(1) Lungs

60. LUNG
61. RIGHT UPPER LOBE
62. RIGHT MIDDLE LOBE
63. RIGHT LOWER LOBE
64. LEFT UPPER LOBE
641. LEFT UPPER APICAL POST ANT. SEGMENTS
642. LEFT UPPER LOBE-LINGULA
65. LEFT LOWER LOBE
66. PLEURA
67. MEDIASTINUM
671. TRACHEA, R & L MAIN BRONCHI
672. SUPERIOR MEDIASTINUN
673. ANTERIOR MEDIASTINUM
674. MIDDLE MEDIASTINUM
675. POSTERIOR MEDIASTINUM
676. THYMUS
677. HILAR LYMPH NODE
678. GENERALIZED (INVOLVING MORE THAN 1 MEDIASTINAL AREA)
679. OTHER MEDIASTINAL LOCATION
68. MORE THAN 1 LUNG PLRA, MEDIAST., LOCATION (GNRLIZED)
69. OTHER-(LUNG, PLRA, MEDIAST., OR CHEST WALL) LOCATION

.13 NORMAL VARIANT
.131 NORMAL VARIANT, AZYGOS LOBE
.132 CERVICAL RIB
.139 NORMAL VARIANT-OTHER (ACCES. BRONC.FRM.TRACH VRT.FISS.)
.141 APLASIA
.142 HYPOPLASIA
.155 EVENTRATION (PARALYSIS OF DIAPHRAGM)
.21 PNEUMONIA,
.211 LOBAR PNEUMONIA
.212 BRONCHO-PNEUMONIA
.2199 PNEUMONIA,
.22 SARCOIDOSIS
.221 SARCOIDOSIS, ADENOPATHY
.222 SARCOIDOSIS, "ALVEOLAR" SARCOID, PARENCHYMAL SARCOIDOSIS
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.26 BRONCHIECTASIS
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.2811 CALCIFIED PULMONARY

.31 BENIGN NEOPLASM, CYST, OTHER NEOPLASTIC-LIKE CONDITION
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.451 POSTOPERATIVE; THORACOPLASTY
**.452 POSTOPERATIVE; PNEUMONECTOMY
**.453 POSTOPERATIVE; LOBECTOMY
**.454 POSTOPERATIVE THORACOTOMY
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60. LUNG
61. RIGHT UPPER LOBE
62. RIGHT MIDDLE LOBE
63. RIGHT LOWER LOBE
64. LEFT UPPER LOBE
641. LEFT UPPER LOBE-APICAL POST. ANT. SEGMENTS
642. LEFT UPPER LOBE-LINGULA
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66. PLEURA
67. MEDIASTINUM
671. TRACHEA, R & L MAIN BRONCHI
672. SUPERIOR MEDIASTINUM
673. ANTERIOR MEDIASTINUM
674. MIDDLE MEDIASTINUM
675. POSTERIOR MEDIASTINUM
676. THYMUS
677. HILAR LYMPH NODE
678. GENERALIZED (INVOLVING MORE THAN 1 MEDIASTINAL AREA)
679. OTHER MEDIASTINAL LOCATION
68. MORE THAN 1 LUNG, PLRA, MEDIAST., LOCATION (GNRLIZED)
69. OTHER-(LUNG, PLRA, MEDIAST., OR CHEST WALL) LOCATION

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.746 DISCOID ATELECTASIS
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.751 PULMONARY EMPHYSEMA
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.753 OTHER FORM OF HYPER-INFLATION
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.755 CHRONIC BRONCHITIS
.756 BULLA, SINGLE OR
.76 HYDROTHORAX, EMPYEMA, PLEURAL THICKENING
.761 FREE FLUID
.762 SUBPULMONARY FLUID
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522.	CARD.CHAMBER -L. ATRIUM & APPENDAGE	.14	CONGENITAL ANOMALY, DEVELOPMENTAL ABNORMALITY		
		.15	GREAT VESSEL ANOMALY		
523.	CARD.CHAMBER R. VENTRICLE	.16	TRANSPOS.OF GRT ARTERIES, REL.ANOM.,SITUS ANOM	**.71	CONGESTIVE HEART
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564.	PULMONARY ARTERY				
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32.	THORACIC SPINE	.141	APLASIA		
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(4) Special Codes

60.	LUNG	**51.453	HEART-VALV.SURG.FOR CONG/ACQRD. HRT.DISEASE
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62.	RIGHT MIDDLE LOBE	**60.452	LUNG-POSTOP;THORACOPLASTY
63.	RIGHT LOWER LOBE	**60.454	LUNG-POSTOP;THORACOTOMY
64.	LEFT UPPER LOBE	**60.71	LUNG-PULMON.EDEMA, LUNG CHANGES WITH HEART FAILURE
641.	LEFT UPPER LOBE-APICAL POST. ANT. SEGMENTS	**60.75	PULMONARY HYPERINFLATION
		**61.453	R.UPPER LOBE-LOBECTOMY
642.	LEFT UPPER LOBE-LINGULA	62.453	R.MIDDLE LOBE-LOBECTOMY
65.	LEFT LOWER LOBE	63.453	R.LOWER LOBE-LOBECTOMY
66.	PLEURA	64.453	L.UPPER LOBE-LOBECTOMY
67.	MEDIASTINUM	65.453	L.LOWER LOBE-LOBECTOMY
671.	TRACHEA, R & L MAIN BRONCHI		
672.	SUPERIOR MEDIASTINUM		
673.	ANTERIOR MEDIASTINUM	**61.74	R.UPPER LOBE COLLAPSE (ATELECTASIS)
674.	ANTERIOR MEDIASTINUM	62.74	R.MIDDLE LOBE-COLLAPSE (ATELECTASIS)
675.	POSTERIOR MEDIASTINUM	63.74	R.LOWER LOBE-COLLAPSE (ATELECTASIS)
676.	THYMUS	64.74	L.UPPER LOBE-COLLAPSE (ATELECTASIS)
677.	HILAR LYMPH NODE	65.74	L.LOWER LOBE-COLLAPSE (ATELECTASIS)

678. GENERALIZED (INVOLV-
ING MORE THAN 1
MEDIASTINAL AREA)
679. OTHER MEDIASTINAL
LOCATION
68. MORE THAN 1 LUNG,
PLRA,MEDIAST.,
LOCATION (GNRLIZED)
69. OTHER-(LUNG, PLRA,
MEDIAST.,OR CHEST
LOCATION

(5) Abdomen

70. NOT SPECIFIED (GI)

72. STOMACH
775. SPLEEN

**70.451 NOT SPECIFIED
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IV. Medical Examination Manuals

N. Vision Testing

1. Introduction

The procedures outlined in this manual are to be used in conjunction with the physical assessment to detect abnormalities in vision. Those abnormalities to be evaluated include near vision, far vision and peripheral vision.

2. Equipment

a. Optec 2000

(1) The Optec 2000 is a precision designed stereoscopic instrument for measuring visual performance and thereby detecting visual problems. The instrument is semiautomatic with an illuminated control panel. It weighs 13.5 lbs and can be used on a desk since it requires less than 2 sq. ft. of space. All tests are concealed in a closed housing allowing only the tester and the subject being tested to view the targets.

(2) For the operator, all switches are located on one panel within easy reach. Each switch is illuminated for quick, easy identification. The dial which controls the slides is located on the side of the instrument.

(3) Some interface features of the Optic 2000 include an advanced light system which renders a white light, resulting in high contrast images and truer color reproduction. A built-in baffle assembly isolates the left and right eyes, thus eliminating unwanted reflective light. By eliminating crossover, true binocular and uniocular tests are guaranteed. The front surface mirror offers a ghost-free image. Up to 12 test slides can be mounted on a rotatable drum. We will be using only the near and far vision letter charts in this study.

(4) External features include a forehead trigger which controls illumination inside the Vision Tester. It will only activate the illumination when the subject maintains pressure for testing. When forehead pressure is applied to the bar, the green "Ready" indicator will illuminate and the subject is ready to be tested. The lens system consists of two lenses. The upper lens is for FAR POINT testing (simulated distance of 20 feet). The lower lens is for NEAR POINT testing (simulated distance of 14 inches). FAR and NEAR indicator lights indicate how the instrument is set to test, yellow for FAR and blue for NEAR. The colors will correspond with the FAR/NEAR switch on the

control panel. The test dial is used to change slides in the viewing area. The numbers on the dial correspond to the numbers on the record form for identifying the slide test.

3. Supplies

a. Slides - Black and White, Color Special
b. Perimeter Tester Attachment
c. Reference and Training Manual
d. Record forms: Medical, 100 sheets/pad, 5 pads/pkg
   Industrial, 100 sheets/pad, 5 pads/pkg
e. Headrest tissue, 50 sheets/pad, 50 pads/pkg
f. Dust cover
g. Pointer, 6 per pkg
h. Power cord
i. Bulbs (7 watt) 6 per pkg
j. Lens cleaner, 2 oz bottle
k. Plus lenses: plus 1.75D
   plus 2.25D
l. Intermediate lenses: set of 5
   Lens #1: 39.25 in, 100 cm
   #2: 31.48 in, 80 cm
   #3: 26.23 in, 66.7 cm
   #4: 22.49 in, 57.1 cm
   #5: 19.68 in, 50 cm

4. Maintenance

The Optic 2000 was designed to minimize maintenance. All bearings and internal mechanisms have been sealed at the factory. For further information on the OPTEC 2000, please refer to the Equipment Manual and/or a copy of the machine manual located with the machine. The only components requiring maintenance are:

a. Eyepiece lenses
   The external side of these lenses need to be cleaned occasionally. Care should be taken not to use any abrasive material on these lenses. Use the cleaner supplied with the Vision Tester or plain soap and water. It is important to dry the lenses with a soft cloth or tissue.

b. Replacement of slides
   The slide drum assembly holds up to 12 slides and can be reached through the door located above the control panel. Turn power switch on and set for FAR POINT. To replace a slide, rotate the dial until the number of the slide to be removed is under the yellow indicator. Open rear door, remove slide on top of drum by rotating clips toward each other until they clear the slide. Remove unwanted slide and insert new slide.

c. Control panel removal
The panel is designed with reliable solid state components, all UL listed. The modular design allows quick segmentation from the rest of the instrument.

d. Exterior
The ABS plastic, of which the instrument body and base are made, can be cleaned using a damp, clean cloth and a mild detergent. A dust cover is provided for dust protection and to discourage tampering. An 8-foot cord can be disconnected.

e. Inside mirror
Behind the rear door you will find a front surface mirror. Handle the mirror with care and avoid placing fingers on its surface. The surface of the mirror should be cleaned with the cleaner supplied with the instrument along with a moistened, clean, soft cloth or tissue. DO NOT tamper with the three screws surrounding the mirror. The mirror has been carefully aligned to achieve precise light reflections.

f. Replacement of bulbs
The instrument contains four 7-watt bulbs, two of which are located behind the lower doors on the right and left sides of the instrument. Be certain both the orange and green lights on the rear control panel are on when testing bulbs. Disconnect power before replacement of bulbs. Upon opening the top side door, a screw can be seen in the center of the lip of the lower door. Remove the door screw, drop the lower door down, then remove single bulb access screw. This permits easy withdrawal of the double socket assembly so that new bulbs can be substituted. Replace both bulbs, right and left sides, when one burns out. This ensures uniform light intensity.

g. Calibration of OPTEC 2000

(1) The manufacturer calibrates the machine before it is sent out. It will need no further calibration.

(a) The responsible company is:
Stereo Optical Company
3539 N. Kenton Avenue
Chicago, Illinois 60641

(b) The local representative is: Al Lucero
2103-B Wyoming Blvd. NE
Albuquerque, New Mexico 87112
505-293-0732

5. Procedure

a. Operation of the OPTEC 2000

(1) The unit should be placed on a flat table top.

(2) The power plug should be inserted into a 110-120 V AC power outlet.

(3) To turn the unit power on, press the red switch located on the rear panel to the "in" position. If the unit is receiving power from the power outlet the switch light will turn on.

b. Subject Preparation

(1) The participant should be asked if he wears corrective lenses or contact lenses. If he answers yes, the initial exam of visual acuity for near and far vision should be performed without corrective or contact lenses. (Participants who wear contacts are asked not to put in their contacts on Medical Day morning, but to wear glasses and bring their contacts with them. This request is made during the orientation, the evening of Arrival Day.) The participant should then be re-examined with the corrective lenses.

(2) The subject should be informed that he should keep both eyes open at all times and should always look straight ahead.

(3) Prior to administering the test, the subject should be seated in front of the unit and the unit height adjusted to conform to the subject's height. This is done by pressing the light grey button located on the unit base and moving the upper portion of the unit up or down.

(4) For hygienic purposes, new tissue inserts should be in place on the forehead trigger for each subject tested.

(5) Prior to administering the vision tests, the subject should place his forehead firmly against the forehead trigger located at the middle upper edge of the unit.

c. Visual Acuity Test

(1) Near Vision
The FAR/NEAR switch on the rear panel should be placed in the "in" position and the blue bar light should be on.

(2) Far Vision
The FAR/NEAR switch on the rear panel should be placed in the "out" position and the yellow bar light should be on.

(3) Right Eye Vision
The orange right eye switch should be placed in the "in" position and the light should be on. The green left eye switch should be placed in the "out" position with the light off.

(4) Left Eye Vision
The green left eye switch should be placed in the "in" position and the light should be on. The orange right eye switch should be in the "out" position with the light off.

(5) Binocular Vision (vision using both eyes)
Both the green left eye switch and the orange right eye switch should be in the "in" position with the respective lights on.

(6) The subject's vision should be tested in the following order:

(a) Without glasses/contacts

(i) Near Vision
Right Eye
Left Eye
Both Eyes

(ii) Far Vision
Right Eye
Left Eye
Both Eyes

(b) With glasses/contacts

(i) Near Vision
Right Eye
Left Eye
Both Eyes

(ii) Far Vision
Right Eye
Left Eye
Both Eyes

(7) The dial on the right at the unit should be turned on so that the #9 lines up with the yellow bar. The subject is then asked to read line 5 completely.

(8) If the line is read correctly (no more than one mistake), the subject should be told to read the next smaller line until the smallest line (#7) is read correctly or until a line is read incorrectly (more than one mistake), in which case the last line read correctly would be entered on the subject's chart.

(9) If line 5 is read incorrectly or the subject is unable to read any letters, the tester should ask the subject to read the next larger line until a correct reading is given and the corresponding visual acuity should then be entered into the subject's chart.

(10) If the subject is unable to read the largest line (#1), a visual acuity at >20/200 should be entered on the subject's chart.

(11) Below is a listing of the correct responses that should be given for each line on the vision chart that the subject will read from and the visual acuity reading for that line.

(a) Right Eye:

(i) Line	#1	RO HK	20/200
(ii)	#2	HNC ZOD	20/100
(iii)	#3	SKZO RNDS	20/70
(iv)	#4	NSCH VZKN	20/50
(v)	#5	OZNR DNVC	20/40
(vi)	#6	DKHCS KDSON	20/30
(vii)	#7	VRZKO HSNRD	20/20

(b) Left Eye:

(i) Line	#1	ZNRO	20/200
(ii)	#2	RKS HNC	20/100
(iii)	#3	HCDV SKZO	20/70
(iv)	#4	ZROD NSCH	20/50
(v)	#5	KHSC OZNR	20/40
(vi)	#6	ONRZV DKHCS	20/30
(vii)	#7	SDCHN YRZKO	20/20

(c) Both Eyes:

(i) Line	#1	ZNRO RO HK	20/200
(ii)	#2	RKS HNC ZOD	20/100
(iii)	#3	HCDV SKZO RNDS	20/70
(iv)	#4	ZROD NSCH VZKN	20/50
(v)	#5	KHSC OZNR DNVC	20/40
(vi)	#6	ONRZV DKHCS KDSON	20/30
(vii)	#7	SDCHN YRZKO HSNRD	20/20

d. Peripheral Vision Test

(1) This is a test of peripheral vision on the horizontal plane. It tests at 85, 70 and 55 degrees temporally and 35 degrees nasally, so a possible total of 120 degrees for each eye can be attained. (Highest temporal reading plus nasal reading.)

(2) Caution should be taken because the temples on eyeglass frames could interfere with this test. The test should be taken without eyeglasses and again with the glasses to

determine if the frame does interfere with peripheral vision.

(3) To administer the test:

(a) FAR Switch ON.....YELLOW Light ON
(b) RIGHT Occluder switch ON.....ORANGE Light ON
(c) LEFT Occluder switch OFF
(d) Dial #1 at YELLOW Indicator

(4) Subject should look straight ahead, through the FAR lens system, with his forehead against the headrest trigger. Ask the subject to fix his vision on the red dot. Then ask the subject to point his finger in the direction he sees the light. The tester will then press one of the four switches, one yellow, and three blue, on the lower half of the control panel. The switches can be pressed in any order and should be held down for two or three seconds. Repeat the test with the left eye by turning the RIGHT occluder OFF and the LEFT occluder ON, using the green dot as a fixation point.

(5) This test can be administered to a one-eyed person. In this case, the nasal test becomes very important because it will determine if there is peripheral vision on the blind side.

6. Data Management

The following procedures will be followed for the collection and reporting of vision test data:

a. At the beginning of the day, the day's scheduling report will be distributed to the staff. This report will list each participant who is to have a vision test for the day. The report does not list the participant in the order to be examined; however, it does show the schedule number (1-23) that the participants have been assigned.

b. The scheduled participant will arrive.

c. The technician will check off the participant on the daily schedule. This will provide an ongoing record of participants who have or have not been examined.

d. The technician will perform the vision test as described in this manual. The technician will enter data on the hardcopy form.

e. All of the vision tests will be administered in this manner by the technician. After all participants for the day have had their vision tests, the daily schedule will be given to the Clinic Manager for review and filing.

f. Medical Records personnel will pick up the vision test reports as described in the Medical Records manual. Both the confirmed and unconfirmed reports will be collected. These reports will be taken to Data Processing.

g. Data Processing will log and enter the test results. Each test will be entered according to the procedures outlined in the Data Management manual.

h. After the test results have been entered, Medical Records personnel will collect the printouts and file them in the participants' records.

7. Supervision

The testing will be performed by the visual testing technicians. Immediate supervision of technicians will be by two RN's who have been trained to operate the OPTEC 2000. They are, in turn, supervised by the Clinic Manager.

8. Quality Control

The Clinic Manager, with the supervision of the Special Assistant for Quality Control and Scientific Affairs, will be responsible for administrative coordination of the quality control program, e.g., identifying and scheduling retests. The retest will be done as described in the Quality Control sections of the Data Management Manual. One participant per day will undergo a repeat visual exam. Results of the repeat exam will be compared to results of the original exam by the Medical Director and by the Assistant for Quality Control and Scientific Affairs. Any problems or deficiencies will then be quickly corrected so as to maximize the standardization of the vision test.

9. Equipment Problems

a. In the event of mechanical difficulties, all attempts to have problems remedied within two hours will be made.

b. The in-house Biomedical Engineering section will be called as soon as mechanical problems become evident. In the event that they are unable to handle the problem, Benson Optical will be called.

10. Backup

A second OPTEC 2000 machine is available in the Clinic area in case problems with the primary machine are not immediately

resolvable. An additional backup machine will be provided by Benson Optical within 24 hours in the unlikely event that both on-site machines malfunction simultaneously.

11. Subject Problems

If, during the course of testing, a participant decides to terminate or refuse the vision test, the Clinic Manager will be notified. The participant then will be reminded of the importance of completing the test, recognizing that the individual has the right to refuse. If the participant, at that time, still decides not to continue the test, a refusal with the signatures of the participant and the Clinic Manager will be entered into his record.

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IV. Medical Examination Manuals

O. Results Interview - Medical

1. Diagnostician (Reader)

It is the purpose of the Diagnostician to review all of the medical data obtained during the study on each veteran. The Diagnostician should identify any significant abnormalities, arriving at diagnostic impressions where justified by the data. The Diagnostician should present this information to the veteran so that the veteran understands what abnormalities, if any, have been detected during his examination, what the significance of these abnormalities or diagnostic impressions might be in terms of his overall health, and what follow-up is recommended for any medical conditions or problems which have been identified.

a. The Diagnostician will review the following medical data in attempting to identify clinically significant medical problems or conditions:

(1) History (per physician assistant)
(2) Physical examination (per internist)
(3) Neurology examination (per neurologist)
(4) Dermatology examination (per dermatologist)
(5) ECG report
(6) Pulmonary function report
(7) Radiology report
(8) Nerve conduction velocity report
(9) Peripheral vascular report
(10) Audiogram
(11) Visual acuity test results

b. It is the responsibility of the Diagnostician to read and evaluate the handwritten comments of the neurologist, internist and dermatologist prior to arriving at a diagnosis. These comments may reflect data or findings which would otherwise go uncoded or unrecorded. Not only are the results of the freehand comments important to the participant, but they are also important to the study. If similar handwritten comments by the examiners are found to be present persistently, study revision may be indicated.

c. It will be the responsibility of the Diagnostician to arrive at the most specific diagnosis possible from the medical information. However, the specificity of the diagnoses may vary from participant to participant.

d. It will be the responsibility of the Diagnostician to identify those participants in whom a subspecialty consultation must emergently be obtained. This may be obtained from the appropriate Lovelace Medical Center clinical department.

Consultation other than during regular clinic hours may be obtained by asking the Lovelace Medical Center operator to contact the individual physician on call for the appropriate department.

e. For those medical problems, conditions, or diagnoses which appear to require follow-up evaluation and/or treatment, the Diagnostician will suggest a plan of follow-up and/or treatment to the veteran. The veteran may have results of the examination forwarded to his local physician or to himself, for communication to whomever he feels is appropriate. Although general information may be given to the veteran participant concerning institutions where follow-up care may be available (Veterans Administration hospital, university teaching hospital, private physician, etc.), it is not the responsibility of the Diagnostician to arrange for specific follow-up medical care for nonemergency conditions.

f. If an emergency medical situation is identified by the Diagnostician, where delay in treatment would significantly injure the participant or where return to his hometown would not be safe, the Diagnostician will refer the veteran participant to the appropriate medical department at Lovelace Medical Center for such emergent treatment. In general, this will be the Emergency Center. There, the veteran participant will be treated like any other visitor to the Center who develops a medical emergent condition. The veteran participant will be assigned a Lovelace Medical Center patient number, a clinical chart will be generated, and appropriate forms and documents will be completed. Lovelace Medical Center will be responsible for costs incurred in the treatment of such emergent medical conditions. The Medical Director should be informed following the referral of a participant to the Emergency Center. However, such notification is not necessary for emergent treatment of the participant and should not delay treatment.

g. In order to locate a participant who, from the medical data, requires immediate medical attention, the Diagnostician should contact the Participant Advocate, who can arrange for transportation to the Emergency Center. In addition, the Emergency Center physician should be contacted, so that he/she might be prepared for the participant's arrival.

   The Participant Advocate "on call" on a particular evening may be identified by referring to the schedule maintained at the Diagnostician Reader's desk. This Participant Advocate will have a beeper and can be paged by the Lovelace telephone operator.

h. For veteran participants who develop emergent psychiatric conditions, where hospitalization in a psychiatric facility may be indicated, the Diagnostician should be aware that

arrangements for such treatment have been made with Memorial Hospital. The psychologists working on the Veterans' Health Study are familiar with the procedures involved, but, in general, the psychiatrist on call for Memorial Hospital can be located by telephoning Memorial Hospital. Generally, the patient requiring emergency psychiatric hospitalization would be conveyed to Memorial Hospital by ambulance where a psychiatrist on the Memorial Hospital staff would make a determination concerning the advisability of hospitalization.

i. The Diagnostician Reader will be a board-certified or eligible internist who has been approved by the Medical Director.

j. It is the function of the Diagnostician Reader to review all data as described in Section 1.a. of this manual and arrive at specific diagnoses wherever appropriate. In addition to the responsibilities described in Section 1, it is the responsibility of the Diagnostician Reader to record specific comments concerning positive findings, diagnoses and likely recommendations for further evaluation of any medical problems identified (Appendix I).

k. The Diagnostician Reader will not have examined the participant directly. This excludes the Diagnostician Reader from having participated in the physical examination of any participant whose chart he subsequently reviews. If the Diagnostician Reader is given a chart to review in which he participated in data collection, he will return the chart to the Medical Records Clerk.

l. The Diagnostician Reader is authorized by the Medical Director to thoroughly evaluate the participant's chart prior to the exit interview by the Diagnostician Interviewer. The exact time allotted for each file review will be determined by the Medical Director. It is anticipated that the Diagnostician Reader will review charts in the evening prior to the exit interview.

2. Diagnostician Interviewer

The Diagnostician Interviewer will be the primary source of information to the participant. It will be the responsibility of the Diagnostician Interviewer to adequately inform the participant of the nature, extent and meaning of any positive and negative findings which may have arisen during the course of the Study. The Diagnostician Interviewer will answer the questions of the participant honestly and clearly.

a. It is the responsibility of the Diagnostician Interviewer to review the information as described in Section 1.a. in arriving at final diagnoses.

b. The urgency of any positive findings will be conveyed to the participant during the exit interview by the Diagnostician Interviewer. The participant will be asked to sign an informational sheet (Appendix II) which he may hand-carry to his local physician which briefly describes the nature and urgency of the positive findings. Complete medical information will be sent to the local physician as described in Section 2.e.(6) of this manual. In cases in which it is felt that emergent treatment needs to be provided, the participant will be clearly informed of the nature of the medical information and told of the need for emergent treatment.

c. This Study is to determine the effects of herbicidal exposure and the Vietnam experience on cohorts of Vietnam era veterans. The effects of Agent Orange (dioxin) are largely unknown and the participant should be reminded that the purpose of this Study is to obtain data so that ultimately these questions may be answered. Consequently, the Diagnostician Interviewer must state honestly that it is unknown whether any of the possible physical or laboratory findings present are attributable to dioxin-containing herbicide.

d. It is the responsibility of the Diagnostician Interviewer to review the handwritten interpretations of the Diagnostician Reader after independently arriving at his/her own diagnoses (Appendix III). In the case of differences of opinion, it is the responsibility of the Diagnostician Interviewer to reconcile these differences at the time of the exit interview. If recurring differences of medical opinion by the Diagnosticians are noted frequently, it will be the responsibility of the Diagnostician Interviewer to bring this to the attention of the Medical Director who will determine whether additional testing needs to be included in the Study schedule, or whether the differences of opinion between the Diagnosticians are related to legitimate differences of opinion that would not be reconciled even with more information.

e. In rare circumstances it may become necessary for the well being of the participant to withhold selected information during the exit interview. While each and every circumstance where access is potentially injurious cannot be anticipated, the following policy guidelines and protocol are necessary to ensure both the protection of study participants and the participant's rights to full disclosure. Unless specifically and individually justified, each and every study participant will be fully debriefed and will have access to all of the examination results findings. Information may be withheld if the Medical Director or any of the Diagnostician Interviewers involved in the exit interview can document any of the following:

(1) The participant has a documented history of mental illness which, in the Diagnostician's or Medical Director's opinion, creates the strong potential for an injurious reaction to all or some of the study findings.

(2) The participant has displayed disruptive or otherwise abnormal behavior during his stay which, in the opinion of the Diagnostician or Medical Director, constitutes grounds for having concern that access by the study participant to his examination results would be potentially injurious to the well being of the participant.

(3) At the time of the exit interview, in the opinion of the Diagnostician or the Medical Director, the study participant is intoxicated or severely under the influence of drugs.

(4) Under rare circumstances the Diagnostician or the Medical Director may authorize the withholding of particularly serious medical findings from a study participant. This would be done only in unusually significant findings (such as the establishment of previously undiagnosed advanced illness). The rationale for withholding disclosure at the time of the exit interivew is that without family, friends, a personal physician or significant others for support, the potential initial shock of the knowledge of a serious medical condition has the potential for being injurious to the participant.

(5) For cases (1)-(3) above, the Diagnostician Interviewer or Medical Director will write on the results interview form that access to the records by the individual participant is inadvisable but the participant may elect and authorize to have his medical records sent to his personal physician or other health care professional. The Diagnostician or Medical Director will inform the individual participant that information is being withheld and that only the Veterans' Health Study Systems Manager, through the Medical Director of the Veterans' Health Study, can override the decision to withhold information.

(6) In all cases, the participant may authorize in writing that copies of his medical record and all findings be sent to a personal, licensed physician. Since, under the Privacy Act, authority to withhold information is reserved to the Veterans' Health Study Systems Manager, in all cases where a Diagnostician or the Medical Director has withheld information, a copy of the participant's medical record and a justification of the withholding will be sent to the Veterans' Health Study Systems Manager through the Veterans' Health Study Medical Director.

(7) In case (4), where a previously undiagnosed serious medical problem was detected, the Diagnostician must inform the study participant that a potentially significant problem was uncovered and that immediate medical attention from the participant's personal physician is advised. The participant should be told that detailed test results and findings will be sent to a personal physician of the participant's choice and should be required to complete and sign a release of medical records form at the time of debriefing. If, in these rare cases, the participant chooses not to have records sent to a personal physician, Lovelace study staff will monitor release requests until the hardcopy record is forwarded to the CDC. If no release has been received, Lovelace will specifically notify the Veterans' Health Study Medical Director of the concern for the participant's well-being.

3. Participant Advocate

a. Completing the Form for the Medical Results Interview.

(1) Participant Advocates will fill out participant name and identification number, allowing participant to read the form, and will enter the date.

(2) Participant will hand the form to the Diagnostician at initiation of his interview with the Diagnostician.

(3) Diagnostician will list medical problems and recommended follow-up, identifying those problems which require immediate follow-up with a star, "*". Problems and recommended follow-up will be discussed with the participant, permitting time for questions which the diagnostician will attempt to answer to the best of his/her ability.

(4) Diagnostician will sign the form.

(5) Participant will sign the form.

(6) Should the participant refuse to sign the form, a third person (advocate, physician or psychologist) will be asked to enter the room. In his/her presence, the Diagnostician will briefly review the significant medical findings and recommended follow-up with the participant. If the participant still refuses to sign the form, the Diagnostician will so indicate on the form and the form will be signed by the witness.

(7) If the participant, due to disability, is unable to sign the form, a witness will sign the form as the agent of the participant.

4. Appendix I - Diagnostician Reader Review Results

DIAGNOSES	ICD-9-CM CODES
1._____	_____
2._____	_____
3._____	_____
4._____	_____
5._____	_____
6._____	_____

Plan for further work-up, identified by diagnosis number above.

_____

_____

_____

_____

_____

_____

Noninvasive tests which might be added to the Study protocol and which may have been useful to have had in this case. Notes to the Diagnostician Interviewer, including any consultations obtained or which should be obtained.

_____

Signature of Diagnostician Reader

_____

Date

5. Appendix II - Medical Results Interview

PARTICIPANT NAME: _____ IDENTIFICATION NO: _____

The results of your medical history, general physical examination, neurological examination, dermatological examination, chest x-ray electrocardiogram, pulmonary function studies, blood flow studies, and nerve conduction studies, as well as the clinically relevant laboratory results, have been independently reviewed by two physicians who are Board-Certified in Internal Medicine. The following represents their concerns as to the existence of any medical problems and their recommendations for further evaluation and/or treatment. Their review was based only on the material available to them and additional tests may well be necessary in order to further define any problems.

Copies of clinically relevant information obtained during the study will be forwarded to a physician or health care facility that you wish, or to you. Please be sure that you have signed the "Release of Medical Information" form, identifying where you want this information sent.

Except in circumstances judged by the Medical Director of the Veterans' Health Study to be medical emergencies, mailing of this information requires your written permission. This is to protect you.

Medical problems identified in the study:

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

Recommended follow-up for these problems, identified by their numbers in above, is as follows:

_____

_____

_____

_____

Any problems which require follow-up as soon as you return home have been identified by a star ("*").

I have reviewed any medical problems identified in the study as outlined above with the participant, and explained their significance and the necessity for and urgency of follow-up medical care, if indicated.

_____

Diagnostician (printed name)

_____

Diagnostician Signature

I have read the information provided on this form and have had an opportunity to discuss any medical problems identified in this study with the physician diagnostician. I understand that further medical evaluation or treatment may be necessary for any medical problems identified. I also understand the procedure by which this information may be made available to my own physician, another health care facility, and/or to myself.

_____

Printed Participant Name

_____

Participant Signature

_____

Date

6. Appendix III - Diagnostician Interviewer Review Results

DIAGNOSES ICD-9-CM CODES

1._____

2._____

3._____

4._____

5._____

6._____

Plan for further work-up, identified by diagnosis number above.

_____

_____

_____

_____

_____

Noninvasive tests which might be added to the Study protocol and which may have been useful to have had in this case.

After reviewing the report of the Diagnostician Reader, enter the final diagnosis, if this review has changed your diagnosis. (The participant may be interviewed, if necessary.)

DIAGNOSES ICD-9-CM CODE

1._____ _____

2._____ _____

3._____ _____

4._____ _____

5._____ _____

6._____ _____

Are there any apparent reasons for differences in diagnosis between the diagnosticians?

Were there any problems in communicating the findings to the participant, in his acceptance of the diagnoses, or in his willingness to arrange follow-up medical care?

Would a repeat physical examination by you have made a more precise diagnosis possible?

YES: _____ NO: _____

_____

Signature of Diagnostician Interviewer

_____

Date

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V. Psychological Examination Manuals

A. Psychology

1. Introduction to Study

a. Psychological testing is typically used to examine differences in cognitive and/or emotional functioning either BETWEEN different people or across different time periods for the SAME person (Anastasi, 1976). In both cases, the tests are used as a means of comparison, rather than as a reflection of some absolute characteristic or event. The materials of psychological assessment include paper and pencil tests, individual interviews and a variety of other types of tests examining, for example, intellectual ability, personality characteristics, psychopathology or intellectual achievement. In the present study, psychological assessment will be used to evaluate and compare the emotional and cognitive functioning of different groups of Vietnam-era veterans who have had varying degrees of combat experience. The general purpose is to examine the specific effects, if any, of these experiences on the psychological functioning of the individual.

b. In order to examine the psychological effects of the Vietnam experience, the present study is using a subset of psychological assessment tools referred to as neuropsychological tests in conjunction with tests of emotional functioning. Neuropsychological assessment is an area of psychology that specifically attempts to evaluate patterns of cognitive (and to a lesser extent, emotional) performances, and relate these patterns to the integrity of functional brain systems.

c. This investigation will also include in-depth evaluation of personality and emotional functioning. Both structured interviews and self-report procedures will be utilized to provide a comprehensive assessment. These data will be important in the attempt to determine the psychological sequelae of combat experience. Further, this type of information is necessary for the accurate interpretation of neuropsychological test results.

d. Neuropsychology generally has three major purposes: diagnosis, treatment, or research (Lezak, 1983). The present study uses neuropsychological assessment as a research and diagnostic tool. Although neuropsychological assessment is principally concerned with cognitive factors associated with brain function, personality and emotional factors interact with (or are correlates of) cognitive functions and cannot be easily separated. As a result, neuropsychological assessment frequently includes tests designed to examine personality

characteristics and emotional factors that may influence an individual's behavior. Thus, the present study will include tests assessing cognitive ability, personality, and patterns of emotional functioning.

e. Investigation of the possible cognitive, emotional and medical effects of combat experience in Vietnam will require evaluation of a large number of veterans. With the help of the Department of Defense and other agencies, CDC will identify about 12,000 qualified veterans to participate in this investigation, i.e. 6,000 veterans from each of two different cohorts will be contacted and interviewed by telephone at Research Triangle Institute, N.C.; approximately 2,000 of these veterans from each cohort will then be medically and psychologically examined at Lovelace. The two cohorts are veterans that

(1) Served in Vietnam during 1965-72. Randomly selected from all areas.

(2) Served during 1965-72 in countries other than Vietnam.

f. Over the next 16 months, the battery of psychological tests described below will be administered to approximately 4,200 Vietnam-era veterans representative of these cohorts. Data for the Vietnam experience investigation will be gathered from these cohorts to provide data for health assessment in association with Vietnam service and other general experiences.

g. The comprehensive evaluation of these veterans will be conducted over a three-day period. Medical testing will be conducted on the first day, psychological and neuropsychological assessment will occur on the second day, and the participants will be provided with relevant feedback on test results by health professionals on the third day before departing from Albuquerque.

h. Approximately 92 people will be evaluated each week. Because neuropsychological evaluation will be done on Day 2 of the three-day evaluation, approximately 23 people per day will be seen from Tuesday through Friday. Monday will be used as a day to discuss issues of standardization and quality control, and provide inservice training.

2. Tests Administered

a. All tests will be given to each participant, and both group administered and individually administered psychological tests will be used. The specific tests comprising this series are as follows:

(1) Psychological and Neuropsychological Tests Administered in Group and Individual Sessions.

(a) Group

MMPI
Edinburgh Handedness Inventory
Army Classification Battery

(b) Individual

Wide Range Achievement Test-Revised (WRAT-R)
California Verbal Learning Test (CVLT)
Grooved Pegboard Test
Wechsler Adult Intelligence Scale-Revised Subtests (WAIS-R):
Block Design
Information
Rey-Osterrieth Complex Figure:
Copy
Immediate Recall
Delayed Recall
Wisconsin Card Sort Test (WCST)
Word List Generation
Paced Auditory Serial Addition Test (PASAT)
Diagnostic Interview Schedule (DIS)
Combat Exposure Index (CEI)

b. The battery in this study examines memory, concentration and attention, intellectual ability, response organization and inhibition, verbal fluency, fine motor skills, reading recognition, visuospatial skills, handedness, and emotional and psychiatric status. Because the memory tests examine both verbal and visuospatial memory abilities in both immediate and delayed (20 minutes post) recall conditions, the order of the individually administered tests is designed so that tests occurring between the immediate and delayed recall components of a VERBAL test are nonverbal in order to avoid interfering with the verbal memory. Conversely, verbal tests are interspersed between the immediate and delayed recall components of the nonverbal, visuospatial tests of memory.

c. On both memory tests, the delayed recall phases are given no less than 15 minutes following immediate recall. Ideally, delayed recall is given no more than 25 minutes after immediate recall. However, because the interpolated tests cannot be interrupted to administer the delayed recall tests, the length of the delay may be quite long. When the delay is longer than 25 minutes, this is noted on the individual results validity form.

d. The individually administered tests will be given in two different orders of administration to control for the effects of test order on test performance. The two orders that will be used are as follows:

(1) Test Orders A and B of the Individually Administered Assessments

A	B
WRAT-R	WRAT-R
CVLT	Rey-Osterrieth
Grooved Pegboard Test	WCST
WAIS-R Block Design	WAIS-R Information
Rey-Osterrieth	CVLT
WCST	Grooved Pegboard Test
WAIS-R Information	WAIS-R Block Design
Word List Generation	Word List Generation
PASAT	PASAT

(2) Each day the participants will receive the individually administered tests and the MMPI in the morning sessions, with the other group administered tests and the DIS given in the afternoon. The Combat Exposure Index (a self-administered test) will always be given to each participant in the afternoon upon completion of the DIS. In order to obtain an estimate of reading ability, the WRAT-R reading subtest will be individually administered to each participant in the morning, prior to either the MMPI or individual testing.

(3) The final format for administering tests involves four possible orders:

	ORDER 1	ORDER 2
a.m.	WRAT-R	WRAT-R
	MMPI	Neuropsych Individ Ord B
	Neuropsych Individ Ord A	MMPI
p.m.	Group Tests	DIS
	DIS	Combat Exposure Index
	Combat Exposure Index	Group Tests

	ORDER 3	ORDER 4
a.m.	WRAT-R	WRAT-R
	MMPI	Neuropsych Individ Ord B
	Neuropsych Individ Ord B	MMPI
p.m.	Group Tests	DIS
	DIS	Combat Exposure Index
	Combat Exposure Index	Group Test

(4) Each participant will be randomly assigned to one of the four possible orders of testing by the lead technician. Based upon the master list of participants, every fourth participant will be assigned to a given testing order.

e. The order of the group tests administered in the afternoon is designed so that the timed group test (Army Classification Battery) will be administered first, with the untimed test (Edinburgh Handedness Inventory) administered second.

3. Roles and Responsibilities

a. The personnel involved in the neuropsychological component of the study include one full-time clinical neuropsychologist, two half-time clinical psychologists, one quarter-time clinical psychologist, one lead psychology technician, 12 full-time-equivalent (FTE) psychology technicians, four PRN technicians for test administration and data compilation, and four FTE editors to edit the Diagnostic Interview Schedule. In addition, two neuropsychology consultants and a neuropsychology technician consultant will be available at various times to assist in training and quality control. Additional consultants include two members of the Psychiatry Department from Washington University in St. Louis who will consult for five days to train technicians, editors, and psychologists on the DIS. These consultants will also be available periodically during the second and third years of the study for questions regarding the DIS. During the first year of the study, the DIS data collection will be monitored by Survey Research Associates (SRA).

b. The full-time neuropsychologist is in charge of the psychological evaluations, ensuring quality control by personally collaborating with consultants, observing the technicians' test administration and data compilation, and formally supervising the technicians after each observation with individual meetings. The chief neuropsychologist will also be involved in the results interviews with the participants.

c. The lead psychology technician will assist in training technicians in test administration and scoring and in directly monitoring test administration and data compilation by the technicians.

d. Twelve FTE technicians with at least a B.A. or B.S. degree in psychology or a related field, PRN technician and the lead psychology technician are responsible for test administration and for data compilation to provide information to the clinical psychologists regarding results. Besides maintaining standardized procedures, these technicians must have some experience in working with people and building rapport with study participants. Training will be provided during the first two months of Phase I (pilot phase), with emphasis upon building rapport and the importance of standardized testing procedures.

e. The editing technicians must have a B.A. or B.S. in psychology or liberal arts. They are hired to edit and "clean" the DIS data. These positions require very detail-oriented people. One of these technicians, designated the lead-editor by the consultants and the head neuropsychologist, will be in contact with Survey Research Associates (SRA) during the first year, and with Washington University during the second and third years. The editing technicians will have the same training as the testing technicians, but during the DIS training they will have individual contact with SRA consultants to learn the flow pattern of the DIS and its editing requirements and problems.

f. One staff member from the Department of Psychiatry, Washington University, St. Louis, and one consultant from SRA will provide a five-day training course on the DIS, a rigorously standardized structured interview. The training is didactic and involves demonstrations and observation of technicians and psychologists by the trainers. The Washington University consultant will also be used in Years 2 and 3 for questions regarding editing and inconsistent responses in the interview.

g. Survey Research Associates, a consulting firm which has been heavily involved in previous DIS studies, will be consulting on the present project during the first year. They will be providing:

(1) General consultation to set up questionnaires.
(2) Specifications to write the computer program to "clean" the DIS after initial editing.
(3) On-site training for the editor technicians on the last two days of the DIS training.
(4) Intensive monitoring of interview administration and editing.
(5) Second-edit audiotapes of each technician's first three interviews and every tenth interview per technician.
(6) Monthly reports of errors by technicians and editors.

4. Training

a. The psychology technicians and editors will have an intensive six-week training course to learn standardized administration and scoring of the specific tests used in this study. Eight days of the training will be devoted to the Diagnostic Interview Schedule (DIS) training with the consultants from Washington University and Survey Research Associates. The chief neuropsychologist and the clinical psychologists will become familiar with the DIS during that time although they will not be trained as interviewers. Training will be conducted by the staff and consultants using the following specified schedule.

(1) Training Agenda Neuropsychology Technicians and Editors

February 11 (Monday)	
8:00 - 12:00 Noon	LMC Orientation
1:00 - 3:30	New Hire Processing
3:45 - 5:00	Tour of Veterans' Health Study (VHS) Site and Introduction
February 12 (Tuesday)	
8:00 - 10:00	Intro Neuropsychology (slides and videotape)
10:00 - 11:00	Confidentiality Film and Signing (videotape)
11:00 - 12:00 Noon	Intro to Test Administration.
1:00 - 5:00	Rapport, Clinical Observation, General overview of tests being used.
February 13 (Wednesday)	
8:00 - 12:00 Noon	Overview - Veterans' Health Study
1:00 - 5:00	Test Situations (videotape), Intro to Evaluation Intelligence (Theory/Administration and Scoring - WAIS-R)
February 14 (Thursday)	
8:00 - 12:00 Noon	Finish WAIS-R and Practice, Administration/Scoring Army Classification Battery and Practice
1:00 - 3:00	Methodological Issues
3:00 - 5:00	Attention/Concentration: Theory Administration/Scoring - PASAT
February 15 (Friday)	Introduction to Evaluating Psych Status
8:00 - 12:00 Noon	Theory, Administration and Scoring MMPI, Combat Exposure Index SCL-90-R; Practice and Discussion
February 18 - 22 (Monday - Friday)	DIS with people from Washington University and SRA
February 25 - 27 (Monday - Wednesday)	DIS Practice with volunteers Checking Protocols (Psychologists and SRA)

February 28 (Thursday)	
8:00 - 12:00 Noon	Theory, Administration and Scoring California Verbal Learning Test
1:00 - 3:00	PTSD in combat veterans
3:00 - 5:00	Memory continued. Administration and Scoring Rey-Osterrieth Complex Figure
March 1 (Friday)	
8:00 - 12:00 Noon	Memory continued. Administration and Scoring Lausanne Figure Learning Test
1:00 - 5:00	Practice tests learned to date
March 4 (Monday)	
8:00 - 12:00 Noon	Response Organization, Inhibition, Flexibility - Theory, Administration and Scoring Word List Generation and Release from Proactive Inhibition
1:00 - 5:00	Administration and Scoring Wisconsin Card Sort Test, Practice
March 5 (Tuesday)	
8:00 - 12:00 Noon	Grooved Pegboard Test and WRAT-R (reading), Cookie Theft Administration and Scoring
March 6 - 8 (Wednesday - Friday)	PRACTICE
March 11 - 15 (Monday - Friday)	PRACTICE

b. Training will also include learning to administer the Breath Alcohol Test and cardiopulmonary resuscitation. In the event of a medical emergency, the technician testing at the time will send the nearest staff member for assistance and will begin CPR if needed. For minor medical problems, the participant's advocate will contact a staff nurse for instructions as to how to proceed. For major medical problems, all personnel will be instructed to dial 911, requesting emergency medical assistance.

c. If a psychiatric emergency occurs, the technician will send the nearest staff member to get the chief neuropsychologist, a clinical psychologist at Lovelace, or a physician (whoever is nearest), to determine the severity of the case. Referrals may be made to Memorial Hospital.