one, between acute symptoms and long-term damage. Finally, the committee paid special attention to the data available from long-term follow up of chemical munitions workers and to the very few follow-up studies done with World War I mustard gas casualties. In all of their evaluations, the committee was guided by established principles of risk assessment, including dose estimation, timing of symptoms, and plausibility of biological mechanisms of injury, among others.

Between January and April 1992, the committee sought to obtain as much detail as possible regarding the experimental protocols to assess what the actual exposure levels might have been. In addition, the committee began its public hearing process in which it solicited written, oral, or public statements from veterans–over 250 veterans contacted the committee through the study director, Dr. Constance Pechura, who still receives telephone calls from affected veterans. Both these activities helped shape the report.

The committee is indebted to the Naval Research Laboratory for providing technical reports and summaries of the gas chamber tests conducted there. These documents, some of which were included in Appendix D of our report, outlined subject recruiting methods, information about the concentrations of agents inside the gas chambers, number and length of individuals trials, as well as the variable use of "protective" clothing. These documents also made clear that the end point of the gas chamber experiments was tissue injury. These official documents strongly corroborated the veterans' own reports. We know that at least 2500 men were subjects in gas chamber tests and at least 1500 participated in field tests. These numbers, however, are from incomplete records and thus represent the absolute minimum number involved. Let me outline the experiments.

Young men in Navy boot camps were offered extra leave and "a change of scenery" if they would agree to test "summer uniforms" for a few weeks. Once at the test site, the men wore various amounts of clothing that had been chemically impregnated with substances developed to retard the penetration of mustard or other chemical agents. They were given gas masks and locked into a chamber, which was then filled with gas–most often sulfur mustard. These chambers were kept at ninety degrees Fahrenheit and sixty percent humidity. In some cases, the concentrations of sulfur mustard in the chambers would have been lethal without the gas masks. The men were required to remain in the chamber for an hour, after which they remained in the protective clothing for varying periods of time. This scenario was repeated either daily or every other day

until the men's skin burned, indicating failure of the protective clothing.

Four aspects of this testing are notable in terms of research with human subjects. First, the men were deliberately misled about what they were being exposed to until after they had been through one chamber trial. Second, official documents warned those conducting tests not to mistake symptoms such as laryngitis or conjunctivitis for gas symptoms, despite the fact that these were well known consequences of sulfur mustard exposure. Third, official documents guided those in charge to "dress down" any subject who wanted to withdraw from the experiments; according to veterans' reports, this dressing down often took the form of overt threats. Finally, the men were told never to reveal their participation to anyone.

Less is known about field testing of the protective clothing. However, it is known that concentrations in field tests were also high, that some field tests were done without protective clothing or masks, and that field tests were often followed by chamber tests of the clothing worn. Subjects in field tests were most often recruited from units of the Chemical Warfare Service, including the 95th Medical Gas Treatment Battalion and others.

After the subjects were released from the chamber test sites, they were sent home for leave and, later, sent to their various wartime posts. No attempts were made by any department of the U. S. Government to follow the men's health status and, in some cases, mustard agent-related illnesses were not recorded as such in infirmary or hospital records. The IOM committee concluded that this lack of follow up was not justified by a lack of knowledge about long-term health effects of these agents, because military doctors had published in the open literature in 1933 that chronic bronchitis, chronic asthma, emphysema, corneal opacities, and chronic conjunctivitis resulted from sulfur mustard exposure.

The committee also investigated the degree to which the gas masks used prevented inhalation injuries in chamber tests and found that, even assuming a protection factor afforded by modern gas masks, inhalation injuries would have occurred. Further, the type of gas mask used in the experiments, the Navy diaphragm type, was eventually rejected by the Chemical Warfare Service because it was unacceptably leaky.

By their second meeting and public hearing in April 1992, the committee was also concerned with the potential psychological effects of the gas chamber and field tests on the human subjects and with their own responsibilities as physicians and scientists to consider the conduct of the experiments and how to communicate most effectively with the affected veterans once the study was completed. Thus, the committee sought input from an expert in the psychological effects of chemical and biological warfare environments and from experts in bioethics and risk communication. We decided to appoint a psychologist to the committee to help assess the relevant literature. The human subjects had not only been placed into highly threatening chemical warfare

environments, they had also suffered real exposures to toxic substances. The committee reviewed the literature pertaining to psychological health effects of not only chemical warfare environments, but also exposures to other toxic substances, such as dioxin at Love Canal, and radioactive leaks, such as the Three Mile Island accident.

Between April and August 1992, the committee met twice to draft the report. Information about the poor safety record of chemical warfare production facilities emerged, partly due to the public hearing process and partly due to the search for additional exposure data. The committee was surprised to find that only Japan had done long-term follow-up studies with workers from chemical production facilities. To a lesser extent, Great Britain had studied such workers; the United States had not. In addition, the committee found that some servicemen, assigned to handle chemical weapons or train others in defense against them, had also suffered severe exposures. Finally, the committee heard from men who had been injured in World War II by sulfur mustard following the German bombing of the harbor in Bari, Italy, which destroyed a U.S. merchant vessel carrying a secret load of sulfur mustard munitions. The sulfur mustard leaked from the ship into the water and vaporized into the air, causing at least one thousand deaths among civilians and military personnel.

Now let me turn to the health conditions identified by the committee as causally related to exposure to mustard agents. I will also identify those conditions associated with exposure to lewisite, but the data on lewisite were quite scant. The committee's evaluation agreed with the original determination of the VA assigning a causal relationship to chronic bronchitis, chronic asthma, chronic laryngitis, emphysema, corneal opacities, keratitis, and chronic conjunctivitis. In addition to these, the committee found that exposure was also causally related to:

* respiratory cancers, including cancer of the nasopharyngeal tracts and lung;

* skin cancer, as well as pigmentation abnormalities of the skin, chronic skin ulceration, and scar formation;

* acute nonlymphocytic leukemia resulting from exposure to nitrogen mustard exposure, and probably sulfur mustard exposure as well;

* bone marrow depression and a decrease in the competency of the immune system (An acute reaction that can render a person more susceptible to infectious diseases with serious long-term consequences, such as rheumatic fever that can cause lifelong cardiovascular problems.);

* psychological disorders from gas chamber and field tests due to the combination of repeated threatening circumstances and toxic exposures (The committee was only able to identify general classes of psychiatric diagnostic categories because there is little known about the long-term expressions of untreated post-traumatic

stress disorder. However, the committee believes that the causal relationship between the experimental situations and development of psychological disorders in some subjects is clear.); and

* dysfunctions in sexual performance as a result of severe burns and scarring of sexual organs.

All other health conditions fell into one of two remaining categories. The second category is quite small and contains those conditions for which there are suggestive data, but not enough to establish a causal relationship. It includes leukemia from exposure to sulfur mustard and reproductive toxicity, including increased miscarriages or infertility.

The last category contains the majority of health problems reported by veterans during the public hearing process. This category covers those health problems for which few data exist to argue for or against a causal relationship. These include all cardiovascular problems (except those resulting from acute infectious diseases as mentioned previously), and neurological, hematological, and gastrointestinal diseases. The category further includes any reproductive effects that might result from exposure to lewisite. As you can see, the gaps in the literature still outweigh the certainties.

To close as many gaps as possible, the committee made a number of recommendations to the VA, but also to the Department of Defense. The committee asked the VA to identify the subjects from the gas chamber and field tests, to evaluate their health status, treat any causally related health problems found, and to initiate morbidity and mortality studies. I would like to emphasize here that the VA anticipated this recommendation and, under the direction of Dr. Susan Mather, initiated an investigation of the feasibility of identifying the subjects. This investigation began in the winter of 1992 and reports of progress were shared with our committee in June and August 1992.

The committee made a further recommendation to the VA to pay careful attention to the special problems of these veterans, stemming from years of official denials, the burden of secrecy, and the decades of silent worry about their health problems and their possible cause. Many of the affected veterans understandably feel betrayed and, over time, have come to believe that all their health problems are related to their exposure. Certainly, on the basis of the scientific literature, no one can be sure whether they are right or wrong. The VA system operates, however, on the basis of scientific proof and this is, and will continue to be, a difficult concept to translate to the affected veterans. It is especially difficult to do with people who have been secretly living with serious health concerns for five decades, or, in some cases, have been telling the truth only to be told that no such thing ever happened.

We also recommended that the Department of Defense attempt to identify former military and civilian workers exposed during gas handling and production, and to find

those exposed following the Bari disaster. The records of military personnel should be turned over to the VA for notification and medical evaluation and civilians should be notified by the Department of Defense and advised about their options for appropriate compensation. Finally, the committee recommended that the VA and the Department of Defense widely advertise that any oaths of secrecy taken in World War II related to testing of mustard agents or lewisite are no longer binding.

In the preface to their report, the committee asked that each veteran who served as a human subject in the testing programs be honored for his sacrifice and that any continuing military research with human subjects be held to the same standards and guidelines applicable to civilian research; specifically, we recommend the inclusion of civilians on all research protocol review panels.

There are a variety of viewpoints regarding the ethics of these experiments. Many would argue that it was wartime and that, because they pre-dated the Nuremberg Code, no formal code of ethics had yet been formalized about human experimentation. It is, therefore, difficult to say clearly what the "standards of the day" were in the early 1940s. As a medical student, I volunteered as a human subject for medical research in the late 1940s. I knew what the experiment entailed and I had the right to withdraw from the experiment at any time. Professor Jay Katz from Yale University, a bioethicist who served on the panel that reviewed the Tuskegee experiments and whom our committee consulted, took the position in a letter to me (and reprinted in one of the appendices to our report) that the World War II mustard gas experiments did violate ethical standards and the Government should be held accountable. It is also true that the "standards of the day" were held up at Nuremberg by the U.S. Military Tribunal as the measure against which Nazi medical atrocities should be judged.

Members of our committee individually expressed differing opinions on the ethical issues presented by these experiments. Nevertheless, the consensus was that the combination of misleading the subjects, exposing them to high levels of toxic substances, demanding them to remain in the experiments and keep it secret for decades, and then neglecting to follow the subjects' health status required, at the very least, comment. We also believed that these abuses justified our recommendations to the government agencies involved to do everything possible to aid these men now and to ensure that adequate protections, equal to those in the civilian research arena, were in place for the present and future human subjects of military experiments.

Thank you.

STATEMENT OF DAVID GRIES

Before the Subcommittee on Administrative Law
and Governmental Relations

Committee on the Judiciary
U.S. House of Representatives
Wednesday, February 2, 1994

Good afternoon, Mr. Chairman. My name is David Gries, and I am the Director of the Center for the Study of Intelligence, Central Intelligence Agency. The Director of Central Intelligence has appointed me as the CIA's representative to the interagency working group on radiation testing. I am pleased to testify today on the CIA's efforts to determine whether the Agency ever took part in any radiation testing on human beings. Although our searches continue, we have not found any information thus far indicating that the Agency ever conducted or participated in such testing.

I would like to describe the extensive efforts we are making to search our records. On Tuesday, 4 January 1994, CIA started an Agency-wide search for records bearing on any possible CIA involvement in testing the effects of radiation on humans. A steering group was established to coordinate the effort. We focused our efforts initially on records pertaining to the MKULTRA program, which I will briefly describe.

The MKULTRA program was established to counter perceived Soviet and Chinese advances in brainwashing techniques. Between 1953 and 1964, the program consisted of some 149 subprojects which the Agency contracted out to various universities, research foundations and similar institutions. Some of the subprojects involved drug testing on unwitting human subjects, but most involved other areas of behavior. In 1963, the Agency's Inspector General inspected the program and issued a report on MKULTRA. The Agency destroyed most of its MKULTRA records in 1973.

In 1974 and 1975, the Rockefeller Commission and Church Committee conducted extensive investigations of CIA human research activities, relying on extant documents, interviews and testimony. Both of these bodies issued public reports that discussed the MKULTRA program in some detail and noted that "radiation" was one area within the MKULTRA program charter. In 1977, CIA's discovery of program financial

papers enabled CIA to reconstruct files on virtually all MKULTRA subprojects and led to another Congressional investigation and testimony before the Senate Select Committee on Intelligence and Senate Committee on Human Resources. Once again, these Committees issued public reports discussing the MKULTRA program in detail. Most Agency records on the MKULTRA program were declassified and made public long ago.

These extensive and public investigations made it possible for our current researchers to assess virtually every one of the 149 subprojects and to follow up those that looked of interest. The task was made easier by the fact that the MKULTRA program files are centrally located. In addition, CIA researchers are reviewing the extant records from other programs (largely drug related) that may have conducted intrusive research on humans. We are also reviewing and checking the voluminous documentation on intrusive research compiled in response to the Rockefeller Commission, Church Committee and SSCI/SCHR investigations, as well as the approximately 11,000 pages of documents released in response to Freedom of Information Act requests.

We also studied the 1963 Inspector General's report on MKULTRA and a 1973 compendium of employee reports of improper or illegal activities. We interviewed more than 40 current and former employees, ranging from former DCI's to the scientists and medical personnel most likely to have conducted or been aware of radiation testing, had it occurred. Simultaneously, Agency records managers and offices are carrying out wide ranging searches for any indication whatsoever of radiation testing. I should emphasize that we have based our search inquiries on the broadest and most comprehensive usage of the term "radiation".

To date, CIA has found no evidence of any ionizing radiation testing on humans ever carried out under its auspices. Further, none of the employees or senior officers whom we consulted, and who were in a position to know, have ever heard of the Agency conducting such an activity.

We believe the statement appearing in the Rockefeller Commission and Church Committee Reports originated as standard phraseology in early documents mentioning radiation as a potential area of MKULTRA research. However, we have not located any documents thus far showing that radiation testing on humans was pursued.

Despite these findings, a vigorous research effort going beyond the MKULTRA program is continuing. Computer searches of data bases are underway throughout the Agency, and an effort is being made to locate any records that may

have been missed when MKULTRA files were reconstituted in 1977.

That was the past, what about now? Since they took effect, the Agency has strictly followed HHS regulations pertaining to the conduct of human subject research. We have established an internal review board and rigorous procedures to ensure that any proposal for such research complies in every respect with these guidelines. In recent years, very few proposals have been considered and certainly none have involved radiation or drug testing on human beings.

In conclusion, thus far, CIA has found no evidence of any kind that the Agency has ever deliberately exposed any person to ionizing radiation, whether for research into human behavioral modification or for any other purpose. Our research continues, however, and will not conclude until we are certain that all pertinent records have been reviewed. We are committed to locate, review and declassify any evidence of ionizing radiation experiments on humans.

Thank you, Mr. Chairman.

TESTIMONY OF LLOYD B. GAMBLE
BEFORE THE JUDICIARY COMMITTEE
ADMINISTRATIVE LAW AND GOVERNMENTAL RELATIONS SUBCOMMITTEE
FEBRUARY 2, 1994

Good morning, and thank you for the opportunity to appear hear today. My name is Lloyd B. Gamble, Sergeant, USAF, Retired. I am also a retired Capitol Hill police officer. Today I am 65 years old. I have give 35 of those years in service to my country--either in the military or in law enforcement. I would like to tell you what I received in turn.

I enlisted in the U.S. Army in 1944 and then transferred to the U.S. Air Force in 1950. I was a career oriented, highly motivated non-commissioned officer. I was steadily promoted. My periodic fitness reports assured continued promotions. But most importantly, serving my country in the Air Force went beyond duty. It was my--and my family's--life.

But in 1968, dismayed and disheartened, I took an early retirement. In the previous ten years, I had been humiliated by being moved from my job as a top-rated Air Police investigator and given meaningless desk jobs. For a time my security clearance was questioned and I was barred from carrying a sidearm. And despite the fact that my immediate superiors continued to give me the highest fitness ratings and recommendations, I received only one promotion. One stripe in more than 10 years.

My career, I finally realized was finished. It was not until 1975 that I learned why. And that is why I am here today.

In the summer of 1957, while I was stationed at Dover AFB, a Department of the Army memorandum was circulated throughout all branches of the military. The subject was a "Medical Research Volunteer Program" being conducted by the Army Chemical Corps at Edgewood Arsenal, MD. From as high up as the then-Secretary of the Army Brucker, the program was described as being in the "highest

national security interests" at a time when the Cold War was at one of its most tense periods.

Incentives--including liberal leave policy, family visitations and the finest in living and recreation facilities--were offered. But most important to a young, career-oriented NCO: Volunteering for the program would be given "official recognition through letters of commendation and certificate of participation." I discussed the program with my CO, decided to volunteer, was accepted and TDY'd to Edgewood Arsenal.

This is what I was told. I would be testing protective equipment such as gas masks and coverall clothing while being exposed to--quote--"certain toxic agents" which would be--quote--"inhaled in very small amounts." I was further told that I would be--quote-thoroughly informed about all test procedures and what can be expected prior to each test."

Having understood this, I was required to sign what was called a Volunteer's Participation Agreement which stated in part--quote: "The experiments will be conducted as to avoid all unnecessary physical and mental suffering and injury, and I will be at liberty to request that the experiments be terminated at any time."

That is what I was told. This is what happened.

I was never asked to inhale very small amounts of certain toxic agents. Instead, on two--perhaps three--occasions I was asked to drink a glass of a clear, odorless, tasteless liquid. And how was I "Thoroughly informed" about the test? I was told that the transitory effects would be similar to having one or two highballs. And then I was given a massive dose of LSD--one of the most virulent and potentially dangerous hallucinogens then known to medical science.

LSD--"A compound which causes psychotic symptoms similar to those

of schizophrenia."

After the end of my participation in the program, I was left to twist slowly in the wind--with no follow-up medical or psychiatric help--as my personal and professional life began to disintegrate to the point I would begin to doubt my own sanity. Consider this.

- While at Edgewood, I was ordered to Dover AFB to testify at a court martial hearing. I have no memory of that trip, and it was not until I read the official transcript that I finally believed I had been there.

- While stationed in Tripoli, I came to my senses being physically wrestled to the ground and restrained by fellow soldiers. I had suddenly "gone berserk, crazy," they told me. The "official" report found I was drunk, but at the time and under the circumstances there was no way I could have been.

- I began experiencing periods of deep depression and erratic behavior--and more and more withdrawal from my family and closest civilian and military friends. At one point, divorce from my beloved wife of 39 years was a very real possibility.

- And then one late, late night, only a passing motorist who pulled me back off the railing on Key Bridge stopped my suicide attempt--which of course then led to my confinement for psychiatric evaluation.

Then, as suddenly as the active symptoms of schizophrenia began, they ceased. Gradually, I was able to put my personal life back together and--yet, as the Departments of Defense and Justice have been quick to argue at every opportunity as I have sought redress--after my retirement from the Air Force, I went on to have a distinguished career in law enforcement.

But for too many years my family and I were left in anguish to wonder: What happened to us? Could it happen again? There were

people in the United States government at the time who had all the answers--but they weren't talking.

When I finally learned in 1975 what had happened to me--what had been done to me at the hands of the government I had sworn to preserve and protect, with my life if need be--there was bitterness.

That bitterness increased when the Department of the Army initially tried to deny even that I had been an LSD guinea pig. That is until they were furnished an official DOD publicity photo of me at Edgewood Arsenal--one of the valiant servicemen volunteering for a program that was in the highest national security interests.

But eventually I began to learn that I was not alone. That many of my fellow Americans had endured equal or more suffering than my family and I had. And, I suppose, that is really why I am here today.

Faced with revelations of some foreign government's heinous actions, we comfort ourselves here in America with the belief, "It can't happen here." But it did. The covert LSD experiments, the radiation experiments. All of them using human beings--many of them military personnel, or physically, or emotionally, or economically disadvantaged civilians--as unknowing guinea pigs.

I have no way of knowing what the outcome of these hearings--and any subsequent congressional action--will be. But God bless you for listening to us. today. And please, keep your determination and resolve to see that these terrible things will never again happen here.

Thank you for hearing my story.

Statement
of
Dr. Harold Smith
to the
Subcommittee on Administrative Law and Government Relations
Committee on the Judiciary

February 2, 1994

Mr. Chairman and Members of the Committee, it is an honor for me to appear before you today on behalf of the Department of Defense. I am accompanied by Ms.Joan Pierre, Director for Radiation Sciences at the Defense Nuclear Agency, who will be able to respond to your questions about the details of the Nuclear Test Personnel Review (NTPR). In addition, Ms. Jeanne Fites, Deputy Assistant Secretary of Defense (Requirements and Resources) within the Office of the Assistant Secretary of Defense for Personnel and Readiness, is here as well.

You have heard the description of the Interagency Working Group now in place to conduct the search and retrieval of records of human radiation experiments. It is not necessary to describe that process again. The Department of Defense is a full and active participant in this process, and the Secretary of Defense has placed a high priority on this project. As the Interagency Working Group was established, he appointed personnel from the highest levels of the Department to serve on the working group. Simultaneously, he charged those persons with the additional duty of serving on a steering committee panel formed to oversee the Department's search and retrieval endeavor.

The steering committee is acting as a "board of directors" for a Command Center which we have established. That center is headed by a Rear Admiral and is to be the collection point and clearinghouse for records discovered in this project. As one might imagine, this retrieval process requires an extensive search. Based upon the experience of DoD's NTPR program, the command center is to be the central point to which records can be referred, cataloged, and reviewed.

While we cannot simply go into the attics or cellars of the Department and pull out boxes labelled "Human Radiation Experiments", the Department will not be deterred by the complexity or difficulty of the task confronting us. We are fully committed to this effort. We are acting as quickly as possible to find and catalog records. We will collect those records and review them. We will release them as comprehensively and as soon as possible, recognizing that we must proceed in a way that protects the privacy of citizens who may have been participants, knowingly or unknowingly, in those experiments.

It is important to understand that this is a discovery process requiring some time before a full report can be provided to Congress and the people of this country. We have all read or heard media reports of radiation experiments in which human subjects participated. They will all be a part of our search. In the interim, we want to make it clear and emphasize to you that we are fully committed to this effort. We are acting expeditiously to find and catalog records. We will collect those records and review them. We will release them as comprehensively and as soon as possible, recognizing that we must proceed in a way that protects the privacy of citizens who may have been participants, wittingly or unwittingly, in those experiments.

NUCLEAR TEST PERSONNEL REVIEW

In the meantime, DoD continues to administer the Nuclear Test Personnel Review. This program was initiated in the late 1970s to identify and assist veterans and selected DoD civilians who participated in the U.S. atmospheric nuclear testing. In 1988, NTPR was expanded to cover DoD personnel who participated in the post-war occupation of Hiroshima and Nagasaki, Japan. The program provides individuals with participation data and exposure levels to assist them in applying for health care or compensation from the Departments of Veterans Affairs and Labor, which are responsible for determining an individual is eligible for health care or compensation.

As of January 1, 1994, 205,472 individuals were identified as having participated in the U.S. atmospheric nuclear testing program. Another 195,753 DoD personnel were associated with the occupation of post-war Hiroshima and Nagasaki. Over the past five years, about 2,000 new program participants have been added to the program annually.

Reaching out to these individuals has been a challenge. DoD has relied on an outreach program to encourage them to contact us. A key component of that outreach has been a toll free hot line. Contact has been established with approximately 70,000 individuals.

The Department of Defense, and the Defense Nuclear Agency remains fully committed to its philosophy of honesty, candor, and thoroughness in the management of this program.

The Department of Defense's full participation in the Human Radiation Interagency Working Group and its administration of the Nuclear Test Personnel Review represent an intense collective attempt to accumulate information necessary to identify those individuals who participated in radiation experiments. Candor and openness have marked each of these endeavors and will continue to serve as hallmarks by which this administration conducts these efforts.

Those brave military personnel, their families, and the American people deserve no less than a full accounting of experiments in which human subjects were used.

STATEMENT OF

MARY LOU KEENER

GENERAL COUNSEL, DEPARTMENT

OF VETERANS AFFAIRS

BEFORE THE

SUBCOMMITTEE ON ADMINISTRATIVE LAW AND GOVERNMENTAL RELATIONS

HOUSE COMMITTEE ON THE JUDICIARY

FEBRUARY 2, 1994

Mr. Chairman and members of the Subcommittee, I am pleased to be here today to discuss our efforts to determine if VA has ever conducted or sponsored inappropriate radiation-related experiments on humans, and to assist you in determining the appropriate government response to concerns about those issues.

Secretary of Veterans Affairs Jesse Brown is a member of the cabinet-level Human Radiation Interagency Working Group. The Working Group is coordinating Executive-branch efforts to determine whether experimental abuses have occurred, and if so the appropriate governmental response. Secretary Brown has committed the Department to a thorough, accurate and energetic review of its nuclear medicine activities and records. He has appointed me to chair VA's internal coordinating committee for this effort. We are determined to learn whether any radiation-related

experimentation of dubious merit or means was ever performed under our aegis, and to share our findings fully with the Congress and the American people.

Our search for the truth is an ambitious undertaking. During the early years of the Nuclear Age, VA was a pioneer in nuclear medicine and conducted a great deal of research using radioisotopes which produced major advancements in patient care. When a review of centrally held research and nuclear medicine records revealed no information on specific research projects, protocols or human subjects, the Secretary required each of our 172 VA medical centers to search its files to determine if it exists locally. All VA facilities are currently engaged in this effort, which includes a search for any documentation of experiments VA conducted in conjunction with its affiliated medical schools or which it contracted out. We hope to have initial reports from all facilities regarding their searches by February 4.

We are currently preparing a protocol for the formal retrieval and inventory of these records. These procedures, being developed in coordination with the Interagency Working Group, will facilitate the orderly provision of documentation to the President's Advisory Committee on Human Radiation Experiments. Of course, due care will be taken to

protect the privacy of research subjects throughout the review.

The President's Advisory Committee is being charged with determining whether:

(1) there was a clear medical or scientific purpose for the experiments;

(2) appropriate medical follow-up was conducted; and

(3) the experiments' design and administration adequately met the standards of informed consent that prevailed at the time of the experiments and meet the standards that exist today.

Mr. Chairman, we share in the insistence that, should inappropriate experimentation be identified, there be a prompt and adequate governmental response. Such a response will be developed in a timely fashion. Certainly, at a minimum the Government should provide appropriate information to experimental subjects and their families and, where required to protect their health, notify them of any potential health risk or need for medical follow-up. Whether

anything more is warranted must neces-sarily await the findings of what transpired and the likeli-hood of any resulting injury.

VA is perhaps unique among the concerned Federal agencies in already having statutory authority to compensate for injuries to veterans resulting from radiation exposure that occurred either during their military service or in connection with negligent clinical treatment at VA health-care facilities following service. Under title 38 of the U.S. Code, if it were determined that veterans were injured as a result of human experimentation while in service, or due to fault (including failure to obtain informed consent) on the part of VA-care providers, VA would be authorized to compensate veterans for disabilities or their surviving spouses or children for resulting deaths, and VA health care could be provided the veterans for their disabilities.

I hope I have conveyed the strength of the Secretary's commitment to addressing the very real concerns of our nation's veterans that their Government may have misled some of them or otherwise abused its trust in the interests of radiation-related research. We want veterans to continue to use our toll-free number (1-800-827-1000) to share their concerns with us. We intend to do all we can to learn

whether abuses have occurred, and to do the right thing if indeed they have.

I would be pleased to respond to any questions you or others members may have.

TAB B15

WITNESS LIST

Subcommittee on Military Forces and Personnel

Thursday, February 10, 1994
2:00 p.m., 2212 Rayburn House Office Building

MISCELLANEOUS PERSONNEL LEGISLATION

H.R. 1055 - To direct the Secretary of Defense to issue a commendation to each individual exposed to mustard agents during World War II, and for other purposes

Honorable Porter Goss
Member of Congress

Jeanne B. Fites
Deputy Assistant Secretary for Requirements and Resources

H.R. 3273 - To amend title 10, United States Code, to revise the requirements for eligibility under chapter 67 of that title for receipt of retired pay for nonregular service in the Armed Forces

Honorable Mike Kreidler
Member of Congress

Mr. Frank Rush
Principal Director
Manpower and Personnel
Office of the Assistant Secretary of Defense for Reserve Affairs

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Mr. SKELTON. Ms. Fites.

STATEMENT OF JEANNE B. FITES, DEPUTY ASSISTANT SECRETARY FOR REQUIREMENTS AND RESOURCES

Ms. FITES. Mr. Chairman and Members of the committee, thank you for the opportunity for me to tell you what the Department of Defense is doing to identify and support military or civilian personnel who were exposed to chemical weapons agents as a part of Defense research programs during and after World War II.

First, I want you to know we share your concern, your indignation and your frustration. I wish I could tell you today that we have identified everyone exposed. I can't. I can only tell you what we have done, what we are continuing to do and what we hope to accomplish.

As Representative Goss referred to, Secretary Perry released individuals from many oaths of secrecy last March and directed us to locate all of the records of these experiments, to declassify those that were classified and to identify the individuals exposed. We established a task force of senior representatives from across the Department and the military services to guide and monitor the effort. This effort is under the Assistant Secretary of Defense for Personnel and Readiness, Dr. Edwin Dorn, because of the critical personnel and compensation issues. So I am qualified to talk to you about the records search, not the scientific details of the experiments.

At first, our effort focused on two things. One, a definition of the kinds of data we are seeking on our testing programs and on the individuals exposed; and, second, identifying the places that this information could be found.

Unfortunately, we don't have a file we can go to on a particular base that says chemical weapons experiments. The information is very old, and it is scattered across the country.

We worked with representatives of the Department of Veterans Affairs——

Mr. SKELTON. Ms. Fites, I realize this is rude, but I think in order for us to make that vote, let me interrupt you right at this point. We will ask you and Mr. Goss to come back, and we will have the opportunity then to ask questions, if you don't mind. I just hate for us to miss it.

Ms. FITES. Fine.

[Recess.]

Mr. SKELTON. We will reconvene.

Ms. Fites, you were in the middle of your testimony before you were so rudely interrupted. We will ask you to proceed. I am sure that Representative Goss will reappear shortly.

Ms. FITES. I will just briefly summarize the rest of my testimony.

We have found five major records holding sites that have records relevant to the issue: Edgewood Arsenal, the Naval Research Lab in Maryland, Dugway Proving Ground, the Army Chemical School Library in Alabama, Rocky Mountain Arsenal and the University of Chicago. We are sure there are other sites, and we are continuing to look.

Let me tell you a little bit about what we found. We visited most of the sites, and I have a list of sites that we visited that we will leave with you today describing what we found there.

[The following information was received for the record:]

CONFIRMED RECORDS REPOSITORY CONTENTS

DUGWAY PROVING GROUND

Technical Library hold over 60,000 documents.
Records holding area contains over 400 boxes of material including scientific notebooks (over 6,000 paper records).

ABERDEEN PROVING GROUND/EDGEWOOD ARSENAL

8,465 linear feet paper.
29 linear feet index cards.
6,776 reels of microforms.
288 gigabytes electronic records.
Some of this documentation is located at Rocky Mountain Arsenal.

U.S. ARMY TRAINING COMMAND CHEMICAL CENTER FORT MCCLELLAN, AL

735 linear feet paper.
Large library collection of books, manuals, etc.

U.S. ARMY MEDICAL RESEARCH AND DEVELOPMENT COMMAND, FORT DETRICK, MD.

100 linear feet of paper.
7,000 sets of microfiche.
200 minutes of film media.

NAVAL RESEARCH LABORATORY

11 scientific notebooks from 1942–1945 (2,300 names extracted).
Large volume of technical reports, papers, etc.

WASHINGTON NATIONAL RECORDS CENTER, SUITLAND, MD

13 boxes of Army Surgeon General files.
Over 100 linear feet of Army Chemical Corps records.

NATIONAL PERSONNEL RECORDS CENTER, ST. LOUIS, MO

Extensive collection of personnel and organizational files from early 1900's to present.
Extensive collection of morning reports and unit information.

UNIVERSITY OF CHICAGO

82 boxes of records from Vice President for Special Projects from WWII DOD contracts.

Ms. FITES. In general, the records aren't indexed or sorted. There are thousands of linear feet of paper in filing cabinets, boxes, thousands of sets of microfiche, and we have to go through all of this page by page with somebody knowledgeable reading it and seeing if there is stuff to be declassified. It is a very complex, time-intensive effort, but we are committed to doing it.

We also have done an analysis from computerized files of experiments and sites and will make available to you that information, too.

[The Battelle Preliminary Draft Report is retained in committee files.]

[The following information was received for the record:]

STATEMENT OF JEANNE B. FITES

DEPUTY ASSISTANT SECRETARY OF DEFENSE

FOR REQUIREMENTS AND RESOURCES

BEFORE THE

MILITARY FORCES AND PERSONNEL SUBCOMMITTEE

HOUSE ARMED SERVICES COMMITTEE

FEBRUARY 10, 1994

FOR OFFICIAL USE ONLY

UNTIL RELEASED BY THE

SUBCOMMITTEE

JEANNE B. FITES

Mrs. Fites was appointed Deputy Assistant Secretary of Defense for Requirements and Resources on December 26, 1993. Prior to that, she served as either Principal Director to or Acting Deputy Assistant Secretary of Defense (Requirements and Resources) and the Director, Intergovernmental Affairs since 1985. She holds a Top Secret clearance with access to special compartmented information. She has been responsible for the research and analytic program for the Assistant Secretary of Defense (Personnel and Readiness), as well as his participation in the Program, Planning and Budgeting system; the Major Automated Information Systems Review Council; and the Defense Corporate Information Council. She is also responsible for presentation of the Defense Manpower Program to the Congress; determination of total force manpower requirements; and for providing Defense support to special events such as the Olympics and the Pan American Games.

From July 1978 to August 1985, as Director, Intergovernmental Affairs, Office of the Assistant Secretary of Defense (Manpower, Installations and Logistics), she managed the presentation of Defense manpower, logistics and military construction program before Congressional committees, the DoD program to avoid tuition charges to military dependents attending public school, support to other agencies in drug interdiction, customs inspection, youth employment. Managed Defense support to the 1980 Winter Olympics at Lake Placid, 1984 Summer Olympics in Los Angeles, and the U.K. sponsored Operation Raleigh.

She was a research psychologist for the Marine Corps, Navy and Air Force, specializing in performance of low aptitude military accessions, training technology and education programs (1966-1974). Member of OSD Central All Volunteer Force Task Force (1972). Assistant Director for Research, Defense Manpower Data Center (1974-1976). Director for Research, Office of the Assistant Secretary of Defense for Manpower and Reserve Affairs (1976-1977).

Mrs. Fites received a master's degree in personnel and industrial psychology from George Washington University in 1969; a baccalaureate in psychology from Wake Forest University in 1966. She was awarded the Presidential Meritorious Executive Rank in 1982 and 1991, and the Defense Meritorious Civilian Service Award in 1981, 1984, and 1989. She resides with her husband Mack and two children, David and Kristi, in Falls Church, Virginia.

Mr. Chairman and Members of the Committee:

Thank you for the opportunity to tell you what the Department of Defense is doing to identify and support military or civilian personnel who were exposed to chemical weapons agents as part of Defense research programs during and after World War II. First, I want you to know that we share your concern, your indignation, and your frustration. I have heard the stories told by witnesses at several hearings. I have read some of the test descriptions in the National Academy of Sciences report and in other documents, and members of my staff have personally called and talked to some of these individuals. I wish I could tell you today that we have identified everyone exposed. I cannot. I can only report to you what we have done, what we are doing, and what we can hope to accomplish.

On March 9, 1993, Dr. Perry directed the Department to take immediate steps to determine the extent of the potential human exposure to chemical weapons agents through our testing program and to identify the individuals exposed. He immediately declassified all relevant information concerning chemical weapons testing programs that were conducted prior to 1968, and directed the Department to begin the declassification process for all programs since 1968. He also released any individuals who participated in testing, production, transportation, or storage associated with any chemical weapons research from any oaths of secrecy or non-disclosure restrictions concerning their participation in such testing. We established a task force of senior representatives from OSD and the Military Departments to guide and monitor the effort. Because of the critical personnel and compensation issues, oversight of the effort rests with the Assistant Secretary of Defense for Personnel and Readiness, Dr. Edwin Dorn.

Our first efforts focused on two things: first, a definition of the kinds of data we were seeking on the testing programs and on the individuals exposed; and second, identification of places where such information would be found. Unfortunately, there is

no central repository for information concerning historical data on our chemical weapons testing programs.

The task force worked with representatives from Veterans Affairs to ensure that we would collect information that would support their efforts to appropriately identify and compensate veterans exposed. The Military Departments sent out messages throughout the Department asking for information on the testing programs, exposures, and locations of records containing such information.

In addition to the National Archives in Suitland and St. Louis, we have so far identified five major DoD records holding sites and one University site where large volumes of records are stored. They are: Edgewood Arsenal, in Maryland; the Naval Research Laboratory, in Maryland; Dugway Proving Ground, in Utah; the Army Chemical School Library, in Alabama; Rocky Mountain Arsenal, in Colorado; and the University of Chicago. We also believe that additional records are almost certainly stored at other contractor facilities and universities that we have not yet identified.

Let me tell you a little bit about what we have found. Members of the task force have visited most of the sites. I have a list of the sites we visited that I will leave with you today. It briefly describes the kinds of records at each location. In general, these records are not indexed or sorted. They consist of thousands of linear feet of paper in filing cabinets or boxes, and thousands of sets of microfiche. They are in historical library collections, warehouse holding areas, and technical libraries. The files also contain weapons schematics, technical drawings, and operational directions as well as scientific formulae. Personnel information can sometimes be extracted from scientific notebooks, operational orders and plans, administrative correspondence, technical reports, personnel rosters, or medical records. Because of national security, foreign diplomacy, and personal privacy issues, review of this information can only be completed by personnel with appropriate security clearances and technical background, as well as

knowledge of personnel issues. Each piece of paper in every collection must be reviewed page by page.

The records at the contractor-operated Chemical and Biological Information Analysis Center at Edgewood are completely automated. We contracted with them to perform a key words search on their records. We recently received a preliminary report from them that contains over 2,000 entries for about 500 sites. The sites include locations where chemical and biological agents were tested, produced, stored, or shipped. But we know this list is incomplete. Our preliminary manual review at other sites has resulted in identification of three human test sites that we did not know about last year and which are not in the automated files.

One of our best sources of information is correspondence from veterans and others who participated in or know something about the tests. We have followed up on individual claims forwarded to us from Veterans Affairs and on phone conversations and letters. These contacts have resulted in identification of additional storage and testing sites. For instance, VA forwarded to us a request for validation on a claim of a US veteran who handled and transported chemicals in India. Experts at Edgewood Arsenal were able to identify the mustard and phosgene canisters in the photos. In addition, the photos confirmed for DoD that mustard was stored at the site. We also located a previously unidentified test site, a Navy Base at Harts Island, New York, through documentation provided by a participant. The documentation indicated that many volunteers for the tests were solicited from individuals in disciplinary barracks.

We now have about 4,000 names of individuals who may have been exposed. We do not have complete information on all of them and not all of them are confirmed test subjects. The first 2,300 names came from the Naval Research Laboratory at the beginning of our effort. Not long after that, an archivist at Suitland who read about our

effort in the newspaper provided about 700 names. The rest of the names have trickled in or been extracted from documents in the DoD repositories.

We have shared our experiences and knowledge gained with the DoD members of the interagency group researching radiation testing. Much of the work we have done is also applicable to their effort. For instance, the same kinds of information must be extracted for personnel involved in those tests. In addition, some of the DoD repositories that we have found also contain information on these programs.

The Department is committed to supporting these individuals, and we will continue to pursue review of records and follow-up on letters from veterans and personal conversations with veterans and former DoD employees.

This concludes my formal statement. Thank you.

HEARING ON EXPERIMENTS WITH HUMAN TEST SUBJECTS

HASC RAYBURN HOUSE BLDG 2:00 pm

FEBRUARY 10, 1994

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CONGRESSMAN PORTER GOSS
TESTIMONY BEFORE THE SUBCOMMITTEE ON
MILITARY FORCES AND PERSONNEL
FEBRUARY 10, 1994

MR. CHAIRMAN, MEMBERS OF THE SUBCOMMITTEE, I VERY MUCH APPRECIATE THE CHANCE TO COME BEFORE YOU TODAY.

FOR THE PAST 5 YEARS, I HAVE WORKED TO BRING ABOUT RELIEF AND OFFICIAL RECOGNITION FOR THE VICTIMS OF SECRET GOVERNMENT TESTS INVOLVING LETHAL MUSTARD AND LEWISITE GASES. THESE MEN, ALL MILITARY TRAINEES, WERE UNWITTINGLY USED AS HUMAN GUINEA PIGS AND THEN ABANDONED BY THE GOVERNMENT THEY SERVED.

AFTER NEARLY 50 YEARS OF DENIAL AND BUREAUCRATIC INACTION, THE GOVERNMENT HAS FINALLY ADMITTED ITS RESPONSIBILITY FOR CONDUCTING THESE SECRET TESTS WITHOUT THE FULL, INFORMED CONSENT OF ITS SUBJECTS AND THAT IT HAS BEGUN TO ASSIST VICTIMS SUFFERING FROM LONG-TERM HEALTH PROBLEMS.

LAST MONTH, THE DEPARTMENT OF VETERANS AFFAIRS ISSUED NEW REGULATIONS DESIGNED TO PROVIDE MEDICAL CARE AND DISABILITY COMPENSATION FOR VETERANS WHO UNDERWENT THESE TESTS.

THE FACTS ARE NO LONGER IN QUESTION: DURING WORLD WAR II, AMID FEARS OF AN ENEMY CHEMICAL ATTACK, THE UNITED STATES NAVY (AND LIKELY THE OTHER ARMED SERVICES AS WELL) EMBARKED ON A PROGRAM TO TEST THE EFFECTIVENESS OF PROTECTIVE CLOTHING AGAINST IMPREGNATION BY MUSTARD GAS AND LEWISITE. IN GATHERING THE NEEDED SUBJECTS FOR THESE TESTS, "VOLUNTEERS" WERE SOLICITED, UNDER THE GUISE OF TESTING "SUMMER CLOTHING" AND WITH THE ATTRACTIVE PROMISE OF EXTRA WEEKEND LIBERTY PASSES.

ONCE COMMITTED TO THE PROGRAM, THESE 17 AND 18-YEAR OLD TRAINEES SUDDENLY "CEASED TO BE VOLUNTEERS." THEY WERE FITTED WITH GAS MASKS AND SUITS, AND ORDERED INTO GAS CHAMBERS FOR REPEATED EXPOSURE TO LETHAL GASES. DOCUMENTATION CONFIRMS THAT THE TESTS WENT BEYOND STUDYING THE EFFECTIVENESS OF THE CLOTHING, AND MOVED INTO A STUDY OF HOW MUCH EXPOSURE A MAN COULD TAKE, THE INFAMOUS "MAN-BREAK" TEST. IN MANY CASES. THE PROTECTIVE EQUIPMENT FAILED.

WHEN THEY WERE NO LONGER NEEDED, OR WHEN THEY WERE TOO SICK TO CONTINUE, THE MEN WERE SENT BACK TO THEIR POSTS WITHOUT PROPER MEDICAL FOLLOW-UP. THEY WERE SWORN TO SECRECY AND THREATENED WITH COURTS MARTIAL IF THEY REVEALED THE TRUE NATURE OF THEIR EXPOSURE TO ANYONE, EVEN TO THEIR OWN PHYSICIANS. GIVEN THE CLASSIFIED STATUS OF THIS TEST PROGRAM, THE RECORD-KEEPING ABOUT WHO PARTICIPATED, LEVELS OF EXPOSURE AND INJURIES SUSTAINED IS WOEFULLY INCOMPLETE AND SOMETIMES NON-EXISTENT.

AFTER DECADES OF SILENCE, THESE MEN BECAME ILL AND SOME VENTURED TO SPEAK OUT ABOUT WHAT THEIR GOVERNMENT HAD DONE TO THEM. NOT ONLY HAD THEY BEEN LIED TO, BUT THEY HAD BEEN USED AS HUMAN GUINEA PIGS AND THEN DISCARDED. WHEN THEY SOUGHT REDRESS -- AND ASSISTANCE FOR THEIR MEDICAL PROBLEMS -- THEY WERE REBUFFED. FIRST CAME THE DENIAL, THEN THE STONEWALLING, THEN THE "GEE, WE WISH WE COULD HELP, BUT . . ." ACCORDING TO VA RULES, IN ORDER TO RECEIVE COMPENSATION FOR A DISABILITY, YOU HAD TO SHOW THAT THE MEDICAL PROBLEM WAS THE RESULT OF YOUR SERVICE. IN THE CASE OF THE MUSTARD GAS VICTIMS, WHO HAD NO PAPER TRAIL FOR THEIR PLIGHT, THIS WAS PRACTICALLY IMPOSSIBLE, A TRAGIC CATCH-22.

BUT A FEW PERSISTED. USING COMPUTERS, TELEPHONES AND THEIR FREEDOM OF INFORMATION RIGHTS AS U.S. CITIZENS, THEY GATHERED BOXES AND BOXES OF RECORDS AND WAS ABLE TO PIECE TOGETHER ENOUGH EVIDENCE TO SHOW THAT THOUSANDS OF MEN HAD INDEED BEEN USED AS HUMAN GUINEA PIGS.

FINALLY, AFTER NATIONAL MEDIA ATTENTION, IN 1991 THE VA BEGAN TO CHANGE THE RULES AND COMMISSIONED A LONG-TERM STUDY INTO HEALTH PROBLEMS ASSOCIATED WITH EXPOSURE TO LETHAL GASES. IN 1993, WITH THE RELEASE OF THAT STUDY, ENTITLED "VETERANS AT RISK," THE DEPARTMENT OF DEFENSE OFFICIALLY RELEASED ALL PARTICPANTS OF THESE TESTS FROM THEIR OATH OF SECRECY. AND, AS I MENTIONED EARLIER, JUST LAST MONTH, THE PROPOSED NEW RULES FOR EXPANDING THE LIST OF ILLNESSES WERE PUBLISHED IN THE FEDERAL REGISTER.

WE HAVE HEARD FROM HUNDREDS OF MEN AND THEIR FAMILIES. THEY ALL TELL SIMILAR TALES OF LIES, DECEPTION AND BETRAYAL. THEY NEED MEDICAL HELP; THEY WANT RECOGNITION; THEY DESERVE RESPECT AND GRATITUDE.

TODAY WE KNOW THAT GOVERNMENT'S USE OF UNWITTING SUBJECTS FOR POTENTIALLY HARMFUL STUDIES WAS NOT LIMITED TO THE MILITARY IN TIMES OF ACTUAL WAR. ENERGY SECRETARY HAZEL O'LEARY HAS SAID THAT GOVERNMENT HAS AN OBLIGATION TOWARD RADIATION VICTIMS -- I AGREE. BUT I THINK GOVERNMENT HAS AN OBLIGATION TOWARD <u>ALL</u> VICTIMS OF SECRET TESTS.

THE DISCUSSSION ABOUT COMPENSATION BEYOND TREATMENT FOR MEDICAL AILMENTS AS A RESULT OF SECRET GOVERNMENT TESTS WILL BE ONGOING. TODAY, I SEEK YOUR HELP IN TAKING AN IMPORTANT INTERIM STEP -- ENSURING THAT THE VETERANS WHO PARTICIPATED IN THESE TESTS RECEIVE THE OFFICIAL GOVERNMENT COMMENDATION THEY HAVE EARNED. HR 1055, WHICH NOW HAS 60 COSPONSORS, INCLUDING THE CHAIRMAN OF THE HOUSE VETERANS AFFAIRS COMMITTEE, INSTRUCTS THE SECRETARY OF DEFENSE TO:

* ISSUE AN APPROPRIATE COMMENDATION "IN HONORARY RECOGNITION OF THE INDIVIDUAL'S SPECIAL SERVICE, LOYALTY, AND CONTRIBUTION TO THE UNITED STATES;"

* NOTIFY TEST VICTIMS OF THE EXPOSURE THEY SUFFERED, THE POSSIBLE HEALTH EFFECTS RESULTING FROM THAT EXPOSURE AND THE LIKELY OPTIONS FOR MEDICAL TREATMENT;

* MAKE AVAILABLE TO THE SECRETARY OF VETERANS AFFAIRS ANY RELATED RECORDS AND INFORMATION.

WHILE THE DEPARTMENT OF DEFENSE AND THE DEPARTMENT OF VETERANS AFFAIRS, AS WELL AS THE PRESIDENT, HAVE ALL PLEDGED TO WORK TOWARD THE SECOND AND THIRD REQUIREMENTS OF HR 1055, THERE IS NO MANDATE OR TIMETABLE FOR THIS TO OCCUR AND THE MATTER OF AN OFFICIAL COMMENDATION REMAINS IN QUESTION. HENCE, I ASK YOUR SUBCOMMITTEE'S FAVORABLE CONSIDERATION AND SPEEDY ACTION ON HR 1055.

THE TWO MAJOR CONCERNS RAISED BY MY COLLEAGUES ABOUT THIS LEGISLATION INVOLVED NUMBERS AND COST PROJECTIONS. REGARDING THE NUMBERS OF VETERANS THAT COULD BE ELIGIBLE UNDER HR 1055, THERE ARE ONLY ROUGH ESTIMATES. WE KNOW THAT AT LEAST 1700 MEN PARTICIPATED IN THE NAVY'S FULL-BODY TEST PROGRAM AT NRL IN ANACOSTIA, BUT THERE IS EVIDENCE THAT OTHER TESTS (INVOLVING "PATCH" EXPOSURE AND "FIELD" EXPOSURE) WERE CONDUCTED BY THE OTHER BRANCHES OF THE MILITARY AT DIFFERENT LOCATIONS. AS FOR THE COST OF IMPLEMENTING HR 1055, THIS IS A COMMENDATION BILL, NOT A COMPENSATION BILL. THERE WOULD, OF COURSE, BE INCREMENTAL COSTS ASSOCIATED WITH ISSUING THE COMMENDATION, LOCATING THE VETERANS AND INVOLVING THEM IN EXISTING VA MEDICAL PROGRAMS -- BUT THERE IS NO PROVISION IN HR 1055 FOR A "LUMP SUM" OF BENEFITS PER VETERAN.

IN CLOSING, MR. CHAIRMAN, I HAVE BEEN STRUCK BY THE REMARKABLE LOYALTY TO THE UNITED STATES GOVERNMENT AND PRIDE IN THEIR SERVICE THESE VETERANS SHOW, EVEN DESPITE THE YEARS OF DENIALS AND BETRAYAL. ASIDE FROM SEEKING MUCH-NEEDED MEDICAL AND DISABILITY ASSISTANCE, WHAT THEY REALLY LONG FOR IS RECOGNTION -- AND A THANK YOU FROM THE GOVERNMENT THEY SERVED. THAT'S CERTAINLY THE LEAST WE CAN AND SHOULD DO FOR THESE BRAVE MEN.

THANK YOU. I'D BE HAPPY TO ANSWER ANY QUESTIONS.

TAB B16

SENATE COMMITTEE DAILY DIGEST MAY 06, 1994
extract from THOMAS September 24, 2007

VETERANS HEALTH

Committee on Veterans Affairs: Committee concluded hearings to examine how to protect the interests and welfare of military personnel who serve as test subjects in war-related research, and VA efforts to assist veterans who were exposed to hazardous substances while in the military, after receiving testimony from Edward Martin, Acting Principal Assistant Secretary for Health Affairs, and Jeanne B. Fites, Deputy Assistant Secretary for Defense, Personnel and Readiness, both of the Department of Defense; Raymond J. Vogel, Under Secretary for Benefits, and Susan H. Mather, Assistant Chief Medical Director for Environmental Medicine and Public Health, both of the Department of Veterans Affairs; Robert J. Temple, Director, Office of Drug Evaluation, and Russell G. Katz, Deputy Director, Division of Neuropharmacological Drug Products, both of the Center for Drug Evaluation and Research, Karen L. Goldenthal, Director, Division of Vaccines and Related Product Applications, Center for Biologics Evaluation and Research, and Catherine C. Lorraine, General Counsel, all of the Food and Drug Administration, Department of Health and Human Services; James Moss, Researcher, Agricultural Research Service , Department of Agriculture; Leonard A. Cole, Rutgers University, Ridgewood, New Jersey; Arthur L. Caplan, University of Pennsylvania, Philadelphia; Thomas J. Callender, Lafayette, Louisiana; Rudolph R. Mills, Fredericksburg, Virginia; Earl P. Davenport, Tooele, Utah; Neil R. Tetzlaff, Reed City, Michigan; and Barry M. Walker, East Palestine, Ohio.

[Page: D504]

TAB B17

HOUSE COMMITTEE DAILY DIGEST SEPTEMBER 28, 1994
extract from THOMAS September 24, 2007

COLD WAR ERA HUMAN SUBJECT EXPERIMENTATION

Committee on Government Operations: Subcommittee on Legislation and National Security held a hearing on Cold War Era Human Subject Experimentation . Testimony was heard from Representative Sabo; Frank C. Conahan, Assistant Comptroller General, National Security and International Affairs Division, GAO; the following officials of the Department of Defense: Jeanne Fites, Deputy Under Secretary, Requirements and Resources, Personnel and Readiness; Gordon Soper, Deputy Assistant Secretary, Atomic Energy Division; Joseph Osterman, Director, Environmental and Live Sciences, Office of the Director, Defense Research and Engineering; and Michael A. Parker, Executive Director, U.S. Army Chemical and Biological Defense Command, Aberdeen Proving Ground; Robyn Y. Nishimi, Senior Associate, OTA; and public witnesses.

TAB B18

HEARING ON EXPERIMENTS WITH HUMAN TEST SUBJECTS
BRIEFING BOOK FOR SEPTEMBER 28, 1994

ALPHABETICAL INDEX OF TOPICS

HEARING ON EXPERIMENTS WITH HUMAN TEST SUBJECTS
September 28, 1994

Alphabetic Listing of Topics

Bari Italy Bombing Raid -- On December 2, 1943, German airplanes raided the harbor at Bari, Italy which was packed with ships. The raid was highly successful. At least 2 of the ships exploded. One was loaded with 100 tons of 100 pound mustard bombs. Some of the mustard was released and dissolved in the oil and gasoline floating in the harbor. DDR&E letter of March 17, 1993, to the VA promised a list of the personnel involved. OUSD(P&R) has been able to piece together a list of 504 personnel who were on ships in the harbor. **At Tab 1 is (A) copy of the DDR&E letter and (B) the package forwarding the names to the VA .**

Bills to Compensate or Recognize Persons Exposed to Radiation or Mustard Gas
HR 1055 - To direct the Secretary of Defense to issue a commendation to each individual exposed to mustard agents during W.W.II. HR 3743 - To provide for payments to individuals who were the subjects of radiation experiments conducted by the Federal Government. "Sense of the Congress" contained in the Authorization Act of FY 1995 suggests that SecDef should identify mustard gas test subjects, notify them of the degree of their exposure, and give them some kind of commendation. In April we wrote to the Chairman of the HASC and stated that we concurred with the proposed legislation. On September 1, 1994, Mr. Goss wrote to SecDef and asked us to honor our commitment to support the legislation and commend these veterans and to notify them about their exposures. On September 22, Mr. Goss's office forwarded a list of potential test subjects to OUSD (P&R), which has been included here.We will begin immediately to make contact with the persons on this list. **At Tab 2 is (A) a copy of the final and proposed legislation, (B) Mr. Goss's September 1 letter reminding us of our commitment and our April 1994 letter concurring with the legislation,, and (C) our proposed response to Mr. Goss, (D) list of contacts from Mr. Goss's office.**

Biological Warfare Research - Summary We received updated information on the biological research programs via OASD (LA) from the information that was compiled by OASD (International Security Policy) while researching information for the non-proliferation treaties. The first page is a summary of our biological activities. The formal list of projects with number of volunteers is from the ISP report. We have been in contact with the ISP project manager for bio collection, Lisa Bronson. She said they did not have names, but that they would share whatever information they had when we were ready for it. Some of the contract personnel we have on our Battelle CBIAC contract did work on the bio project as a sub to BDM the principle contractor. **Tab 3 is a (A) a Summary Bio Factsheet, (B) a list of Bio Projects and (C) Chemical Agent Fact Sheets.**

Chemical Weapons Exposure Task Force (CWEST) -- The Chemical Weapons Exposure Task Force is led through my office. Members are senior analysts from several OSD offices and the Military Departments. It was established to oversee the efforts

directed by Dr. Perry to provide information on sites and individuals potentially exposed. To meet our goals, it was immediately obvious that our first priorities had to be design of the data bases we planned to develop and location of sites where information is stored. We worked closely with VA staff to design the data bases to ensure they would contain the information critical to their efforts. The group met formally several times in the first months of the effort. Formal meetings are less frequent now, but the members keep in regular contact on an informal basis. **GAO has copies of these minutes. Summary Sheet and Minutes at Tab 4.**

Chemical Weapons Testing Sites Using Human Test Subjects - Updated List
We have added Fort Detrick, MD; Fort Benning, GA; and Harts Island, NY to the list of human subject research test sites that was provided during the March 1993 hearing. Fort Detrick was the center for biological warfare research. There is a significant collection of records on Ft. Detrick at WNRC, Suitland. OUSD(P&R) analysts identified a group of medical files at NPRC St. Louis that were from the LSD testing around the late 60's early 70's using volunteers from Fort Benning. The Harts Island identification was made by two different methods. In November, 1993, VA forwarded to DoD a copy of a medical card and commendation from a veteran which clearly referenced mustard gas warfare tests. In December, 1993, NPRC St. Louis found a copy of correspondence between the Chemical Weapons Service and the Secretary of the Navy authorizing use of prisoners at the U. S. Navy Disciplinary Barracks at Harts Island, New York. As a result of an earlier visit by OUSD(P&R) to NPRC, the Director of the Military Records Section forwarded us copies. **Updated Human Test Site list at Tab 5. Copy of record validation on Harts Island at Tab 6. History of University of Chicago Toxicity Lab at Tab 7.**

Clinton Reply to Congressman Glen Browder - February 93 -- Glen Browder wrote to the President after publication of the NAS Report in January 1993, to urge him to commit the resources of DoD to fining and helping veterans. The President replied that the VA was diligently attempting to identify the veterans and they had asked for our help. *He told Mr. Browder this issue would not be treated as "business as usual."* **Tab 8 is Mr. Clinton's reply and the original letter from Mr. Browder.**

Database - Chemical and Biological Weapons Site Location -- This database contains information on where chemical and biological agents were tested, produced or stored, test dates; whether or not there were human test subjects; the agent used; and information on source documents for further reference. So far, there are about 500 sites, representing over two thousand entries in the automated database; these are not all test sites, many are storage or production sites, or transportation terminals. Not all information is available for each entry. Contractor support is being used to research and populate the database. To date, the automated contents of the database reflect information extracted from automated files at the Chemical/Biological Warfare Analysis Center and from files at the Technical Library at Edgewood Arsenal. **The contractor is at this time at Dugway Proving Ground extracting information from the records holding area and the Technical Library.** Our manual review has also identified additional experiments which

will be added to the database. **We received additional funding and have now committed $244K to this effort. Sample page from the database is at Tab 9.**

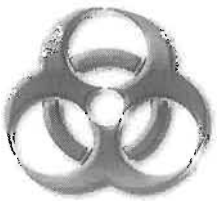
Database - Personnel -- This database identifies individuals (military and civilian) who may have been exposed to chemical and/or biological agents and assists VA in their verification. The database contains available information on: name, service number or SSN, Military Department, rank, date of birth, age at exposure, current health status, agents and type of exposure, location, project name and start/end date, and record location and type (medical/personnel/technical). To date, there are 12,743 names in the database. Not all information is available for all entries. We have designed expanded personnel file software to capture information on exposures. **Tab 10 is a breakdown of the sources for the names in the database and a sample page of file maintained by DMDC.**

Edgewood Data on Experiments and Subjects -- LTC Rick Jackson, our former Army POC on the CWEST, uncovered information on the chemicals tested and the numbers of subjects at Edgewood. Information like this on each site where experiments were conducted would be invaluable in establishing a projected universe. **Data at Tab 11.** In March 1994, we located 7,000 names on automated tapes at Edgewood. The records are for experiments conducted from 1955 up thorough the 70's and include LSD test subjects. Edgewood converted the tapes for us and in August, and we obtained copies of the data. **Sample of Information at Tab 12.**

GAO Report - February, 1993 -- A GAO report was issued in February, 1993, which attempted: to identify all chemical and biological experiments; to review VA handling of claims; and to review VA's efforts to contact veterans. They cited a lack of data as a reason for difficulty in VA validating claims. **Two-page summary of GAO results is at Tab 13.**

GAO Study - September 1994 -- The GAO is conducting another review at the request of Congressman John Conyers, Chairman of the Subcommittee on Legislation and National Security, House Committee on Government Operations. This study started September, 1994. It is examining the efforts that DoD has been making to locate the names of test subjects from various types of research including radiological, chemical and biological. *Questions concerning the chemical weapons exposure study have been directed at the amount of resources (both fiscal and personnel) that have been put toward this effort, where the principle responsibility lies for the effort, and whether or not we have been making any effort to notify test subjects of the potential long term effects of their exposures.* **Tab 14 is (A) Summary of GAO meetings, (B) entrance letter, and (C) Questions from Congressman Conyers via RECC.**

Goss letter to President Clinton - January 1994 -- Congressman Porter Goss wrote to the President to remind him of the plight of veterans who were used in W.W.II chemical warfare experiments. He asked him not to let their sacrifice and patriotism be forgotten as we react to t e needs of persons used in radiation experiments. **Mr. Goss' letter is at**



TAB B19

SUMMARY OF GAO ENTRANCE MEETING
19 August 1994 IRM OFFICE OUSD(P&R)

At 1000 the DoDIG opened the GAO entrance meeting. The GAO Auditor with lead on this study was Mr. Glenn Furbish, who also conducted the review on the GAO study completed in 1993 on human use.

GAO was requested to conduct this inquiry and provide testimony by Congressman John Conyers for his subcommittee on Legislation and National Security, House Committee on Government Operations. The objective of the review was to identify the magnitude, impact and government actions being taken to address problems resulting from experiments sponsored or conducted by Federal agencies in which humans were deliberately exposed to hazardous chemical, biological, and/or nuclear material. The Service points of contact for the Chemical Weapons Exposure Study Task Force were invited to attend, and most were there or sent a representative. NTPR sent a rep; as did DTIC, which has oversight for the contracting vehicle we use in (P&R) for our Battelle/CBIAC contract.

GAO was particularly interested in our efforts to (a) identify and notify participants about medical care necessary and compensation available, (b) the kinds and numbers of experiments, (c) the long term effects of the experiments on human subjects, (4) and what were the current laws or policies that we operate under where human use is concerned.

Questions were posed concerning who was in control of particular efforts to collect information, how the efforts were administered within OSD and the Services, what kind of resources were allocated to particular efforts, and what were the extent of our activities so far, what had we accomplished, and what were the major challenges to identification and notification. There was discussion as to where the responsibility lay and what the avenues were for compensation for injury. The attached *Human Subject Experimentation Audit Guidelines* were provided to the attendees.

GAO said they would be visiting the Services, specifically those installations that had human testing activities confirmed such as NRL and Edgewood Arsensal.

GAO was given copies of the DepSecDef memo of March 9, 1993, to the Services directing declassification of certain materials, collection of information and forwarding to OUSD (P&R), and releasing WWII test subjects from oaths of secrecy. They were also given a copy of the DepSecDef memo to Congressman Montgomery dated March 9, 1993; and a copy of the current human experimentation information sheet developed by OASD (HA). President Clinton's letter of January 31, 1994, to Congressman Porter Goss was also provided.

FOLLOW-UP MEETING WITH GAO SEPTEMBER 8, 1994

On September 8 Glenn Furbish and Meg Klucaritas held a meeting with OUSD (P&R) staff to clarify some of the issues concerning the chemical exposure study. The discussion centered on issues of personnel and fiscal resources committed to the chemical effort; a central or focal point for control and direction of the collection efforts; and what our understanding or intentions were concerning outreach efforts for persons identified during our records searches. They also asked about clarification on DoD policy. They were referred to the March 9, 1993, DepSecDef memo as the implementing policy for the chemical weapons exposure search.

September 12, 1994, Phone Inquiry

The week of 12 September OUSD (P&R) received a call from Ms. Klucaritas concerning questions on how and where people sought compensation. Marty Hamed discussed use of the VA for veterans, and the Department of Labor for former civilian DoD or contractor employees.

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-2884

Analysis
and Followup

AUG 16 1994

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR PERSONNEL AND READINESS

SUBJECT: General Accounting Office (GAO) Letter Dated August 9, 1994, "Human Use Experiments During the Cold War Era" (GAO Code 709096)--NOTIFICATION OF GAO REVIEW

On August 11, we received the official GAO notification letter on the subject effort (Enclosure 1). The GAO National Security and International Affairs Division (Defense Management and National Aeronautics and Space Administration Issues) has started the subject review at the request of Chairman John Conyers, Jr., Subcommittee on Legislation and National Security, House Committee on Government Operations. The GAO is working with Mr. Jim Turner of the Subcommittee staff on this assignment.

Chairman Conyers has requested that the GAO testify on September 19, 1994, before his Subcommittee. In preparing its testimony, the GAO will review human use experiments conducted within the DoD during the Cold War era, including chemical, biological, radiological and medical experiments, both classified and non-classified. The GAO intends to provide (1) an overview on the types and magnitude of tests conducted, and (2) information on the Federal efforts to notify participants, provide assistance, and compensate test participants.

To preclude duplication and expedite this review, the GAO intends to use the radiation data gathered on its ongoing GAO Code 302113 effort, "Federally Sponsored Radiation Releases and Experiments Involving Human Subjects." Enclosure 2 is a copy of our July 1, 1994, tasking memorandum to the Under Secretary of Defense for Acquisition and Technology on the Code 302113 effort. Our July 22, 1994, weekly activity report item (Enclosure 3) described the details of the entrance meeting with the GAO on that project. The GAO also plans to use data from its recently announced review on the "Adequacy of Informed Consent Procedures for Volunteers at the Departments of Health and Human Services and Veterans Affairs." This latter project does not currently involve the DoD.

The DoD Directive 7650.2 designates this office as the central DoD liaison for GAO activities. The enclosed Information Sheet describes the DoD procedures for processing, monitoring, and managing GAO survey and reviews, and the DoD primary action office (PAO) responsibilities. Your office is the PAO for the subject review. Your audit liaison advises that your action officer for this case is Ms. Norma St. Claire, Office of the Deputy Assistant Secretary of Defense (Requirements and Resources), (703) 696-8710.

Collateral action offices (CAO) are listed at the end of this memorandum. The CAO should provide action officer information (name, telephone and telefax numbers, room number) to Ms. St. Claire and our action officer, Mr. Bob Benefiel, (703) 604-9630.

As arranged with Ms. St. Claire and the GAO, a joint, headquarters level entrance meeting with the GAO (to identify and discuss the detailed GAO workplans) is scheduled for Friday, August 19, 1994, at 10:00 a.m., in the 12th floor conference room, at 4015 Wilson Boulevard (Ballston Centre Tower III). We intend to telefax copies of this letter to members of the Chemical Weapons Exposure Study Task Force from the CAO as well as the other listed CAO that are not part of the Task Force.

My office, in coordination with Ms. St. Claire, will also schedule interim and/or exit meetings with the GAO and cognizant DoD component representatives before any GAO congressional briefing or testimony based on this audit work, or before the GAO issues a final report.

The interim status and exit meetings are particularly important because these meetings may effectively be the only DoD opportunity to comment on GAO work that could result in budget reductions and/or program direction decisions by the Congress long before any GAO report is issued. My action officer should be alerted if the GAO distributes written information to your office for review and informal comments.

All involved DoD components are requested to inform your office and this office if the GAO requests an interim status or exit meeting with them (i.e., provide advance notice of the meeting, forward copies of memoranda for the record on the meetings and any GAO document discussed). This information is important because the PAO is ultimately responsible for responding to GAO reports (and other documents) on behalf of the Secretary of Defense.

Staying informed on GAO survey/review activity depends on the PAO, the other involved DoD components, and this office working closely together. We request your full support in these efforts to prevent surprises related to the GAO audit and to ensure that the DoD is in a position to realize the maximum benefits from this GAO audit work.

For additional information, please contact Mr. Benefiel. If he is not available, I can be reached on (703) 604-9636.

Peggy Wright

Peggy Wright
Acting Director
GAO Surveys and Reviews

Enclosures:
As stated

CAO Copies:	SEC ARMY	DIR, JS
	SEC NAVY	DIR, ARPA
	SEC AIR FORCE	DIR, DIA
	USD(A&T)	DIR, DNA
	ASD(C3I)	DIR, PA&E
	ASD(HA)	
Info Copies: (Without Info Sheet-A)	CMDT, USMC	
	DDR&E	
	ASD(LA)	
	ATSD(AE)	
	ATSD(PA)	
	GC	

GAO

United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

AUG 1 1 1994

AUG 9 1994

The Honorable William J. Perry
The Secretary of Defense

Attention: DOD Office of the Inspector General
Director for GAO Surveys and Reviews

Dear Mr. Secretary:

This is to inform you that the General Accounting Office, in response to a congressional request, is initiating a review of human use experiments conducted within the Department of Defense during the Cold War era. Our review will include chemical, biological, radiological and medical experiments, both classified and non-classified. Our objectives are to provide (1) an overview on the types and magnitude of tests conducted; and (2) information on the federal government's response to include efforts to notify participants, provide assistance, and compensate test participants.

Our work, scheduled to begin this month, will be conducted under assignment code 709096. This assignment has been coordinated with Peggy Wright.

If you have any questions about this assignment, please contact Tom Howard, Assistant Director, at (202) 512-3620, or Glenn Furbish at (202) 512-8439.

Sincerely yours,

Donna M. Heivilin, Director
Defense Management and NASA Issues

Enclosure 1
Page 1 of 1

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-2884

JUL - 1 1994

Analysis
and Followup

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND TECHNOLOGY

SUBJECT: General Accounting Office (GAO) Letter Dated June 20, 1994, "Federally Sponsored Radiation Releases and Experiments Involving Human Subjects" (GAO Code 302113)--NOTIFICATION OF GAO REVIEW

On June 23, we received the official GAO notification letter (Enclosure 1) on the subject effort. The GAO has started the review based on an April 14, 1994, request letter (Enclosure 2) from Chairman John Glenn, Senate Committee on Governmental Affairs. Since sending the notice letter, the GAO has decided that its Health, Education, and Human Services Division (Federal Health Care Delivery Issues) will lead this effort with support from the Resources, Community, and Economic Development Division (Energy and Sciences Issues). The GAO National Security and International Affairs Division is no longer involved with this effort.

In his request letter, Chairman Glenn noted that the Administration is currently identifying the radiation releases, experiments, and tests that through lapses in science or ethics standards may have harmed individuals. The President has appointed an Advisory Committee on Human Radiation Experiments to provide advice and recommendations to the Human Radiation Interagency Working Group on the ethical and scientific standards applicable to human radiation experiments. The Departments of Defense, Energy, Health and Human Services, and Veterans Affairs have recently disclosed that they previously planned radiation releases, conducted experiments and other tests to determine the effects of radiation on humans.

Chairman Glenn cited the related January 25, 1994, Committee hearings and the Committee's need for additional work in this area. Specifically, the Committee requested that the GAO examine the Administration's plans for:

- disclosing the details of the Federally sponsored radiation releases and experiments that involved human subjects,

- identifying and notifying those subjects (or their families), and

- compensating those people who are determined to have been injured as a result of the experiments.

The Committee has requested that the GAO testify in October 1994 on its work. The GAO testimony will likely show the status of the Administration's actions. Based on our past experience with the lead GAO team, we expect that the GAO will meet with appropriate DoD officials in advance of any congressional testimony to discuss the accuracy and completeness of its work.

The GAO is working with Mr. Chris Kline of the Committee staff on this assignment. The GAO will determine what further work is needed, completion dates, and reporting products based on input received during the Committee hearings in October 1994. The GAO does not know at this time whether the DoD will be provided an opportunity to comment officially on any GAO draft report. However, the GAO staff has agreed to an exit meeting with appropriate DoD officials to discuss the accuracy and completeness of its work before issuing any final report.

The DoD Directive 7650.2 designates this office as the central DoD liaison for GAO activities. The enclosed Information Sheet describes the DoD procedures for processing, monitoring, and managing GAO survey and reviews, and the DoD primary action office (PAO) responsibilities. Your office is the PAO for the subject review. Your audit liaison advises that your action officer for this case is Dr. Gordon Soper, Principal Deputy, Office of the Assistant to the Secretary of Defense (Atomic Energy), (703) 697-5161.

Collateral action offices (CAO) are listed at the end of this memorandum. The CAO should provide action officer information (name, telephone and telefax numbers, room number) to Dr. Soper and our action officer, Mr. Bob Benefiel (703) 693-0214. Action officer information should be provided as soon as possible to allow us an opportunity to advise on the entrance meeting arrangements.

Mr. Benefiel will coordinate with Dr. Soper to arrange a joint, headquarters level entrance meeting with the GAO so that the GAO can identify and discuss the detailed GAO plans and begin the review. My office, in coordination with Dr. Soper, will also schedule interim and/or exit meetings with the GAO and cognizant DoD component representatives before any GAO congressional briefing or testimony based on this audit work, or before the GAO issues a final report.

The interim status and exit meetings are particularly important because these meetings may effectively be the only DoD opportunity to comment on GAO work that could result in budget reductions and/or program direction decisions by the Congress long before any GAO report is issued. My action officer should

be alerted if the GAO distributes written information to your office for review and informal comments.

All involved DoD components are requested to inform your office and this office if the GAO requests an interim status or exit meeting with them (i.e., provide advance notice of the meeting, forward copies of memoranda for the record on the meetings and any GAO document discussed). This information is important because the PAO is ultimately responsible for responding to GAO reports (and other documents) on behalf of the Secretary of Defense.

Staying informed on GAO survey/review activity depends on the PAO, the other involved DoD components, and this office working closely together. We request your full support in these efforts to prevent surprises related to the GAO audit and to ensure that the DoD is in a position to realize the maximum benefits from this GAO audit work.

For additional information, please contact Mr. Benefiel. If he is not available, I can be reached on the same number.

Marcia J. Van Note

Marcia J. Van Note
Director
GAO Surveys and Reviews

Enclosures:
As stated

CAO Copies:	SEC ARMY	CMDT, USMC
	SEC NAVY	ASD(HA)
	SEC AIR FORCE	DIR, DNA
Info Copies:	ASD(LA)	DIR, JS
(Without	ATSD(AE)	AIG(APO)
Info	ATSD(PA)	AIG(AUD) (2)
Sheet-A)	DUSD(ES)	AIG(INS) (2)
	GC	

Enclosure 2
Page 3 of 6

GAO
United States
General Accounting Office

National Security and
International Affairs Division

June 20, 1994

The Honorable William J. Perry
The Secretary of Defense

Attention: DOD Office of the Inspector General
Director for GAO Surveys and Reviews

Dear Mr. Secretary:

This is to inform you that, at the request of the Senate Committee on Government Affairs, the Resources, Community, and Economic Development Division of the General Accounting Office is initiating an examination of the administration's plans for 1) disclosing the details of federally-sponsored radiation releases and experiments that involved human subjects; 2) identifying and notifying those subjects (or their families); and 3 compensating those people who are determined to have been injured as a result of the experiments. DOD is one of the agencies GAO will examine in regard to these issues.

The assignment code for this work is 302113. This assignment will be jointly conducted by GAO's Health, Education, and Human Service Division, and National Security and International Affairs Division. If you have any questions or require further information, please contact any of the following individuals:

Robert E. Allen, Jr., Assistant Director, RCED, (301) 903-5710
Stephen P. Backhus, Assistant Director, HEHS, (202) 512-7111
Foy D. Wicker, Assistant Director, NSIAD, (202) 512-6042

Sincerely yours,

Frank C. Conahan
Assistant Comptroller General

Enclosure 2
Page 4 of 6

United States Senate

COMMITTEE ON
GOVERNMENTAL AFFAIRS
WASHINGTON, DC 20510-6250

April 14, 1994

The Honorable Charles A. Bowsher
Comptroller General of the United States
U.S. General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Bowsher:

Recently several federal agencies, including DOE, DOD, VA, and HHS, disclosed that experiments, planned releases and other tests have been conducted to determine, among other things, the effects of radiation on humans. Many of the human subjects involved in these radiation events were cognizant of what was happening to them. However, it appears that some of the subjects were not made aware of the significance and potential danger of these radiation tests and experiments. The administration, with DOE as the main sponsor of these tests, is currently involved in an effort to identify historical radiation tests, planned releases and experiments that through lapses in science or ethics standards may have harmed individuals.

As you know, the Committee is very interested in this issue and has held hearings, most recently, on January 25, 1994 to discuss the details of federally-sponsored radiation and other tests involving human subjects. To help support the Committee's effort in this matter, I request that the General Accounting Office (GAO) initiate an examination of the administration's plans for: 1) disclosing the details of the federally-sponsored radiation releases and experiments that involved human subjects; 2) identifying and notifying those subjects (or their families); and 3) compensating those people who are determined to have been injured as a result of these experiments.

GAO's primary objectives in this assignment should be to: 1) understand the administration's overall plans to locate and analyze information and then make public radiation-related releases and experiments involving human subjects; 2) understand DOE's, DOD's, HHS's and VA's detailed plans for addressing this issue; 3) determine whether these plans adequately address the full disclosure of federally-sponsored radiation tests and experiments involving human subjects; 4) assess the ability and success of the federal government in indentifying and notifying human subjects; and 5) provide an assessment of other relevant compensation programs, including those established for the

"downwinders," the Marshall Islanders, and "atomic veterans," with respect to any lessons learned from those programs which might be applied to a compensation program for subjects of radiation experiments.

As you may know, the President has appointed an Advisory Committee on Human Radiation Experiments to provide advice and recommendations to the Human Radiation Interagency Working Group on the ethical and scientific standards applicable to human radiation experiments. I would expect GAO to closely monitor the meetings of the Working Group and Advisory Committee. Your examination should also include an assessment of the analytical plan or framework developed by the Advisory Committee to carry out its charge.

I understand that you staff has already had preliminary meetings with DOE officials, and has briefed my Governmental Affairs staff on your initial findings. I also understand that the scope of your investigation may need to change as it proceeds; therefore, I would appreciate your staff providing regular updates to my staff as your investigation continues. Chris Kline is my point of contact; he may be reached at 202-224-7954.

Thank you for your continued assistance.

Sincerely,

John Glenn
Chairman

JHG/ck

Enclosure 2
Page 6 of 6

1. Entrance Meeting: "Federally Sponsored Radiation Releases and Experiments Involving Human Subjects" (GAO Code 302113).

The GAO has started the review based on an April 14, 1994, request letter from Chairman John Glenn, Senate Committee on Governmental Affairs. Since sending its June 20, 1994, notice letter, the GAO has decided that its Health, Education, and Human Services Division (Federal Health Care Delivery Issues) will lead its DoD efforts. The GAO Resources, Community, and Economic Development Division (Energy and Sciences Issues) will have overall responsibility for coordinating the GAO efforts at the Departments of Defense, Energy, Health and Human Services, and Veterans Affairs, as well as the National Aeronautics and Space Administration (NASA). The GAO National Security and International Affairs Division will do the work at the NASA. The GAO has excluded the Central Intelligence Agency from its work because it was not discussed in the request letter.

In his request letter, Chairman Glenn noted that the Administration is currently identifying the radiation releases, experiments, and tests that, through lapses in science or ethics standards, may have harmed individuals. The President has appointed an Advisory Committee on Human Radiation Experiments to provide advice and recommendations to the Human Radiation Interagency Working Group on the ethical and scientific standards applicable to human radiation experiments. The Departments of Defense, Energy, Health and Human Services, and Veterans Affairs have recently disclosed that they previously planned radiation releases, conducted experiments and other tests to determine the effects of radiation on humans.

Chairman Glenn cited the related January 25, 1994, Committee hearings and the Committee's need for additional work in this area. At the July 19 entrance meeting, the GAO staff discussed the Committee request that the GAO examine the Administration's plans for:

- disclosing the details of the Federally sponsored radiation releases and experiments that involved human subjects,

- identifying and notifying those subjects (or their families), and

- compensating those people who are determined to have been injured as a result of the experiments.

The Committee has requested that the GAO frequently update the Advisory Committee and Working Group so that its preliminary observations can be considered and search process adjusted, if needed. The Committee has also requested that the GAO testify in

October 1994 on its work. The GAO testimony will likely show the status of the Administration's actions. Based on our past experience with the GAO team working in the DoD, we expect that the GAO will meet with appropriate DoD officials in advance of any congressional testimony to discuss the accuracy and completeness of its work.

The DoD Principal Deputy Assistant to the Secretary of Defense (Atomic Energy) informed the GAO that the (1) Radiation Experiments Command Center is the focal point for the DoD search process, (2) agency Generals Counsel will decide on disclosures at the completion of the search, and (3) Congress will decide on compensation based on input from the Department of Justice.

The GAO is working with Mr. Chris Kline of the Committee staff on this assignment. The GAO will determine what further work is needed based on input received during the Committee hearings in October 1994. The GAO currently plans to issue its final report by May 1995 but does not know at this time whether the DoD will be provided an opportunity to comment officially on any GAO draft report. However, the GAO staff has agreed to an exit meeting with appropriate DoD officials to discuss the accuracy and completeness of its work before issuing any final report. The Office of the Under Secretary of Defense for Acquisition and Technology is the primary action office for this GAO effort. (Mr. Benefiel (703) 604-9630)

Enclosure 3
Page 2 of 2

CODE 709096
HUMAN SUBJECT EXPERIMENTATION
AUDIT GUIDELINES

Objectives: Identify the magnitude, possible impact, and government actions to address problems resulting from experiments sponsored or conducted by federal agencies for national security purposes in which humans were deliberately exposed to hazardous or potentially hazardous chemical, biological, and/or nuclear material. Specifically, summarize available information on (1) the experiments and the approximate number of human subjects involved, (2) the potential effects of these experiments on human subjects, (3) the government's efforts to notify the participants and provide medical care and/or compensation, and (4) current laws, policies and procedures to ensure that the government obtains informed consent from participants in experiments.

Potential Agencies to Contact:

Department of Defense
OSD: Assistant to the Secretary of Defense (Atomic Energy)
Army
Navy/Marine Corps
Air Force
Defense Nuclear Agency
National Security Agency
Defense Intelligence Agency

Other Government Agencies
Veterans Administration
Central Intelligence Agency
Department of Energy
NASA
Presidential Advisory Committee on Human Radioactive Experiments

Audit Steps: Contact appropriate officials in the above listed agencies, use prior GAO reports and other existing studies and documents to meet the following objectives:

OBJECTIVE (1) Identify program, experiments, and number of participants.

Purpose: To meet this objective we will gather information to support a testimony section in which we discuss, in general terms, the scope of tests that have been conducted by the federal government for national security purposes. It is not designed to develop an all-inclusive list, but to give the Committee as much information as possible within the time available concerning the extent and nature of experiments conducted. It will define "experiment", identify some of the more egregious examples, and summarize agencies' efforts to identify experiments and participants.

Specific audit steps are:

a. Determine how each agency defines human use experiments.

b. Determine what experiments were conducted by each agency. Describe the purpose, experimental agent(s) used, the number of subjects, and the dates of the experiments.

c. Determine efforts taken or being taken by each agency to identify the experiments and the participants.
(1) prior efforts
(2) ongoing efforts
(3) resources dedicated to these efforts
(4) search methodology (e.g. archival research, outreach programs to identify participants, etc.)

d. Identify the difficulties agencies are encountering in identifying experiments and participants.

OBJECTIVE (2) Potential Effects of Experiments on Subjects

Purpose: To meet this objective we will gather information to develop a testimony section that summarizes federal agencies' efforts to identify the effects of their experiments on human

subjects. Prior work in this area has shown that agencies are generally ignorant of any potential long-term effects related to the agents or contaminants used in their experiments. This, in turn, leads to problems when participants allege their current medical problems are the result of experiments conducted many years ago. Where these questions exist, it appears agencies have an obligation to determine whether, in fact, people have suffered negative health effects. These audit steps are meant to determine the extent of those efforts.

From the list identified in step 1b above, determine:

a. What were the risks of the experiments to the human subjects identified at the time of the experiments?

b. What studies have been done or are currently underway to identify the possible long term health effects of the experimental agents (including radioactive material) used in the experiments?

OBJECTIVE (3) Government's Efforts to Notify Participants, and Provide Medical Care and/or Compensation

Purpose: To meet this objective we will gather information to support a testimony section that summarizes federal agencies' efforts to locate and provide assistance to experiment subjects. From prior work in this area, we know that agencies do not always have comprehensive lists of experiment participants. This causes problems when experiment participants are required to prove participation in the experiments in order to receive medical care and/or compensation.

From the list identified in step 1b above, determine:

a. What efforts have the agencies taken to locate both civilian and military subjects of the experiments?

b. What criteria must the subjects meet in order to receive compensation and/or medical care?

c. What is the level of compensation that human subjects have received?

d. What barriers do the agencies perceive participants face in getting compensation?

e. Identify private bills introduced by Congressional Representatives to obtain compensation for constituents (may be obtained from legislative searches rather than agencies).

f. Identify agency points of contact that interested parties can contact to obtain information about their participation in human subject experiments.

(4) Current Laws, Policies, etc. to Ensure Informed Consent of Human Test Subjects

Purpose: This audit step will develop a testimony section that briefly summarizes the history of informed consent requirements, and current requirements designed to ensure that current human subjects are informed of the risks of their participation in an experiment.

a. Summarize current Code of Federal Regulations requirements, laws, etc.

b. Identify milestones in the legislative history of informed consent (Nurenburg Guidelines, 1975 Law, etc.).

TEAM MEMBER ASSIGNMENTS

TEAM MEMBER	AUDIT STEP RESPONSIBILITY	AGENCIES
GLENN FURBISH	(1) Experiments and number of participants	DOD VA NSA HHS
MARK LITTLE	(1) Experiments and number of participants	DOE NASA
EARL MORRISON	(2) Potential effects on subjects	Air Force Defense Nuclear Agency Navy/Marine Corps
MEG KLUCSARITS	(3) Govt efforts to notify participants/ provide medical care & compensation	Army Defense Intelligence Agency
DAVE ROWAN	(4) Laws, policies, etc. re. informed consent	CIA

OTHER GAO DIVISIONS INVOLVED

OFFICE OF GENERAL COUNCIL

RESOURCES, CONSERVATION AND ENERGY DIVISION

HEALTH, EDUCATION AND HUMAN SERVICES DIVISION

INDEXING SCHEME

A Administrative

B Background

C Experiments and Number of Participants
- C-1 OSD
- C-2 Army
- C-3 Navy/Marine Corps
- C-4 Air Force
- C-5 Defense Nuclear Agency
- C-6 National Security Agency
- C-7 Defense Nuclear Agency
- C-8 Veterans Administration
- C-9 Central Intelligence Agency
- C-10 Department of Energy
- C-11 NASA
- C-12 Presidential Advisory Cmte. on Radioactive Experiments

D Potential Effects of Experiments on Subjects
D-1 through D-12 same as C-1 through C-12

E Government's Efforts to Notify Participants and Provide Compensation and/or Medical Care
E-1 through E-12 same as C-1 through C-12

F Laws, Policies, etc. to Ensure Informed Consent

TAB B20

THE SECRETARY OF VETERANS AFFAIRS
WASHINGTON

1994 FEB 24 PM 12:47
OFFICE OF THE
SECRETARY OF DEFENSE

FEB 1 0 1994

The Honorable William J. Perry
Secretary of Defense
The Pentagon
Washington, DC 20301-1155

Dear Mr. Secretary:

Recent disclosures concerning inappropriate radiation-related human experimentation in the late 1940's and 1950's caught us all by surprise and caused the Administration to react immediately. The Department of Veterans Affairs is now carefully searching our own records to determine whether experimental abuses occurred under our aegis and I have expressed my personal distress at recently learning that VA at one time apparently had a secret Atomic Medicine Division.

In the past, VA also has been surprised by allegations and disclosures of various types of chemical testing or exposure conducted by the military, for example, mustard gas testing and LSD experiments.

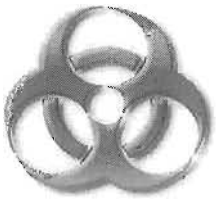
VA's responses to these situations were as quick and comprehensive as circumstances and current knowledge permitted. However, concern exists that additional, previously undisclosed, questionable programs may have been conducted. Thus, I believe that our departments need to work together to avoid similar future surprises and to help ensure that veterans are not needlessly disadvantaged by military service. In my view, we should adopt the goal of identifying all veterans who may have been harmed by their participation in improper experimentation while serving on active duty and assist them in applying for any benefits for which they may be entitled. To this end, I propose the formation of an interdepartmental working group to design and undertake a review of projects, other than appropriately approved medical research, involving the exposure of military personnel to toxic substances or environmental hazards. In order to provide for the development of this proposal, I have designated Deputy Undersecretary for Benefits R.J. Vogel as the VA contact in this matter, and I request that you name an appropriate DoD official to contact Mr. Vogel in order to initiate discussions.

I know you share my concern for the welfare of our veterans and I would appreciate your immediate attention to this request. I look forward to your response.

Sincerely yours,

Jesse Brown

04042



TAB B21

THE DEPUTY SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

P+W
CLOSER
RR

30 APR 1994

Honorable Hershel W. Gober
Deputy Secretary of Veterans Affairs
Washington, DC 20420

Dear Mr. Gober:

Thank you for your letter of April 12. We fully support the proposed DoD/VA Reinvention Partnership agreement that your staff prepared. Secretary Perry is also pleased with our collaboration on the Persian Gulf illnesses. Dr. Edwin Dorn, Under Secretary of Defense for Personnel and Readiness, has oversight for all DoD activities related to veterans.

As you pointed out, DoD and VA staff have been working together on a number of joint issues, including: improving the processes for transfer of medical records from DoD to VA; studying the dual compensation issue; and facilitating searches for the records of veterans used as test subjects in experimental tests during and after World War II. These projects were initiated under the auspices of a joint DoD/VA task force, co-chaired by Dr. Dorn and Mr. Vogel. The DoD membership of that task force is the appropriate representation for our Reinvention Partnership Executive Committee. The membership list is enclosed.

I believe that we should move forward and formalize our agreement. Dr. Dorn's staff will work with your staff to: prepare the agreement for signature of the Secretaries; expand the existing DoD/VA task force to include the additional membership from VA; incorporate the existing working groups into the new structure; and schedule a kick-off meeting within the next couple of weeks.

We look forward to opportunities to expand our partnership.

Sincerely,

Enclosure:
As Stated

09102

DOD/VA NON-MEDICAL BENEFITS TASK FORCE

DoD Members

Mr. Edwin Dorn, Under Secretary of Defense
Personnel and Readiness

Ms. Deborah Lee, Assistant Secretary of Defense
Reserve Affairs

Dr. Stephen C. Joseph, Assistant Secretary of Defense
Health Affairs

Mr. William Clark, Assistant Secretary of the Army
Manpower and Reserve Affairs (Acting)
(Confirmation vote on Mrs. Sara Lister, 4/20/94)

Mr. Fred Pang, Assistant Secretary of the Navy
Manpower and Reserve Affairs

Mr. Rodney A. Coleman, Assistant Secretary of the Air Force
Manpower, Reserve Affairs, Installation and Environment

VA Members

Mr. John Vogel, Under Secretary for Benefits
Department of Veterans Affairs

Mr. J. Gary Hickman, Director
Compensation and Pension Service

Mr. Thomas R. Wagner, Director
Administrative Staff

Executive Secretaries

Ms. Norma St.Claire, Department of Defense
Director, Information Resources Management

Mr. William Stinger, Department of Veterans Affairs
Director of Programs and Planning

TAB B22

DoD/VA REINVENTION PARTNERSHIP

The Department of Defense and the Department of Veterans Affairs hereby establish a DoD/VA Reinvention Partnership to enhance cooperation, integrate programs, improve operations between and within both Departments, and provide better service to our customers.

We will take advantage of natural opportunities to work together to our mutual benefit and those we serve. All military service members will become veterans at some point and are already eligible for some veterans benefits such as home loans while on active duty. Streamlined processes and procedures in both Departments will permit us to treat active duty members and veterans in a seamless manner so there is one continuous interaction with the federal government.

We also have areas of our operations that should be mutually supportive so that both operations are as effective and efficient as possible. We will overcome the traditional organizational obstacles to cooperation and concentrate on finding a better way to accomplish our missions. Our intent is to accelerate reinvention efforts in both Departments through a Reinvention Partnership that will seek mutually beneficial opportunities for improving service to our customers, increasing efficiency in operations, cutting red tape, and generally finding better ways to do business. Our Partnership will strive to reinvent and re-engineer processes and operations to make our Departments work better and cost less.

Our DoD/VA Reinvention Partnership will be initiated by forming a permanent Partnership Executive Committee made up of senior DoD and VA executives to spearhead this effort. The Executive Committee will form short-term task forces and work groups as required consisting of subject matter experts from both departments to formulate options and solutions to specific issues, problems, or overlapping functional areas suitable for consolidation in whole or in part.

William J. Perry
Secretary of Defense

Jesse Brown
Secretary of Veterans Affairs

June 30, 1994

DoD/VA REINVENTION PARTNERSHIP

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William J. Perry
Secretary of Defense

Jesse Brown
Secretary of Veterans Affairs

June 30, 1994

DoD/VA REINVENTION PARTNERSHIP

The members of the Reinvention Partnership Executive Committee will be:

Department of Defense

- Under Secretary of Defense for Personnel and Readiness
- Assistant Secretary of Defense for Health Affairs
- Assistant Secretary for Reserve Affairs
- Assistant Secretary of the Army (Manpower and Reserve Affairs)
- Assistant Secretary of the Navy (Manpower and Reserve Affairs)
- Assistant Secretary of the Air Force (Manpower, Reserve Affairs, Installations & Environment)

Department of Veterans Affairs

- Under Secretary for Benefits
- Under Secretary for Health
- Assistant Secretary for Policy and Planning
- Deputy Chief of Staff

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- Assistant Secretary of Defense for Health Affairs
- Assistant Secretary for Reserve Affairs
- Assistant Secretary of the Army (Manpower and Reserve Affairs)
- Assistant Secretary of the Navy (Manpower and Reserve Affairs)
- Assistant Secretary of the Air Force (Manpower, Reserve Affairs, Installations & Environment)

Department of Veterans Affairs

- Under Secretary for Benefits
- Under Secretary for Health
- Assistant Secretary for Policy and Planning
- Deputy Chief of Staff

TAB B23

OFFICE OF THE UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND
READINESS

AUG 26 1994

Mr. Bruce McConnell
Office of Management and Budget
Washington, DC 20503

Dear Mr. McConnell:

In response to your request of August 11, 1994, attached is a copy of our Best Practices--Project Progress Reports. The report has been coordinated with the Department of Veterans Affairs. Please feel free to call me at 703-696-8710 if you have any questions.

Sincerely,

Norma J. St. Claire

Norma J. St. Claire
Director
Information Resource Management

Enclosure:
As stated

Best Practices--Project Progress Reports

The Secretaries of Defense and Veterans Affairs entered into a Reinvention Partnership on June 30, 1994 to enhance cooperation, integrate programs, improve operations between and within both Departments, and provide better service to our customers. A copy of that agreement is at Appendix A. The Partnership embraces the initiatives that originated with the DoD/VA Non-Medical Benefits Task Force and seeks to further identify mutually beneficial opportunities for improving service.

The customer service initiatives begun under the auspices of the DoD/VA Non-Medical Benefits Task Force are continuing under the Reinvention Partnership. These initiatives are listed below with their current status.

Service Medical and Personnel Records

The transfer of military service medical records from DoD to VA was completed in May 1994. As of July 1994 the military services have transferred 208,561 service medical records to VA's St. Louis Medical Records Center. Veterans have experienced expedited claims processing as a result. A copy of the Report to Congress on the Transfer of Service Medical Records is at Appendix B. VA and DoD are now looking at access to medical records for personnel who separated prior to the implementation of the direct transfer program, access to information in military personnel records, and DoD access and exchange of information held by VA and the National Personnel Records Center. An inter-agency corporate information management project has been initiated by VA and DoD. The work group will analyze processes and procedures for requesting, accessing, and exchanging information in personnel and medical records. The first formal work group will meet in October 1994. The objective of the study is to streamline and standardize the processes and procedures to expedite the transmittal of information essential to veterans benefits claims. The study is scheduled for completion in spring 1995.

Separation Physical Examinations

DoD and VA have met regularly to discuss implementation of a uniform separation physical interview questionnaire that will collect standard information from Service members who are separating or retiring. A DoD meeting was held in August 1994 to finalize the questionnaire design. Implementation of the questionnaire is anticipated in FY1995.

Home Loan Guaranty

DoD and VA working together were able to notify approximately 50,000 veterans with VA guaranteed home loans about the VA programs and services available to assist them in the event they experience economic hardship as a result of the military's downsizing effort. Efforts are continuing to identify and notify active duty military and civilian employees who may also be at risk because of downsizing and base closures.

Disability Compensation/Retired Pay

A joint DoD/VA/Treasury work group is identifying and examining common areas in the payment processes of individuals entitled to both disability compensation and retired pay. The goal is to determine whether a consolidation of functions would result in a lower cost to the government or a higher level of service to the beneficiaries. The work group expects to finalize its findings and recommendations in October 1994.

Electronic Transfer of Data

Defense Manpower Data Center (DMDC) is developing a computer program that will provide VA with recurring monthly listings of new enlistment's. These enlistment data are used to establish the initial VA record for the Service member. The initial DMDC effort resulted in the establishment of approximately 850,000 VA records for cumulative enlistment's from 1982 to the present.

Persian Gulf Registries

DoD and VA are each responsible for separate registries of persons who served in the Persian Gulf Theater of operations. The VA Persian Gulf War Veteran's Registry is composed of veterans who ask to be included in the registry. The DoD Registry contains the names of all persons who served in the Persian Gulf, to include active duty military, reservists, and separated persons who are now veterans. DoD also maintains the Persian Gulf War Health Surveillance System, which includes personnel who are being evaluated at DoD hospitals for possible health effects from their service in the Gulf War. In addition, DoD was tasked with developing an air pollutant exposure model. Exposure data, coupled with unit location data, will be used to provide an assessment of an individual's potential exposure. As of August 15, 1994, 697 linear feet of Army Desert Storm records have been collected of which 336 linear feet have been reviewed. Actual work on the DoD registry began in June 1993 and is expected to take three years.

Chemical Weapons Exposure Study Task Force

DoD is continuing to work on collecting information on chemical weapons exposure in order to assist the VA in making determinations on service connected compensation. DoD is compiling a database of test sites, dates and agents used, as well as a file on personnel who were test subjects, or who may have been exposed through other activities such as production, storage and transportation. The personnel database includes personnel and exposure information from any type of human experimentation, including ionizing radiation. There are currently about 5,000 names for chemical weapons exposures, and DoD is anticipating adding another 7,000 from magnetic tape records from the 1970's. VA and DoD continue working together to make further personnel identifications and to assist veterans in verification of claims of exposure.

Data Standardization

The VA is participating in a series of DoD Data Standardization workshops. The areas involved relate to data that is of interest to the VA, such as retirement and separation data. The purpose is to insure that the resulting standardized information meets the needs of both DoD and VA by developing a set of commonly understood data elements and values. The bulk of the project is expected to be completed by October 1995 with implementation and coordination issues being addressed on an ongoing basis.

In addition to the DoD/VA efforts described above, DoD and NARA have initiated an inter-agency effort to improve the processes by which we retire (and document) records from military hospitals.

Appendix A

DoD/VA REINVENTION PARTNERSHIP

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William J. Perry
Secretary of Defense

Jesse Brown
Secretary of Veterans Affairs

June 30, 1994

DoD/VA REINVENTION PARTNERSHIP

The members of the Reinvention Partnership Executive Committee will be:

Department of Defense

- Under Secretary of Defense for Personnel and Readiness
- Assistant Secretary of Defense for Health Affairs
- Assistant Secretary for Reserve Affairs
- Assistant Secretary of the Army (Manpower and Reserve Affairs)
- Assistant Secretary of the Navy (Manpower and Reserve Affairs)
- Assistant Secretary of the Air Force (Manpower, Reserve Affairs, Installations & Environment)

Department of Veterans Affairs

- Under Secretary for Benefits
- Under Secretary for Health
- Assistant Secretary for Policy and Planning
- Deputy Chief of Staff

Appendix B

REPORT TO CONGRESS ON THE TRANSFER OF SERVICE MEDICAL RECORDS

Purpose: This report documents the status of Department of Defense (DoD) actions to transfer medical records of separating service members directly to the Department of Veterans Affairs (VA).

Background: Congress has expressed concern in the variation in procedures and time frames among the Military Services for transferring service medical records of separating service members. Access to the service medical records by the VA has an impact on the expeditious determination of eligibility for appropriate benefits for separated service members and reservists. In August of 1991, Representative Sonny Montgomery wrote to the Deputy Secretary of Defense and the Secretary of the Army, expressing concerns about the delays the VA was experiencing in accessing medical records.

In November of 1991, the Medical Records Transfer Task Force was established as part of the Corporate Information Management Program under the then Assistant Secretary of Defense for Force Management and Personnel. The effort focused on improving the VA access to medical records to ensure that veterans will receive benefits to which they are entitled. Both DoD and VA are represented on the task force. An analysis of medical records transfer procedures used by the Services showed that in some cases records took in excess of six months to arrive at the VA. In January of 1992, the Medical Records Task Force presented a proposal for phased in implementation of medical records transfer to begin with Army. The Navy was to follow after six months of successful transfer between Army and VA, and a successful records recall test. The Air Force was to implement after six months of successful transfer procedures between the Navy and VA. The Task Force continues to monitor the medical records transfer program between the two agencies.

The *Report of Committee on Armed Services, House of Representatives, on HR 2401*, directed a report on the status of the issues below.

1. Statistics on Transfer Times: The amount of time currently required by each Service and component to transfer medical records of separating service members to the VA is from 10 to 16 days from the date the service member separates to receipt by the VA. Six of the days are mailing days. This is significantly less than the average times noted in a 1990 study of transfer times for each Service. The 1990 transfer times are noted below:

U. S. Army	132 Days
U. S. Navy	51 Days
U. S. Marine Corps	83 Days
U. S. Air Force	37 Days

2. Assessment of Current DoD Initiatives: The Army started transferring records of service members separating from active duty directly to the VA Service Medical Records Center (SMRC) in St. Louis in October of 1992. In September of 1993, a formal records recall test was conducted at the SMRC. A 95 percent return rate within 48 hours was established as a measure for successful return of records to DoD. Representatives from each of the Military Services were present to observe the test. The SMRC provided 97.8 percent of the requested records within the specified time. Based on the results of the test and the successful transfer program between Army and VA the schedule for implementation was accelerated. Navy implemented the direct transfer of medical records in January of 1994. On May 1, 1994, the Air Force began direct transfer of medical records to the VA. As of that date all Services are directly transferring service medical records to the VA from the point of separation.

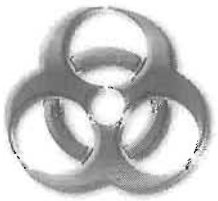
3. **Service By Service Implementation Schedule and Number of Records Transferred:** Since the implementation of the direct transfer process 179,577 medical records have been forwarded to the VA. The breakdown by Military Service is provided as of July 5, 1994.

Branch	Effective Date	Records to VA
U. S. Army	October 16, 1992	128,109
U. S. Navy	January 31, 1994	35,280
U. S. Marine Corps	May 1, 1994	12,403
U. S. Air Force	May 1, 1994	3,785
	Total	**179,577**

The transfer program is in place for all members upon separation. A problem remains for those service members who separated before the dates listed above. The Joint DoD/VA Medical Records Transfer Task Force is now considering alternative strategies for quick access to medical records currently back-logged at Service records holding sites. The work will proceed as part of the Corporate Information Management Program of the Under Secretary of Defense for Personnel and Readiness and the newly established DoD/VA Reinvention Partnership.

4. Service Access to Medical Records: The Army and Navy report that there have been no problems with retrieving medical records from the VA. The standards set for return of medical records to the Services are: 30 days for routine requests; 5 days for emergency requests; and within 48 hours for contingency or mobilization operations. The records recall test conducted at the Service Medical Records Center in September of 1993, included provisions for sending records to military mobilization sites within the continental United States, as well as locating and moving records that are stored at VA Regional Offices rather than in St. Louis. VA is working on an emergency operating procedure to ensure response to all Services within 48 hours under contingency operation and mobilization conditions. Air Force and Marine Corps have not been on line with the transfer process long enough to have any input on VA response back to the Services. However, no problems are anticipated.

5. Automation of Service Medical Records Transfer: Currently within DoD, medical records are not stored, received, or transferred electronically. The OASD (Health Affairs) plans to study alternatives for automating the medical record.



TAB B24

THE SECRETARY OF VETERANS AFFAIRS

WASHINGTON

OFFICE OF THE

94 APR 15 PM 3:38

APR 7 1994

The Honorable William J. Perry
Secretary of Defense
Washington, DC 20301

Dear Mr. Secretary:

The Department of Veterans Affairs (VA) is committed to providing the best possible service to veterans who claim to have been exposed to vesicant gasses during their active service either through experimental testing, field training or accidentally while working with the gasses. To fulfill our commitment, we find we must call upon you for assistance.

VA decisions concerning entitlement to disability benefits are based on evaluations of documentary evidence provided by the Department of Defense. After the World War II mustard gas testing became public knowledge in 1990, VA has learned that the evidence of possible exposure of an individual is usually not available in his service records. Without access to this information it is impossible for VA to render a fair and just decision on such a claim.

The enclosed fact sheet outlines some of the difficulties VA has experienced in obtaining relevant information.

I am certain you share my concern for providing the best possible service to our nation's veterans. I would appreciate your immediate attention to resolving the issues raised in this letter.

Sincerely yours,

Jesse Brown

Jesse Brown

Enclosures

JB/lp

08174

Fact Sheet

ISSUE: Department of Defense (DoD) cooperation in developing information which would document servicemen's participation in events during which they were exposed to vesicant gasses.

DISCUSSION: The Department of Veterans Affairs (VA) has received over 1,100 claims for conditions allegedly arising from exposure to mustard gas. We have been able to verify exposure for fewer than 200 veterans, most of whom were in testing at the Naval Research Laboratory (NRL).

In March 1993, DoD's Deputy Director, Defense Research and Engineering, assured the Secretary of Veterans Affairs, in writing, that DoD would assist in the following areas:

> (a) Compilation of the names of exposed personnel, specific test protocols, and available data for mustard gas testing during and subsequent to World War II. Personnel data from Edgewood Arsenal mustard gas testing conducted between 1955 and 1965 will also be included.
>
> (b) Compilation of the names and exposure data for military chemical agent workers exposed to mustard gas or Lewisite via production, handling, or training. In addition, the names of personnel exposed to chemical agents during the Bari, Italy, harbor disaster will also be compiled.
>
> (c) Identification of points of contact for each military service will be provided to assist your Department (VA) in expediting the collection of available information."

This information was to have been compiled and available to VA before the end of fiscal year 1993. None of these actions have yet taken place.

We have worked closely with NRL for claims by Navy personnel who participated in testing there. VA was initially informed that no other testing occurred. However, we have since learned of other testing by the Navy at sites such as USN Disciplinary Barracks, Hart's Island, New York and Great Lakes Naval Training Center, Illinois. VA has been aware of extensive arm testing at Great Lakes which involved putting drops of a vesicant on a participant's arm. Documents received here recently mention a chamber constructed in 1944 which was used extensively. Development for exposure at Navy sites other than NRL have produced essentially negative results.

Currently, our development procedures for claims for Army personnel are to solicit information from the National Personnel Records Center (NPRC), if the alleged exposure occurred prior to 1955, and from the Office of the Surgeon General (OTSG), Falls Church, Virginia, for other periods. The results of this development have been, with few exceptions, negative. In addition to the five bases where the Army has acknowledged mustard gas testing occurred (Edgewood Arsenal, Maryland; Bushnell Field, Florida; Camp Sibert, Alabama; Dugway Proving Grounds, Utah; and San Jose Island, Panama), we have learned of several other sites where mustard gas training or testing was undertaken.

. For example, VA received a claim from an Army veteran claiming exposure at Ft. Riley, Kansas. Up to this time, we had no knowledge of mustard gas activity at Ft. Riley. In response to a referral from OTSG, the Federal Archives in Suitland, Maryland, stated that they had over 1,000 pages of material which includes information about training exercises at Ft. Riley, including the use of mustard gas, during World War II. They are not staffed to do research on individuals involved in the training. A copy of this letter is attached.

In another case, VA received a claim from a veteran who served with a chemical company in India. The contention was that the canisters leaked badly and one of his jobs was to sniff the canisters daily to identify the leaking ones. He supported his contention with photographs of the canisters containing mustard gas on a flatbed railroad car, being buried and being tossed over the side of a ship into the Indian Ocean. Officials from DoD confirmed they were indeed mustard gas canisters and that in the heat and humidity of India they all leaked.

Additionally, we have received material from a veteran who was a member of the Army Chemical Service which identifies other locations such as the Black Hills Ordnance Depot, South Dakota, where he was temporarily assigned for the purpose of destroying mustard gas.

The DoD Mustard Gas Project has recently provided VA with some assistance in the form of site listings where mustard gas was used for testing, training or was stored during and after World War II. One volume entitled, "Potential Chemical/Biological Exposure Sites," contains over 200 pages with several sites listed on each page. This information is very interesting and a good beginning, but it is not adequate to support VA claims adjudication which requires more specific information on individuals.

It is clear that if DoD is aware of mustard gas related records at the Federal Archives and elsewhere, it should be able to consolidate them into a single location and have them sorted or indexed by individual, service number or even by unit designation, and begin fulfilling its pledge to VA.

TAB B25

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

JUN 16 1994

PERSONNEL AND
READINESS

Honorable John Vogel
Under Secretary for Benefits
Department of Veterans Affairs
810 Vermont Avenue, N. W.
Washington, D. C. 20420

Dear Mr Vögel:

This is in response to Secretary Brown's April 7 letter to Secretary Perry requesting information on veterans exposed to mustard and vesicant gasses. I apologize for the delay in responding. Unfortunately, there is no single repository of information on personnel exposures, so developing a response required quite an extensive effort.

The enclosure provides answers to the major concerns addressed in Secretary Brown's letter. Should your staff have any questions please have them contact my action officer, Ms. Norma St. Claire; 696-8710.

I am committed to providing the best possible service to our veterans and appreciate your interest and support in our joint efforts. Please call me if I can be of further assistance.

Sincerely,

Enclosure:
As stated

826

RESPONSE TO VA FACT SHEET FORWARDED APRIL 7, 1994

VA Fact Sheet Statement:

ISSUE: Department of Defense (DoD) cooperation in developing information which would document servicemen's participation in events during which they were exposed to vesicant gases.

DISCUSSION: The Department of Veterans Affairs (VA) has received over 1,100 claims for conditions allegedly arising from exposure to mustard gas. We have been able to verify exposure of fewer than 200 veterans, most of whom were in testing at the Naval Research Laboratory (NRL).

In March 1993, DoD's Deputy Director, Defense Research and Engineering, assuring the Secretary of Veterans Affairs, in writing, that DoD would assist in the following areas:

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>
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>
> (c) Identification of points of contact for each military service will be provided to assist your department (VA) in expediting the collection of available information."

This information was to have been compiled and available to the VA before the end of fiscal year 1993. None of these actions have yet taken place.

DoD Response: *It is important to note that neither the referenced letter, nor the letter forwarded to Congressman Sonny Montgomery from the Deputy Secretary of Defense, committed DoD to completing actions by the end of FY 1993. At the hearing held on March 10, 1993, LtGen Alexander stated that this effort will require years of research, collection, and analysis in order for the information to be put into an organized and easily accessible format for use by DoD, VA and the Department of Labor. We did commit to providing as much information as soon as possible, and we have provided VA with some of the information we extracted. However, much of the information is not conclusive concerning exposure, and personnel information is incomplete in many instances. Many records refer to personnel by last name only, with no rank or title that would indicate military or civilian; test subject numbers may be used instead of*

names, code names are sometimes used instead of surnames, and often there are no service or social security numbers. Chemical agents being tested are often referred to by numbers or letters relevant only to the test site which makes it necessary to have an index or guide to determine the name and type of agent. Extraction of pertinent information on human exposures, or potential exposure is an extremely complex and labor intensive task. Information on personnel injured in the Bari, Italy, harbor disaster has not been located. The DoD points of contact are the members of the Chemical Weapons Exposure Task Force, which has held joint meetings with representatives from VA. The Task Force includes representatives from the Services and several OSD offices.

VA Fact Sheet Statement:

We have worked closely with NRL for claims of Navy personnel who participated in testing there. VA was initially informed that no other testing occurred. However, we have since learned of other testing by the Navy at sites such as USN Disciplinary Barracks, Hart's Island, New York, and Great Lakes Naval Training Center, Illinois. VA has been aware of extensive arm testing at Great Lakes which involved putting drops of a vesicant on a participant's arm. Documents received here recently mention a chamber constructed in 1944 which was used extensively. Development for exposure at Navy sites other than NRL have produced essentially negative results.

DoD Response: *Hart's Island was identified as a test site by staff in the Office of the Under Secretary of Defense for Personnel & Readiness, OUSD (P&R), after over a year of research into records collections. The actual documentation was forwarded to us by the Head of the Military Records Section at the National Personnel Records Center (NPRC) in St. Louis. DoD did not previously know about these documents. Because DoD staff had made a visit to NPRC to discuss what records collections were there, the archivist contacted us when the documents were found. We were pleased to be able to assist in the verification of a veteran's claim based on the information from NPRC. The information on testing at Great Lakes was in the National Academy of Science Report published in January, 1993. Great Lakes was on the list issued in March of 1993. Chamber test information was sent to VA by OUSD (P&R) staff after finding technical reports at one of the DoD record repositories. P&R staff also visited the University of Chicago (Test Contractor) and researched records in an attempt to locate names. To date no names have been found. The Naval Training Center Great Lakes does not have any records of the testing or the test subjects. We are continuing our search for the names of the Great Lakes test subjects.*

VA Fact Sheet Statement:

Currently, our development procedures for claims for Army personnel are to solicit information from the National Personnel Records Center (NPRC), if the alleged exposure occurred prior to 1955, and from the Office of the Surgeon General (OTSG), Falls Church, Virginia, for other periods. The results of this development have been, with few exceptions, negative. In addition to the five bases where the Army acknowledges mustard gas testing occurred (Edgewood Arsenal, Maryland; Bushnell Field, Florida; Camp Sibert, Alabama;

Dugway Proving Ground, Utah; and San Jose Island, Panama), we have learned of several other sites where mustard gas training or testing was undertaken.

DoD Response: *The other sites where mustard gas training or testing was conducted were identified through the exhaustive review of automated records indexing and storage systems maintained by Dugway Proving Ground and the Chemical/Biological Information Analysis Center in Edgewood, Maryland. Initial information on two of the additional sites was forwarded by veterans who had personal knowledge and documentation on the chemical warfare activities carried out at the locations. When we get information from veterans, we try to verify it. We have found in researching some veterans' claims that individuals have mistaken standard tear gas training for mustard because it burned their eyes or made them cough. More than ten cases a day are received at Edgewood Arsenal from VA Regional Offices. Each case is researched and answered. P&R has several cases we are currently researching. The list of sites where testing and training were done with chemical weapons is updated as information is located*

VA Fact Sheet Statement:

For example, VA received a claim from an Army veteran claiming exposure at Fort Riley, Kansas. In response to a referral from OTSG, the Federal Archives in Suitland, Maryland, stated that they had over 1,000 pages of material which includes information about training exercises at Ft. Riley, including the use of mustard gas, during World War II. They are not staffed to do research on individuals involved in the training. A copy of this letter is attached.

DoD Response: *VA shared this information with P&R staff. The records on Fort Riley stored at the National Archives turned out to be lesson plans. There were no names of personnel in the records. P&R staff continue to review records when we expect to find information on human test subjects; for example, we have reviewed a collection of Surgeon General records and records from the Army Chemical Corps. DoD does not have the resources to immediately review all archived material relating to military installations and activities. We are targeting collections that we know to have information on chemical warfare and research test activities in the hope of providing information to assist the VA in making compensation determinations.*

VA Fact Sheet Statement:

In another case, VA received a claim from a veteran who served with a chemical company in India. The contention was that the canisters leaked badly and one of his jobs was to sniff the canisters daily to identify the leaking ones. He supported his contention with photographs of the canisters containing mustard gas on a flatbed railroad car, being buried and being tossed over the side of a ship into the Indian Ocean. Officials from DoD confirmed they were indeed mustard gas canisters and that in the heat and humidity of India they all leaked.

DoD Response: *P&R staff received this inquiry from VA. A P&R staff member took the file to Edgewood Arsenal and had the veteran's unit researched. We were pleased to be able to provide*

VA with historical information on chemical warfare units that was used to confirm the veteran's deployment to India. The P&R staff member also took the veteran's photographs to a munitions expert to have cylinders identified. We were not aware of storage and transport at Ondal, India prior to this. As stated above, initial DoD efforts have been to identify persons used as human test subjects. Storage or transport sites are included in our database as we find them. The Black Hills Ordnance Depot was identified in the February 1994 Site Location Database as a storage site. We have found no information on confirmed human exposures at Black Hills as of this date.

VA Fact Sheet Statement:

The DoD Mustard Gas Project has recently provided VA with some assistance in the form of site listings where mustard gas was used for testing, training or was stored during and after World War II. One volume entitled, "potential Chemical/Biological Exposure sites," contains over 200 pages with several sites listed on each page. This information is very interesting and a good beginning, but it is not adequate to support VA claims adjudication which requires more specific information on individuals.

DoD Response: *The Chemical/Biological Exposure Sites is the interim product of a exhaustive search of automated records. We have been pleased to be able to provide information on individuals when we can. Unfortunately we have not found any large collections of personnel or medical records verifying exposures. In most cases we find information on testing, transportation and storage that is interspersed with administrative correspondence, technical manuals, laboratory notebooks, test plans, etc. Names are scattered throughout, and conclusive verification of exposure is not always evident. More importantly, names for World War II test subjects have been particularly elusive. It is because of this we have tried to construct a database of test sites and dates to verify events. Very little information has been found on training, specifically, information that verifies the use of vesicants or live agent as part of training.*

VA Fact Sheet Statement:

It is clear that if DoD is aware of mustard gas related records at the Federal Archives and elsewhere, it should be able to consolidate them into a single location and have them sorted and indexed by individual, service number or even by unit designation, and begin fulfilling its pledge to VA.

DoD Response: *DoD is working to provide data on personnel who participated in tests in which mustard gas was used; however, there are no organized records of participants for any of the tests. Research work to date has revealed that most test reports simply refer to the participant as "Subject" using the surname, or as "Observer" with a numerical designator. While small numbers of names have been located there is no central listing of test subjects during and after World War II. Information at the National Archives and installations are not in any order to support easy retrieval. At the National Archives, the records are sorted by the activity that retired the records. To do what is recommended would require searching millions of documents*

page by page to identify names. Many names may be imbedded in documents that are technical in nature. The average time to review this information is in excess of 1 hour per linear foot. Staff from OUSD (P&R), the Defense Manpower Data Center(DMDC), and the Chemical/Biological Defense Command are working to convert 13 magnetic tapes from the 1970's to a format usable by DMDC and VA. These tapes were found in April, 1994, and we believe they contain information on over 7,000 test subjects who participated in tests at Edgewood Arsenal between 1955 and the late 70's. As soon as this conversion is accomplished the information will be shared with the VA. This will be the largest single collection of test subjects we have found to date.

TAB B26

Norma file

103D CONGRESS
2d Session

COMMITTEE PRINT

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103–97

IS MILITARY RESEARCH HAZARDOUS TO VETERANS' HEALTH? LESSONS SPANNING HALF A CENTURY

A STAFF REPORT PREPARED FOR THE

COMMITTEE ON VETERANS' AFFAIRS

UNITED STATES SENATE

DECEMBER 8, 1994

Printed for the use of the Committee on Veterans' Affairs

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84-680 WASHINGTON : 1994

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FOREWORD

U.S. Senate,
Committee on Veterans' Affairs,
Washington, DC, December 8, 1994.

During the last few years, the public has become aware of several examples where U.S. Government researchers intentionally exposed Americans to potentially dangerous substances without their knowledge or consent. The Senate Committee on Veterans' Affairs, which I have been privileged to chair from 1993-94, has conducted a comprehensive analysis of the extent to which veterans participated in such research while they were serving in the U.S. military. This resulted in two hearings, on May 6, 1994, and August 5, 1994.

This report, written by the majority staff of the Committee, is the result of that comprehensive investigation, and is intended to provide information for future deliberations by the Congress. The findings and conclusions contained in this report are those of the majority staff and do not necessarily reflect the views of the members of the Committee on Veterans' Affairs.

This report would not have been possible without the dedication and expertise of Dr. Patricia Olson, who, as a Congressional Science Fellow, worked tirelessly on this investigation and report, and the keen intelligence, energy, and commitment of Dr. Diana Zuckerman, who directed this effort.

JOHN D. ROCKEFELLER IV, *Chairman.*

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DECEMBER 8, 1994

IS MILITARY RESEARCH HAZARDOUS TO VETERANS' HEALTH? LESSONS SPANNING HALF A CENTURY

I. INTRODUCTION

During the last 50 years, hundreds of thousands of military personnel have been involved in human experimentation and other intentional exposures conducted by the Department of Defense (DOD), often without a servicemember's knowledge or consent. In some cases, soldiers who consented to serve as human subjects found themselves participating in experiments quite different from those described at the time they volunteered. For example, thousands of World War II veterans who originally volunteered to "test summer clothing" in exchange for extra leave time, found themselves in gas chambers testing the effects of mustard gas and lewisite.[1] Additionally, soldiers were sometimes ordered by commanding officers to "volunteer" to participate in research or face dire consequences. For example, several Persian Gulf War veterans interviewed by Committee staff reported that they were ordered to take experimental vaccines during Operation Desert Shield or face prison.[2]

The *goals* of many of the military experiments and exposures were very appropriate. For example, some experiments were intended to provide important information about how to protect U.S. troops from nuclear, biological, and chemical weapons or other dangerous substances during wartime. In the Persian Gulf War, U.S. troops were intentionally exposed to an investigational vaccine that was intended to protect them against biological warfare, and they were given pyridostigmine bromide pills in an experimental protocol intended to protect them against chemical warfare.

However, some of the studies that have been conducted had more questionable motives. For example, the Department of Defense (DOD) conducted numerous "man-break" tests, exposing soldiers to chemical weapons in order to determine the exposure level that would cause a casualty, i.e., "break a man."[3] Similarly, hundreds of soldiers were subjected to hallucinogens in experimental programs conducted by the

[1]Veterans at Risk: The Health Effects of Mustard Gas and Lewisite, Pechura, C.M. & Rall, D.P. (Eds.) Institute of Medicine, National Academy Press, Washington, DC, 1993, p. 65.

[2]In a survey of 150 Persian Gulf War veterans conducted by Committee staff, 15 of 17 military personnel receiving botulinum toxoid in the Gulf war were told they could not refuse the vaccination; 54 of 73 military personnel receiving pyridostigmine were told they could not refuse the drug.

[3]Veterans at Risk, op. cit., p. 36.

DOD in participation with, or sponsored by, the CIA.[4,5] These servicemembers often unwittingly participated as human subjects in tests for drugs intended for mind-control or behavior modification, often without their knowledge or consent. Although the ultimate goal of those experiments was to provide information that would help U.S. military and intelligence efforts, most Americans would agree that the use of soldiers as unwitting guinea pigs in experiments that were designed to harm them, at least temporarily, is not ethical.

Whether the goals of these experiments and exposures were worthy or not, these experiences put hundred of thousands of U.S. servicemembers at risk, and may have caused lasting harm to many individuals.

Every year, thousands of experiments utilizing human subjects are still being conducted by, or on behalf of, the DOD. Many of these ongoing experiments have very appropriate goals, such as obtaining information for preventing, diagnosing, and treating various diseases and disabilities acquired during military service. Although military personnel are the logical choice as human subjects for such research, it is questionable whether the military hierarchy allows for individuals in subordinate positions of power to refuse to participate in military experiments. It is also questionable whether those who participated as human subjects in military research were given adequate information to fully understand the potential benefits and risks of the experiments. Moreover, the evidence suggests that they have not been adequately monitored for adverse health effects after the experimental protocols end.

Veterans who become ill or disabled due to military service are eligible to receive priority access to medical care at VA medical facilities and to receive monthly compensation checks. In order to qualify, they must demonstrate that their illness or disability was associated with their military service. Veterans who did not know that they were exposed to dangerous substances while they were in the military, therefore, would not apply for or receive the medical care or compensation that they are entitled to. Moreover, even if they know about the exposure, it would be difficult or impossible to prove if the military has not kept adequate records. It is therefore crucial that the VA learn as much as possible about the potential exposures, and that the DOD assume responsibility for providing such information to veterans and to the VA.

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[4]Testimony of Deanne Siemer, general counsel, Department of Defense, hearing before the Subcommittee on Health and Scientific Research, Committee on Human Resources, U.S. Senate, "Human Drug Testing by the CIA, 1977," September 20-21, 1977, pp. 157-168.

[5]Testimony of Sidney Gottlieb, M.D., former CIA agent, hearing before the Subcommittee on Health and Scientific Research, Committee on Human Resources, U.S. Senate, "Human Drug Testing by the CIA, 1977," September 20-21, 1977, pp. 169-217.

II. BACKGROUND

A. CODES, DECLARATIONS, AND LAWS GOVERNING HUMAN EXPERIMENTATION

The Nuremberg Code is a 10-point declaration governing human experimentation, developed by the Allies after World War II in response to inhumane experiments conducted by Nazi scientists and physicians. The Code states that voluntary and informed consent is absolutely essential from all human subjects who participate in research, whether during war or peace. The Code states:

> The person involved should have the legal capacity to give consent; should be so situated as to be able to exercise free power of choice, without the intervention of any element of force, fraud, deceit, duress, overreaching, or other ulterior form of constraint or coercion; and should have sufficient knowledge and comprehension of the elements of the subject matter involved as to enable him to make an understanding and enlightened decision. This latter element requires that before the acceptance of an affirmative decision by the experimental subject, there should be made known to him the nature, duration, and purpose of the experiment; the method and means by which it is to be conducted; all inconveniences and hazards reasonable to be expected; and the effects upon his health and person which may possibly come from his participation in the experiments.[6]

There is no provision in the Nuremberg Code that allows a country to waive informed consent for military personnel or veterans who serve as human subjects in experiments during wartime or in experiments that are conducted because of threat of war. However, the DOD has recently argued that wartime experimental requirements differ from peacetime requirements for informed consent. According to the Pentagon, "In all peacetime applications, we believe strongly in informed consent and its ethical foundations.....But military combat is different."[7] The DOD argued that informed consent should be waived for investigational drugs that could possibly save a soldier's life, avoid endangerment of the other personnel in his unit, and accomplish the combat mission.

More than a decade after the development of the Nuremberg Code, the World Medical Association prepared recommendations as a guide to doctors using human subjects in biomedical research. As a result, in 1964 the Eighteenth World Medical Assembly met in Helsinki, Finland, and adopted recommendations to be used as an ethical code by all medical doctors conducting biomedical research with human subjects. This code, referred to as the Declaration of Helsinki, was

[6]The Nuremberg Code, from Trials of War Criminals before the Nuremberg Military Tribunals, U.S. Government Printing Office, Washington, DC, 1948.

[7]55 Federal Register 52,814-52,817 (December 21, 1990), "Informed Consent for Human Drugs and Biologics: Determinations that Informed Consent is Not Feasible."

revised in 1975, 1983, and 1989.[8] It differs from the Nuremberg Code in certain important respects. The Declaration of Helsinki distinguishes between clinical (therapeutic) and nonclinical (nontherapeutic) biomedical research, and addresses "proxy consent" for human subjects who are legally incompetent, such as children or adults with severe physical or mental disabilities.[9] Proxy consent for legally competent military personnel who participate in military research is *not* considered appropriate under the Nuremberg Code or the Declaration of Helsinki.

On June 18, 1991, the Federal Government announced that 16 U.S. governmental agencies would abide by a set of regulations, referred to as the "Common Rule," designed to protect human subjects who participate in federally funded research.[10] The provisions of the "Common Rule," first promulgated for the Department of Health and Human Services (DHHS) in 1974, described how federally funded research involving human subjects shall be conducted. However, local Institutional Review Boards (IRB's) may revise or exclude some or all consent elements if the research exposes subjects to no more than "minimal risk," meaning "that the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests."[11] IRB's vary greatly in their interpretation of the risks of daily life.

There are three provisions governing research funded by DHHS that are intended to protect vulnerable populations, such as pregnant women and fetuses, prisoners, and children.[12] There are no special Federal regulations to protect military personnel when they participate as human subjects in federally funded research, despite logical questions about whether military personnel can truly "volunteer" in response to a request from a superior officer.

Current law prevents the Department of Defense from using Federal funds for research involving the use of human experimental subjects, unless the subject gives informed consent in advance. This law applies regardless of whether the research is intended to benefit the subject.[13]

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[8]Declaration of Helsinki, in European and Nordic Regulations and Guidelines for Good Clinical Practice, Pharmaco Dynamics Research, Inc., July 1990.

The Declaration of Helsinki was amended at the Twenty-Ninth World Medical Assembly held in Tokyo, Japan, in 1975, the Thirty-Fifth World Medical Assembly held in Venice, Italy, in 1983, and the Forty-First World Medical Assembly held in Hong Kong in 1989.

[9]Declaration of Helsinki, World Medical Association, in Biomedical Ethics, Third Edition, Mappes, T.A. & Zembaty, J.S., McGraw-Hill, Inc., 1991, pp. 211-213.

[10]56 Federal Register 28,002-28,032 (June 18, 1991), "Federal Policy for the Protection of Human Subjects."

[11]"Research Involving Human Subjects," statement of Robyn Y. Nishimi, Ph.D., Office of Technology Assessment, hearing before the Subcommittee on Energy, Committee on Science, Space, and Technology, U.S. House of Representatives, "Human Radiation, Experimentation, and Gene Therapy," February 10, 1994.

[12]45 CFR §46 (Public Welfare), subparts B,C, and D, revised October 1, 1991.

[13]10 U.S.C. (Armed Forces) and 32 U.S.C. § 980 (National Guard) put limits on the use of humans as experimental subjects.

B. MUSTARD GAS AND LEWISITE

According to a report published by the Institute of Medicine (IOM) last year, approximately 60,000 military personnel were used as human subjects in the 1940's to test two chemical agents, mustard gas and lewisite. Most of these subjects were not informed of the nature of the experiments and never received medical followup after their participation in the research.[14] Additionally, some of these human subjects were threatened with imprisonment at Fort Leavenworth if they discussed these experiments with anyone, including their wives, parents, and family doctors.[15] For decades, the Pentagon denied that the research had taken place, resulting in decades of suffering for many veterans who became ill after the secret testing. According to the 1993 IOM report, such denial by the DOD continues: "This committee discovered that an atmosphere of secrecy still exists to some extent regarding the WWII testing programs. Although many documents pertaining to the WWII testing programs were declassified shortly after the war ended, others were not."[16]

Based on findings from the National Academy of Sciences, the Department of Veterans Affairs recently published a final rule to compensate veterans for disabilities or deaths resulting from the long-term effects of inservice exposure to mustard gas and other agents which blister the skin (these are called vesicants).[17] The final rule expands coverage to veterans exposed to mustard gas under battlefield conditions in World War I (WWI), those present at the German air raid on the harbor of Bari, Italy (WWII), and those engaged in manufacturing and handling vesicant agents during their military service. Thus, for the first time, VA will compensate certain veterans for illnesses which may have been caused by their exposure to vesicants over half a century ago.

C. SEVENTH-DAY ADVENTISTS

Many experiments that tested various biological agents on human subjects, referred to as Operation Whitecoat, were carried out at Fort Detrick, MD, in the 1950's. The human subjects originally consisted of volunteer enlisted men. However, after the enlisted men staged a sitdown strike to obtain more information about the dangers of the biological tests, Seventh-Day Adventists who were conscientious objectors were recruited for the studies.[18] Because these individuals did not believe in engaging in actual combat, they instead volunteered to be human subjects in military research projects that tested various infectious agents. At least 2,200 military personnel who were

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[14]Veterans at Risk, op. cit., pp. 3-4, 6-8, 50-52, 224-226.

[15]Ibid., p. 65.

[16]Ibid., p. 7.

[17]59 Federal Register 41,497-42,500 (August 18, 1994), "Claims Based on Chronic Effects of Exposure to Vesicant Agents."

[18]Gene Wars, Military Control Over the New Genetic Technologies, Piller, C. & Yamamoto, K.R., Beech Tree Books, William Morrow, New York, 1988, pp 44-45, 53.

Seventh-Day Adventists volunteered for biological testing during the 1950's through the 1970's.[19]

Unlike most of the studies discussed in this report, Operation Whitecoat was truly voluntary. Leaders of the Seventh-Day Adventist Church described these human subjects as "conscientious participants," rather than "conscientious objectors," because they were willing to risk their lives by participating in research rather than by fighting a war.[20,21]

D. DUGWAY PROVING GROUND

Dugway Proving Ground is a military testing facility located approximately 80 miles from Salt Lake City. For several decades, Dugway has been the site of testing for various chemical and biological agents. From 1951 through 1969, hundreds, perhaps thousands of open-air tests using bacteria and viruses that cause disease in human, animals, and plants were conducted at Dugway.[22] For example, antigens produced by animals that had come in contact with Venezuelan equine encephalomyelitis (VEE), a disease usually found in horses, were later found in animals around Dugway. Prior to the identification of these substances in the Dugway vicinity, VEE had only been identified in the rat population in Florida. Such a finding suggested that VEE had been used in the open-air tests at Dugway or within laboratories, and transferred to the nearby animal population.[23]

In 1968, approximately 6,400 sheep died following the intentional release of a deadly nerve gas from a plane. According to a veterinarian who evaluated the sick and dying sheep, there was little doubt that the sheep had been poisoned with nerve gas.[24] The sheep and other animals in the area had depressed cholinesterase levels, suggesting organophosphate nerve poisoning. Initially, the Department of Defense denied any responsibility for the accident, stating that the sheep died from organophosphate pesticides sprayed on a nearby alfalfa field. However, the nerve agent VX was identified when the poisoned sheep were autopsied, which made it clear that the deaths were not caused by pesticides.[25] Eventually, the Department of Defense reimbursed the ranchers for their animals.

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[19]Ibid.

[20]Ibid.

[21]At least one Seventh-Day Adventist Church has held reunions of those human subjects who participated in Operation Whitecoat. (Phone interview by Committee staff with Dr. Frank Damazo, Frederick, MD, March 21, 1994.)

[22]Hearing before the Subcommittee on Conservation and Natural Resources, Committee on Government Operations, U.S. House of Representatives, "Environmental Dangers of Open-Air Testing of Lethal Chemicals," May 20-21, 1969.

[23]Ibid., pp. 6-7.

[24]Testimony of Dr. D.A. Osguthorpe, veterinarian and consultant to Utah State Department of Agriculture, hearing before the Subcommittee on Conservation and Natural Resources, Committee on Government Operations, U.S. House of Representatives, "Environmental Dangers of Open-Air Testing of Lethal Chemicals," May 20-21, 1969, pp 63-66.

[25]Ibid., pp. 64-65.

It is unknown how many people in the surrounding vicinity were also exposed to potentially harmful agents used in open-air tests at Dugway. In 1969, concerns were expressed at a congressional hearing about the possible public health implications of the VEE virus tested at Dugway.[26]

Due to previous problems with dangerous organisms and chemicals, Dugway has developed an active program of "simulant" testing. According to the Department of Defense, simulants are harmless organisms or chemicals which do not cause disease. However, during 45 years of open-air testing, the Army has stopped using a variety simulants when they realized they were not as safe as previously believed.[27]

E. RADIATION EXPOSURE

Atomic Veterans

From 1945 to 1962, the United States conducted numerous nuclear detonation tests: Crossroads (Bikini); Sandstone, Greenhouse, and Ivy (Eniwetok Atoll); Castle (Bikini Atoll); Pacific Ocean 400 miles southwest of San Diego; Redwing and Hardtack I (Eniwetok and Bikini Atolls); Argus (South Atlantic); and Dominic (Christmas Island, Johnston Island, 400 miles west of San Diego).[28] The main goal was to determine damage caused by the bombs; however, as a result, thousands of military personnel and civilians were exposed to radioactive fallout. Similar tests were conducted within the continental United States, including sites in New Mexico and Nevada.[29] Veterans who participated in activities that directly exposed them to radioactive fallout are referred to as "atomic veterans."

Data obtained on some military personnel who were exposed to radioactive fallout were collected after these men were unintentionally exposed. However, some atomic veterans believe they were used as guinea pigs to determine the effects of radiation from various distances, including those at ground zero, on human subjects. Their suspicions are supported by a 1951 document from the Joint Panel on the Medical Aspects of Atomic Warfare, Research and Development Board, Department of Defense, which identified general criteria for bomb test-related "experiments" and identified 29 "specific problems" as "legitimate basis for biomedical participation."[30]

[26]Testimony of Hon. Richard D. McCarthy, a Representative in Congress from the State of New York, hearing before the Subcommittee on Conservation and Natural Resources, Committee on Government Operations, U.S. House of Representatives, "Environmental Dangers of Open-Air Testing of Lethal Chemicals," May 20-21, 1969, pp 6-7.

[27]Cole, L.A., "Risk and biological defense program," *Physicians for Social Responsibility Quarterly*, Vol 2, No. 1, March 1992, pp. 40-50.

[28]Compilation of Local Fallout Data From Test Detonations 1945-1962, extracted From DASA 1251, Vol I-Oceanic U.S. Tests, Contract No. DNA 001-79-C-0081, May 1, 1979, sponsored by the Defense Nuclear Agency.

[29]Ibid.

[30]Secret document, Department of Defense, Research and Development Board, Committee on Medical Sciences, Joint Panel on the Medical Aspects of Atomic Warfare, 8th Meeting, Washington, DC, February 24, 1951.

The National Research Council's Committee on the Biological Effects of Ionizing Radiation (BEIR) have prepared a series of reports to advise the U.S. Government on the health consequences of radiation exposure.[31] The first of these reports was not published until the late 1980's, decades after military personnel were first exposed to ionizing radiation. For the last 13 years, the VA has provided free medical care to atomic veterans who have disorders they believe to be caused by ionizing radiation, even if there is no conclusive evidence of the cause.[32] In addition, the VA provides monthly compensation to veterans who were exposed to ionizing radiation during military service, who have illnesses that are believed to be associated with their exposure. The lists of compensable diseases have been revised as more research information has become available. For example, on October 11, 1994, the VA announced that tumors of the brain and central nervous system would be considered for disability compensation for veterans exposed to ionizing radiation.[33]

Radiation Releases at U.S. Nuclear Sites

In addition to detonation testing, radioactive releases were also intentionally conducted at U.S. nuclear sites in the years following World War II. According to the U.S. General Accounting Office (GAO), at least 12 planned radioactive releases occurred at three U.S. nuclear sites during 1948-1952. These tests were conducted at Oak Ridge, TN; Dugway, UT; and Los Alamos, NM.[34] Additionally, a planned release occurred at Hanford, WA, in December 1949, which has been referred to as the Green Run test. It is not known how many civilians and military personnel were exposed to fallout from these tests.

Other Exposures to Ionizing Radiation

In January 1994, the Clinton administration established a Human Radiation Interagency Working Group to coordinate a Government-wide effort to uncover the nature and extent of any Government-sponsored experiments on individuals involving intentional exposure to ionizing radiation. The working group represents the Administration's response to Secretary of Energy Hazel O'Leary's promise to comb Government files for information on hundreds of experiments conducted on people in the 1940's and 1950's.

To assist in identifying those people who may have been harmed by secret experiments utilizing ionizing radiation, the Clinton administration solicited complaints from possible victims by installing several telephone hotlines. As of September 1994, 86 percent of the

[31]"Health Effects of Exposure to Low Levels of Ionizing Radiation," BEIR V, National Research Council, National Academy Press, Washington, DC, 1990.

[32]Letter from Hon. Jesse Brown, Secretary of Veterans Affairs, to Sen. John D. Rockefeller IV, Chair, Senate Committee on Veterans' Affairs, May 31, 1994.

[33]News release, Office of Public Affairs, Department of Veterans Affairs, Washington, DC, October 11, 1994.

[34]"Nuclear Health and Safety, Examples of Post World War II Radiation Releases at U.S. Nuclear Sites," U.S. General Accounting Office, November 1993, GAO/RCED-94-51FS.

21,996 callers to the radiation hotline were veterans who believed they had participated in various radiation "experiments."[35]

A VA advisory committee has concluded that activities other than atomic weapons tests and occupation force activities resulted in the exposure of veterans to ionizing radiation during their military service prior to 1970.[36] The committee concluded that the records for many individuals who were exposed to such activities are inadequate or inaccessible. Additionally, the committee concluded that information pertinent to military exposures is not always adequate to evaluate the health risks.

F. HALLUCINOGENS

Working with the CIA, the Department of Defense gave hallucinogenic drugs to thousands of "volunteer" soldiers in the 1950's and 1960's. In addition to LSD, the Army also tested quinuclidinyl benzilate, a hallucinogen code-named BZ.[37] Many of these tests were conducted under the so-called MKULTRA program, established to counter perceived Soviet and Chinese advances in brainwashing techniques. Between 1953 and 1964, the program consisted of 149 projects involving drug testing and other studies on unwitting human subjects.[38]

One test subject was Lloyd B. Gamble, who enlisted in the U.S. Air Force in 1950. In 1957, he volunteered for a special program to test new military protective clothing. He was offered various incentives to participate in the program, including a liberal leave policy, family visitations, and superior living and recreational facilities. However, the greatest incentive to Mr. Gamble was the official recognition he would receive as a career-oriented noncommissioned officer, through letters of commendation and certification of participation in the program. During the 3 weeks of testing new clothing, he was given two or three water-size glasses of a liquid containing LSD to drink. Thereafter, Mr. Gamble developed erratic behavior and even attempted suicide. He did not learn that he had received LSD as a human subject until 18 years later, as a result of congressional hearings in 1975.[39] Even then, the Department of the Army initially denied that he had participated in the experiments, although an official DOD publicity photograph showed him as one of the valiant

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[35]Information from the Office of the Assistant Secretary for Congressional Affairs, Department of Veterans Affairs, received at the Senate Committee on Veterans' Affairs, September 21, 1994; in Committee files.

[36]Letter from Hon. Jesse Brown, Secretary of Veterans Affairs, to Sen. John D. Rockefeller IV, Chair, U.S. Senate Committee on Veterans' Affairs, May 26, 1994.

[37]Gene Wars, op. cit., pp 50-51.

[38]Statement of David Gries, Director, Center for the Study of Human Intelligence, CIA, hearing before the Subcommittee on Administrative Law and Governmental Relations, Committee on the Judiciary, U.S. House of Representatives, "Government-Sponsored Tests on Humans and Possible Compensation for People Harmed in the Tests," February 2, 1994.

[39]Summary of testimony, Lloyd B. Gamble, LSD test subject, hearing before the Subcommittee on Administrative Law and Governmental Relations, Committee on the Judiciary, U.S. House of Representatives, "Government-Sponsored Tests on Humans and Possible Compensation for People Harmed in the Tests," February 2, 1994.

servicemen volunteering for "a program that was in the highest national security interest."[40]

According to Sidney Gottlieb, a medical doctor and former CIA agent, MKULTRA was established to investigate whether and how an individual's behavior could be modified by covert means.[41] According to Dr. Gottlieb, the CIA believed that both the Soviet Union and Communist China might be using techniques of altering human behavior which were not understood by the United States. Dr. Gottlieb testified that "it was felt to be mandatory and of the utmost urgency for our intelligence organization to establish what was possible in this field on a high priority basis." Although many human subjects were not informed or protected, Dr. Gottlieb defended those actions by stating, "...harsh as it may seem in retrospect, it was felt that in an issue where national survival might be concerned, such a procedure and such a risk was a reasonable one to take."[42]

G. INVESTIGATIONAL DRUGS USED IN THE PERSIAN GULF WAR

Under the Food, Drug, and Cosmetics Act, all vaccines and medical products must be proven safe and effective by the Food and Drug Administration (FDA) in order to be sold and distributed in the United States. This law also applies to medical products used by the Department of Defense, even if given to U.S. troops who are stationed in other countries.

FDA also regulates medical products that are proven safe and effective for some uses or with specific doses, but not for other uses or other doses. If the product is only sold at certain doses and not others, its use at the non-approved dose would be considered investigational. If the product is legally available for sale at the same dosage, physicians can legally prescribe it; however, manufacturers can not advertise it for that purpose. Such "off label" use is also considered investigational. So, for example, a drug may be proven safe and effective to treat one kind of cancer, but be considered investigational to treat a different disease.

Under current law, an unapproved vaccine or investigational use of a drug could only be administered by the DOD under an Investigational New Drug (IND) procedure.[43] Under an IND, any individual who is given the investigational product must give informed consent, i.e., must be told of the potential risks and benefits of the product, orally and in writing, and choose freely whether or not to participate. In addition, the IND requires that the medical product be distributed under carefully controlled conditions where safety and effectiveness can be evaluated.

When the Department of Defense began preparations for Desert Shield and Desert Storm in 1990, officials were extremely concerned that Iraq would use chemical and biological weapons against the

[40]Ibid.

[41]Testimony of Sidney Gottlieb, M.D., former CIA agent, before the Subcommittee on Health and Scientific Research, Committee on Human Resources, U.S. Senate, "Human Drug Testing by the CIA, 1977," September 20-21, 1977, p. 169. Actual wording is "convert means," which we took to mean "covert means."

[42]Ibid., pp. 169-217.

[43]55 Federal Register 52,814-52,817 (December 21, 1990).

United States. Despite years of study and billions of dollars, the DOD lacked drugs and vaccines that were proven safe and effective to safeguard against anticipated chemical nerve agents and biological toxins. Therefore, DOD officials wanted to use a medication (pyridostigmine bromide) and vaccine (botulinum toxoid) that they believed might protect against chemical nerve agents and botulism. Because the safety and effectiveness of pyridostigmine bromide and botulinum toxoid had not been proven for their intended use, these products were considered investigational drugs.

Pyridostigmine bromide is a chemical which enhances the effectiveness of two drugs, atropine and 2-PAM, which are proven effective for the treatment of nerve agent poisoning.[44] Pyridostigmine is also a nerve agent itself. Nerve agents exert their biological effects by binding to, and inhibiting, the enzyme acetylcholinesterase (AChE) which normally shuts off the neurotransmitter, acetylcholine (ACh). When levels of ACh increase, nerve impulses and organ activity increase. When nerve and organ stimulation are excessive, death can result.

There are two major categories of nerve agents, carbamates and organophosphate (OP) compounds.[45] German scientists developed many of the OP compounds for warfare agents and pesticides in the 1930's and 1940's. Examples of warfare agents include tabun, sarin, soman, and VX. Many organophosphates *permanently* inhibit AChE. This permanent effect, which can only be reversed when new enzymes are synthesized, makes OP warfare agents extremely lethal.

Pyridostigmine bromide is a carbamate, rather than an OP compound.[46] Although it is a nerve agent, pyridostigmine has a *reversible* effect which can protect the AChE from permanently binding to OP compounds. When appropriate doses are selected, pyridostigmine theoretically should not cause nerve agent poisoning and should help protect against some lethal chemical warfare.

Efficacy. Pyridostigmine only works when taken in combination with other drugs and only if taken *before* exposure to nerve gas.[47] Two antidotes to nerve agents, atropine and pyridine-2-aldoxime methochloride (2-PAM), are reportedly enhanced if pyridostigmine has already been given. Atropine and 2-PAM were included in the nerve agent antidote kits (Mark I) which were issued to U.S. troops in the Persian Gulf.

In research studies, animals given pyridostigmine, atropine, and 2-PAM were more likely to survive exposure to one chemical nerve agent, soman, than those given only atropine and 2-PAM. However, pyridostigmine is unable to enter and protect the brain, so that animals exposed to soman can still suffer from convulsions despite the pyridostigmine pretreatment.[48] To protect against brain damage from ongoing seizure activity, valium may also be required following

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[44]Sidell, F.R., "Clinical Considerations in Nerve Agent Intoxication," Chemical Warfare Agents, Somani, S.M. (Ed.), Academic Press, Inc., 1992, pp. 155-194.

[45]Ibid.

[46]Ibid.

[47]Ibid.

[48]Ibid.

exposure to a warfare nerve agent. Similarly, pyridostigmine may offer little protection against the damage caused by nerve agents in the spinal cord.[49]

Safety. Pyridostigmine bromide is approved by the FDA for treating myasthenia gravis, a neurological disease characterized by extreme weakness. This disease occurs when individuals develop antibodies that prevent ACh from causing muscle impulses at the neuromuscular junction. Therefore, treatment with relative high doses of pyridostigmine increases ACh to levels that are able to overcome the "block" created by the antibodies. An analogy might be that of a fishing pond. The two ways to increase the number of fish caught are to increase the number of fishing poles or to increase the number of fish in the pond.

FDA and DOD officials claimed they were confident of the safety of pyridostigmine as an antidote enhancer for chemical warfare protection because it would be used at a much lower dose[50] in combat than normally used for treating patients with myasthenia gravis. However, normal patients and those with myasthenia gravis may not respond similarly to the same dose of pyridostigmine bromide. Whereas the dosage of pyridostigmine bromide for patients with myasthenia gravis may reach 120 mg every three hours,[51] the dose for U.S. troops was only 30 mg every 8 hours. A good analogy is the use of insulin for diabetes mellitus; very high doses of insulin are sometimes necessary to treat diabetics, but similar doses could be fatal for non-diabetic individuals.

Some scientists also question whether pyridostigmine is completely safe even for treating patients with myasthenia gravis. The proportion of patients with myasthenia gravis that recover after surgical treatment (thymectomy) has decreased since pyridostigmine therapy was introduced several decades ago.[52] Experts speculate that whereas the problems caused by myasthenia gravis can be corrected by surgery, pyridostigmine may cause immune damage to the neuromuscular junction that cannot be corrected by surgery. Since the symptoms of pyridostigmine damage would be similar to the symptoms of myasthenia gravis, any damage from the pyridostigmine would be extremely difficult if not impossible to diagnose.

In addition to its use for myasthenia gravis, pyridostigmine bromide has been approved by FDA for use with surgical patients; it is administered after surgery to reverse the effect of anesthesia, which are neuromuscular blocking agents. The dose is relatively small (15 mg) and not repeated. This treatment does not provide relevant information about the safety of repeated use of pyridostigmine by

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[49]Das Gupta, S., Bass, K.N., Warnick, J.E. "Interaction of reversible and irreversible cholinesterase inhibitors on the monosynaptic reflex in neonatal rats," *Toxicology and Applied Pharmacology*, Vol. 99, 1989, pp. 28-36.

[50]55 Federal Register 52,814-52,817 (December 21, 1990).

[51]Drachman, D.B. "Medical Progress, review article: Myasthenia gravis," *New England Journal of Medicine*, Vol. 330, No. 25, June 23, 1994, pp. 1797-1810.

[52]Scadding, G.K., Havard, C.W.H., Lange, M.J., & Domb, I. "The long term experience of thymectomy for myasthenia gravis," *Journal of Neurology, Neurosurgery, and Psychiatry*, Vol. 48, 1985, pp. 401-406.

healthy individuals, since the dosage is small and the patients have received neuromuscular blocking agents.

The bromide that is included in pyridostigmine bromide pills is known to sometimes cause problems referred to as "bromide intoxication" when used for the treatment of myasthenia gravis.[53] Bromide intoxication may cause confusion, irritability, tremor, memory loss, psychotic behavior, ataxia, stupor, and coma. Some patients with bromide intoxication have a skin disorder of the face and hands resembling acne. A 60 mg tablet of the commercially available pyridostigmine bromide contains 18.4 mg bromide (30.6 percent).[54,55]

FDA has not approved pyridostigmine bromide for repeated use in healthy individuals as an antidote enhancer or for any other reason. Since it would be unethical to expose individuals to potentially lethal chemical weapons in order to evaluate the *efficacy* of pyridostigmine, this use has only been studied on animals. The product is therefore an investigational drug when used as an antidote enhancer for treating nerve gas poisoning.

Botulinum toxoid is an unapproved vaccine that is used to protect laboratory workers and others who are likely to be exposed to botulism. Botulism is caused by at least one of seven neurotoxins produced by the bacteria Clostridium botulinum. When home-canning of food was common, food poisoning was the most common cause of botulism in the United States; the bacteria in the food produces a toxin which is eaten. Today, the most common form of botulism occurs in infants, since the bacteria that produces the toxin can thrive in a baby's intestinal tract.

A botulism vaccine that is intended to protect against five of seven neurotoxins (called A,B,C,D,E) is produced by the Michigan Department of Health. This is called pentavalent toxoid. This vaccine is not a licensed product and must be distributed as an Investigational New Drug (IND).

Efficacy. Desert Shield began on August 8, 1990. Since the air war did not begin until January 16, 1991, and the ground war took place from February 24-27, 1991, the Pentagon had several months to review the possible use of investigational drugs and vaccines.

In December 1990, the FDA advised the Department of Defense that it would be unable to test the botulism vaccine for efficacy, presumably because of limited time before the onset of the war. The FDA agreed to test the vaccine for safety, but these tests were not completed until late January 1991. At a meeting of the Informed Consent Waiver Review Group (ICWRG) on December 31, 1990, a representative of FDA's Center for Biologics Evaluation and Research discussed the vaccine, explaining that the existing supply was nearly 20 years old and consisted of three lots, stored under continuous

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[53]Wacks, I., Oster, J.R., Perez, G.O., & Kett, D.H. "Spurious hyperchloremia and hyperbicarbonatemia in a patient receiving pyridostigmine bromide therapy for myasthenia gravis," *American Journal of Kidney Diseases*, Vol. XVI, No. 1, July 1990, pp. 76-79.

[54]Ibid.

[55]Mestinon is the brand name for one form of pyridostigmine bromide available in the United States.

refrigeration.[56] Given the age of these vaccines, there were concerns about their safety.

The recommended schedule for immunization with the pentavalent vaccine includes a series of three initial injections at 0, 2, and 12 weeks, followed by a booster 12 months after the first injection. According to the Centers for Disease Control's Center for Infectious Diseases, subjects given the vaccine did not have detectable antitoxin titers after the first two shots in the initial series, which means that they were unlikely to be protected at week 2.[57] If for any reason only two immunizations can be given, at least 4 to 8 weeks should elapse between injections if most individuals are to be protected against the disease.[58]

Safety. The Michigan Department of Health reported that 4.2 percent of patients reported a sore arm or other local reactions to the initial series of three shots, and 12.1 percent had local reactions to the booster shots.[59] Almost 3 percent had systemic reactions, such as general malaise, after either the initial three shots or the booster shots. Because of the relatively large percentage of adverse reactions, new lots of the vaccine were manufactured in 1971. However, there is no evidence that the newer lots produced fewer adverse reactions than the older lots.

In her review of the DOD's application for use of botulinum toxoid in the Persian Gulf, an FDA reviewer pointed out that in 1973, the Centers for Disease Control had considered terminating the distribution of the vaccine because of the relatively large number of individuals who had negative reactions to it.[60] The FDA reviewer also pointed out that "there are no efficacy data in humans" and that the dose for humans was an estimate based on results from guinea pigs. In addition, potency testing had suggested that the vaccine would not be effective against two of the five botulism toxins.

According to the Michigan Department of Health, the effects of the botulism vaccine on pregnant women had not been studied prior to its use in the Persian Gulf War.

Anthrax vaccine is an FDA-approved vaccine that is considered safe and effective for individuals whose skin may come in contact with animal products such as hides, hair, or bones likely to contain the anthrax infection. It is also recommended for veterinarians and

[56]Minutes of meeting of the Informed Consent Waiver Review Group (ICWRG), Food and Drug Administration, December 31, 1990.

[57]Ellis, R.J. Immunobiologic agents and drugs available from the Centers for Disease Control: Descriptions, recommendations, adverse reactions, and serologic response. Third Edition. Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA, March 1982.

[58]Middlebrook, J.L. "Contributions of the U.S. Army to Botulinum Toxin Research," Botulinum and Tetanus Neurotoxins, Das Gupta, B.R., (Ed.), Plenum Press, New York, 1993, pp. 515-519.

[59]Informational material for the use of pentavalent (ABCDE) botulinum toxoid aluminum phosphate adsorbed, Protocol #392, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, May 1992.

[60]Review by Ann Sutton to the IND record, November 14, 1990; in Committee files.

others who are likely to touch infected animals.[61] However, the vaccine's effectiveness against *inhaled* anthrax is unknown. Unfortunately, when anthrax is used as a biological weapon, it is likely to be aerosolized and thus inhaled. Therefore, the efficacy of the vaccine against biological warfare is unknown.

It appears that there is only one relevant animal study which showed that anthrax vaccine apparently provided additional protection against relapse in monkeys exposed to inhalation anthrax and treated with antibiotics.[62] Although the results of this study suggest the vaccine might protect against anthrax that has been sprayed, it is not sufficient to prove that anthrax vaccine is safe and effective as used in the Persian Gulf. The vaccine should therefore be considered investigational when used as a protection against biological warfare.

The anthrax vaccine is given as three injections 2 weeks apart, followed by three additional injections given 6, 12, and 18 months after the initial injection. If immunity is to be maintained, subsequent booster injections of anthrax vaccine are recommended at 1-year intervals.[63] According to the Interagency Task Force on Persian Gulf War Illnesses, one dose provides some immunity in 85 percent of those individuals vaccinated.[64]

According to the Michigan Department of Public Health which manufactures anthrax vaccine, it is not known whether anthrax vaccine is safe for pregnant women or their offspring.

III. Findings and Conclusions

A. FOR AT LEAST 50 YEARS, DOD HAS KNOWINGLY EXPOSED MILITARY PERSONNEL TO POTENTIALLY DANGEROUS SUBSTANCES, OFTEN IN SECRET.

The U.S. General Accounting Office issued a report on September 28, 1994, which stated that between 1940 and 1974, DOD and other national security agencies studied hundreds of thousands of human subjects in tests and experiments involving hazardous substances.[65] GAO stated that some tests and experiments were conducted in secret. Medical research involving the testing of nerve agents, nerve agent antidotes, psychochemicals, and irritants was often classified. Additionally, some work conducted for DOD by contractors still remains classified today. For example, the Central Intelligence Agency (CIA) has not released the names of 15 of the approximately 80 organizations that conducted experiments under the MKULTRA

[61]Informational material for the use of anthrax vaccine adsorbed, Michigan Department of Public Health, U.S. License No. 99, 1978.

[62]Friedlander, A.M., Welkos, S.L., Pitt, M.L.M., et al. "Postexposure prophylaxis against experimental inhalation anthrax," *Journal of Infectious Diseases*, Vol. 167, 1993, pp. 1239-1242.

[63]Anthrax vaccine adsorbed, package insert, Michigan Department of Public Health, Lansing, MI, 1978.

[64]"Summary of the issues impacting upon the health of Persian Gulf War veterans," Version 1.1, March 3, 1994.

[65]"Human Experimentation, An Overview on Cold War Era Programs," U.S. General Accounting Office, September 28, 1994, GAO/T-NSIAD-94-266.

program, which gave psychochemical drugs to an undetermined number of people without their knowledge or consent. According to the GAO report, the CIA has not released this information because the organizations do not want to be identified.[66]

World War II Veterans

As recently as 1993, the Institute of Medicine of the National Academy of Sciences reported that an atmosphere of secrecy still existed regarding World War II testing of mustard gas and lewisite.[67] Although many documents pertaining to the World War II testing programs were declassified shortly after World War II ended, others remain "restricted" even today. In addition to the classified or restricted documents, World War II veterans who participated in the research were sworn to secrecy. These classified documents and promises of secrecy have impeded medical care for thousands of veterans during half of the last century.

For example, Rudolph R. Mills participated in gas chamber experiments as an 18-year-old in 1945, one year after he joined the U.S. Navy.[68] He was sworn to secrecy and did not learn until 46 years later that approximately 4,000 servicemen were human subjects in mustard gas experiments conducted from 1942 through 1945 by the Chemical Warfare Service. Although his health began to deteriorate even before his discharge from the Navy in 1946, he did not learn that mustard gas might be responsible for his physical problems until more than 40 years later.

At a May 6, 1994, hearing of the Senate Committee on Veterans' Affairs, entitled "Is Military Research Hazardous to Veterans' Health? Lessons from World War II, the Persian Gulf War, and Today," Mr. Mills testified, "I had on an experimental mask and the Navy was trying to determine if people wearing these masks could communicate with each other. I was enticed to sing over the intercom....No one ever told me that the mask became less effective against the gas with each use....We were sworn to secrecy....At the age of 43 I underwent a long series of radiation treatments and later surgery to remove part of my voice box and larynx....It didn't occur to me that my exposure to mustard gas was responsible for my physical problems until June 1991, when I read an article in my hometown newspaper."[69]

John T. Harrison participated in Navy chemical tests in 1943 to get an extra week pass. He was also sworn to secrecy. According to written testimony submitted to the Senate Committee on Veterans' Affairs by Mr. Harrison, "[I] was never warned or told anything about the dangers of what [I] volunteered for....told never to reveal what [I] did or where [I] was; if anyone asked [I] was to say [I] was on rowing

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[66]Ibid.

[67]Veterans at Risk, op. cit., pp. 7-8.

[68]Statement of Rudolph R. Mills, hearing before the Committee on Veterans' Affairs, U.S. Senate, "Is Military Research Hazardous to Veterans' Health? Lessons from World War II, the Persian Gulf War, and Today," May 6, 1994; hereinafter referred to as Hearing, May 6, 1994.

[69]Ibid.

maneuvers."[70] At the time of his discharge from the military, he could not even describe his exposures to a Navy doctor who was trying to determine the cause of his severe respiratory illnesses. Although Mr. Harrison has suffered from recurrent breathing problems and has greatly diminished pulmonary function, he has never received any compensation for his illness. According to the VA and DOD, his medical and services records have been lost, making it difficult to prove that his disability is service-connected.

Cold War Veterans

During the years immediately following World War II, military personnel were intentionally exposed to radiation during the testing of atomic bombs and during radioactive releases. While it is unclear how many of these servicemembers were intentionally exposed to what were known to be harmful levels of radiation, there is clear evidence that in some cases military personnel were ordered to locate themselves in areas of high radioactive fallout. They were given no choice in the matter, and they were not told of the potential risks of those exposures.

Similarly, military personnel were intentionally given hallucinogenic drugs to determine the effects of those drugs on humans. The servicemembers were not told that they would be given experimental drugs, they had no choice of whether or not to take them, and even after the unusual effects of the drugs were obvious to researchers, the unwitting human subjects were given no information about the known effects of the drugs. Even if the DOD did not know about the potential long-term effects of the drugs, that would not justify their failure to provide information to thousands of servicemembers about the known short-term effects of the drugs.

Persian Gulf War Veterans

Persian Gulf veterans were also given investigational vaccines and ordered not to tell anyone. In a Committee survey of 150 individuals who served in the military during the Persian Gulf War (see Appendix), many of those surveyed indicated they were ordered, under threat of Article 15 or court martial, to discuss their vaccinations with no one, not even with medical professionals needing the information to treat adverse reactions from the vaccine. Similarly, 86 percent of the military personnel who told the Committee that they were ordered to take pyridostigmine bromide reported that they received no information on what they were taking or the drug's potential risks. According to a DOD study published in the Journal of the American Medical Association, commanding officers and medical personnel were also inadequately informed about the investigational drugs; as a result, they were ill-prepared to recognize or treat military personnel who experienced side effects.[71]

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[70]Hearing, May 6, 1994; John T. Harrison, written statement submitted for the record.

[71]Although the study was published in the *Journal of the American Medical Association*, these results were not reported in the published article. They are reported in an unpublished report, Survey #1, Food and Drug Administration IND 23,509, Operation Desert Storm/Shield, May 27, 1992.

B. DOD HAS REPEATEDLY FAILED TO COMPLY WITH REQUIRED ETHICAL STANDARDS WHEN USING HUMAN SUBJECTS IN MILITARY RESEARCH DURING WAR OR THREAT OF WAR.

The major principle of all research ethics involving human subjects, as described by the Nuremberg Code, the Declaration of Helsinki, and the "Common Rule" of the U.S. Government, states that the voluntary, competent, informed, and understanding consent of the subject is absolutely essential, whether during war or peace.[72]

These standards are more than 50 years old. For example, the Nuremberg Code was based on testimony of two U.S. physicians, Drs. Leo Alexander and Andrew Ivy, who served as expert medical witnesses for the Nazi crime prosecutors. The code was not the outcome of an attempt to frame a new code of ethics, but rather a description of criteria said to be widely accepted by the medical profession at the time.[73] Therefore, DOD research during the 1940's was clearly conducted in an era when researchers were well aware of ethical codes regarding the use of human subjects.

The Department of Defense has violated these well-established ethical principles each time soldiers are required to participate in military research or take investigational drugs or vaccines or are not adequately informed about the risks of the experiments.

World War II Veterans

Many individuals were recruited for various military experiments of mustard gas and lewisite under the guise of testing clothing, without being warned beforehand that they would be exposed to dangerous chemicals. Additionally, young servicemembers frequently reported that they were enticed to volunteer for experiments by being promised extra leave time from duty.

For example, in 1944, Nathan Schnurman was a 17-year-old sailor who was recruited to test Navy summer clothing, in exchange for a 3-day pass. Instead, he participated in the testing of gas masks and clothing while he was locked in a gas chamber and exposed to mustard gas and lewisite. Mr. Schnurman believes that he was not really a volunteer since the research was misrepresented. Additionally, Mr. Schnurman stated in written testimony submitted to the Committee that "many were denied the 3-day pass, and many went to their graves without revealing this story."[74] Perhaps most outrageous, Mr. Schnurman was not allowed to leave the gas chamber when he became violently ill. Mr. Schnurman testified before the Committee on the Judiciary of the U.S. House of Representatives that, "During my sixth exposure in the chamber, I determined something was wrong. I called to the corpsman, via an intercom, and informed him of my condition, and what was happening and requested I be released from the chamber, now. The reply, was `No' as they had not completed the experiment. I became very nauseous. Again, I requested to be released from the chamber. Again,

[72]The Nuremberg Code, op. cit.

[73]Annas, G.J. & Grodin, M.A. "The Nazi Doctors and the Nuremberg Code," Human Rights in Human Experimentation, Oxford University Press, 1992, p 152.

[74]Hearing, May 6, 1994; Nathan J. Schnurman, written statement submitted for the record.

permission was denied. Within seconds after the denial, I passed out in the chamber. What happened after that, I don't know. I may only assume, when I was removed from the chamber, it was presumed I was already dead."[75]

John William Allen enlisted in the U.S. Navy in 1945 at the age of 17. Immediately after boot camp, he volunteered to test summer uniforms so he could go home before shipping out. His test clothing consisted of one pair of pants, undershorts, a gas mask, and a shirt that had been used in previous experiments and was therefore impregnated with toxic chemicals. According to Mr. Allen, the actual testing consisted of determining the amount of sulfur mustard that would cause illness ("man-break" test), not the testing of summer uniforms. He was exposed several times to sulfur mustard and was removed from further exposure on May 5, 1945, when he passed out in the gas chamber. A physical examination on May 14, 1945, revealed many wounds as the result of exposure to mustard gas.

Mr. Allen stated in written testimony submitted to the Committee, "The government has lied to us for 50 years over and over again. If I would have been shot on the front lines at least I would had it on my record and would have received medical treatment."[76]

Persian Gulf War Veterans

Almost 50 years after World War II veterans were exposed to unethical research, the Department of Defense again failed to comply with the well-established ethical requirement that all soldiers and civilians make an informed choice of whether or not to use investigational medical treatment.

1. Military personnel were not given the opportunity to refuse investigational drugs.

When the Department of Defense began preparations for Desert Shield and Desert Storm in 1990, officials were extremely concerned about the need to protect U.S. troops against chemical and biological weapons that were believed to have been developed by Iraq. However, the DOD lacked drugs and vaccines that were proven safe and effective to safeguard against expected weapons, such as soman and botulism.

Under the Food, Drug, and Cosmetics Act, all vaccines and medical products must be proven safe and effective by the Food and Drug Administration (FDA) in order to be sold and distributed in the United States, or used by U.S. troops. However, DOD officials were interested in using a botulinum toxoid, which is a vaccine to prevent botulism, that was *not* approved by FDA. They also wanted to use pyridostigmine bromide, a medication to protect U.S. troops against chemical nerve agents. Although approved by the FDA for treating patients with a neurological disorder called myasthenia gravis,

[75]Testimony of Nathan Schnurman, WWII veteran, mustard gas test subject, hearing before the Subcommittee on Administrative Law and Governmental Relations, Committee on the Judiciary, U.S. House of Representatives, "Government-Sponsored Tests on Humans and Possible Compensation for People Harmed in the Tests," February 2, 1994.

[76]Hearing, May 6, 1994; John William Allen, written statement submitted for the record.

pyridostigmine is not proven safe or effective for repeated use by *healthy* persons under any circumstances, and is normally unavailable in doses that would be likely to be safe for healthy individuals.[77]

Under current law, the unapproved vaccine and the investigational use of pyridostigmine for healthy individuals could only be administered under an Investigational New Drug (IND) procedure.[78] Under an IND, any individual who is given the investigational product must give informed consent, i.e., must be told of the potential risks and benefits of the product, orally and in writing, and choose freely whether or not to participate. In addition, the IND requires that the medical product be distributed under carefully controlled conditions where safety and effectiveness can be evaluated.

In August 1990, the DOD contacted FDA to review regulatory restrictions of DOD's plan to use pyridostigmine and botulinum toxoid for U.S. troops in the Persian Gulf. The major focus of the meeting was informed consent. The DOD sought a waiver of requirements for informed consent for the use of pyridostigmine bromide and botulinum toxoid, arguing that these investigational products had well-established uses and were safe. They also claimed that there were no reasonable alternatives. According to minutes of the meeting, "FDA expressed some concern about liability and the need to comply with the regulations," and FDA's Deputy Director for Drug Review "pointed out the need to establish an appropriate investigational framework to collect observational data and evaluate the military medical products in question."[79]

In summary, DOD informed FDA that they did not want to abide by informed consent regulations, and FDA officials pointed out that pyridostigmine and botulinum toxoid were investigational and that there are laws regulating how they can be used. DOD claimed that "under the DOD directive the Secretary of Military Departments [could] dictate the use of unapproved FDA regulated products" in the Persian Gulf, but "DOD's current position is that this not their primary choice at this time."[80]

The issue was debated by the two agencies for several months. Finally, at a meeting on December 31, 1990, an agreement was reached. According to minutes of that meeting, DOD officials agreed that the botulism vaccine would be administered by trained individuals with a health care background, and that information would be provided orally "at minimum, and in written form if feasible, to all personnel receiving the vaccine."[81] Officials from the DOD said that the feasibility of distributing an information sheet would depend on many factors, and would vary from location to

[77]Pyridostigmine is approved by the FDA at a one-time dosage of 15 mg to reverse the effects of certain drugs given during anesthesia.

[78]55 Federal Register 52,814-52,817 (December 21, 1990).

[79]Memorandum for Record, August 30, 1990, submitted by Craig R. Lehmann, Lt. Col., USAF, BSC; in Committee files.

[80]FDA memorandum from Richard Klein and Ann Graham to Stuart Nightingale, September 7, 1990; in Committee files.

[81]Draft of minutes, meeting between officials of DOD and FDA, December 31, 1990, provided by FDA to Committee; in Committee files.

location within the military theater of operation. DOD officials "reiterated that at least verbal [sic] information would be provided to each person receiving the vaccine."

The FDA Informed Consent Waiver Review Group recommended that pregnant women be excluded from receiving the vaccine and that information about the vaccine be "posted at places where vaccine is administered." However, DOD argued that pregnant women would be at greater risk from exposure to botulism toxins than to the vaccine, and FDA agreed that instead of excluding pregnant women, a statement would be added to the information sheet stating that, "If you are pregnant, it is not known if this vaccine will hurt the unborn baby, however, most vaccines do not."[82]

In their application for a waiver, DOD described the safeguards that would be in place regarding the distribution of the botulism vaccine. In addition to oral warnings regarding the vaccine, DOD promised that the soldiers would be observed for 30 minutes after receiving the vaccine, and if possible, they would also be checked again 48 hours later. In addition, DOD claimed that they would provide all three vaccine injections and stated that all three were necessary to provide protection.

FDA granted the waiver on a temporary basis, concurring that obtaining informed consent during wartime is not feasible in a specific military operation involving combat or the threat of combat.[83] On January 8, 1991, Dr. David Kessler, FDA Commissioner, wrote to the Assistant Secretary of Defense for Health Affairs regarding the waiver for informed consent for pyridostigmine. In his letter, Dr. Kessler agreed that since there was "no available satisfactory alternative therapy" for protection against organophosphorus nerve gas, he would "concur with your assessment that informed consent is not feasible." This agreement was apparently based on DOD officials' promise to "provide and disseminate additional information to all military personnel concerning the risks and benefits of pyridostigmine."[84]

Although FDA agreed to waive informed consent for both the pyridostigmine bromide and the botulism vaccine, the Assistant Secretary of Defense for Health Affairs notified Dr. Kessler on March 15, 1992, that "Central Command" had decided that the vaccine would be administered on a *voluntary* basis.[85] However, based on interviews with 150 Persian Gulf War veterans by Committee staff (Appendix), 88 percent of those who said they received a botulism vaccine were told they had no choice.

According to the DOD, all 696,562 U.S. troops in the Persian Gulf War were *issued* pyridostigmine bromide as a pretreatment for nerve agent poisoning, and officials estimate that approximately two-thirds *took* the drug for varying periods of time. Of 150 who were interviewed by Committee staff, 73 took pyridostigmine and 74

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[82]Ibid.

[83]55 Federal Register 52,814-52,817 (December 21, 1990).

[84]Letter in Committee files.

[85]Letter from Enrique Mendez, Jr., M.D., to David Kessler, M.D., Commissioner, Food and Drug Administration, March 15, 1991; in Committee files.

percent of them were told they could not refuse to take it. Approximately 8,000 individuals received botulinum toxoid in the Persian Gulf. Given the high proportion who have reported that they had no choice, it appears that hundreds of thousands of U.S. troops were ordered to take an investigational drug or vaccine without having the opportunity to refuse.

2. Military personnel were not informed about the risks of the investigational drugs

Although DOD officials convinced FDA they need not offer choice, DOD had promised to provide extensive information about potential risks orally and in writing. In addition to being ordered to take an investigational product without informed consent, most Persian Gulf War military personnel surveyed claim they received no oral or written information about the drug or vaccine, despite the DOD promises to FDA to provide information about potential risks. These claims are supported by a survey conducted by the Department of Defense following the Persian Gulf War. Sixteen of 23 selected Persian Gulf War medical personnel surveyed by the DOD indicated that no information on the side effects of pyridostigmine bromide was provided to those who were ordered to take the drug.[86] These medical personnel were responsible for 8,366 military personnel during the Persian Gulf War.

There are two kinds of risks associated with lack of information. One is a lack of trust. In the survey conducted by Committee staff, 14 of 73 (19 percent) Persian Gulf War veterans who had been ordered to take pyridostigmine bromide indicated that they did not take all the pyridostigmine bromide they were ordered to take, fearful that the drug was responsible for the symptoms they experienced (Appendix). Because no one would answer their questions about the safety and efficacy of the pyridostigmine bromide, they feared they were receiving a potentially harmful drug. Therefore, if pyridostigmine bromide had been crucial for surviving nerve agent exposure, an unknown number of individuals would have lacked protection because they had received inadequate information about the drug.

The other risk is that even if serious side effects were rare, they could have been treated if medical personnel were able to diagnose the problem. For example, Carol Picou, a nurse who was stationed in the Gulf for 5 months, had obvious side effects from the pyridostigmine starting on the third day that she took it. These side effects included incontinence, drooling, and blurry vision, among others. The side effects became worse 1 hour after she took each pill. One day, she did not take the pill as scheduled, and the side effects stopped; unfortunately, her commanding officer ordered her to continue taking the pills, and watched to make sure she swallowed them. She was ordered to take the pills for 15 days. She now has many permanent medical problems, including incontinence, muscle

[86]Survey #1, Food and Drug Administration IND 23,509, Operation Desert Storm/Shield, May 27, 1992.

weakness, and memory loss, that might have been avoided had she been allowed to stop taking the pills.[87]

Similarly, Lt. Col. Neil Tetzlaff had immediate side effects when he started taking pyridostigmine bromide on the plane ride over to Saudi Arabia. His nausea and vomiting became so severe that he needed emergency surgery to repair a hole in his stomach. When he became ill, the military doctor told him to continue to take the pills, because the doctor apparently did not know that nausea and vomiting were known side effects. According to Tetzlaff's sworn testimony, the doctor acted as if the pyridostigmine was as safe as a cough drop.[88]

Civilians in the Gulf War

Numerous civilians have reported to Committee staff that they also were given investigational drugs during the Persian Gulf War without informed consent. For example, civilians who worked for DOD contractors and news media personnel were apparently instructed to take the pyridostigmine bromide tablets. They usually were not told it was experimental or that the pyridostigmine bromide was being administered in a regime that was not proven efficacious or safe, and received no information on potential side effects of the drug.

For example, according to journalists who covered the Gulf War, some were given the pills by the U.S. military. Several of these journalists experienced serious medical problems similar to Persian Gulf War veterans.[89] The Committee has also received letters from civilians who are suffering from "Gulf War syndrome" who report the widespread use of pyridostigmine by civilians working for DOD during the Gulf War.

Other Studies of Pyridostigmine

Following the Committee's May 6, 1994, hearing, several individuals who were in the Air Force during the 1980's contacted Committee staff to report they had also received pyridostigmine bromide without their consent.[90] They indicated that they did not volunteer for any research study, were ordered to take the pyridostigmine pills as part of a research project, and were ordered to report any side effects to the flight surgeons. One individual estimated that several hundred individuals in his squadron participated in the pyridostigmine studies, and reported that the studies were conducted over a period of at least 2 years.

The descriptions of these studies are disturbing because, if accurate, they indicate that even during peacetime, the Air Force totally ignored the requirements of informed consent that are a central provision of the Nuremberg Code, the Declaration of Helsinki,

[87]Response to Committee survey completed by Carol Picou, Persian Gulf War nurse; in Committee files.

[88]Hearing, May 6, 1994; statement of Neil Tetzlaff, Persian Gulf War veteran.

[89]Memoranda describing phone conversations with journalists are in Committee files.

[90]Letters, summaries of phone conversations, and supporting documents are in Committee files. These include an "Aircrew Symptoms Checklist on AF Form 1666 (TEST) FEB 86, which instructs the pilots to "[t]ake one (1) pyridostigmine bromide tablet (30 mg) every eight (8) hours over a 24 hour period."

and the "Common Rule" which had been in effect in at least some U.S. Government agencies at the time.

In addition to being unethical, these studies were reportedly unscientific; there were apparently no safeguards to ensure that the pilots took the pills or accurately reported the side effects. Many pilots who participated in these studies were on flight status; if they reported any side effects, they could lose their flight pay.[91] Obviously, this provided an incentive for them *not* to report any side effects, since they did not want to lose their flight pay. Similarly, those who experienced side effects had an incentive to stop taking the drug without notifying the researchers conducting the study. Moreover, pilots who contacted the Committee staff reported that many of their friends and colleagues did not take any of the pills at all, and many of those who did take at least one pill stopped taking them when they experienced headaches and other side effects. Despite the pressure to obey orders, many of the pilots apparently believed that they should not trust the Pentagon regarding the safety of these experimental pills.

One member of the air crew who was given pyridostigmine as part of these studies, Craig Crane, notified the Committee that he now has memory loss, joint pain, sensitivity to chemicals, and other symptoms that are commonly associated with Gulf War syndrome, although he is only 32 years old and did not serve in the Gulf War. He has left the Air Force because of his disabilities.[92]

C. DOD INCORRECTLY CLAIMS THAT SINCE THEIR GOAL WAS TREATMENT, THE USE OF INVESTIGATIONAL DRUGS IN THE PERSIAN GULF WAR WAS NOT RESEARCH.

Despite the fact that pyridostigmine was an investigational drug whose safety and effectiveness had not been proven to FDA, the DOD claims that its use in the Persian Gulf War was prevention and treatment, not research. For example, Dr. Edward Martin, Acting Principal Assistant Secretary of Defense for Health Affairs, stated at the Committee's hearing on May 6, 1994, that "..investigational products were employed during the Persian Gulf War as prophylactic treatments against biological and chemical warfare agents. This was not research but direct prevention and treatment."[93] Additionally, John M. Bachkosky, Deputy Director, Office of the Director of Defense Research and Engineering, wrote to Sen. Rockefeller on May 19, 1994, that "[botulinum toxoid and pyridostigmine bromide] were used

[91]One of the men has provided records of these studies to the Committee; although the records specify that all pilots participating in the study were removed from flight status and given informed consent about the risks of pyridostigmine, those records are not consistent with the descriptions of the study provided by the pilots who contacted the Committee. Moreover, the records themselves do not include an informed consent form or information about the risks of pyridostigmine.

[92]Letter and medical records of Craig Crane are in Committee files.

[93]Hearing, May 6, 1994; statement of Dr. Edward Martin, Acting Principal Assistant Secretary of Defense for Health Affairs.

for direct prevention and treatment and were not employed as part of any research effort."[94]

In a letter to Sen. Rockefeller dated November 17, 1994, DOD continues to claim that its use of pyridostigmine was not research. John Deutch, Deputy Secretary of Defense, wrote that, "Although pyridostigmine and botulinum toxoid were classified as investigational drugs as required by FDA regulations, they were not used for experimental purposes in [Operation Desert Storm] and the military personnel who received these products were not experimental subjects."[95] Mr. Deutch added that, "The fact that these drugs were used for treatment purposes, not research purposes, was clearly understood by all parties involved and specifically approved by the courts in litigation challenging the governments [sic] actions." Once again, it appears that the DOD confuses the goals of using these medical products with the process, which was clearly considered investigational by FDA.

Dr. Arthur Caplan, who at the time he testified was Director of the Center of Biomedical Ethics at the University of Minnesota, addressed that issue at the May 6 hearing. He explained that the fact that the goal is treatment and that DOD believed the benefits of the pills and vaccines would outweigh the risks "doesn't transform the use of experimental, innovative, investigational agents into therapies. These agents were used, as we have heard, in large populations for purposes other than those for which they were originally designed in some cases, and circumstances under which they had never before been tried out in the desert. This seems to me to cinch the case that what took place fell into the category of experimental, innovative and investigational, and that makes them research."[96]

Since the end of the Persian Gulf War, DOD has repeatedly requested that the waiver of informed consent be made permanent, arguing that "to not finalize it provides an arguable defect under the Administrative Procedures Act and leaves both DOD and FDA open to greater liability."[97] To finalize the interim rule would grant unrestricted use of investigational drugs by military personnel, even though investigational status means that efficacy and safety have not been proven. FDA has not yet decided whether to concur with DOD's request.

D. DOD USED INVESTIGATIONAL DRUGS IN THE PERSIAN GULF WAR IN WAYS THAT WERE NOT EFFECTIVE.

The DOD persuaded FDA that informed consent should be waived for pyridostigmine bromide and botulism vaccine because these

[94]Letter from John M. Bachkosky, Deputy Director, Office of the Director of Defense Research and Engineering, U.S. Department of Defense, to Sen. John D. Rockefeller IV, Chair, Senate Committee on Veterans' Affairs, May 19, 1994.

[95]Letter from John Deutch, Deputy Secretary of Defense, to Sen. John D. Rockefeller IV, Chair, Senate Committee on Veterans' Affairs, November 17, 1994; in Committee files.

[96]Hearing, May 6, 1994; statement of Arthur Caplan, Ph.D. Dr. Caplan is now Director of the Center of Biomedical Ethics at the University of Pennsylvania.

[97]Minutes, Meeting (July 27, 1992) on Finalizing Interim Rule on Waiver of Informed Consent, signed July 28, 1992, by William H. Habig.

investigational products had been used safely in the past. However, based on documents provided to the Committee staff, it is doubtful that either of these products would have been effective as used in the Persian Gulf War.

Pyridostigmine bromide, according to DOD, improves the survival of animals exposed to soman and treated with atropine and 2-PAM. However, pyridostigmine pretreatment makes individuals more vulnerable to other nerve agents, such as VX and sarin.[98] The DOD scientists who studied pyridostigmine and *sarin* therefore concluded that pyridostigmine should *only* be used when the chemical warfare threat is *soman*.[99]

The Pentagon, however, had no reason to believe that the Iraqis were more likely to use soman rather than sarin. According to a report by the Persian Gulf Veterans Coordinating Board, Iraq had several chemical weapons, including sarin.[100] Moreover, at a briefing for Senators and staff on November 10, 1993, Under Secretary of Defense John Deutch stated that the Czechoslovakian military detected low levels of *sarin* in the Saudi theater during the opening days of the air war against Iraq. This statement was also made by Joseph Corrivean, U.S. Army Foreign Science and Technology Center, on April 27, 1994, at a National Institutes of Health workshop on "The Persian Gulf Experience and Health."

Even if U.S. troops had been exposed to soman, it is unclear that the pyridostigmine would have provided adequate protection against nerve damage. When DOD began the second phase of research on pyridostigmine, it was noted that the atropine and 2-PAM did not seem to save the lives of animals that were exposed to soman. As a result, the dose of atropine was increased to 0.40 mg/kg, which according to FDA, increased the survival of Rhesus monkeys exposed to soman.[101] However, when the Department of Defense developed a treatment regimen for U.S. troops during the Persian Gulf War, it was based on the *inadequate* dose of atropine in the animal studies (0.096 mg/kg) rather than the higher, effective dose.[102] **Therefore, even if Persian Gulf soldiers had been exposed to soman, it is questionable if the pyridostigmine pretreatment would have provided any protection, since the dose of atropine was apparently inadequate.**

In response to posthearing questions about this dosage discrepancy from Sen. Rockefeller, the DOD stated "the dose of atropine in the Mark I kit was established based exclusively on safety, rather than

[98]Koplovitz, I., Harris, L.W., Anderson, D.R., Lennox, W.J., & Stewart, J.R. "Reduction by pyridostigmine pretreatment of the efficacy of atropine and 2-PAM treatment of sarin and VX poisoning in rodents," *Fundamental and Applied Toxicology*, Vol. 18, 1992, pp. 102-106.

[99]Sidell, F.R., op. cit.

[100]"Summary of the issues impacting upon the health of the Persian Gulf veterans," Version 1.1: March 3, 1994.

[101]The actual data from this study was not provided to our Committee, and apparently not provided to FDA either.

[102]IND Amendment, Reference to IND# 28480, March 28, 1988, Letter from Thomas H. Gray, Chief, Operational Unit Training Branch, Department of the Air Force, to Mr. David Banks, Consumer Safety Officer, FDA.

on efficacy, considerations."[103] This statement suggests that hundreds of thousands of servicemembers were put at risk by requiring them to take a drug with known risks (pyridostigmine bromide) in a situation where it might have done little good since the *atropine* dose in the Mark I kits, 6 mg, was inadequate. Based on the monkey data, a dose of 27 mg would have been required for a 150-pound man.[104] However, the side effects of only 2 mg of atropine in a normal young person (without nerve-agent exposure) include increased heart rate, decreased sweating, visual blurring, and others.[105] Apparently, DOD officials decided that the high dosage required for protection would impair performance, so they selected the much lower dosage, even though its effectiveness was questionable. Although results for monkeys may not be exactly comparable to those for humans, it seems unlikely that humans would respond dramatically differently. It is therefore likely that the dose of atropine in the Mark I kits was inadequate for efficacy, and even with this very low dose could have compromised the ability of servicemembers during war.[106]

Botulism vaccine was given too late to U.S. troops to be of any use had the Iraqis actually used biological warfare during Desert Storm. At a briefing on April 20, 1994, DOD officials informed Committee staff that botulism vaccine was not administered to most military personnel in the Persian Gulf until January 23, 1991, which was 7 days *after* the onset of the air war. Approximately 8,000 individuals received the vaccine, but most received only one or two inoculations. Because the war ended on February 27, 1991, before the third injection was scheduled to be given, it is unlikely that these soldiers were adequately immunized. Moreover, because of the severe shortage of the product, the remainder of those deployed received no inoculations, and hence no protection against botulism.

According to the Department of Veterans Affairs, 696,562 individuals participated in Operation Desert Shield/Desert Storm. **Therefore, 99 percent of the military personnel deployed would have received no protection due to the shortage of botulinum toxoid, and the remaining 1 percent were probably not protected because the vaccine distribution started too late.**

Additionally, in December 1990, the FDA advised the Department of Defense that it would be unable to test the botulism vaccine for efficacy, presumably because of limited time before the onset of the war.[107] Therefore, in addition to the limited supply of vaccine and late

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[103]Answers from the Department of Defense to followup questions submitted by Sen. John D. Rockefeller IV, after the Committee's May 6, 1994, hearing. The answers were received by the Committee on September 19, 1994.

[104]A 150-pound man weighs 68 kg; 68 x 0.4 = 27 mg.

[105]Sidell, F.R., op. cit.

[106]The administration of additional atropine some hours after exposure to chemical weapons might have been helpful, but it is not clear how many soldiers would have been fortunate enough to receive medical treatment within hours of combat, or how effective that later treatment would have been.

[107]Minutes of Meeting of the Informed Consent Waiver Review Group (ICWRG), Food and Drug Administration, December 31, 1990.

onset of inoculations, efficacy of the existing supply was not determined prior to the onset of the war.

Anthrax vaccine was given to approximately 150,000 military personnel in the Persian Gulf. Anthrax vaccine is considered effective for protecting against anthrax exposure of the skin; however it is unclear whether it provides protection against inhaling aerosolized anthrax.[108] According to the Department of Defense, in biological warfare the anthrax would be sprayed, so the efficacy of the vaccine against aerosolized anthrax would have been the relevant test.[109] As stated earlier in this report, the DOD has only one study indicating that the vaccine might be useful against aerosolized anthrax, but there are no data on humans.

E. DOD DID NOT KNOW WHETHER PYRIDOSTIGMINE BROMIDE WOULD BE SAFE FOR USE BY U.S. TROOPS IN THE PERSIAN GULF WAR.

Committee staff reviewed all the clinical studies and related research regarding pyridostigmine on healthy individuals which DOD provided to FDA to support their IND and their NDA (new drug approval) application.[110] The number of human subjects in most studies was less than 35; several studies included as few as two or four individuals.

According to the materials that FDA provided to the Committee, virtually all the studies excluded women. The lack of studies on women is a problem, because dosage should be based on the weight of the person taking the drug, and because some scientists believe that pyridostigmine may affect men and women differently.[111,112] For example, women on birth control pills may have different levels of AChE than other women or men. Similarly, women in different stages of their reproductive cycle respond differently to pyridostigmine.[113] Since studies excluded women, there is no information on the potential long-term side effects of pyridostigmine on diseases unique to women (such as menstrual cycle irregularities or breast cancer).

Because of the DOD researchers' concerns about serious adverse reactions to pyridostigmine bromide, many of the studies screened the men to determine whether they were hypersensitive to pyridostigmine bromide before allowing their participation in the experiment. In some cases they used test doses; in other cases they asked questions regarding similar medications and sensitivity to bromide. In many of the studies, patients were excluded if they were taking any

[108]In a letter dated July 27, 1992, FDA asked whether an IND should be required to test the anthrax vaccine against aerosolized anthrax.

[109]Department of Defense briefing with staff of the Senate Committee on Veterans' Affairs, 414 Russell Senate Office Building, April 20, 1994.

[110]A list of many of these studies is in Appendix A.

[111]Barbarino, A., Corsello, S.M., Tofani, A., et al. "Sexual dimorphism of pyridostigmine potentiation of growth hormone (GH)-releasing hormone-induced GH release in humans," *Journal of Clinical Endocrinology and Metabolism*, Vol. 73, No. 1, 1991, pp. 75-78.

[112]O'Keane V. & Dinan, T.G. "Sex steroid priming effects on growth hormone response to pyridostigmine throughout the menstrual cycle," *Journal of Clinical Endocrinology and Metabolism*, Vol. 75, No. 1, 1992, pp. 11-14.

[113]Ibid.

medications, since adverse reactions could occur when pyridostigmine was administered with other drugs (i.e., propranolol, birth control medications, or anti-malarial drugs). In some studies, smokers were excluded; in many studies, participants were told not to drink any alcoholic beverages. Most research study participants were less than 35 years of age. In addition, individuals with abnormal blood pressure, asthma, glaucoma, low serum AChE levels, gastrointestinal disorders, urinary or intestinal blockage, or hyperthyroidism, were excluded from the studies.[114]

Despite these precautions, serious adverse reactions were reported for several of the studies. For example, in one study, pyridostigmine bromide was administered to a group of 28 active duty Air Force pilots.[115] One pilot experienced respiratory arrest 91 minutes after swallowing the third in a series of three 30-mg pyridostigmine tablets. This pilot had shown no sensitivity to the test dose of pyridostigmine prior to the study. In another study of 32 male subjects, one subject lost consciousness following vision problems and headache.[116] In other studies, abnormal liver tests, unusual electrocardiograms, gastrointestinal disturbances, and anemia were reported.[117,118,119]

Results also showed that pyridostigmine impaired performance, including tasks which require short-term memory, and prevented a number of test subjects from exercising in hot environments during the second or third day of treatment. A study of the impact of pyridostigmine on swimming in cold water had to be terminated when it was determined that its use caused severe cramps that could cause drowning.

Research published in 1978 on neostigmine, a "close relative" of pyridostigmine, found that the drug caused "profound physiological, electrophysiological, and electron microscopic disruption of nerve endings and muscles." Some of these changes increased in severity over time with continued treatment.[120] The author of that study believes this study has worrisome implications for pyridostigmine.

In August 1990, just before U.S. troops were sent to the Gulf, DOD scientists requested approval for a study of four men that would evaluate the effects of pyridostigmine on vision. This study was deemed urgent because of the situation in Kuwait, and it was approved quickly. It is important to note that this study, conducted just prior to the Gulf War, included extensive safety precautions, including giving medical exams to the men before giving the

[114]These instructions are consistent over time, and were included in many different studies between 1985-90. Copies are in Committee files.

[115]IND Amendment, 28 March 1988, IND 28,480.

[116]IND Annual Report, 1987-1988, IND 23,509.

[117]DAMD17-85-C-5133, Task Order 2, Kornhauser.

[118]*Israeli Journal of Medical Science*, Vol. 27, 1991, pp. 659-663.

[119]Keeler, J.R., Hurst, C.G., & Dunn, M.A. "Pyridostigmine used as a nerve agent pretreatment under wartime conditions," *Journal of the American Medical Association*, Vol. 266, No. 5, 1991, pp. 693-695.

[120]Letter from the author of the published research, Dr. Thomas Tiedt, to Sen. John D. Rockefeller IV, Chair, Senate Committee on Veterans' Affairs, June 8, 1994; in Committee files.

pyridostigmine. **The researchers indicated that pyridostigmine should *not* be given to individuals who had bronchial asthma, peptic ulcer, liver, kidney, heart disease, or hypersensitivity to pyridostigmine or related drugs.** They informed study volunteers that possible adverse side effects include nausea, vomiting, slow heart rate, sweating, diarrhea, abdominal cramps, increased salivation, increased bronchial secretions, and pupil constriction. They also warned of other side effects, including "weakness, muscle cramps, and muscle twitches" and explained that, **"Because of these side effects, all subjects will be admitted to Lyster Army Hospital as in-patients so that they will be medically monitored during evening periods of nontesting.** A drug will be available at the test site to counteract the possible adverse side effects." (Emphasis added)[121] In addition, the Human Subjects Committee that reviewed this study considered whether the possibility of pyridostigmine causing death should be mentioned in the informed consent form; after some discussion, it was decided that such a warning was unnecessary since death was unlikely.

In contrast to the extensive precautions taken before giving pyridostigmine every 8 hours for 3 days to *four* volunteers, a few months later approximately 400,000 U.S. soldiers were ordered to take the same dosage of the drug for days, weeks, or months, none of whom had been screened for any of the diseases mentioned in the informed consent form given to the four men, none of whom were warned about the risks associated with the drug, and none of whom were given a choice of whether or not to take it. Additionally, approximately 28,000 of the 400,000 receiving the pyridostigmine were women, who were required to take an investigational drug that DOD had never tested on healthy women.[122]

The repeated claims by DOD and FDA at the Committee's May 6, 1994, hearing and at other times since the war that they were sure pyridostigmine was perfectly safe as used is not consistent with the concerns of DOD scientists regarding the potential serious adverse reactions and drug interactions while conducting research. It does not make sense that the researchers would establish such elaborate safeguards when giving the drug to four men, and then have none of those safeguards when giving the drug to more than 400,000 U.S. troops, none of whom had been tested for sensitivity to pyridostigmine, and most of whom were not screened for medical problems or medication use that could preclude the safe use of pyridostigmine. DOD researchers were aware of the shortcomings of their research. For example, in 1989 William K. Prusaczyk suggested, "Because of the existing incidence of asthma in soldiers in the U.S.

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[121]Abbreviated Protocol, signed by Roger W. Wiley and Darcelle Delrie, and other documents regarding "The Effects of Pyridostigmine Bromide on Vision"; attached to a cover letter from Martha H. Myers, Acting Chief, Human Use Review and Regulatory Affairs Office, Department of the Army, August 15, 1990. Documents are in Committee files.

[122]There are several studies of the effects of a one-time dose of pyridostigmine on growth hormone in women, but the conditions of these studies, including fasting and use during one phase of the menstrual cycle, were not relevant to use of pyridostigmine in the Gulf War.

Army," the medical monitor believes that pyridostigmine should be studies on individuals who have asthma.[123]

F. WHEN U.S. TROOPS WERE SENT TO THE PERSIAN GULF IN 1994, DOD STILL DID NOT HAVE PROOF THAT PYRIDOSTIGMINE BROMIDE WAS SAFE FOR USE AS AN ANTIDOTE ENHANCER.

When U.S. troops were sent to the Persian Gulf in the fall of 1994 because of concern about Kuwait, the DOD considered the use of pyridostigmine to protect against chemical weapons. However, in the 3 years since the Persian Gulf War of 1991, the DOD had not conducted studies that proved the safety of pyridostigmine bromide for that use.

The safety of pyridostigmine was evaluated during and after the Persian Gulf War. In one study, approximately 37 percent of 213 soldiers reported at least one severe symptom 24 hours after beginning to take the 30-mg pyridostigmine tablets.[124] Additionally, the DOD conducted three surveys concerning the use of pyridostigmine in Operation Desert Shield/Storm which were reported in 1992.[125] These surveys indicated that side effects were frequently experienced by military personnel taking pyridostigmine bromide. One published article, based on reports from medical personnel providing care to 41,650 soldiers (6.5 percent women) who took pyridostigmine bromide in the Persian Gulf, found that over half experienced gastrointestinal disturbances.[126] Urinary urgency and frequency, headaches, nasal discharge, profuse sweating, and tingling of hands and feet were reported to occur in a range of 5 to 30 percent.[127] Several doctors who were interviewed for the study expressed concerns that the dose for women may have been too high.

In the 3 years that have elapsed since the Gulf War, the DOD has apparently not conducted research on the safety of pyridostigmine for healthy women. In early 1994, DOD submitted an NDA (new drug approval) application to FDA, urging that FDA determine that pyridostigmine bromide is safe and effective as an antidote enhancer. The studies provided in that application did not include women.

In the last few year, several studies have been published on the effects of pyridostigmine on growth hormones of women and men. In one study, three of the eight women who received one 120 mg dose of pyridostigmine bromide became so ill they had to be excluded from the study.[128] The entire study consisted of eight women and eight men who received pyridostigmine in single doses of 30, 60, or 120 mg. The women in the study experienced more severe and prolonged

[123]to Protocol HURC #378," memorandum from William K. Prusaczyk, research physiologist, October 23, 1989; in Committee files.

[124]Sharabi, Y., Danon, Y., Berkenstadt, H., et al., "Survey of symptoms following intake of pyridostigmine during the Persian Gulf War," *Israeli Journal of Medical Science*, Vol. 27, 1991, pp. 656-658.

[125]Information amendment from the Department of the Army to FDA, IND 23509-pyridostigmine bromide-WR 270,710, May 27, 1992.

[126]Keeler, J.R., et al., op. cit.

[127]Ibid.

[128]Barbarino, A., et al., op. cit.

symptoms than men, especially at the 120 mg dose, such as severe abdominal cramps, nausea, vomiting, asthenia, and muscle cramps. Three subjects who received 120 mg had vision impairment that lasted several hours.[129]

In addition, none of the studies of pyridostigmine evaluated the safety of pyridostigmine if taken over a period of weeks or months, as was done in the Gulf War. Moreover, none of the studies evaluated the long-term safety of pyridostigmine by providing followup information about men who had taken the drug years earlier.

Despite the Committee's hearing in May and numerous television news magazine reports and newspaper articles reporting our concerns about the safety of pyridostigmine, the DOD has apparently not yet conducted any studies that provide any more information than was previously available.[130] Several studies of pyridostigmine conducted by DOD under conditions of heat and/or exercise have been published, but they studied only four to seven young men. In one study of four men, one man became so fatigued on the third day that he was told to stop exercising; this problem was barely mentioned in the published study, and the implication for soldiers during wartime was not discussed.[131]

G. PYRIDOSTIGMINE MAY BE MORE DANGEROUS IN COMBINATION WITH PESTICIDES OR OTHER EXPOSURES.

In 1993, Dr. James Moss, a scientist at the U.S. Department of Agriculture, conducted research on cockroaches that could have important implications for Persian Gulf War veterans.[132] He found that when pyridostigmine was used in combination with a common insect repellent called DEET (diethyl-m-tolamide), the DEET became almost seven times as toxic as when it was used alone. Similarly, pyridostigmine became four times as toxic when used in combination with DEET.[133] DEET and many other insect repellents and pesticides were widely used in the Gulf War as protection against sand flies, scorpions, and other pests. If individuals who took pyridostigmine bromide became more vulnerable to pesticides, or those exposed to pesticides became more vulnerable to pyridostigmine bromide, this could explain the serious neurological symptoms experienced by so many Gulf War veterans.

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[129]All the men and women in the study were between 19-25 years old, were free of other medications, and were fasting; the women were all in the luteal phase of their menstrual cycle.

[130]Although the DOD does plan to follow up on research on pyridostigmine and DEET conducted by Dr. James Moss (previously with the Agricultural Research Service, USDA) by conducting a study of rats, that research has not yet been initiated. Dr. Moss' research is described in the next section of this report.

[131]M.A. & Stephenson, L.A. "Cardiovascular and thermoregulatory responses to repeated anticholinesterase administration," *Journal of Thermal Biology*, Vol. 17, No. 6, pp. 333-337.

[132]Hearing, May 6, 1994; testimony of James Moss, Ph.D., researcher, Agricultural Research Service, U.S. Department of Agriculture, Gainesville, FL.

[133]Additional information about his results are provided in Dr. Moss' answers to Sen. Rockefeller's posthearing questions, included in the transcript of the Committee's May 6, 1994, hearing, and in documents provided by Dr. Moss which are in the Committee files.

The results were similar but not as alarming for permethrin, another insecticide that was used in the Gulf War. Permethrin was used in the military uniforms, impregnating the fabric before it was cut and sewn. In his cockroach studies, Dr. Moss found that DEET became twice as toxic when used with permethrin.

Dr. Moss also studied the combination of DEET and pyridostigmine with other toxic substances that were present in the Gulf War, such as lindane (a treatment for lice) and a wide range of insecticides. These substances also became more toxic when used at the same time than when used individually. Even caffeine was found to have a potential impact on the toxicity of other substances.

Dr. Moss believes his findings regarding cockroaches are likely to be relevant to humans; however, more research is needed to determine if humans would be similarly affected. Nevertheless, his findings are consistent with concerns that have been raised by military researchers, who have stated publicly that carbamates such as pyridostigmine must never be used *after* nerve agent exposure, presumably because the pyridostigmine could further decrease AChE from nerve agent poisoning. If military personnel were exposed to low levels of nerve agents due to bombing of nerve agent stockpiles as proposed by some,[134] as well as numerous pesticides procured by the Army,[135] and pyridostigmine bromide, it is likely that the combination could have been much more toxic than any of those substances would have been individually.

Dr. Moss' findings regarding pesticides are also consistent with a note in the Air Force records of Craig Crane, an Air Force crewman who participated in a pyridostigmine experiment in 1986. According to a description of the pyridostigmine study that was signed by medical personnel and included in Mr. Crane's records, "There is no sensitivity to pesticides or recent significant exposure." This medical notation suggests that Air Force medical personnel were concerned about a possible interaction between pyridostigmine and pesticides, and therefore avoided including men who had been exposed to pesticides.[136]

Dr. Moss testified about his findings at the Committee's May 6, 1994, hearing, despite efforts by USDA to prevent him from doing so. On June 31, 1994, his 3-year contract with USDA expired, and it was not renewed. Dr. Moss' repeated efforts to continue working at USDA were unsuccessful. Sen. Rockefeller wrote to Secretary Espy in May, June, and July to ask how USDA planned to continue Dr. Moss' research, but received no reply until after a CBS Evening News story on the subject on October 14, 1994. Secretary Espy then wrote to Sen. Rockefeller saying that the USDA had no plans to follow up on Dr.

[134]"U.S. Chemical and Biological Warfare-related Dual Use Exports to Iraq and Their Possible Impact of the Health Consequences of the Persian Gulf War," a report of Sen. Donald W. Riegle, Jr., Chair, and Sen. Alfonse M. D'Amato, ranking Republican member, U.S. Senate Committee on Banking, Housing, and Urban Affairs, May 25, 1994.

[135]List of pesticides procured during Desert Shield/Storm (acquired through the Federal supply system), information submitted to the Senate Committee on Veterans' Affairs, April 6, 1994, from the Department of the Army, Office of the Surgeon General.

[136]Hearing, May 6, 1994; document submitted for the record.

Moss' research, but would ensure that the data were provided to DOD.[137]

Although Dr. Moss made no accusations against USDA at the Committee hearing, he has subsequently expressed his views that he lost his job at USDA because of his research findings. He also now reports that his supervisor warned him that he should not discuss his research findings with anyone. Moreover, in an internal USDA memo dated December 30, 1993, Dr. Moss stated that he was advised to "keep quiet."[138] USDA and the Johnson Wax Company are the co-inventors of DEET, an ingredient in most commercially available insecticides, such as Raid.

H. THE SAFETY OF THE BOTULISM VACCINE WAS NOT ESTABLISHED PRIOR TO THE PERSIAN GULF WAR AND REMAINS UNCERTAIN.

At a meeting with DOD officials regarding informed consent in December 1990, the FDA agreed to test the botulinum toxoid (botulism vaccine) for safety.[139] A representative of FDA's Center for Biologics Evaluation and Research explained that the existing supply of the vaccine was nearly 20 years old and consisted of three lots, stored under constant refrigeration. There was concern that the vaccine would break down into toxic products due to prolonged storage. General safety testing was performed by the FDA on all of the lots of botulinum toxoid used in the Persian Gulf; however, the FDA did not complete these tests until January 24, 1991,[140] after the war had started.

While the results of FDA's general safety testing were encouraging, the problem with adverse reactions to the vaccine were not resolved. In her review of the DOD's application for use of the botulism vaccine in the Persian Gulf, an FDA reviewer pointed out that in 1973, the Centers for Disease Control had considered terminating its distribution because of adverse reactions.[141] New lots of the vaccine were manufactured in 1971, but research was not conducted to determine whether the newer lots produced fewer adverse reactions than the older lots.[142]

Since no records were kept for most of the Gulf War soldiers who received the vaccine, there is no new information about the safety of the botulism vaccine resulting from its use by U.S. troops. Therefore, its safety remains unknown.

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[137]Correspondence between Secretary Espy and Senator Rockefeller are in Committee files.

[138]Hearing, May 6, 1994; document submitted for the record by Craig Crane.

[139]Minutes of Meeting of the Informed Consent Waiver Review Group (ICWRG), Food and Drug Administration, December 31, 1990.

[140]BBIND 3723, Food and Drug Administration, memorandum from Lawrence A. D'Hoostelaere on "General safety testing of botulinum toxoid," March 2, 1994.

[141]Review by Ann Sutton, Vaccines and Allergenics, DBIND, Food and Drug Administration, to the IND record, November 14, 1990.

[142]Informational material for the use of pentavalent (ABCDE) botulinum toxoid aluminum phosphate adsorbed, U.S. Department of Health and Human Services, Centers for Disease Control, Atlanta, Georgia, Revised May 1982, protocol #392.

I. RECORDS OF ANTHRAX VACCINE ARE NOT SUITABLE TO EVALUATE SAFETY.

Although anthrax vaccine had been considered approved prior to the Persian Gulf War, it was rarely used. Therefore, its safety, particularly when given to thousands of soldiers in conjunction with other vaccines, is not well established. Anthrax vaccine should continue to be considered as a potential cause for undiagnosed illnesses in Persian Gulf military personnel because many of the support troops received anthrax vaccine, and because the DOD believes that the incidence of undiagnosed illnesses in support troops may be higher than that in combat troops.[143]

Unfortunately, medical records and shot records of individuals who served in the Persian Gulf frequently do not report the vaccines they received. In some cases, anthrax was recorded as "Vac-A." However, in many cases, veterans who believe they received anthrax vaccinations did not have them recorded in their medical records. According to testimony received at the Committee hearing on May 6, 1994, vaccines were recorded in separate vaccine records, for soldiers who had such records with them and insisted that the information be recorded.[144]

J. ARMY REGULATIONS EXEMPT INFORMED CONSENT FOR VOLUNTEERS IN SOME TYPES OF MILITARY STUDIES.

Army regulation (AR) 70-25 provides guidelines for the use of volunteers as subjects in military research. Section 3 describes three exemptions whereby military researchers are exempt from the provisions of these protective regulations (the following is a direct quote from the regulation):

> a. Research and nonresearch programs, tasks, and tests which may involve inherent occupational hazards to health or exposure of personnel to potentially hazardous situations encountered as part of training or other normal duties, e.g., flight training, jump training, marksmanship training, ranger training, fire drills, gas drills, and handling of explosives.
>
> b. That portion of human factors research which involves normal training or other military duties as part of an experiment, wherein disclosure of experimental conditions to participating personnel would reveal the artificial nature of such conditions and defeat the purpose of the investigation.

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[143]Briefing, Maj. Gen. Ron Blanck, Commanding General, Walter Reed Army Hospital, to Committee staff, 414 Russell Senate Office Building, Washington, DC, February 4, 1994.

[144]Hearing, May 6, 1994, testimony of the Rev. Dr. Barry Walker, Persian Gulf War veteran.

c. Ethical medical and clinical investigations involving the basic disease process or new treatment procedures conducted by the Army Medical Service for the benefit of patients.[145]

It is sometimes difficult to differentiate training from research. For example, military personnel at the U.S. Chemical School, Fort McClellan, AL, are currently exposed to nerve agent poisons as part of their training, so that they will learn how to cope with similar situations in combat. Soldiers who refuse to participate or do not complete live agent training are subject to reclassification in another military occupational specialty and cannot graduate.[146] To determine if the students used correct procedures during the training exercise, blood samples are obtained from some students before and after the procedure, and are analyzed for red blood cell cholinesterase to determine if the soldier was exposed to the nerve agents.

If the military collects data to determine how to better train individuals, the "training" is then defined as contributing information to generalizable knowledge, and is hence "research." For the optimal protection of U.S. troops, one would hope that training exercises are improved based on reliable information. However, during the testing of new training methods or equipment, exercises utilizing potentially dangerous substances, such as chemical weapons, should be considered research rather than training. Participants must be fully apprised of the nature of the experiments and have the opportunity to refuse without reprisal, in order to conform with the Nuremberg Code and other ethical standards.

K. DOD AND DVA HAVE REPEATEDLY FAILED TO PROVIDE INFORMATION AND MEDICAL FOLLOWUP TO THOSE WHO PARTICIPATE IN MILITARY RESEARCH OR ARE ORDERED TO TAKE INVESTIGATIONAL DRUGS.

A common theme voiced by military personnel who have participated in military research or training exercises over the last 50 years is the lack of information about the risks they faced and the lack of medical followup. World War II veterans frequently reported that they heard about the adverse health effects of mustard gas and lewisite from newspapers and television decades after they were exposed, not from the Department of Defense or Department of Veterans Affairs. Veterans and civilians who worked at the Dugway Proving Ground and were exposed to a variety of biological and chemical simulants began to question the association of poor health with work as they compared information among themselves, not because of information provided by military officials. Veterans who were inside atomic clouds from atomic testing heard nothing at all from their government after they returned home from duty. Similarly, soldiers who unknowingly participated in military research designed to test the effects of hallucinogens on human behavior were never

[145]Army Regulation 70-25, "Research and Development, Use of Volunteers as Subjects of Research," Department of the Army, Washington, DC, March 26, 1968.

[146]Letter from Sara E. Lister, Assistant Secretary of the Army, to Sen. John D. Rockefeller IV, Chair, Senate Committee on Veterans' Affairs, June 15, 1994.

given information to explain their hallucinations and suffered from severe psychological disorders as a result. Even today, most of those who served in the Persian Gulf indicate they have received no followup information about the investigational drugs they received.

It is the responsibility of DOD and VA to identify and keep track of veterans exposed to potentially dangerous substances so that they can receive medical care if needed. Even in situations where DOD believes an investigational drug is safe, such followup is necessary to establish with certainty whether exposures were safe, or whether they resulted in long-term side effects.

L. THE FEDERAL GOVERNMENT HAS FAILED TO SUPPORT SCIENTIFIC STUDIES THAT PROVIDE INFORMATION ABOUT THE REPRODUCTIVE PROBLEMS EXPERIENCED BY VETERANS WHO WERE INTENTIONALLY EXPOSED TO POTENTIALLY DANGEROUS SUBSTANCES.

In the last year, Gulf War veterans have reported that exposures during military service have resulted in miscarriages and birth defects, as well as excruciating pain during sexual intercourse. For example, at a Committee hearing on August 5, 1994, Kelli Albuck, the wife of a Gulf War veteran, described the miscarriage and pregnancy problems she had experienced since her husband returned from the Gulf War. She also described what she called "burning semen" or "shooting fire." Mrs. Albuck stated that many wives of Gulf War veterans complained that their husbands' semen caused a burning sensation, and in her case that the semen itself could cause a rash or blood blister on her husband's leg or her skin. Steve Miller, an Army nurse who also testified at that hearing, had no problems with burning semen, but his son was born with extensive birth defects, including having only one eye and one ear. The doctors told him that the combination of severe birth defects was very unusual and suggestive of a toxic exposure. Mr. Miller believes that his son's birth defects could be related to his use of investigational drugs or vaccines, perhaps in combination with pesticide exposures.

Similarly, many atomic veterans believe that infertility, miscarriages, stillbirths, and birth defects resulted from exposure to ionizing radiation.

Although these reports have received media attention for years, the VA and DOD have not conducted research on these questions, nor have they supported independent research. Finally, 50 years after veterans were intentionally exposed to ionizing radiation, the VA will be required by law to enter into a contract with the Institute of Medicine (IOM), or a similar independent agency, to evaluate whether it is feasible to support research on the reproductive problems associated with exposure to ionizing radiation. If the IOM determines that such research is feasible, the VA and the Congress will then determine whether such research should be funded.[147]

In November 1994, President Clinton signed a law that would require VA to conduct research on birth defects and miscarriages among Gulf War families. A preliminary study will be required, in

[147]The two provisions described in this section are part of Public Law 103-446, the Veterans' Benefits Improvement Act of 1994.

which information about these reproductive outcomes will be included in the Persian Gulf War Veterans' Health Registry. In addition, VA will be required to include semen analysis and other reproductive evaluations in a standard protocol used to evaluate Gulf War veterans with mysterious illnesses.

M. THE FEDERAL GOVERNMENT HAS ALSO FAILED TO SUPPORT SCIENTIFIC STUDIES THAT PROVIDE TIMELY INFORMATION FOR COMPENSATION DECISIONS REGARDING MILITARY PERSONNEL WHO WERE HARMED BY VARIOUS EXPOSURES.

For decades, military personnel who were injured from various exposures have been denied compensation until scientific evidence could support their claims for service-connected disabilities. Although 60,000 military subjects were involved as human subjects in testing programs involving mustard gas and lewisite over 50 years ago, the initiation of a study to review research regarding the long-term health consequences from these military experiments did not occur until 1991, and the results of the study were not published until 1993.[148]

Similarly, the use of Agent Orange and other herbicides in Vietnam has stimulated concern and controversy ever since the United States began the military herbicide program in 1961, but a comprehensive review and evaluation of available scientific and medical information regarding the health effects of herbicides and the contaminant dioxin was not conducted until it was authorized by Congress in 1991.[149] The Department of Veterans Affairs has recently announced new rules for awarding compensation for more Agent Orange-related diseases, three decades after military personnel were exposed to the defoliant in Vietnam.[150]

Reports of the National Research Council's Committee on the Biological Effects of Ionizing Radiation (BEIR), written to advise the U.S. Government on the health consequences of radiation exposure, frequently relied on mortality and morbidity experiences of exposed individuals, some of which took decades to accumulate.[151] Information is continuing to be gathered, which will be incorporated into future BEIR reports.

When investigational drugs and vaccines were given to thousands of military personnel during the Persian Gulf War, this provided an unprecedented opportunity to learn more about the safety of those products. Unfortunately, no effort was made to gather objective information, despite the fact that data gathering is required as part of the IND process for investigational drugs and vaccines.[152] Any research that is conducted years after the war is over will be less

[148]Veterans at Risk, op. cit.

[149]Veterans and Agent Orange, Health Effects of Herbicides Used in Vietnam, Institute of Medicine, National Academy Press, Washington, DC, 1993.

[150]News Release, Office of Public Affairs, Department of Veterans Affairs, Washington, DC, June 13, 1994.

[151]"Health Effects of Exposure to Low Levels of Ionizing Radiation," op. cit.

[152]Hearing, May 6, 1994; prepared statement of Robert J. Temple, M.D., Director, Office of Drug Evaluation, Center for Drug Evaluation and Research, Food and Drug Administration.

scientifically valid and much more expensive as a result of the lack of objective information gathered during the war about which servicemembers took which drugs or vaccines, and the adverse reactions that they experienced.

The Medical Follow-up Agency (MFUA) of the Institute of Medicine will take 3 years to issue its final report on whether there is a scientific basis for an epidemiological study on the health consequences of service in the Persian Gulf.[153] If the MFUA determines such a study or studies should be conducted, it will take several more years to gather the necessary data.

N. PARTICIPATION IN MILITARY RESEARCH IS RARELY INCLUDED IN MILITARY MEDICAL RECORDS, MAKING IT IMPOSSIBLE TO SUPPORT A VETERAN'S CLAIM FOR SERVICE-CONNECTED DISABILITIES FROM MILITARY RESEARCH.

Although hundreds of thousands of U.S. military personnel have been involved in military research, their medical records usually do not contain information about the studies they participated in, or the investigational drugs or vaccines they received.[154] There are currently no standardized guidelines imposed by either the DOD or VA to include a copy of the informed consent form or research proposal in the medical records of exposed human subjects.

Even if medical records contain relevant information regarding health consequences from various investigations, these medical records may be difficult to obtain. Of the 150 individuals who were interviewed for the Committee's survey, not all respondents had tried to obtain their medical records, but 28 (19 percent) indicated that part or all of their medical record were lost and 48 (32 percent) respondents indicated that their medical records were incomplete or inaccurate (Appendix). Some of those surveyed believed their records had been deliberately altered or contained inaccurate information.

The VA Office of Inspector General recently investigated the possible illegal removal of official documents from certain veterans' appeals files assigned to two Board of Veterans' Appeals attorneys.[155] It is unknown whether such intentional removal is a rare occurrence; clearly, any removal of medical information would make it difficult and perhaps impossible for a veteran to receive the medical care and compensation that he or she is entitled to.

In addition to any intentional removal of information, veterans' service medical records are difficult to find. According to the U.S. General Accounting Office, veterans' service medical records can

[153]Public Law 102-585, § 706, November 4, 1992, Agreement with National Academy of Sciences for Review of Health Consequences of Service during the Persian Gulf War.

[154]"It is likely that a great majority of ground personnel [in the Persian Gulf] received at least one dose and probably up to the full 21 tablets [of pyridostigmine] dispensed," National Institutes of Health Technology Assessment Workshop, "The Persian Gulf Experience and Health," final statement issued June 22, 1994, p. 10. The workshop was held April 27-29, 1994.

[155]News Release, Office of Public Affairs, Department of Veterans Affairs, July 20, 1994.

potentially be in thousands of locations.[156] The DOD has attempted to simplify the retrieval of medical records by modifying the route for medical records of individuals who have left the military. The simplified route was initiated for the Army in October 1992, for the Navy in February 1994, and for the Air Force and Marines in late 1994. Although the new procedures should simplify the process, the GAO concluded that the possibility of misplaced medical records remains because there are still thousands of locations where records could be found within the new system.

O. DOD HAS DEMONSTRATED A PATTERN OF MISREPRESENTING THE DANGER OF VARIOUS MILITARY EXPOSURES THAT CONTINUES TODAY.

According to Dr. Leonard Cole, professor at Rutgers University, the DOD has denied the possibility of harm from various exposures. However, in many instances the military belatedly recognized that some exposures may be causing disease and death.[157] Such denial, however, delays the availability of medical assistance to those harmed.

For example, the military has released chemicals and biological agents through outdoor "open air" tests for over four decades. Some of these supposedly safe chemicals and biological agents, referred to as simulants, were also released over populated areas and cities.[158] Although scientific evidence suggested that the tests may have caused illnesses to exposed citizens, the Army repeatedly claimed that these bacteria and chemicals were harmless until adverse health effects convinced them to change the simulants used. The death of Edward J. Nevin was associated with the release of one simulant, Serratia marcescens, over San Francisco in 1950.[159] A subsequent court trial revealed that on September 26 and 27, 1950, the Army sprayed Serratia marcescens from a boat off the coast of San Francisco.[160] On September 29, patients at the Stanford University Hospital in San Francisco began appearing with Serratia marcescens infections. Although the judge denied the validity of the plaintiffs' claims that the exposures were related to the death of Mr. Nevin, the trial raised frightening questions about the selection of simulants. Serratia marcescens is no longer used by the military as a simulant.

Dugway Proving Ground has been a site for "open air" testing of chemical and biological agents for decades. The purpose of the tests is to determine how the agents spread and survive, and their effect on people and the environment. Earl Davenport is a veteran who participated in tests at Dugway Proving Ground in Utah, first as a military employee and later as a civilian employee. He became ill in

[156]B-257173, GAO letter to Senator John D. Rockefeller IV, Chair, Senate Committee of Veterans' Affairs, on the location of veterans' service medical records, May 4, 1994.

[157]Hearing, May 6, 1994; testimony of Leonard A. Cole, Ph.D., professor, Rutgers University.

[158]Ibid.

[159]*San Francisco Chronicle,* December 22, 1976, page 1.

[160]Cole, L.A. Clouds of Secrecy, The Army's Germ Warfare Tests Over Populated Areas, Rowman and Littlefield, 1988, pp. 75-104.

1984 after being exposed to a chemical simulant called DMMP (dimethyl methylphosphate). He had been spraying the chemical into the path of a laser beam when a sudden change in wind blew the chemical all over his face and hair before he was able to put on a protective mask. Although he was "wheezing and coughing" the next day, and his symptoms lasted for weeks, the Dugway Army Hospital merely gave him cough medicine and antibiotics. The Dugway Safety Office assured him that the chemical was safe. However, by 1988, officials at Dugway had reevaluated the simulant's danger, and were becoming concerned that DMMP could cause cancer and kidney damage.[161] Mr. Davenport is currently attempting to obtain compensation for his illness from the Department of Labor, since his exposure occurred when he was employed at Dugway as a civilian.

In 1992, several military personnel from the Arizona National Guard experienced chemical burns during a summer training exercise at the Dugway Proving Grounds. According to two physicians, a daughter from one of the guardsmen also received chemical burns when she later handled her father's duffle bag. One of these doctors, Dr. Michael Vance, was contacted by military officials and encouraged to modify his written findings on the possible cause of the daughter's injury.[162] He refused.

According to scientists and doctors from the University of Utah, there is great concern over the potential health consequences not only for military personnel who work and train at Dugway, but also for civilians who live in a small town and on an Indian reservation near the Proving Grounds.

Moreover, physicians from the Utah Medical Society have complained about the lack of information provided to the medical community about the agents that are used in Dugway, despite repeated requests.[163]

According to Dr. Cole, the use of potentially harmful chemical and biological agents continues at Dugway even today. For example, he testified that the Army uses a simulant called Bacillus subtilis, "which is fairly harmless in many natural conditions, [but] is recognized as a potential source of infection and can cause serious illness in some people when they are exposed to it in large numbers and they inhale large numbers of those microorganisms."[164]

Dr. Cole also testified about the lack of informed consent at Dugway in recent months. For example, in November 1993, a test that was intended to evaluate whether chemical agents could penetrate protective clothing used informed consent forms that did not mention the chemicals.[165]

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[161]Hearing, May 6, 1994; testimony of Earl P. Davenport, veteran and former employee, Dugway Proving Ground.

[162]Memorandum of phone interview with Dr. Michael Vance, Good Samaritan Hospital, Phoenix, AZ, March 21, 1994; in Committee files.

[163]"UMA Seeks Health and Safety Controls at Dugway," *Bulletin of the Utah Medical Society*, May 1992, Vol. 40, No. 5, p. 1; "UMA Joins Lawsuit Against Army," *Bulletin of the Utah Medical Society*, June 1992, Vol. 40, No. 6, p. 1; in Committee files.

[164]Hearing, May 6, 1994; testimony of Dr. Cole.

[165]Ibid.

IV. STAFF RECOMMENDATIONS

A. FDA SHOULD DENY THE DEPARTMENT OF DEFENSE REQUEST FOR A "BLANKET WAIVER" TO USE INVESTIGATIONAL DRUGS WITHOUT INFORMED CONSENT IN CASE OF WAR OR THREAT OF WAR.

If investigational drugs are deemed necessary for protection or treatment, a waiver of informed consent should be sought only on a case-by-case basis. While the military might order individuals to take an investigational drug or use an investigational device if it is clearly safe and potentially efficacious, under no circumstances should the DOD fail to inform individuals about the known short-term and long-term risks prior to its administration.

In 1990, DOD applied to FDA for a waiver of informed consent, claiming they would provide warnings orally and in writing regarding the risks of pyridostigmine, even though they would not give soldiers the choice of whether or not to take it. According to reports from various sources, including DOD's own study, DOD did not fulfill its promise. In addition, DOD personnel apparently distributed these drugs to civilians without any warnings. These failures and broken promises should be sufficient to persuade FDA to reject the DOD request for a blanket waiver, and should be taken into consideration any time DOD applies for a waiver of informed consent. In addition, FDA should investigate these problems and work with DOD to prevent similar problems in the future.

In addition, third-party or "deferred" consent should not be considered unless the individual receiving the drug is physically or mentally incompetent to make an informed decision on his/her behalf. If the DOD fails to obtain the necessary waivers, or fails to adequately inform those receiving the investigational products, DOD should be required to provide a written explanation to the appropriate congressional committees.

B. FDA SHOULD REJECT IND AND NDA APPLICATIONS FROM DOD THAT DO NOT INCLUDE DATA ON WOMEN AND LONG-TERM FOLLOWUP DATA.

When DOD submits an IND (investigational new drug) application or NDA (new drug application) to FDA for any product that they plan to use, they should always be required to include women in their research, since it is likely that the product will be used by women. On the basis of that requirement, FDA should reject the currently pending NDA for pyridostigmine's use as an antidote enhancer, which was submitted to FDA in early 1994.

At a Senate briefing in November 1994, Dr. Ruth Merkatz, FDA's Associate Commissioner for Women's Health, stated that FDA will always require data on women in future drug approval applications, if the product under review is intended for use by women. However, Dr. Merkatz was not specific about whether this policy would apply to DOD.

In addition to data on women, it is increasingly clear that drugs can have long-term adverse reactions that are not immediately obvious. Given the responsibility of the Federal Government to

provide medical care to veterans who were harmed during military service, DOD and FDA need to ensure that the VA and the public are aware of any potential long-term adverse reactions of any medical products that are given to military personnel.

In the case of pyridostigmine, a drug that DOD wants to have the authority to use in future conflicts in the Persian Gulf and elsewhere, FDA should immediately urge DOD to conduct the kinds of research that is needed to prove its safety for future military use, including research on its potentially toxic effects when combined with insecticides and other chemical agents that are commonly used by military personnel.

C. CONGRESS SHOULD AUTHORIZE A CENTRALIZED DATABASE FOR ALL FEDERALLY FUNDED EXPERIMENTS THAT UTILIZE HUMAN SUBJECTS.

Currently, the U.S. Department of Agriculture maintains a database which can identify the number of research grants awarded for studying various species, such as beef and dairy cattle, poultry, sheep, swine, and others.[166] However, a database which identifies the types of human subjects does not exist.

Congress should authorize a database which would provide crucial information on federally funded research utilizing human subjects. Included in this database should be the amount of Federal dollars spent on various research efforts and the type of human subjects utilized, such as women, minorities, children, prisoners, military personnel, and others.

Annual reports from the data collected should be provided to Congress. Such information would enable legislators to understand better the use of human subjects in federally sponsored research.

D. CONGRESS SHOULD MANDATE ALL FEDERAL AGENCIES TO DECLASSIFY MOST DOCUMENTS ON RESEARCH INVOLVING HUMAN SUBJECTS.

Information involving human subjects in military research, which remains classified for purported reasons of national security, needs to be reevaluated and declassified whenever possible. All Federal agencies should scrutinize classified information and make information available which might benefit individuals who participated in such research.

E. CONGRESS SHOULD REESTABLISH A NATIONAL COMMISSION FOR THE PROTECTION OF HUMAN SUBJECTS, WITHOUT A TERM LIMIT, WHICH HAS THE AUTHORITY TO INVESTIGATE POTENTIAL VIOLATIONS OF HUMANS SUBJECTS' RIGHTS IN FEDERALLY FUNDED RESEARCH.

A National Commission should standardize Federal regulations (45 CFR 46), and consider adding military personnel as a vulnerable population. Policies for the conduct of research in war or for the purposes of national security should receive greater public debate. No

[166]Phone interview, Patrick Casula, Office of Grants and Program Systems, U.S. Department of Agriculture, October 12, 1994.

existing regulations governing military personnel should be finalized without such public dialogue.

Congress should provide authorization and appropriations for the National Commission, and require annual reports on potential violations of human subjects' rights. The administrative body of the Commission should consist of nine members, three appointed by the majority party in Congress, three appointed by the minority party in Congress, and three appointed by the executive branch.

F. THE DEPARTMENT OF VETERANS AFFAIRS AND THE DEPARTMENT OF DEFENSE SHOULD IMPLEMENT REGULAR SITE VISITS TO REVIEW THE PERFORMANCE OF INSTITUTIONAL REVIEW BOARDS.

DOD and VA authorized site visits should include an evaluation of military and VA research onsite, and a random sample review of actual research and medical records, interviews with human subjects, and signed consent forms to assure investigator compliance. A mechanism should be in place whereby human subjects can express concern over perceived or actual violations of the informed consent contract. This mechanism should allow human subjects to register complaints to a regulatory agency and the National Commission, rather than solely the investigator of the research project. All military personnel and veterans involved in research should receive a copy of the "Experimental Subject's Bill of Rights."[167]

G. THE FERES DOCTRINE SHOULD NOT BE APPLIED FOR MILITARY PERSONNEL WHO ARE HARMED BY INAPPROPRIATE HUMAN EXPERIMENTATION WHEN INFORMED CONSENT HAS NOT BEEN GIVEN.

The U.S. Supreme Court has interpreted the Feres Doctrine to mean that soldiers "injured in the course of activity incident to service" may not sue the Government for compensation.[168] However, when inappropriate experimentation has resulted in suffering for military personnel, this interpretation stands in violation of established ethical standards, including the Nuremberg Code, the Declaration of Helsinki, and the "Common Rule." Congress should not apply the Feres Doctrine for military personnel who are harmed by inappropriate experimentation when informed consent has not been given.

The U.S. Supreme Court mentioned the Nuremberg Code in *United States v. Stanley* in 1987. James Stanley, an Army serviceman, volunteered to test the effectiveness of protective clothing and equipment against chemical warfare in February 1958.[169] In the process, he unknowingly received LSD as part of an Army study to determine the effects of the drug on humans. Although Stanley suffered from periods of incoherence and memory loss for years, he

[167]"Summary of Findings and Recommendations, Review of the Office of Health and Environmental Research Program, Protection of Human Research Subjects," Subcommittee of the Health and Environmental Research Advisory Committee, U.S. Department of Energy, May 1994.

[168]Annas, G.J. & Grodin, M.A. "The Nazi Doctors and the Nuremberg Code," Human Rights in Human Experimentation, Oxford University Press, 1992, p. 209.

[169]Ibid., pp. 212-214.

only learned in 1975 that he had participated in the LSD study when the Army solicited his cooperation in a followup study. Having been denied compensation for injury by the Army, Stanley filed under the Federal Tort Claims Act. Justice Antonin Scalia wrote the opinion for the Court, split 5 to 4.[170] Justice Scalia wrote that permitting Stanley to sue the Army would disrupt the Army itself and "would call into question military discipline and decision-making." However, Justice Sandra Day O'Connor, writing for herself as one of the dissenting judges, stated that the Feres doctrine bar

> "surely cannot insulate defendants from liability for deliberate and calculated exposure of otherwise healthy military personnel to medical experimentation without their consent, outside of any combat, combat training, or military exigency..."[171]

Justice O'Connor also commented on the Nuremberg Code in her writing, stating that voluntary consent of the human subject is absolutely essential, even for the U.S. military. It was, after all, the U.S. military who played an instrumental role in the criminal prosecution of the Nazi officials who experimented with human beings during World War II.

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[170]*United States v. Stanley*, 107 S. Ct. 3054 (1987), cited in "The Nazi Doctors and the Nuremberg Code," Human Rights in Human Experimentation, Annas, G.J. & Grodin, M.A., Oxford University Press, 1992, pp. 212-214.

[171]Ibid.

APPENDIX

Survey of 150 Persian Gulf War Veterans

Male respondents: 120 [80%]
Female respondents: 30 [20%]

Active duty servicemembers: 46 [31%]
Retired: 4 [3%]
Temporarily disabled retirement list: 2 [1%]

Active reservists: 46 [31%]

Veteran: 15 [10%]
Individual ready reserves: 10 [7%]
National Guard: 27 [18%]

Those ill since returning from Gulf: 136 [91%]
Those who had ill family members: 60 [40%]

Those who identified at least one investigational drug that they took: 75 [50%]

ANTHRAX—
Number of respondents who received anthrax: 68 [45%]
1 vaccination: 31 [46% of those who received anthrax]
2 vaccinations: 31 [46%]
3 vaccinations: 2 [3%]
Unknown number: 4 [6%]

Of those receiving anthrax vaccinations, those who:
received no oral or written information about the vaccine: 61 [90%]
were told they could not refuse it: 58 [85%]
described immediate side effects: 29 [43%]

Of the women receiving anthrax vaccination, those who received no warning on risk if pregnant: 12/16 [75%]

BOTULINUM TOXOID—

Number of respondents who received botulinum toxoid: 17
- **1 vaccination:** 10 [59% of those who received botulinum toxoid]
- **2 vaccinations:** 3 [18%]
- **Unknown number:** 4 [24%]

Of those receiving botulinum toxoid, those who:
- **received no oral or written information about the vaccine:** 13 [76%]
- **were told they could not refuse it:** 15 [88%]
- **described immediate side effects:** 6 [35%]

Of the women receiving botulinum toxoid, those who received no warning on risk if pregnant: 4/4 [100%]

PYRIDOSTIGMINE BROMIDE—

Number of respondents who took pyridostigmine bromide: 73 [49%]

Of those taking pyridostigmine bromide, those who:
- **received no oral or written information on side effects:** 63 [86%]
- **were told they could not refuse it:** 54 [74%]
- **described immediate side effects:** 38 [52%]
- **did not comply and take drugs when they were supposed to:** 14 [19%]

Of the women receiving pyridostigmine bromide, those who received no warning on risk if pregnant: 14/18 [78%]

OTHER SURVEY INFORMATION—

Number of respondents who received a vaccination but did not know what it was: 25 [17%]

Number of respondents who received a drug but did not know what it was: 28 [19%]

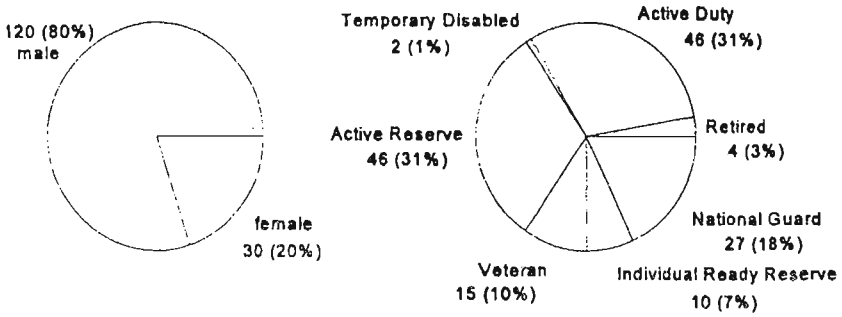
Number of respondents who have not received any information following the Persian Gulf War concerning investigational drugs from either VA or DOD: 128 [85%]

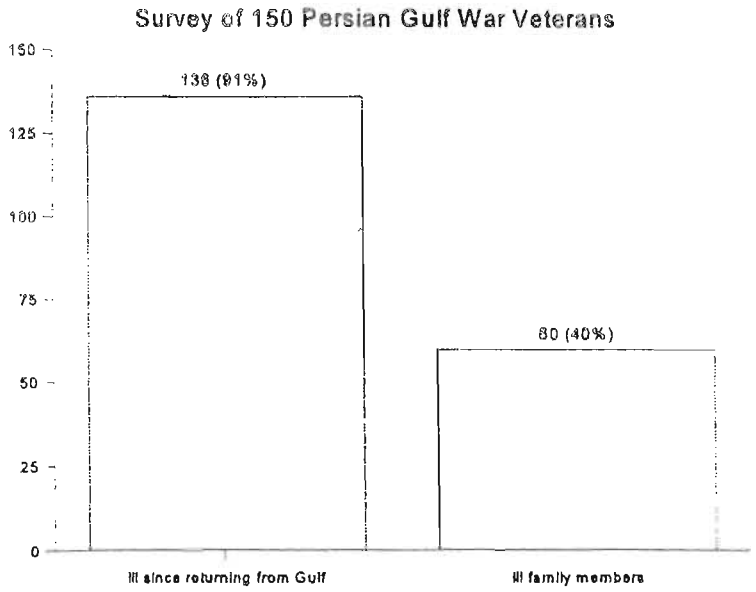
Concerning medical records:
- **Medical record is incomplete/inaccurate:** 48 [32%]
- **Medical record [part or all] is missing/lost:** 28 [19%]

25 MOST COMMON SYMPTOMS REPORTED
[number of respondents reporting]

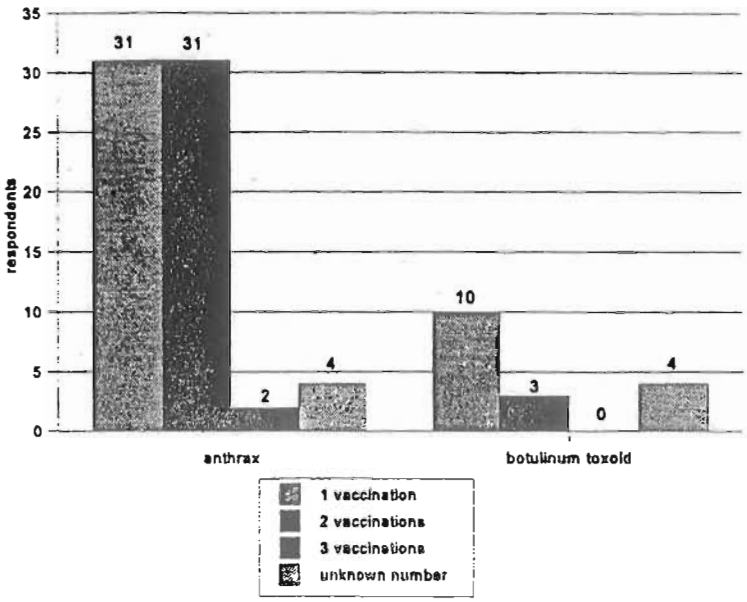
Fatigue	65
Skin problems	61
rashes	50
Memory loss	59
blackouts, forgets where they are	5
Joint pain	55
Headaches	52
Personality changes	44
Diarrhea	32
Muscle pain, weakness, spasms, tremors	29
Pain [back, shoulder, neck, etc]	28
Trouble with vision	24
Shortness of breath	22
Sleep disturbances	22
Hair loss	19
Numbness [hands, fingers, feet]	19
Dental problems/bleeding gums	18
Reproductive problems	18
Bleeding	16
Sores	14
Chest problems [pain]	12
Abdominal/stomach pain	12
Fever	10
Nausea/vomiting	10
Dizziness/staggering	10
Sinus, nasal discharge	9
Sensitivity to light, smell, noise	9
Children born with birth defects	7
Partners with reproductive problems	16

Profile of 150 Survey Respondents

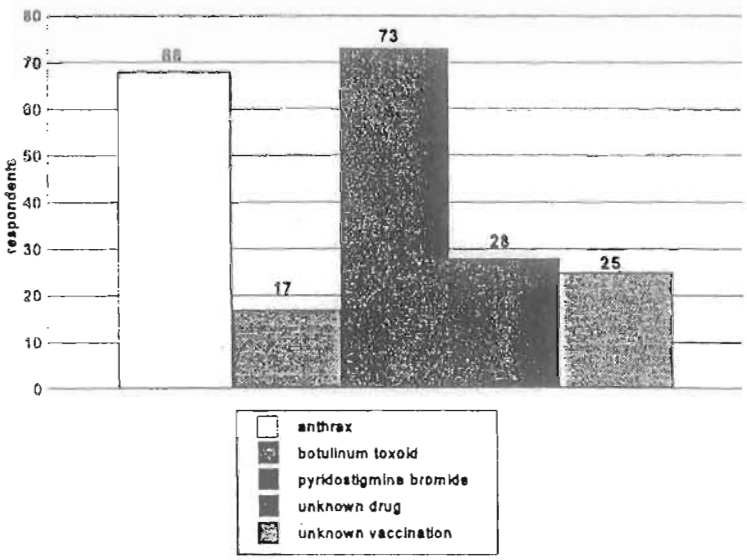


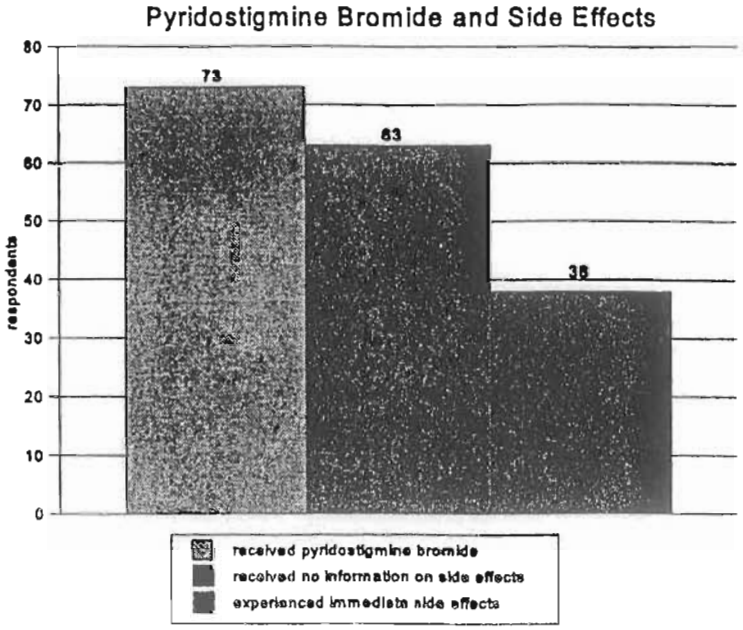


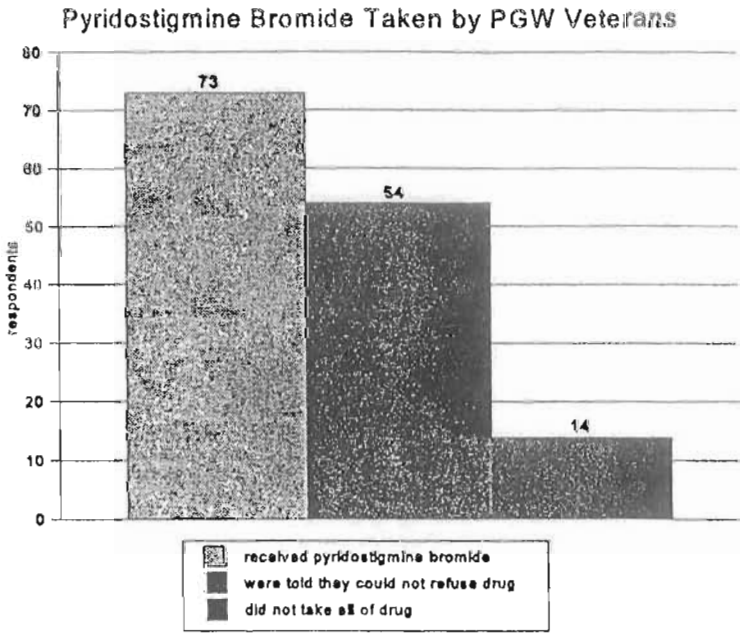
Respondents Receiving Vaccines

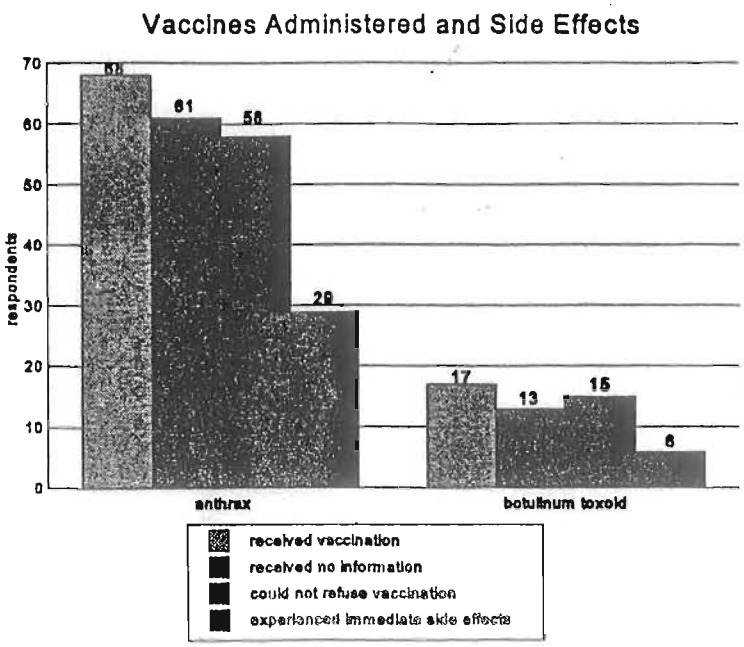


Respondents Receiving Investigational Drug or Vaccine




Pyridostigmine Bromide and Side Effects
80
70
60
50
40
30
20
10
0
respondents
73
63
38
received pyridostigmine bromide
received no information on side effects
experienced immediate side effects


Pyridostigmine Bromide Taken by PGW Veterans
80
70
60
50
40
30
20
10
0
respondents
73
54
14
received pyridostigmine bromide
were told they could not refuse drug
did not take all of drug


Vaccines Administered and Side Effects
70
60
50
40
30
20
10
0
respondents
68
61
58
29
17
13
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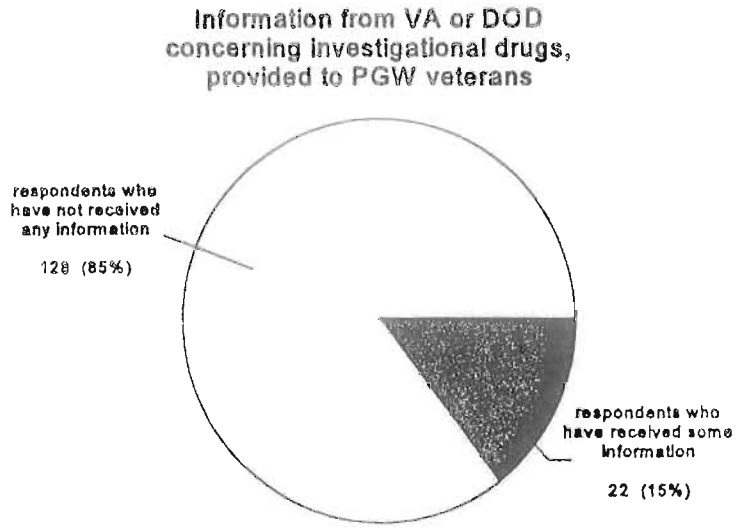
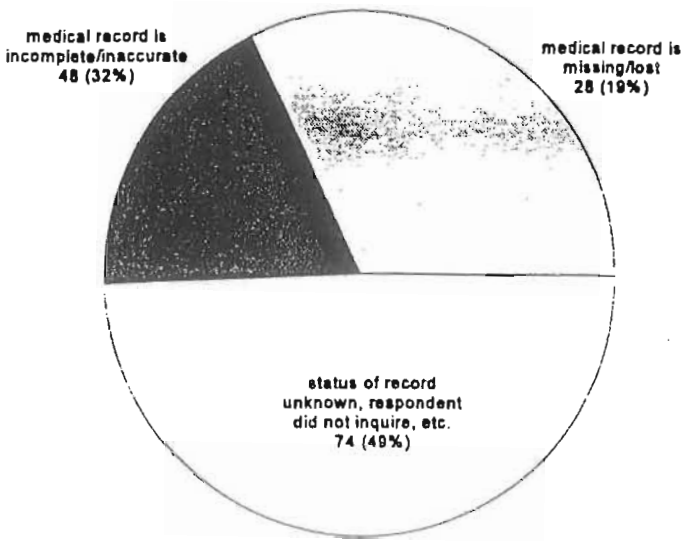
6
anthrax
botulinum toxoid
received vaccination
received no information
could not refuse vaccination
experienced immediate side effects


Information from VA or DOD concerning investigational drugs, provided to PGW veterans
respondents who have not received any information
128 (85%)
respondents who have received some information
22 (15%)

Medical Records of Veterans Surveyed



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