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[REDACTED] 27 MAR 1946
HEADQUARTERS 106TH INFANTRY DIVISION

Office of the Surgeon
APO 443, U. S. Army

CLASSIFICATION CANCELLED

by authority of
THE SURGEON GENERAL

1946

DATE 18

14 Col. J. H. Sullivan, Jr. M. C.
1. Subordinate Division, HQ

DECLASSIFIED

Authority NND 795145

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ANNUAL REPORT OF MEDICAL DEPARTMENT ACTIVITIES 1944

(with Enclosures)

The 106th Infantry Division was activated 15 March 1943, at Fort Jackson, South Carolina. The greater portion of the officers and enlisted cadre was furnished by the 80th Infantry Division. The organization of the Medical Department, was similar to that of all triangular divisions. The first echelon of medical service was rendered by the regimental detachments of the 422d, 423d and 424th Infantry Regiments; the medical section of the 81st Engineer Battalion, the 589th, 590th, 591st and 592d Field Artillery Battalions. The second echelon of medical service was maintained by the 331st Medical Battalion. While in garrison, there were seven dispensaries functioning. In the field, Battalion Aid Stations, Collecting Stations, and the Clearing Station furnished the medical service.

Upon activation, Lt. Colonel T. C. Rich, 019631 was the Division Surgeon and Lt. Colonel M. S. Eelzer, 0285420 was the Commanding Officer of the Medical Battalion. In August 1943, Lt. Colonel Eelzer became the Division Surgeon replacing Lt. Colonel Rich who received another assignment.

The basis of the medical training for the Division was MTP 8-1. The Instructor's Guide issued by Medical Field Service School, Carlisle Barracks, Pennsylvania, was closely adhered to. The training throughout was progressive and intensive. Basic training and Corps tests were passed successfully. Battalion, Regimental, and Divisional series of exercises which stressed rapid removal of the injured from the "field of battle" into the chain of evacuation and efficient medical treatment, were satisfactorily completed. Simulated casualties were "the stock and trade" of the training aids. In the field, company "D" of the 331st Medical Battalion always functioned as the Clearing Station. Throughout the summer and fall, one half of the training time was spent in the field and the other half in garrison. In December 1943, the Division moved into the field for the "D" series. Throughout this period the weather was inclement -- rain, snow and subzero temperatures were common.

The year 1944 found the troops completing the "D" series. On return to Fort Jackson there were property and equipment checks made preparatory to a movement to the Tennessee Maneuver Area. Correction of deficiencies noted in the series of combat exercises was made in the training.

On 18 January, the troops began the trek to the Tennessee Maneuver Area. It was a winter movement and was accomplished without any unusual occurrences.

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The Division Clearing Station opened 20 January in the vicinity of Christiana, Tennessee.

In the Maneuver area, a series of eight operations were completed. One operation was a meeting engagement; one the defense of an organized position; one, a river crossing and another the defense of a river line. Four other operations were problems in attack in which we operated against delaying rear guard actions as well as numerous other types of maneuvers. Throughout the series of operations, the medical service, which at first was satisfactory, became superior. Ratings received from maneuver directors showed seven excellents and one satisfactory. These ratings were the best given any unit in the Division.

The weather during this period, 20 January to 27 March was cold and wet. Mud, slush and rain was the normal diet. However, despite this inclement weather, upper respiratory disease showed a marked decrease from garrison figures. We are impressed with the fact that, as regards upper respiratory infection, troops living in the field always fared better than in garrison.

During the maneuver period, several experienced officers were lost to the Division as well as approximately 600 enlisted men who were shipped to Ports of Embarkation.

Sanitation as practiced by the Division was satisfactory.

Inclosure #1 will show a breakdown of all admissions to the Division Clearing Station during the maneuver.

On 27 March the maneuvers were satisfactorily completed. The Division made the motor move to its new post, Camp Atterbury, Indiana. Here, everyone again returned to a garrison type of existence.

The first week was taken up with billeting and the necessary care and cleaning of all equipment. Not much training was accomplished. Immediately thereafter, an intensive program to correct all deficiencies noted on maneuvers was begun -- to further train all medical personnel in all types of technical training was felt necessary. The accent on training was "functional" medicine. Every medical soldier was required to be able to administer plasma, treat all wounds and to have a thorough and accurate knowledge of splinting and bandaging of all types. The training of all medical personnel was placed under the direction of the Surgeon's Office. A master training schedule was compiled and several schools were initiated as follows:

1. Medical and Surgical Technician School
2. Division Litter Bearer School
3. Ambulance School.

Inclosures 2, 3, 4 and 5 outlined the courses presented. Medical officers who presented the course were enthusiastic and the students were attentive and absorbed the material presented. Oral and written examinations were held at the completion of the courses.

These courses served as a basis for further and more detailed training for the medical personnel. Intensive training programs and schedules promulgated and followed by lower units and weekly testing by the Surgeon's Office, aided materially in bringing the technical ability of the medical soldier to a high plane.

A group of medical and surgical technicians from the medical battalion were given further training by utilizing the facilities of Wakeman General Hospital -- while a few others received the regular three months medical and surgical technicians training at Walter Reed General Hospital.

The average number of medical officers for the training of the troops, for rendering medical service, and beginning in April, for the classification and reclassification of personnel for proper utilization of man power, was sixteen officers. The department was flooded with work due to physical profiling. WD Circular 164 and 212 dated 26 April 1944 and 29 May 1944 respectively, as well as memorandum No 40-44 WD 18 May 1944 and MR 1-9 were the guides in physically examining and classifying personnel. Every man in the Division was examined as to his qualifications for overseas service. We find that an experienced processing team, with adequate space, can examine over 500 men per hour, and 400 men per hour routinely. Some 6000 men qualified and were shipped to units which were alerted or sent as replacements for overseas service. New replacements came in and complete physical examinations were performed. We had to determine whether or not they qualified for overseas service as well as properly profile them. This number amounted to approximately 7500 men. In addition, all officers of the Division were given complete physical examinations on WD AGO form 63. The Division did a good job in utilizing all personnel who were classified as limited service. However, we did ship out to other units some 1500 men who were below the standard set for combat troops by MR 1-9. The Division did utilize many men below the standard MR 1-9 in positions other than rifleman.

The dental classification of the command on arrival at Camp Atterbury was poor; only 30% were in Class IV. Despite the huge turnover in personnel, the percentage increased to 99.98% at the time the Division left Camp Atterbury for the Boston Port of Embarkation. This is a tribute to the amount of work the Dental Department can do when necessary.

During the period at Camp Atterbury, the Division Neuropsychiatrist gave over a hundred talks on mental health. All enlisted men and officers of the command were contacted.

In September three weeks prior to the Division's departure to the Boston Port of Embarkation, 29 new medical officers arrived. These men came from the Air Corps, General and Station Hospitals. Under the direction of the Surgeon, a two weeks school was held for these new officers. Inclosure #7 outlines the courses presented.

Again as always in the past, ten of the medical officers were ordered to other units five days before departure. The Division left the Boston Port of Embarkation and arrived in the United Kingdom ten officers short of T/O.

Two Infantry regiments sailed from the Boston Port of Embarkation, and one Infantry Regiment and the Division Troops sailed at different dates from the New York Port of Embarkation. The first elements sailed October 17 and the last November 10. The Division closed in the United Kingdom, through Glasgow and Liverpool on November 18. The trans-Atlantic voyage was uneventful.

The stay in the United Kingdom was brief. The first elements left England via Weymouth and Southampton on 28 November and the final elements arrived on the continent 6 December 1944. All units spent several days in the channel waiting for an opportunity to disembark. Some Division units landed in the vicinity of Rouen, France and others at LeHavre, France.

The 7th and 8th of December saw a wet, muddy, cold motor movement across France and Belgium to the Schnee Eifel sector of the front. The Division closed on the morning of 9 December in the vicinity of St. Vith.

On 10 December 1944, Division Units began relieving units of the 2d Infantry Division. The 422d combat team went into the line on the 10th of December, the 423d on the 11th, and the 424th on the 12th. All Collecting Companies serviced their respective Infantry Regiments. "A" Company, in addition to the regiment, also supported the 14th Cavalry Group, which was attached to the Division. The 106th Division Clearing Station began to function on 12 December in St. Vith, Belgium. The Division occupied a 28 mile sector.

The German offensive began early on the morning of 16 December. By 17 December, ambulances of Company "A" could not contact the 422d Infantry Regiment, and Company "B" was unable to evacuate to the Clearing Station. By evening of the 17th, the enemy had pushed in, in force, between the Collecting Company and 422d Infantry Regiment and had sealed Company B in with its regiment. The 422d and 423d Infantry Regiments and their organic medical detachments were cut off by the enemy and are considered missing in action. The 589th and 590th Field Artillery Battalions, Company B of the 331st Medical Battalion, two Engineer Companies, and the Reconnaissance Troop, shared the same fate.

The remainder of the Division continued to hold its position until the early morning of 19 December. On 19 December, the Division Clearing Station and Medical Battalion Headquarters closed in Vielsalm, Belgium. Company "A" accompanied the Medical Battalion Headquarters to Vielsalm. Combat Command "B" of 9th Armored Division, attached to the 106th Division, was serviced by "C" Company, which was reinforced with one-half an Ambulance Platoon from "A" Company. The 424th Infantry Regiment received continuous support from this Collecting Company.

X The flow of patients into the Clearing Station which began on 16 December continued. The Clearing Station was situated and close to all combat troops in the area, and as a result cleared personnel from the 106th Division, 9th Armored Division, 28th Division, 7th Armored Division, and many Corps units.

Because of the ~~German~~ German move, the rapid retrograde movement of Evacuation Hospitals, and therefore, the long ambulance hauls to these places, the Clearing Station was having difficulty in having patients evacuated. Organic trucks of the Medical Battalion, Quartermaster trucks of the Division, and Division Collecting Company ambulances were used to help Army clear the Station. Repeated requests on the 19th, 20th, and 21st for supplies, blood and a Field Hospital were sent by radio, messenger, and telephone. Help in the form of a few ambulances and some supplies finally arrived on the 22d of December. Some 300 blankets were taken from Division personnel to give to the wounded.

Meanwhile on the 19th, a platoon from the Clearing Station was ordered to La Roche, Belgium, pending a further rearward move. The enemy, however, by-passed Vielsalm and struck at La Roche on the 20th. The station personnel and patients at La Roche, less those killed, managed to leave La Roche. Equipment was necessarily abandoned.

The enemy had completely surrounded our troops except for a narrow zone to the northwest. Since the combat troops were ordered to set up a perimeter type defense in vicinity of Vielsalm and hold, the decision was made that the medical people would stay with the troops at this location.

On the 22d a route Northwest was opened and kept open by the 82d Airborne Division. The Clearing Station moved that evening to vicinity of Verbomont, Belgium. The flow of patients continued on the 22d and the 23d.

On the 24th, the Clearing Station opened at Banneux, Belgium. Collecting Company "C" still supported troops of the 424th, which as of this date was attached to the 7th Armored Division and fighting at Manhay and Grandmeul.

The Medical Battalion moved to Esneux, Belgium on the 28th to reorganize and reequip. The Clearing Station functioned as such throughout.

December 31 found the Division closing in the vicinity of Anthiesnes, Belgium, to reorganize and reequip -- the Division less two Infantry Regiments, two Field Artillery Battalions, one Collecting Company and two Engineer Companies and its Reconnaissance Troops.

For a further summary of Medical activities for month of December see inclosure #7.

HEADQUARTERS 106TH INFANTRY DIVISION
Office of the Surgeon
Camp Atterbury, Indiana

8 • MAR 1946

CLASSIFICATION CANCELLED
by authority of
THE SURGEON GENERAL

DATE 7/0
Lt. Col. H. H. Sullivan, D. M. C.
Medical Division, 106th

1 April 1944

STATISTICS FOR MANEUVER PERIOD
FROM 2400 23 JANUARY TO 2400 25 MARCH 1944

MEMORANDUM:

TO : Commanding General, 106th Infantry Division

THRU : Chief of Staff

Of interest may be the following figures gathered from our
TMA period 23 January 1944 to 26 March 1944.

	<u>Div.</u>	<u>Non Div.</u>	<u>Total</u>
1. Total Actual Adm to Clr. Sta	2634	387	3021
2. " Evacuated to Evac Hosp	1302	244	1546
3. " Returned to Duty	1420	170	1590
4. Average Stay in Clr. Sta.			1 Day
5. Total Serious Accidents	16	3	19
6. " Deaths		3	3
7. Upper Respiratory Infections	277	58	335
8. Gastro-intestinal Diseases	99	14	113
9. Injuries, Fractures & Sprains (New)	131	42	173
10. Burns, 1st, 2nd & 3rd°	14	7	21
11. Gun Shot Wounds	6	-	6
12. Venereal Diseases, Probable	58	12	70
13. Psycho-Neurotics	103	14	117

M. S. Belzer
Lt. Col., M.C.
Division Surgeon

HEADQUARTERS 106TH INFANTRY DIVISION
Office of the Surgeon
Camp Atterbury, Indiana

MASTER TRAINING SCHEDULE

For the Five Week Period Beginning 1 May 1944.

<u>BASIC</u>	<u>Total</u>	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Fourth</u>	<u>Fifth</u>
	<u>Hours</u>	<u>Week</u>	<u>Week</u>	<u>Week</u>	<u>Week</u>	<u>Week</u>
Mine laying, detection and removal	6	1	2	1	1	1
Individual (and small group) cooking	2	1			1	
1st aid and sanitation (b)	19	4	4	4	4	3
Scouting and observing (c)	6	1	1	2	1	1
Night patrolling (d)	6	2	1	1	1	1
Unarmed Defense	9	1	2	2	2	2
Marches (e)	16	2	2	4	4	4
Identification of Aircraft	2				1	1
Handling prisoners of war (b)	2	1	1			
Map reading (f)	4	1		1		2
Counter intelligence (g)	2		1	1		
Equipment, clothing and shelter tent pitching	2	1	1			
Individual defense against chemicals	2			1	1	
Military Courtesy	2	1	1			
Individual defense against mechan- ized forces, air and parachute troops.	2					2

TECHNICAL SUBJECTS

Army arm and leg splints	6	2	1	1	1	1
Anatomy and physiology	3	1	1	1		
Bandaging and Medical Aid	16	3	4	3	3	3

Total Hours	First Week	Second Week	Third Week	Fourth Week	Fifth Week
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TECHNICAL SUBJECTS (Continued)

Materia medica	2				1	1
Organizational equipment	6	1	1	2	1	1
Transportation of wounded	2	1				1
Plasma and intravenous therapy	6	1	1	2	1	1
Malaria	2		1		1	
Records	2		1		1	
Surgical technique	4	1		1	1	1
Organization and function of medical units	2				1	1
Organization and function of other arms and branches of service	4	1	1	1		1

TACTICAL

Close order drill	5	1	1	1	1	1
Available to unit	73	15	15	14	15	14

MISCELLANEOUS

Reserved for Division Surgeon	5	1	1	1	1	1
Motor stables						

TOTALS

220	44	44	44	44	44
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REMARKS:

- In addition all troops will be required to subsist two successive days per month on food cooked individually or by small groups. (After May 1st)
- In addition, practical work in appropriate exercises. In all exercises of a battalion or larger unit, wounded will be tagged, and other men designated to act as prisoners, stragglers, etc.
- Hostile forces will be represented in this training and in all appropriate exercises.
- Service units stress defense against night patrols.
- May be concurrent with field exercises if they can be arranged without detracting from realism.
- Include ground orientation.
- Stress safeguarding of information.

For the Surgeon XXXXXXXXXXXX

JAMES R. KLETT
1st Lt., Med Adm C.
Office Executive

TRAINING SCHEDULE FOR MEDICAL UNITS 106TH INFANTRY DIVISION

4 Weeks Schedule Beginning 12 June 1944

<u>SUBJECT</u>	<u>TOTAL HRS</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Personal hygiene and first aid.	1	1			
Individual defense against chemical attack	1	1			
Individual defense against air, parachute, and mechanized guard.	1	1			
Dismounted drill.	6	2	2	1	1
Marches and Bivouacs.	20	4	4	6	6
Physical Training.	12	3	3	3	3
Hasty Entrenchments and shelter camouflage.	2	1	1		
Elementary Anatomy and Physiology.	6	2	2	2	
Nomenclature and care of organization equipment.	2	1	1		
Field Medical Records.	2	2			
Treatment of gas casualties.	4		3	1	
Litter drill including ambulance loading and unloading; and passage of obstacles.	1	1			
Field sanitation and sanitary appliance.	4			2	2
Materia Medica and Pharmacy.	6	3	3		
Medical and surgical nursing.	6		2	2	2
Organization and function of the arms.	1	1			
Organization and function of the Medical Unit.	2	2			
Medical aid (Splints and splinting; bandages and dressings).	16	4	4	4	4
Detection of mines and removal.	4		2	2	
Scouting and patrolling.	3			1	2
Map and aerial photograph reading.	6	3	3		
Orientation in night combat.	1				1

Training Schedule for Med' al UNIT

<u>SUBJECT</u>	<u>TOTAL HRS</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Communications in combat	2				2
Technical and tactical employment of medical field units.	30	4	5	9	12
Unarmed defense.	2			2	
Inspections by Division Surgeon's Office.	4	1	1	1	1
Available Unit C.O.	<u>91</u>	<u>7</u>	<u>8</u>	<u>8</u>	<u>8</u>
<u>Total Hours</u>	176	44	44	44	44

<u>TRAINING SUBJECT</u>	<u>Attached Medical</u>	<u>Hq. & Services</u>	<u>Collecting</u>	<u>Clearing</u>	<u>Ambulance</u>
(a) Functions and combat dispositions of sections of Hq. & Sv., collecting, ambulance, or clearing elements.		5	9	3	3
(b) Reconnaissance, use of cover and concealment.	3	1	3	1	3
(c) Collection and evacuation of casualties from the field (AM, PM)	9		9		
(d) Ambulance driving shuttle (day or night).					5
(e) Ambulance driving convoy (day and night).					5
(f) Nursing and Ward Management.				8	
(g) Transportation and supply requirements.		5			
(h) Procurement and issue of supply.		5			
(i) Selection and occupation of various station sites, and the function of integral parts of station.	5	5	5	9	5
(j) Forward displacements and withdrawals during action.	2	3	4	3	3
(k) Operation of Regimental and Battalion dispensaries.	5				
(l) Battalion or Regimental training (field exercise).	6	6	6	6	6
<u>TOTAL</u>	<u>90</u>	<u>90</u>	<u>90</u>	<u>90</u>	<u>90</u>

Training Schedule for Medical Units (Continued)

Training Inspections conducted by Division Headquarters (Surg O) are scheduled as follows:

Thursday	1030 1330	423d 424th
Friday	1030 1330 1430	422d Sp. Tr. & Engr. Arty.
Saturday	0830	Med. Bn.

Subject:	1st Week of Training	Medical Aid
2d	" " "	Material Medica
3d	" " "	Treatment of gas casualties
4th	" " "	Elementary Anatomy and Physiology

UNIT TRAINING SCHEDULE

5 Weeks

	<u>TOTAL</u> <u>HRS</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Medical Aid	20	4	4	4	4	4
Organization Equipment	5	2	1	1		1
Organization and Function of Arms	3	3				
Field Medical Records	2	1		1		
Organization and Function of Medical Units	2	1	1			
Dismounted Drill	5	1	1	1	1	1
Marches	36	8	8	8	8	4
Physical Training	15	3	3	3	3	3
Maps, Aerial & Strip	6		2	2	1	1
Tactical & Technical Training	80	13	15	14	17	21
Intravenous & Subcutaneous Therapy	4		1	2	1	
Inspection (Reserved for Division Surgeon)	5	1	1	1	1	1
Open for Unit Commander	37	7	7	7	8	8
Total Hours	220	44	44	44	44	44

Training Schedule for Medical Units (Continued)

Training inspection conducted by Division Headquarters (Surg O) are scheduled as follows:

1st Week - Splinting & Improvised splints.

2nd Week - Organization equipment.

3rd Week - Intravenous & Subcutaneous Therapy.

4th Week - Sanitation

5th Week - Miscellaneous - practical test to be announced.

1. Examination will be oral.
2. Roster of unit and absentee list will be presented to inspecting officer.
3. Unit to be tested will furnish necessary equipment and training aids for inspection. Pencils will always be available.
4. Any changes in schedule or place will be coordinated thru Div. Hq. (Surg O).
5. Division Schools will be conducted for Medical Department Officers on Wednesday at 1600. Schedules to be announced.
6. One third of training will be conducted at night.
7. Instructor's Guide MFP 8-101 should be utilized.
8. Division lives in field
 - 19 June - 1 July
 - 17 July - 29 July
 - 15 Aug - 26 Aug
9. Preparation to comply with applicable provisions of "POM" will be continuous throughout all training periods where pertinent.
10. Training in motor maintenance will be as prescribed in Circulars No. 82 and No. 85, 1943, Second Army.
11. Annex #12 of Training Schedule published by this headquarters dated 31 March 1944 still in effect.

Incl 3 to Annual
Report of Medical
Activities 1944

HEADQUARTERS 106TH INFANTRY DIVISION
Office of the Surgeon
Camp Atterbury, Indiana

CLASSIFICATION CANCELLED
by authority of
THE SURGEON GENERAL
MAR 1946
DATE
Lt. Col. E. H. Sullivan, Jr. M. C.
Historical Division, SGO

GNM:MM

20 April 1944

MEMORANDUM:

CONFERENCE OUTLINE FOR MEDICAL AND SURGICAL TECHNICIANS SCHOOL

The success of this short intense course for Medical and Surgical Technicians depends on the thorough knowledge and careful preparation of subject material by each instructor and carefully trained demonstration teams.

The lectures, conferences, and demonstrations will be prepared using the following outline for each subject.

1. APPLIED ANATOMY
 - a. Demonstration of important structures of system involved.
 - b. Normal function and physiology of parts involved.
 - c. Discuss and demonstrate abnormal functions caused by disease and injury.
2. TECHNIQUE OF ADMINISTRATION OF ANESTHETICS
 - a. Demonstration of the use of local anesthetics and their preparation.
 - (1) Procaine and allied anesthetics.
 - (a) Mucous membranes.
 - (b) Infiltration
 - (2) Ethyl chloride
 - b. Demonstration of the use of general anesthetics.
 - (1) Inhalation
 - (2) Intravenous
 - c. Spinal; Demonstration of its use.
3. TREATMENT OF INFECTION
 - a. Explanation of infection, inflammation, and pus formation.
 - b. Causes - primary and secondary.
 - c. Demonstration of treatment of various types of infections.
(Emphasize treatment of "boils, carbuncles, and cellulitis".)
4. NOMENCLATURE, CARE AND USE OF SURGICAL INSTRUMENTS AND EQUIPMENT
 - a. Demonstration of instruments.
 - b. Explanation of the use of various surgical instruments.
 - c. Setting up of instruments, trays, and packs.
5. PRE-OPERATIVE, OPERATIVE, AND POST-OPERATIVE TREATMENT OF CASUALTIES
 - a. Setting up of operating room and operative equipment in the field, including sterilization of instruments and equipment.
 - b. Preparation of operating room personnel.
 - c. Preparation of patient for operation.
 - d. Post-operative treatment in the operating room.
 3. Later post-operative

6. TREATMENT OF GAS CASUALTY
- Demonstration of the new gas treatment kits.
 - Demonstration of protective coverings.
 - Application of the use of contents of the gas treatment kits.
 - Skit and demonstration of treatment of gas casualties.

7. TECHNIQUE OF ADMINISTRATION OF DRUGS, PLASMA, AND FLUIDS PARENTERALLY

- Work to be done in unit dispensaries.
- Subcutaneous injections done by each man.
- Setting up of intravenous sets.
 - plasma
 - saline

8. EMERGENCY MEDICAL TREATMENT OF WOUNDS AND HEMORRHAGE

- Review of types of wounds and hemorrhage.
- Proper cleansing of wounds.
- Use of antiseptics and sulfanilimide powder.
- Oral administration of sulfone drugs.
- Discussion and demonstration of the causes of infections of wounds.
- Stress how incorrect handling of wounds pre-disposes to gas, gangrene infection.
- Treatment of gas, gangrene infection.

9. EMERGENCY MEDICAL TREATMENT OF FRACTURES AND DISLOCATIONS

- Brief review of types of fractures and dislocations.
- Proper splints for fractures of various parts of body.
- Sequel of improper application of splints.

10. EMERGENCY MEDICAL TREATMENT OF THE UNCONSCIOUS PATIENT, AND PATIENT IN SHOCK.

- Discussion of the causes of unconsciousness, and differential diagnosis and treatment.
- Discussion and demonstration of shock..
 - Measures to be taken to combat shock.
 - Treatment of patients in shock.

11. EMERGENCY MEDICAL TREATMENT OF BLAST INJURIES AND INJURIES DUE TO HEAT AND COLD

- Discuss the frequency, cause and treatment of blast injuries.
- Cause and treatment of flash burns.
- Exhaustion due to cold.
- Brief discussion of the treatment of heat exhaustion and sunstroke.

12. TREATMENT OF BATTLE INJURIES

- Demonstration of the treatment of battle injuries using mannequins to simulate battle casualties.

13. PREPARATION OF CASUALTIES FOR TRANSPORTATION

- Discussion of priority.
- Short discussion of the importance of correct methods and detailed preparation for transportation.
- Demonstration of preparation of patients for transportation. (Emphasize head, neck, and back injuries; the unconscious patients; and ~~patients with~~ patients.)

14. MATERIA MEDICAL
 - a. Review the dosage and uses of the common drugs.
 - b. Stress the dosage and use of the newer drugs.
(Sulfonimides, penicillin, atabrine)
15. CONTROL AND TREATMENT OF DISEASE
 - a. Briefly list diseases.
 - b. Briefly discuss control measures of important diseases.
 - c. Discussion of the diagnosis and treatment of important diseases.
(Venereal disease - special attention to the preparation, dosage and method of administration of mapharsen, and bismuth.)
16. TREATMENT OF DROWNING, ASPHYXIA, AND CARBON MONOXIDE POISONING
 - a. Brief discussion of emergency medical treatment of each accident.
 - b. Demonstration of the use of the oxygen therapy apparatus.
 - c. Demonstration and application of artificial respiration.
17. TREATMENT OF BURNS, FROSTBITE AND IMMERSION FOOT
 - a. Discussion of burns, local and general treatment.
 - b. Causes and treatment of frostbite and immersion foot.
 - c. Stress importance of correct and early treatment in avoiding serious sequel.
 - d. Use of Balopticon to show pictures of sequel of severe cases and cases treated improperly.
18. TREATMENT OF COMMON EMERGENCIES
 - a. Demonstration of the removal of foreign bodies from the nose, eye and ear.
 - b. Demonstration of treatment of severe nose bleeding. (Nasal pack)
 - c. Significance and differential diagnosis of abdominal pains.
 - d. Emergency medical treatment of poisons taken internally.
19. USES OF ADHESIVE PLASTER FOR THE FIXATION OF JOINTS AND FRACTURES
 - a. Demonstration of technique of adhesive strapping of the chest, ankle, back and knee.
 - b. Each man will strap ankle, chest and back.
20. USES OF PLASTER OF PARIS BANDAGE FOR THE FIXATION OF JOINTS AND FRACTURES
 - a. Preparation of plaster of paris bandages.
 - b. Demonstration of the application of plaster of paris bandage to various parts of the body.

For the Surgeon,

JAMES R. KLETT,
1st Lt., Med Adm C.
Office Executive

HEADQUARTERS 100TH INFANTRY DIVISION
Office of the surgeon
Camp Atterbury, Indiana

TRAINING SCHEDULE - MEDICAL AND SURGICAL TECHNICIANS SCHOOL

FROM 1 May to 5 May 1944

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	LECTURE HALL AND DISP. EQUIP.
MONDAY, 1 May 0730-0830	Rec Hall Bldg. #714	Lt. Epperson	Applied anatomy and physiology of bones, joints skin and muscles. (Conference and demonstration)	Chapter 2, TM 8-220	blackboard and chalk. charts
0830-0930	"	Lt. Xander	Applied anatomy and physiology of the circulatory, respira- tory and digestive systems. (Conference and demonstration)	Chapter 2, 8-220	blackboard and chalk. charts
0930-1030	"	Lt. Epperson	Applied anatomy and physiology of the excretory, genito- urinary systems. (Conference and demonstration)	Chapter 2, TM 8-220	blackboard and chalk. charts.
1030-1130	"	Lt. Xander	Applied anatomy and physiology of the nervous, special senses and endocrine systems. (Conference and demonstration)	Chapter 2, TM 8-220	blackboard and chalk. charts
1300-1400	"	Lt. parisi	Technique of the administration of anesthetics. (Conference and demonstration)	Chapter 3, Sec. I par. 118 TM 8-220	syringes, needles, procaine, sterile water, other mask and ethyl-chloride

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	LECTURE HALL AND DISP. EQUIP.
MONDAY, 1 May 1400-1500	Rec Hall Bldg. #714	Capt. Wachtel	Treatment of infections	Chapter 3, TM 8-220	bandage, compresses basins, towels, surgical knives and forceps.
1500-1700	"	Lt. Stone	Nomenclature; care and use of surgical instruments and equip- ment. Setting up of instrument trays.	Chapter 3, Sec. 4 TM 8-220 Sec. I, II, III TM 8-611	Chest 1 Chest 2 Chest 3 Autoclave
TUESDAY, 2 May 0730-1130	"	Capt. Wachtel Capt. Grosh	post-operative and operative technique, including sterili- zation of instruments and equipment. (Conference and demonstration)	Chapter 3, Sec. 3 TM 8-220 Chapter 3, Sec. 1 par. 123, TM 8-220 Chapter 3, Sec. 3 TM 8-200	chests 1, 2, 3, 14, 16 & 17. Autoclave, blank- ets, sheets and towels.
1300-1400	"	Capt. Wachtel Capt. Grosh	post-operative treatment (Conference and demonstration)	Chapter 3, Sec. 3 TM 8-220 Chapter 3, Sec. 1 Par. 123, TM 8-220 Chapter 3, Sec. 3 TM 8-220	chests 1, 2, 3. 14, 16, & 17. Autoclave, blank- ets, sheets and towels.
1400-1500	"	Lt. Zogby	Demonstration of Gas treatment Chest and gas casualty treat- ment kit. (Conference and demonstration)	FM 21-40, TM 8-285 Chapter 1, Sec. 1, 2, & 3. Chapter 8, TM 8-285	Gas treatment chest, gas casual- ty treatment chest protective cloth- ing.

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	LECTURE HALL AND DESK. EQUIP.
TUESDAY, 2 May 1500-1600	Rec Hall	Maj. Clement	Treatment of gas casualties (Conference and demonstration)	FM 21-40, TM 8-285 Chapter 1, Sec.1, 2, & 3. Chapter 8, TM 8-285	gas treatment chest, gas casualty treatment chest. protective clothing.
1600-1700	"	Lt. Zogby	Treatment of gas casualties (Demonstration)	None	Appropriate equip. furnished by Co. C 331st Med Bn.
WEDNESDAY, 3 May 0730-0830	"	Maj. Dreier	Emergency medical treatment of wounds and hemorrhage. (Conference and demonstration and application)	Chapter 3, Sec.4 TM 8-220, FM 8-50 FM 21-10	splints, bandages, dressings, litters blankets and heat pads.
0830-0930	"	Maj. Buckley	Emergency medical treatment of fractures and dislocations. (Conference, demonstration and application)	Chapter 3, Sec.4 TM 8-220, FM 8-50 FM 21-10	splints, bandages, dressings, litters blankets and heat pads.
0930-1030	"	Lt. Warner	Emergency medical treatment of shock and unconsciousness. (Conference, demonstration and application)	Chapter 3, Sec.4 TM 8-220, FM 8-50 FM 21-10.	splints, bandages, dressings, litters blankets and heat pads.
1030-1130	"	Maj. Fridline	Emergency medical treatment of blast injuries and injuries due to heat and cold. (Conference, demonstration and application.)	Chapter 3, Sec.4 TM 8-220, FM 8-50 FM 21-10.	splints, bandages, dressings, litters blankets and heat pad.

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	LECTURE HALL AND DISP. EQUIP.
WEDNESDAY, 3 May 1300-1700	Unit Disp.	unit Surgeon	Technique of preparation and administration of drugs, plasma, and fluids. (Parenterally) (Conference, demonstration and application)	Chapter 4, Sec.2 par. 212, TM 8-220	Syringes 2, 5, 10 C.C. needles alcohol, sterile water, and plasma.
THURSDAY, 4 May 0730-0830	Rec Hall El dg. #714	Maj. Chapman	treatment of battle injuries of head, neck and extremities. (Demonstration)	None	moulages bandage, adhesive and dressings.
0830-0930	"	Lt. Epperson	treatment of battle injuries of chest and abdomen (Demonstration)	None	moulages bandage, adhesive and dressings.
0930-1030	"	Lt. Ross	preparation of casualties for transportation. (Conference and demonstration)	TM 8-35	litters and blankets.
1030-1130	"	Lt. Stone	Materia Medica and pharmacy (Conference and demonstration)	TM 8-220 TM 8-233	MD chest 1 and 2.
1300-1400	"	Lt. Rogg	control and treatment of respiratory diseases. (Conference)	Sec.4, Chapter 4 Sec.3, Chapter 5 TM 8-220	blackboard, chalk and charts.
1400-1500	"	Lt. Siemens	control and treatment of intestinal diseases. (Conference)	Sec.4, Chapter 4 Sec.5, Chapter 5 TM 8-220	blackboard, chalk and charts.

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	LECTURE HALL AND DISP. EQUIP.
THURSDAY, 4 May 1500-1700	Rec Hall	Capt. Hene	control and treatment of insect borne diseases. (Conference)	Sec.4, chapter 4 Sec.5, chapter 5 TM 8-220	blackboard, chalk and charts.
FRIDAY, 5 May 0730-0830	"	Lt. Rogg	control and treatment of venereal diseases.	Sec.4, chapter 4 Sec.6, chapter 5 TM 8-220	Syringes 2 & 5 cc Mapharsen bismuth
0830-0930	"	Capt. Wachtel	treatment of drowning, as- phyxia, and carbon monoxide poisoning Demonstration of oxygen therapy apparatus (conference, demonstration and application)	Chapter 10, sec.5 Par. 120, 121, 122 FM 21-10	oxygen therapy apparatus
0930-1030	"	Lt. Jablonowski	treatment of burns, frost bite and immersion foot (Conference and demonstration)	Chapter 3, Sec.4 TM 8-220 U.S.A. Bul. Med. Dept. No. 75	galoptican and screen.
1030-1130	"	Lt. Sierens	Treatment of common emergencies (conference, demonstration and application)	chapter 3, sec.4 TM 8-220	ear syringe, ap- plicators, nasal forceps, 1-inch bandage, petrol- atum, catheter, & forceps.

DATE, DAY AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	LECTURE HALL AND DISP. EQUIP.
FRIDAY, 5 MAY 1300-1400	Rec Hall	Capt. Grosh	uses of adhesive plaster for the fixation of joints and fractures.	None	Adhesive plaster razor & blades scissors
1400-1600	"	Capt. Grosh Capt. Wachtel	preparation and uses of plaster of paris bandage for the fixation of joints and fractures. (Conference, demonstration and application)	FM 8-50, Chapter 2 Sec.2, Tr 8-220	3-inch bandages, plaster of paris bandages, sheep cotton, basins and water.
1600-1700	"	By Division Surgeon	Examination	None	Lecture hall and disp. equip.

For the Surgeon;

JAMES R. KLETT
1st Lt., Med Adm C
Office Executive

NOTE: Further references for instructors may be found in Tr 8-210.

Office of the Surgeon
Camp Atterbury, IndianaTRAINING SCHEDULE - MEDICAL AND SURGICAL TECHNICIANS SCHOOLFROM 8 May to 12 May 1944.

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	LECTURE HALL AND DEP. EQUIP.
MONDAY, 8 May 0730-0830	Hoo Hall Bldg. #714	Lt. Epperson	Applied anatomy and physiology of bones, joints, skin and muscles. (Conference and demonstration)	Chapter 2, TM 8-220	blackboard and chalk, charts.
0830-0930	"	Lt. Xander	Applied anatomy and physiology of the circulatory, respira- tory and digestive systems. (Conference and demonstration)	Chapter 2, TM 8-220	blackboard and chalk charts.
0930-1030	"	Lt. Epperson	Applied anatomy and physiology of the excretory, genito- urinary systems. (Conference and demonstration)	Chapter 2, TM 8-220	blackboard and chalk, charts.
1030-1130	"	Lt. Xander	Applied anatomy and physiology of the nervous, special senses and endocrine systems. (Conference and demonstration)	Chapter 2, TM 8-220	blackboard and chalk, charts.
1230-1330	"	Capt. Washel Capt. Grosh	Technique of the administration of anesthesia. (Conference and demonstration)	Chapter 3, sec. 1 par. 118 TM 8-220	syringes, needles, procaine, sterile water, ether mask and ethyl-chloride

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	INSTRUCTION	STUDY REFERENCES	LECTURE HALL AND DIST. EQUIP.
MONDAY, 8 May 1330-1430	Rec Hall Bldg. #714	Capt. Wachtel	Treatment of infections	Chapter 3, TM 8-220	bandage, compresses basins, towels, surgical knives and forceps.
1430-1530	"	Lt. Stone	Nomenclature; care and use of surgical instruments and equip- ment. Setting up of instrument trays.	Chapter 3, sec.4 TM 8-220 Sec. 1, 2, & 3 TM 8-611	Chest 1 Chest 2 Chest 3 Autoclave
TUESDAY, 9 May 0730-1030	Rec Hall	Capt. Wachtel Capt. Grosh	pre-operative and operative technique, including sterili- zation of instruments and equipment. (Conference and demonstration)	Chapter 3, sec.3 TM 8-220 Chapter 3, sec.1 par. 123, TM 8-220 Chapter 3, sec.3 TM 8-220	chests 1, 2, 3, 14, 16, & 17. autoclave, blank- ets, sheets and towels.
1030-1130	"	Capt. Wachtel Capt. Grosh	Post-operative treatment (Conference and demonstration)	" "	" "
1230-1330	"	Capt. Wachtel Capt. Grosh	Post-operative treatment (Conference and demonstration)	" "	" "
1330-1430	"	Lt. Epperson	Diagnosis and treatment of battle neurosis. (Conference and demonstration)	T.g. med. 21	blackboard and chalk.

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	LECTURE HALL AND DISP. EQUIP.
TUESDAY, 9 MAY 1430-1530	Rec Hall Bldg. #714	Capt. Kincov	Demonstration of gas treatment chest. Newer concepts of treat- ment of gas casualties. (Conference and demonstration)	FM 21-40, TM 8-285 Chapter 1, Sec. 1, 2, and 3. Chapter 8, TM 8-285	gas treatment chest, gas cas- ualty treatment chest. protective clothing.
1530-1630	"	Lt. Epperson	Differential diagnosis and treatment of acute abdominal conditions. Diagnosis and treatment of accidental poisoning. (Conference and demonstration)	None	blackboard and chalk.
WEDNESDAY, 10 MAY 0730-0830	"	Maj. Drier	Emergency medical treatment of wounds and hemorrhage. (Conference, demonstration and application)	Chapter 3, Sec. 4 TM 8-220, FM 8-50 FM 21-10	splints, bandages, dressings, litters blankets and heat pads.
0830-0930	"	Capt. Grosh	Emergency medical treatment of fractures and dislocations. (Conference, demonstration and application)	Chapter 3, Sec. 4 TM 8-220, FM 8-50 FM 21-10	splints, bandages, dressings, litters blankets and heat pads.
0930-1030	"	Lt. Warner	Emergency medical treatment of shock and unconsciousness. (Conference, demonstration and application)	Chapter 3, Sec. 4 TM 8-220, FM 8-50 FM 21-10	splints, bandages, dressings, litters blankets and heat pads.

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	LECTURE MATERIAL AND DISP. EQUIP.
WEDNESDAY, 10 May 1030-1130	Rec Hall Bldg. #714	Maj. Fridline	Emergency medical treatment of blast injuries and injuries due to heat and cold. (conference, demonstration and application)	Chapter 3, Sec. 4 TM 8-220, FM 8-50 FM 21-10	splints, bandages, dressings, litters blankets and heat pads.
1230-1630	"	Unit Surgeons	Technique of preparation and administration of drugs, plasma, and fluids. (parenterally) (conference, demonstration and application)	Chapter 4, sec. 2 par. 212, TM 8-220	syringes 2, 5, 10 cc. needles alco- hol, sterile water and plasma.
THURSDAY, 11 May 0730-0830		Capt. Grosh	treatment of battle injuries of head, neck and extremities. (demonstration)	None	Moulages bandage, adhesive and dressings.
0830-0930	"	Lt. Epperson	treatment of battle injuries of chest and abdomen (demonstration)	None	Moulages bandage, adhesive and dressings.
0930-1030	"	Lt. Ross	preparation of casualties for transportation. (conference and demonstration)	TM 8-35	litters and blankets.
1030-1130	"	Lt. Stone	Materia Medica and pharmacy (conference and demonstration)	TM 8-220 TM 8-233	1st chest 1 and 2.
1230-1330	"	Lt. Rogg	control and treatment of respiratory diseases. (conference)	Sec.4, Chapter 4 Sec.3, Chapter 5 TM 8-220	blackboard, chalk and charts.

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	LECTURE HALL AND DISP. EQUIP.
THURSDAY, 11 May 1330-1430	Rec Hall Bldg #714	Lt. Epperson	control and treatment of intestinal diseases. (conference)	Sec.4, Chapter 4 Sec. 5, Chapter 5 TM 8-220	Blackboard, chalk and charts.
1430-1630	▪	Capt. Hene	control and treatment of insect borne diseases. (conference)	Sec.4, Chapter 4 Sec.5, Chapter 5 TM 8-220	blackboard, chalk and charts.
FRIDAY, 12 May 0730-0830	▪	Lt. Rogg	control and treatment of venereal diseases.	Sec.4, Chapter 4 Sec.6, Chapter 5 TM 8-220	syringes 2 & 5 cc neopharsen bismuth
0830-0930	▪	Capt. Wachtel	treatment of drowning, as- phyxia, and carbon monoxide poisoning. Demonstration of oxygen therapy apparatus. (conference; demonstration, and application)	Chapter 10, sec.5 Par. 120, 121, 122 FM 21-10	oxygen therapy apparatus
0930-1030	▪	Capt. Kincov	Treatment of burns, frost bite and immersion foot. (conference and demonstration)	Chapter 3, Sec.4 TM 8-220 U.S.A. Bul. Med. Dept. No. 75	galoptican and screen.

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	LECTURE HALL AND DISP. EQUIP.
FRIDAY, 12 MAY 1030-1130	Rec Hall Bldg. #714	Capt. wachtel	treatment of common emergencies of the eyes, ears, nose and throat. (conference, demonstration and application)	chapter 3, sec.4 TM 8-220	ear syringes, ap- plicators, nasal forceps, 1-inc' bandage, petrol- atum, catheter, & forceps.
1230-1530	"	Capt. Grosh Capt. wachtel	uses of adhesive plaster for the fixation of joints and fractures. preparation and uses of plaster of paris bandage for the fixation of joints and fractures. (conference, demonstration and application)	FM 8-50, chapter 2 Sec.2, TM 8-220	Adhesive plaster, razor & blades, scissors, 3-inch bandages, plaster of paris bandages, sheep cotton, basins and water.
1530-1630	"	By Division Surgeon	Examination	None	lecture hall and disp. equip.

For the Surgeon,

JAMES R. KLETT
Capt., Med Adm C
Office Executive

NOTE: Further references for instructors
may be found in TM 8-210.

ONMM

21 April 1944

MEMORANDUM

CONFERENCE OUTLINE FOR LITTER BEARER'S SCHOOL

The success of this short intensive course for litter bearers depends on the thorough knowledge and careful preparation of subject material by each instructor and carefully trained demonstration teams.

The lectures, conferences, and demonstrations will be prepared using the following outline for each subject.

1. ORIENTATION

- a. Importance in chain of evacuation
- b. Establishing and maintaining liaison
 - (1) Company Aid to Aid station
 - (2) Aid station to Collecting station
- c. Use in carrying messages
- d. Searching the field for patients
- e. Knowledge of tactical situation
- f. Length of litter hauls, average and extremes
- g. Immunity to rifle fire
- h. Functions of Officer and NCO's litter bearer platoon
- i. Importance of map reading
- j. Orientation at night

2. ORGANIZATIONAL AND INDIVIDUAL EQUIPMENT

- a. Components parts of litter
- b. Contents of pouches and pockets
- c. Method of carrying pouches when hauling litter
- d. Use of litter carrying straps
- e. Use of litter securing strap

3. LITTER DRILL

- a. Purpose of litter drill
- b. Steps in litter drill
- c. Application

4. EXPLANATION OF CASUALTIES FOR TRANSPORTATION

- a. Priority
- b. Importance of correct methods
- c. Demonstration of preparation for movement
 - (1) Head, neck, back, chest, abdominal injuries
 - (2) Unconscious patients
 - (3) Post-operative patients
 - (4) Fractured patients
 - (5) Techniques
 - (6) Others

5. MAINTENANCE OF LITTER

- a. Proper methods of use
- b. Common errors in use

Memorandum (Continued)

- 6. LITTER CARRIES OVER OBSTACLES**
 - a. Mountainous terrain
 - b. Desert
 - c. Jungle
 - d. Obstacles, fences, bridges, etc.
- 7. LITTER RELAY POSTS**
 - a. Use - When and how
 - b. Demonstration and application
- 8. WHEELED LITTER**
 - a. Use - When and how
 - b. Loading
 - c. Demonstration and application
- 9. IMPROVISED CARRIES, SPLINTS, AND LITTERS**
 - a. Supporting, arms, saddleback, packsaddle, fireman's carry
 - b. Improvised litters: rifles and overcoat, blouse, blanket, field jacket; poles
- 10. ARMY LEG SPLINT**
 - a. Demonstration and application
 - b. Common errors in application
- 11. AMBULANCE LOADING**
 - a. Demonstration and application
 - b. Common errors
- 12. EMERGENCY MEDICAL TREATMENT**
 - a. Wounds
 - b. Hemorrhage
 - c. Fractures
 - d. Dislocation
 - e. Shock
 - f. Gas casualties

For the Surgeon:

**JAMES R. KIETT
1st Lt., Med Adm C
Office Executive**

HEADQUARTERS MEDICAL DEPARTMENT
OFFICE OF THE SURGEON
Camp Atterbury, Indiana

TRAINING SCHEDULE - LITTER BEARER'S SCHOOL

FROM 4 May to 5 May 1944

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	EQUIPMENT
MONDAY, 4 May 0730-0830	931st Med Bn Training Area	Maj. Clement	Orientation: Purpose of the school. (Conference)	None	Black board, chalk
0830-0930	"	Lt. Millman	Organizational and individ- ual equipment. (Conference and demonstration)	T/O and T/E Med Supply Catalog FM 8-35 C2	Litter, Medical pouches, packet litter securing straps
0930-1130	"	Lt. Penney	Preparation of casualties for transportation. (Conference, demonstration and application)	FM 8-35	Litters, blank- ets, prepared patients
1300-1400	"	Lt. McCoy	Litter drill (Demonstration and application)	FM 8-35 Chapter 3, Sec. 2	Litters, blank- ets, 3 demon- stration teams.
1400-1500	"	Lt. McCoy	Loading of litter (Demonstration and application)	FM 8-35 Chapter 3, Par. 22	Litters, blank- ets, 3 demon- stration teams.

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	EQUIPMENT
MONDAY, 4 May 1500-1700	331st Med Bn Training Area and obstacle course.	Lt. Millman	Litter carries over obstacles. (Conference, demonstration and application)	FM 8-35 Par 23-24	Litters Blankets
TUESDAY, 5 May 0730-0830	331st Med Bn Training Area	Lt. Penney	Litter relay posts. Wheeled litter carrier. (Conference and demonstration)	FM 8-35 Par. 26	Wheeled litter carriers, lit- ters, blankets, blackboard.
0830-0930	"	Lt. Penney	Ambulance loading (Demonstration and application)	FM 8-35 Par 37-41	Litters, blank- ets, ambulances
0930-1130	"	Lt. Millman	Improvised carries, splints, and litters. (Demonstration and application)	FM 8-35 Chapter 2 Chapter 3, Par. 15-17	Rifles, poles, blankets, over- coat, field jacket, fatigue clothing, bayonet & scabbard.
1300-1500	"	Lt. McCoy	Army arm and leg splint (Demonstration and application)	Instructor's guide	Army arm splint Army leg splint bandages, tourn- iquet.
1500-1700	"	Maj. Clement	Emergency medical treatment (Conference, demonstration, and application)	Instructor's guide	Blackboard, chalk

Uniform will be wool O. D., leggins, and helmet liner.

Each detachment senior NCO will report in writing to instructor names of men attending each class.

Each student will bring notebook, pencil, and medical pouches to class.

Two (2) similar schools will be held;

1st school will be May 4th and 5th.

2nd school will be May 15th and 16th.

All litter bearers are required to attend either of the two schools. Rosters of the men to attend each school will be submitted to this office.

For the Surgeon:

JAMES R. KLETT,
1st Lt., Med Adm C.
Office Executive

HEADQUARTERS 106TH INFANTRY DIVISION

Office of the Surgeon
Camp Atterbury, Indiana

TRAINING SCHEDULE - LITTER BEARER'S SCHOOL

FROM 16 May to 17 May 1944

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	EQUIPMENT	UNIFORM
TUESDAY 16 May 0730-0830	106 Div Clr Sta	Lt. Millman	Orientation (Conference)	None	Blackboard, chalk	B with gas mask.
0830-0930	"	Lt. Penney	Organizational and Individual Equipment (Conference and Demonstration)	T/O & T/E Med. Supply catalogue. FM 8-35 C2	Litter, Med	"
0930-1130	"	Lt. Ross	Preparation of casualties for transportation. (Conference, demonstration and application)	FM 8-35	Litters, blank- ets, prepared patients.	"
1230-1330	"	Lt. McCoy-	Litter Drill (Demonstration and application)	FM 8-35 Chapter 3, Sec 2	Litters, Blank- ets.	"
1330-1430	"	Lt. McCoy	Loading of Litter (Demonstration and application)	FM 8-35	Litters, Blank- ets.	"
1430-1630	331 Med Bn Trng Area	Lt. Tesson	Litter Carries over obstacles and cross country. Conference, demonstration and application.	FM 8-35	Litters	"

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	TOPIC & INSTRUCTION	STUDY REFERENCES	EQUIPMENT	UNIFORM
WEDNESDAY	106 Div	Lt. Penney	Litter relay posts and wheeled litter carrier. (Conference, Demonstration)	FM 8-35 Par 26	Wheeled litter carriers, litters blankets, black- board, chalk.	•
0830-0930	"	Lt. McCoy	Ambulance loading (Demonstration, Application)	FM 8-35 Par 37-41	Litter, Ambulance	•
0930-1130	"	Lt. Teason	Improved carries, splints, and litters. (Demonstration and application)	FM 8-35 Chap 2 Chap 3 Par 15-17	Rifles, Poles, Blankets, Field Jacket, Fatigue clothing, etc.	
1230-1330	"	Lt. Ross	Army Arm and Leg Splint (Demonstration and Application)	Instructor's Guide.	Army Arm & Leg Splints, Bandages Tourniquets.	•
1330-1430	"	Lt. Ross	Bandaging and Splinting	FM 8-50	Bandages, Splints	•
1430-1530	"	Lt. Ross	Emergency Med. Treatment	Instructor's Guide.	Bandages, Tourni- quets.	
1530-1630	"	Lt. Millman	Examination	None	Examination Papers	•

1. Each student will bring Notebook, pencil, and Med Pouches to class.
2. Rosters will be submitted to Instructor at last class daily.

For the Surgeon:

VINCENT BL WANDERMAN
1st Lt., Med Adm C.
Office Executive.

HEADQUARTERS 106TH INFANTRY DIVISION
Office of the Surgeon
Camp Atterbury, Indiana

CLASSIFICATION CANCELLED
by authority of
THE HUNTERDON GENERAL

27 MAR 1946

DATE 10/1/46
Lt. Col. B. N. Sullivan, Jr. M. C.
Historical Division, AGO

GNDOM

22 April 1944

MEMORANDUM:

CONFERENCE OUTLINE FOR AMBULANCE SCHOOL

This two-day school will stress the importance of the shuttle for Ambulance evacuation demonstrating the correct procedure in the establishment and the operation of a shuttle to derive the fullest benefit of ambulances and ambulance drivers in combat.

ORIENTATION, AMBULANCE SHUTTLE (Conference)----- 1 Hour

1. Composition of shuttle in respect to location, distance of posts, and control points.
 - a. Ambulance Loading Post
 - b. Ambulance Relay Post
 - c. Basic Relay Post
 - d. Ambulance Control Point
 - e. Advance Ambulance Loading Post
 - f. Only one ambulance in Collecting Station
 - g. Importance of ambulances and drivers

EXAMINATION ----- 1 Hour

1. Examination to cover all points discussed in Orientation period having chart drawn by students showing disposition of all posts.

MEDICAL AID FOR PATIENTS (Conference, Demonstration and Application)

1. Use of first aid kits. 2 Hours
2. Control of pain and hemorrhage
 - a. Emergency Medical Treatment
 - b. Use of morphine
3. Splinting and bandaging
4. Ambulance loading

AMBULANCE SHUTTLE, TYPES (Demonstration)----- 2 Hours

1. Establish shuttle at reduced distance using Hospital Road with Control Point at intersection of Hospital Road and Edinburg Street having students watch correct application of shuttle.

AMBULANCE SHUTTLE, ACTUAL (Demonstration)----- 2 Hours

1. Operate shuttle over actual distances demonstration:
 - a. Ambulance replacement at each post
 - b. Operation of Basic Relay Post
 - c. Control of ambulances
 - d. Transmittal of messages
 - e. Advance Ambulance Loading Post
 - f. SOP at Clearing Station
 - g. Camouflage and turn-around
 - h. Motor maintenance at Basic Relay Post

Conference outline for Ambulance School (Continued)

PRODUCTION OF AND PRACTICAL USE OF STRIP MAP ----- 2 Hours

1. Utilize 30 minutes for explanation and 90 minutes for application walking students around block and draw strip map to scale, impressing necessity for placing landmarks on maps for reference.

ADVANCED STRIP MAP EXERCISE ----- 2 Hours

1. Have students sketch route of evacuation showing road blocks and alternate routes, selection of posts, distances between posts all to scale.
 - a. Impress location of posts by using speedometer to measure distance.
2. Drivers will be taken over one complete route of evacuation from Advanced Loading Post to Clearing Station and will draw sketch and strip map of route.

EXAMINATION ON AMBULANCE SHUTTLE SYSTEM ----- 4 Hours

1. Operate shuttle with all posts in suitable terrain over 6 to 8 mile route from Advanced Loading Post to Clearing Station.
2. Area adjacent to Nineveh will be designated as Clearing Station with roads west and southwest utilized to operate two distinct shuttles.
3. Each Ambulance Platoon will establish its own shuttle and be examined for the following:
 - a. Camouflage of all posts.
 - b. Ambulance turn-around
 - c. Dispersion of vehicles at Basic Relay Post
 - d. Control of Ambulances
 - e. Driver alertness
 - f. Message transmittal
 - g. Selection of Relay Post sites
 - h. Distance between posts.

For the Surgeon:

JAMES R. KLETT
1st Lt., Med Adm C
Office Executive

HEADQUARTERS 106TH INFANTRY DIVISION
Office of the Surgeon
Camp Atterbury, Indiana

TRAINING SCHEDULE - AMBULANCE SCHOOL

FROM 4 May to 5 May, 1944 and
17 May to 18 May, 1944

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	UNIFORM AND EQUIPMENT
4 and 17 May 0730-0830	Bldg #750	Lt. Goldberg	Orientation	FM 8-10 Page 87-95	B
0830-0930	"	Lt. Goldberg	Examination on orientation	FM 8-10 Page 87-95	B Pencil & paper
0930-1130	Bldg #750 & Area 3	Lt. Xander Lt. LaManche	Medical aid for ambulance patients	TM 8-220, Chap. 3 FM 8-50 FM 8-35	B
1300-1500	Area 6 & 7	Lt. Goldberg Lt. LaManche	Type of ambulance shuttle (Demonstration)	FM 8-10 Page 87-95	B
1500-1700	Old Rt. 252	Lt. Goldberg Lt. LaManche	Ambulance Shuttle (Actual demonstration)	FM 8-10 Page 87-95	B

DAY, DATE AND HOUR	PLACE	INSTRUCTOR	NATURE OF INSTRUCTION	STUDY REFERENCES	UNIFORM AND EQUIPMENT
5 and 18 May 0730-0930	Bldg #750 & 331st Bn Area	Lt. Goldberg	Production of and use of strip map	FM 21-25	B Pencil & paper
0930-1130	Old Rt 252	Lt. Goldberg Lt. Lallancho	Advance map exercise	FM 21-25	B Pencil & paper
1300-1700	Old Rt 252	Lt. Goldberg Lt. Lallancho	Practical exam on shuttle	All above references	B

For the Surgeon:

JAMES R. KLETT
1st Lt., Med Adm C
Office Executive

1944 to Annual
Report of Medical
Activities 1944

HEADQUARTERS [REDACTED] DIVISION

Camp Atterbury, Indiana

27 MAR 1946

DIVISION SCHOOL

GNM

23 September 1944

TIME	CHARACTER OF TRAINING	PLACE	INSTRUCTOR	UNIFORM	TEXTS
Monday, 25 Sep 44 0830-0930	1. organization of the Army 2. organization of the Medical Department. (c)	Bldg 714	Lt Col Neigus	A	FM 100-5 FM 101-10 FM 8-5 chap 1 FM 8-10 chap 1 T 8/ser
0930-1030	Military Courtesy (c&d)	Bldg 714	Lt Lemanche	A	FM 21-50 sec IV FM 21-100 chap 1-2 TF 21-2048 (26 min)
1030-1130	Function of the Medical Department (Schelons of med- ical service) (c)	Bldg 714	Lt Col Neigus	A	FM 8-5 chap 1 FM 8-10 Chap 1 FS 8-75 FS 8-76
1130-1230	Organization of the Infantry Division (c)	Bldg 714	Major Axelrod	A	F 100-5 F 101-10 Charts chap 1 F 101-10
1330-1530	The army leg and arm splint. (c, d & a)	Bldg 714	Captain Grosh	A	TM 8-50 chap 4 FS 8-50 T 8-220 chap 3 sec I
1530-1630	Calisthenics Dismounted drill (positions, steps and marchings) (a)	Area 2	Lt McCoy	A	F 21-10; F 22-5 par 1-32 F 21-100; T 21-220
Tuesday, 26 Sep 44 0830-1030	Individual equipment and shelter tent pitching. (d&a)	Area 2	Lt Penney	B plus full field equip.	F 21-15 sec IV F 21-100 F 21-5 par 241
1030-1130	Military neuropsychiatry (c)	Bldg 714	Major Fischbein	B	As directed

DATE	CHARACTER OF INCIDENT	TIME	LOCATION	UNIT/TYPE	TREASON
Monday, 27 Sep 44 1030-1100	gunnery and personnel (individual security) posts	1100 1110	10 Jambou	A	TR 1-2-14 (1A) TR 1-10-1 (10A)
1100-1130	map and aerial photo reading (a)	1100 1110	10 Jambou	A	TR 1-1-10 par 6, 21-21, 21-22 TR 21-10 par 1-4.
1130-1145	calibration and dismounted drill (a)	1130 1145	Area 2 10 Jambou	A	TR 21-5 par 1-4 TR 21-20 chap 1, 2, 6, 7
Monday, 27 Sep 44 1145-1200	chemical warfare orientation, platoon (o d & a)	1145 1200	Major Library	A	TR 21-40 FM 3-1 TR 1-21-1
1200-1215	chemical warfare orientation, platoon (o d & a)	1200 1215	Major Library	A	TR 1-007 TR 1-110 TR 1-007 TR 1-009
1215-1230	chemical warfare orientation area 2 (o d & a)	1215 1230	Major Library	A	same as above
1230-1245	map and aerial photo reading (o d & a)	1230 1245	10 Jambou	A	TR 21-21 FM 21-30 TR 21-10
1245-1300	movements in combat (o) platoon drill	1245 1300	10 Jambou	A	TR 20-5 par 10, 43-47 TR 20-10
1300-1315	calibration and dismounted drill (a)	1300 1315	10 Jambou	A	TR 21-10 FM 22-5 TR 21-100 FM 21-200
Thursday, 29 Sep 44 0830-1000	presentation of gas casualties (o) platoon drill	0830 1000	Capt Division	A	TR 2-205
1030-1100	defense against air attack and identification of aircraft (a)	1030 1100	Major	A	TR 10-30 par 1-4 aircraft identification

TIME	CHARACTER OF TRAINING	PLACE	INSTRUCTOR	UNIFORM	TEXTS
Thursday, 28 Sep 44 1230-1330	Compass	Bldg 714	Lt Jennings	A	FM 21-25 par 38
1330-1530	Military sanitation (c)	Bldg 714	Capt Gardner	A	FM 8-45; TM 8-220 FM 21-10; TF 8-999 TF 8-1179; TF 8-1000
1530-1630	March	Area 2	Lt McCoy	A	None
Friday 29 Sep 44 0830-1030	Procurement and issuance of supplies. (c)	Bldg 714	Lt Rinck	A	T/C and T/E 8-10 FM 8-5 par 42-46 and 52-54
1030-1130	Troopship and POM (d)	Bldg 714	Capt Lichtblau	A	TF 21-1265 TF 55-1287
1230-1330	Film - Infantry weapons	Bldg 714	Lt Col Belzer	A	TF 7-1266 (30 min)
1330-1430	Employment of weapons of the Infantry Division (c)	Bldg 714	Lt Col Belzer	A	As directed
1430-1530	Employment of medical field units Battalion aid station (c)	Bldg 714	Major Chapman	A	FM 7-30; FM 8-5; FM 8-10 FM 8-35; FM 8-55; FM 21-10 FM 100-10; FM 101-10 TM 8-220
1530-1630	Employment of medical field units Collecting station (c)	Bldg 714	Lt Hillman	A	Same as above
2000-2200	Night problem, scouting, patrol- ing and compass reading at night (d&a)	Area B	Lt Jennings	B	FM 7-10 par 36 & 158 FM 21-75 chap 3; FM 5-15 FM 5-20; FM 21-25

TIME	CHARACTER OF TRAINING	PLACE	INSTRUCTOR	UNIFORM	TEXTS
Saturday, 30 Sep 44 0830-0930	Employment of medical field units Clearing station (c)	Bldg 714	Capt Grosh	A	FM 7-30; FM 8-5; FM 8-10 FM 8-35; FM 8-55 FM 21-10; FM 100-10 FM 101-10; TM 8-220
0930-1030	Orientation	Bldg 714	Lt Col Belzer	A	None
1030-1130	Map and aerial photo reading (Aerial photographs)	Bldg 714	Lt Jennings	A	FM 21-25 par 39-42, 46, 47 FM 21-26 par 76-88
Monday, 2 Oct 44 0830-0930	Intelligence and counter- intelligence (c)	Bldg 714	Lt LeManche	A	FM 30-25 WD Cir 99 cs AR 380-5 Sec VIII
0930-1030	By Your Command	Bldg 714	Capt Lichtblau	A	TF 21-2056
1030-1130	Orientation	Bldg 714	Lt Col Belzer	A	None
1230-1430	Anti-personnel mines and booby traps (d)	Bldg 714	Engineer Officer	A	TF 25-394 (21 min) TF 5-594 (27 min)
1430-1630	Nomenclature and care of organizational equipment (c d & a)	Bldg 714	Capt Grosh	A	FM 8-10; TM 8-220 LD supply catalogue
Tuesday, 3 Oct 44 0830-1030	Field medical records (c & a)	Bldg 714	Capt Grosh	A	FM 8-45 sec --77-- appendix. AR 10-1025 Sec II, IV, VII & 1A
1030-1130	Orientation	Bldg 714	Lt Col Belzer	A	
1230-1430	Water purification (d & a)	Bldg 714	Capt Gardner	A	TF 8-1174

TIME	CHARACTER OF TRAINING	PLACE	INSTRUCTOR	UNIFORM	TEXTS
Tuesday, 3 Oct 44 1430-1630	Field exercise	Area B	Lt Col Belzer	Leggins, steel helmet, full field pack	FM 21-10 chap 8 FM 100-5 par 374-398
1630-	overnight bivouac	Area B	"	"	
Wednesday 4 Oct 44 0830-1030	Conference orientation	Bldg 714	Lt Col Belzer	A	
1030-1130	Train Surgeon	"	Lt Col Belzer	A	
1300-1500	Examination and discussion	"	Lt Col Belzer	A	

key: (c) = conference (d) = demonstration (a) = application

1. Attendance: All Medical Department officers who have not been with the division on maneuvers.
2. No individual will be excused from classes without approval of this headquarters (Surg O).
3. References will be studied prior to classes.
4. Pencils and pads will be brought to all classes.

By command of Major General JONES:

F. I. AGULE
Lt. Colonel, A.G.D.,
Adjutant General.

DISTRIBUTION:

- One copy each officer.
- Two copies each unit.
- Fifteen copies Div Surg O.

MONTHLY MEDICAL BULLETIN

DECLASSIFIED
Authority NND 795145
By W NARA Date 7/29/66

This office contemplates publishing monthly, a summary of the medical activities which affect the officers and the men of this division. The initial medical record will begin with the 12th of December 1944, at which time this division took over the sector in the vicinity of St. Vith, and will conclude on 31 December 1944, which time the division is reorganizing and re-equipping in the vicinity of Anthismes, Belgium. This record will reflect the result of many days of hard fighting as well as days of rest and reorganization.

This record will not give a true picture of the entire division's medical activity because of the large number of troops still missing in action. Records of the 422d Infantry, 423d Infantry, 589th Field Artillery Battalion, 590th Field Artillery Battalion, Medical and Engineer Battalions will be incomplete. The records of the 591st and 592d Field Artillery Battalions, which for a period of time had been attached to other units for medical services, will not be complete. The Engineer and Medical Battalions also have large components of their total strength missing in action.

More than 7500 patients were treated in the division medical installations from the 12th of December 1944 until the year's end. Of this number, 1781 cases were treated in the division Clearing Station, and 1288 are personnel of this division. On analysing the charts made available from studies of the A & D sheets of the Division Clearing station, the following figures strike home with forceful effect.

TOTAL PERSONNEL OF DIVISION ADMITTED TO CLEARING STATION- 1288

Trench foot and allied conditions	529	....	(41%)
Battle casualties	396	....	(31%)
Combat Exhaustion cases	118	....	(9.2%)
Upper Respiratory Infections	62	....	(4.5%)
All other cases	184	....	(14.3%)

It is relatively easy to try to explain the high incidence of trench foot. From the time the men got off the ship after crossing the channel, they splattered and splashed across France without overshoes, sleep or a change of clothing. Immediately on arrival at St. Vith, large numbers of cases of trench foot became manifest. At this time, all the front line troops were issued overshoes. At the start of the German offensive, on the 16th of December, much equipment and individual clothing was lost. The greater proportion of men lost all clothing excepting that in which they stood. It was most difficult to conduct the proper foot hygiene at this time. However, it is felt that if the men were properly oriented and realized that activity in itself i.e., walking and moving their toes within their shoes, will act to prevent the occurrence of trench foot, a much smaller proportion would be admitted to the clearing station. Constant and continual effort and training must be carried on to further orient the troops of the inherent danger of trench foot, not only to themselves, but the entire division's effort.

The 396 battle casualties were a smaller number than expected. But in view of the fact we supported for the most part one regiment of the division, its losses were moderate. In analysing our statistics on wounds, it is noted that too large a proportion of men were wounded in the chest, which means that men are not hitting the ground in the face of enemy artillery fire. Wounds of the chest and of the abdomen are among the most serious types. Compound and comminuted fractures and gunshot wounds of the extremities were found in the normal proportion.

7 4261-37

Enclosure # 7

In view of the fact that only 118 cases (2.2%) of combat exhaustion were admitted to the clearing station, it is felt that we have suffered a markedly low number of casualties due to this source. This percentage is abnormally low for troops exposed for the first time to enemy fire.

Upper Respiratory Infections. It has been proven to us repeatedly on maneuvers and on "D" series that when men live out in the open the number of cases of upper respiratory infections immediately decreases. This is again borne out here. For the same period, while at Fort Jackson, the number of men in the hospital with upper respiratory infections, totaled 800. In the period of this report, only 62 cases were hospitalized.

On analysing the A & D sheets of aid stations and collecting stations, we find a high percentage of common diarrhea throughout the command. It must again be emphasized that unless the officers who command companies and platoons make proper mess sanitation S.O.I., the total number of personnel lost to combat because of diarrhea, will become prohibitively large. A common violation exemplifying lack of supervision, is the use of water from unauthorized sources. Diarrhea is almost 100% preventable when proper field sanitation is practiced. All officers and men must make this subject a matter of primary concern.

Published herein are charts showing the incidence of trench foot, battle casualties, disease rates, total admission rates and the types of missiles which caused the largest proportion of wounds. It will be noted on analysing these charts, that the proportion of battle casualties and nonbattle casualties is 1-4; that enemy artillery is still the greatest factor causing battle casualties among our troops; and that 27% of the T/O strength of the 424th Regiment had been cleared through the Division Clearing Station.

Records of 58 P.O.W. admitted to this station, showed that over 60% of the casualties were due to small arms fire, a tribute to the effectiveness of the average infantry man's weapon.

On perusing these charts, if the paper will be turned horizontally, it will be noticed that the X's from a graphic representation of the subject. Also that percentage used on these charts are based on full T/O strength. Much information not elaborated herein can be obtained by a careful scrutiny of material made available here.

TRENCH FOOT OR ALLIED CONDITIONS 2 X - 1%

UNIT	NO : CASES	% : RATE	5	10	15
HQ & HQ SF TROOPS	: 31	: 1.6	: XXX		
81ST ENGINEER BN	: 9	: 1.4	: XXX		
331ST MEDICAL BN	: 0	: 0.0			
422D INF REGT	: 38	: 1.1	: XX		
423D INF REGT	: 36	: 1.1	: XX		
424TH INF REGT	: 380	: 11.6	: XXXXXXXXXXXX	: XXXXXXXXXXXX	: X
DIVISION ARTY	: 34	: 1.6	: XXX		
TOTAL 106TH DIV	: 528	: 3.56	: XXXXXX		

UNIT	NO.	%	5	10	15
421ST INF REGT	16	0.1	I		
422ND INF REGT	10	2.0	II		
423RD INF REGT	8	1.0	II		
424TH INF REGT	24	0.4	I		
425TH INF REGT	22	0.1	I		
426TH INF REGT	275	8.4	II	II	II
DIVISION ARTY	1	0.0			
TOTAL 106TH DIV	336	2.0	II		

DISEASE RATE
4 I = 1%

UNIT	NO.	%	2	4	6	8
421ST INF REGT	16	0.1	II			
422ND INF REGT	10	2.0	II			
423RD INF REGT	8	1.0	II	II		
424TH INF REGT	24	0.4	II			
425TH INF REGT	22	0.1	II			
426TH INF REGT	275	8.4	II	II	II	II
DIVISION ARTY	1	0.0				
TOTAL 106TH DIV	336	2.0	II			

MISSION RATE
1 I = 1%

UNIT	NO.	%	5	10	15	20	25	30
421ST INF REGT	16	0.1	II					
422ND INF REGT	10	2.0	II	II				
423RD INF REGT	8	1.0	II					
424TH INF REGT	24	0.4	II					
425TH INF REGT	22	0.1	II					
426TH INF REGT	275	8.4	II	II	II	II	II	II
DIVISION ARTY	1	0.0						
TOTAL 106TH DIV	336	2.0	II	II				

MISSION AND TIME

UNIT	NO.	%	5	10	15	20	25	30
421ST INF REGT	16	0.1	II					
422ND INF REGT	10	2.0	II	II				
423RD INF REGT	8	1.0	II					
424TH INF REGT	24	0.4	II					
425TH INF REGT	22	0.1	II					
426TH INF REGT	275	8.4	II	II	II	II	II	II
DIVISION ARTY	1	0.0						
TOTAL 106TH DIV	336	2.0	II	II				

A review of casualties of the 106th Division is herein charted. This chart will not include COs and other medical personnel missing in action or other medical troops missing in action with the Infantry regiments, artillery battalions and the Reconnaissance troop.

MEDICAL DEPARTMENT

UNIT	EXH	NEC	SHELL FRAG	RIFLE (75MM)	MORTAR	MO	ROBOT	LINE	TOTAL
422d Med Det	-	1	-	-	-	-	-	-	1
423d Med Det	-	3	-	-	-	-	-	-	3
424th Med Det	4	5	3	-	-	1	-	-	13
Div Arty Med Det	-	-	2	-	-	-	-	-	2
81st Engr Med Det	-	-	-	-	-	-	-	-	-
331st Med Bn	1	8	1	2	1	-	4	-	17
TOTAL	5	17	6	2	1	1	4	-	36

EVALUATION OF THE MENTAL HEALTH OF THIS COMMAND

The 106th Division left the United States for foreign service early in November 1944. From December 1943 until this time, with the cooperation of the General Staff, Special Staff, the Artillery, Regimental and Medical Officers, the personnel of the entire Division was constantly screened for men who might be considered mal-adapted to combat duty. By the time this organization had reached the staging area, it was quite evident that its personnel was prepared for combat and that morale was high. This was determined by the attitude of the men as well as the reports from those who censored the outgoing mail from the individual units. In the staging area the dispensaries reported a minimum number of soldiers with functional symptoms, and no men admitted to the neuropsychiatric section of the Station Hospital there. Aiding the morale at this station was the abundance of athletics during the training day as well as the free use of passes by the commanding officers.

In England, morale continued high and the presence of neuropsychiatric disorders among the troops were minimum. Here again the censors of the mail reported the high morale among the men.

The Division crossed the Channel, splashed across France and arrived in Belgium where it replaced the Second Division in the line. The Clearing Station was set up at St. Vith, Belgium and two wards were assigned for the cases diagnosed as Exhaustion. Here very few men were admitted to the Clearing Station with diagnosis of Exhaustion, and it is interesting to note that those who were admitted were recent additions to the Division. Most of these men gave histories of previous civilian or military care of their "nerves". A contributing factor to the low neuropsychiatric admissions to the Clearing Station was the fact that men with mild functional complaints were treated at the Regimental Train Areas, not in the front lines. In those areas they were sedated and boarded for no more than 48 hours and then returned to front line duty. This policy could not be continued because of the great fluidity of the situation. Those who were not improved after this regime were evacuated to the clearing station. Another contributing factor was the very satisfactory billeting of the men in the forward areas as well as the "erroneous" belief that the area was being utilized as an indoctrination site "before sending troops into full battle".

On the whole, the mental attitude of this Division was at its highest peak. It was prepared for combat both mentally and physically.

On 16 December 1944, this Division received the full impact of the German offensive. The element of surprise and the fury with which the Germans attacked certainly had its effect on each man in the Division, particularly those men in the front lines. Men who were considered most stable became cases of "nervous breakdown" within a very few days.

Most of these men became thoroughly frightened, quivering, trembling, exhausted men who, though expressing a desire to return to their organizations, did not have the strength to stand on their feet. The look of terror in their eyes was significant. Each man evacuated to the clearing station had received for the most part adequate sedative medication in the Battalion Aid Station. It was interesting to note that many of these men did not want assistance from any of the corps men in the station, but finally yielded to the kindness of the corps men. Most of these men who came through the station had not been neuropsychiatric problems in the past. The patients were of all ranks and a surprising percentage of non-commissioned officers came through.

All the men with functional disorders complained bitterly of the severity of the continuous German artillery barrage--particularly the noise. Many complained of the screaming "Himmies". Most of the men complained severely of the German 88's and of the latter's effectiveness. Men entered the station clasping their hands tightly against their ears, stating that they could still hear the thunderous barrage. Even following a 24 hour period of adequate sedation some of the men still held their ears. But after some persuasion this practice ceased. Occasional gunfire in the distance would bring on a renewal of the symptoms but with continued reassurance became symptomless. Some of the men cried bitterly over the loss of "buddies" and a whole companies. Many men could not be adequately treated in this echelon of medical care. Very few men at this station complained of "the sight of so much blood". The predominant picture throughout was severe anxiety. Not one malingerer was noted among the patients at this station. Very few men were evacuated to this clearing station in restraints. Of these, all were reassured and the restraints were removed within a very few hours after admission to the ward. During this period no patient revealed any evidence of a psychosis. A very common symptom among all the patients was the "startle reaction". The dropping of a utensil or the slamming of a door could easily induce trembling or apprehensiveness. The sleep of many of these patients was disturbed by "battle dreams", but these were no different than those reported before by other observers.

Because of the great number of patients in the clearing station, the necessity for frequent movements, the uncertainty of evacuation by army, and the severity of the symptomology of the patients necessitating extended sedation and psychotherapy, it was necessary to evacuate most of the patients. The contemplated 3 day treatment plan could not be carried out.

The tables compiled on the Combat Exhaustion cases evacuated to the clearing station by no means presents the true picture of the situation. Many men are still missing. The tables are significant in that they reveal the height of the fury of the battle--and as the lines became more stabilized, the less were the admissions to the clearing station. In during this latter period the few men that did come to the clearing station were not the type of patient seen during the height of the battle. These patients were now those with old cardiac complaints, G.I. complaints, as well as back and leg complaints, for which no organic disease could be determined. Most of these men were returned to duty after 3 days stay at the clearing station where they were permitted to talk about their experiences, wash up thoroughly, eat three square meals a day and get plenty of rest. One would expect a greater number of cases to appear in this division among the troops during this latter period. Neuropsychiatric disease has not been a problem in the division.

With the above evidence in mind, it becomes obvious that any individual, regardless of his background, can succumb to excessive mental trauma and become a neuropsychiatric casualty. This fact is known to be true. The personnel of this division certainly were mentally qualified for combat. There still remains the thought among some troops that the enemy cannot last much longer--that "he hasn't got much to fight with". These thoughts certainly leave the individual more susceptible to overwhelming mental trauma when surprising enemy action does occur as it did this month. Our troops are now "battle wise" after a surprisingly short period of active combat. They learned the hard way. The lesson has now been well learned and though there will continue to be neuropsychiatric casualties among our troops, it will not be because they are not prepared for any eventuality.

The following data of combat exhaustion in the 106th Infantry Division has been compiled for your information. The period concerned in this report is from 9 December to 31 December 1944, inclusive.

The data obtained on the following organizations, is incomplete due to the fact that the largest component of each is still missing in action.

422nd Infantry.....	6
423rd Infantry.....	6
589th FA Bn.....	2
590th FA Bn.....	0

The records of the 591st and 592d FA Bns are incomplete because they had been attached to other units for a period of time.

The following organizations are for the most part intact and the data is submitted to reveal the incidence of combat exhaustion in these units.

(1x..1 case)

ORGANIZATION	NO. CASES	5....10...15...20...25..
424th Infantry	(89)	
Hq. Co	4	:XXXX
Ser. Co.	0	:
Med. Det.	4	:XXXX
Can. Co.	3	:XXX
A.T. Co.	4	:XXXX
Hq. 1st Bn.	2	:XX
Co. A	6	:XXXXXX
Co. B	8	:XXXXXXXX
Co. C	13	:XXXXXXXXXXXXXXXX
Co. D	4	:XXXX
Hq. 2nd Bn	0	:
Co. E	3	:XXX
Co. F	5	:XXXXX
Co. G	13	:XXXXXXXXXXXXXXXX
Co. H	6	:XXXXXX
Hq. 3rd Bn.	1	:X
Co. I	2	:XX
Co. K	8	:XXXXXXXX
Co. L	2	:XX
Co. M	1	:X
Other Units in 106th Division	(15)	
81st Engr. Bn.	8	:XXXXXXXX
331st Med. Bn	3	:XXX
FA Hq & Hq Btry	0	:
591st FA Bn	0	:
592nd FA Bn	4	:XXXX
Special Troops	0	:

NO OF EXHAUSTION CASES ADMITTED TO THE 106TH CLEARING STATION FOR EACH 24 HOUR PERIOD FROM 9 DECEMBER TO 31 DECEMBER 1944 (inclusive)

1 x .. 1 case)

DECEMBER	NO. CASES	0....5...10...15...20...25...30...35...40...45..
9	2	:XX
10	2	:XX
11	0	:
12	1	:X
13	2	:XX
14	4	:XXXX
15	2	:XX
16	4	:XXXX
17	8	:XXXXXXXX
18	23	:XXXXXXXXXXXXXXXXXXXXXXXXXXXX
19	8	:XXXXX

Exhaustion cases (continued)

DECEMBER	NO. CASES	0...1...2...3...4...5...6...7...8...9...10...11...12...13...14...15...16...17...18...19...20...21...22...23...24...25...26...27...28...29...30...31
20	16	:XXXXXXXXXXXXX
21	45	:XXX
22	16	:XXXXXXXXXXXXX
23	20	:XXXXXXXXXXXXX
24	0	:
25	1	:X
26	8	:XXXXXXXX
27	3	:XXX
28	5	:XXX
29	0	:
30	1	:X
31	2	:XX

SUMMARY OF ADMISSIONS & DISPOSITIONS

Division Troops

Total of combat exhaustion cases.....	118
Evacuated to Evacuation Hospital.....	91
Returned to duty.....	27
Percentage of combat exhaustion of all admissions.....	9.2%

Non-division Troops (7th Armored; 9th Armored; Attached Units Cleared through 106th Clearing Station.

Total of combat exhaustion cases.....	79
Evacuated to Evacuation Hospital.....	69
Returned to duty.....	10
Percentage of combat exhaustion of all admissions	12.3%

For the Surgeon:

M. M. Fischbein
 MARTIN M. FISCHBEIN
 Major, Medical Corps
 Div. Neuropsychiatrist

HEADQUARTERS 106TH INFANTRY DIVISION
Office of the Surgeon

Report of Admissions to the Clearing Station from 12 December 1944 thru 31 December 1944.

ADMISSIONS															DISPOSITIONS										
UNIT	Resp	GI	Treh Foot	Exh	VD			Cold Inj	ACD	Total Dis	NPC Inj	Total NPC	PC Inj	WIA	TOTAL PC	Rtd fr Clr Sta				Evac to Hosp					
																Dis	NPC Inj	PC Inj	WIA	TC- TAI	Dis	NPC Inj	PC Inj	NIA	TOTAL
Special Troops																									
Hq 106th Div	2		3					3	2	4	1	11		3	3	1	3			4					7
MT Platoon			3					1		1		2		1					1	1					2
806 ord Co									1	1		1									1				1
Recruit Tr	2		6					8		2	1	17		5	5	2				2				5	20
106 Sig Co	1		1						2	3		4		1	1	1				1	1				3
	1		1					7	9	4	1	13		3	3	1	2			3	3			3	3
422d Infantry Regt																									
Hq & Sp Units	1		2					6	4	5		12		2	2	3				3	2			2	11
1st Bn	2		9		1			13	1	4	1	21		5	5	1	5		1	7	3	1		4	19
2d Bn	3		2	4				5	3	10	3	20		6	6	5	2			7	5	8		6	19
3d Bn	1			2				8	3	6	1	15		1	1	3				3	3			1	13
423d Infantry Regt																									
Hq & Sp Units	1		4	1				5	4	6	2	17		4	4	1	1			2	5	10		4	19
1st Bn	2		2	2				5	2	5	1	13	1	10	11	1	2			3	4	6	1	10	21
2d Bn	4		3	3				7	2	9		19		4	4		3			3	9	7		4	20
3d Bn	1		8					2	2	3	4	17	1	2	3	2	1	1		4	1	13		2	16
424th Infantry Regt																									
Hq & Sp Units	3		13	15				10	19	37	13	73	1	35	36	8	4	1	1	14	29	33		35	97
1st Bn	3		41	33				29	9	45	10	125	1	85	86	6	2			6	34	72	1	85	192
2d Bn	7		55	27				36	15	49	10	150		106	108	7	5		1	13	38	76		107	221
3d Bn	13		132	14				64	24	51	5	252	6	39	45	13	26	1		40	35	165	5	39	399
Div Artillery																									
Hq & Hq Btry								1	1	1		2								1	1				2
580th FA Bn	4		3	2				8	5	11	3	25	2	13	15	3	1			4	5	10	1	10	28
590th FA Bn	4							5	2	6		11	1	4	5	1	1	1		3	5	4		1	13
591st FA Bn	1								2	3	2	5		2	2	1				1	2	2		2	5
592d FA Bn	1		5	4	1			12	5	11	1	29		24	24	6	5		1	12	5	13		23	41
81st Engineer Bn	1		4	8				5	6	15	2	26		18	18	1	1			2	14	10		18	32
331st Medical Bn	5			3	1				3	12		12		8	8	2				6	7			2	19
Total 106th Div	62		288	116	3			240	120	303	61	892	13	389	394	69	64	4	11	148	212	483	8	39	1055

HEADQUARTERS 106TH INFANTRY DIVISION
Office of the Surgeon
APO 443, U. S. Army

ANNUAL REPORT OF MEDICAL DEPARTMENT ACTIVITIES 1945

The new year 1945, found the 106th Infantry Division in rest and rehabilitation, and in the process of re-equipment in Belgium. The severity of the enemy action in the latter part of December 1944 resulted in the loss of two regiments, two field artillery battalions, the division reconnaissance troop and one collecting company, all of whom were considered MIA. Early in January the remainder of the Division, the 424th Combat Team went into action. The inclement weather and the terrain added to the difficulties that the troops had to encounter. The temperature hovered around zero and the snow was deep--frequently the troops went through snow up to their hips. Sleds had been improvised for the evacuation of litter casualties, but these were found to be too difficult to maneuver through the snow and through the forest. The battalion surgeons were having difficulties with the administration of the plasma. In several instances when the plasma was reconstituted, an insoluble gummy residue remained which clogged the small filter of the plasma set. This was finally remedied by the substitution of a long needle for the short needle in the outlet tube. The long needle then passed above the residue and did not interfere with the free flow of the plasma. The quarter ton truck served as the best means of transporting the litter casualties.

During the first month, approximately 10,000 patients were treated in the Division medical installations, and the Clearing Station admitted 1135 patients for treatment. When the 424th Combat Team went into the attack, the medical battalion headquarters and the clearing company moved from Esneux, Belgium to Niveze, Belgium and then to Cour, Belgium in close support of the troops. Company A of the Medical Battalion remained at Niveze, Belgium as a holding station where patients with minor wounds could be returned to duty within a period of 10 days. Company C of the Medical Battalion was in close support of its troops. The road net that the ambulances had to traverse was under constant observed enemy artillery fire. The ambulances frequently ran the gauntlet of fire.

A high incidence of frost-bite and allied foot conditions continued during this month. A thorough study of the conditions was made by the Surgeon's Office, stressing both incidence and cause. It was ascertained that about 80% of the men admitted to the Clearing Station were fully conversant with and understood the consequences of improper care of the feet; and many did everything within their limited means to attempt to prevent the occurrence of frostbite. The individual soldier on the line could not possibly work out his own salvation in the matter. Troop leaders had to insist that all their men have overshoes and wear them; the men had to have dry socks and dry shoes available continuously.

It has been the policy of the Surgeon's Office to extract pertinent information, both medical and administrative, so that all the medical officers could be as well informed as possible. Enclosures No. 1, 2, 3, 4 and 5 are representative of this policy. Enclosure #6 is the monthly medical bulletin written for the line officers who were aided materially in presenting to them the picture of the medical service for the month with the recommendations that they could enforce--thus further insuring better health of the Command.

Early in February the division was billeted in the vicinity of Houchenee, Belgium where reorganization, rehabilitation and training was in progress. Regimental medical installations operated in each battalion and Special Troops area conducting sick call and rendering medical care. The problem of frostbite and trench foot received much attention and foot inspections by medical officers were repeatedly conducted. Sanitation was stressed as a result a marked drop in diarrhea was noted. The Medical Battalion Headquarters and Clearing Station were located at Esneux. A cadre for Company "B" was selected and efforts to bring its T/E and T/O to normal were made. Training was conducted in technical subjects in all units.

Two medical conferences were held under the direction of the Surgeon's Office. The first was a conference-critique on problems encountered by the Regimental Medical Services and followed by a conference on "Treatment of Wounds of the Chest". The second was a conference-critique on problems encountered by the Division Medical Service followed by a conference on "Trench Foot and Allied Conditions". Much practical and useful information was obtained at these conferences.

On 5 February the 424th Combat Team was attached to the 99th Infantry Division and placed in V Corps reserve vicinity Amel. By 0600, 9 Feb, the division combat team had replaced the 394th Combat Team on the line vicinity Losheimergraben and reverted to division control. The Division Headquarters and Division Special Troops had meanwhile moved to vicinity of Hunningen.

The terrain occupied by the infantry was rugged, wooded, mined, hilly terrain--which did not have an adequate internal road net. The melting snow and rains had caused the few available trails to become impassable and ambulances and jeeps could not come within 2 miles of the troops. The battalion fronts were also greatly extended. Evacuations became an arduous problem. Each aid station set up a forward and a rear aid station. The forward station, operated by the surgeon, was in close proximity to the troops. A "Weasel" (tractor jeep) was able to negotiate to within 300 yards of the station, so evacuation was by litter to the aid station and after adequate treatment by litter carry to the weasel--and then after a bruising 25 minutes, to the rear battalion medical installations where further medical care and ambulances were available. Out of the battalion area, the roads were somewhat better and evacuation progressed normally. A "Weasel" ride was in itself an adventure in rough riding. However, by getting the casualty in better shape by more plasma, sedation--firmer splints and dressings, no casualty was adversely affected by the length of time or the roughness of terrain during evacuation. The Engineers were constructing roads toward the station and by month's end, a road to the aid station which could be traversed by ambulance and jeep was opened for medical evacuation.

The Collecting Station did maintain contact and worked closely throughout the month with its combat team. From its location at Honsfeld, it could adequately support not only the infantry but also the artillery division troops in the sector.

The Clearing Station closed at Esneux and opened in Ligneuville at 1300 on 7 Feb and continued its efforts to find facilities closer to the troops. By 10 Feb the unit opened in Weverce and on the 15th opened in Butgenbach which was considered a satisfactory supporting location. A holding station manned by a platoon of the Clearing Company was maintained at Weverce. It housed and cared for all cases which would be returned to duty within 5-6 days. The Butgenbach station because of limited holding facilities, indulged chiefly in triage. A minimum of patients were held there for observation. The condition of routes of evacuation was the chief problem of the ambulances service. The former adequate road net due to the mud, rain and

extensive use became rutted mires. However, constant road reconnaissance, a high road priority rating, and extra reserve ambulances given to the operating collecting station, did not allow this service to bog down at any time.

Company "A" of the Medical Battalion continued training throughout the month. It did not operate as a station, however, a large proportion of its personnel were either on detached service with the 424th Inf Regt and/or supplementing the operating Collecting Company. The cadre for Company "B" continued its cadre training and continued to obtain and maintain T/E equipment.

Inclosure No. 7 is the medical bulletin for month of February put out by the Division Surgeon's Office.

Early in March the 424 CT remained on the line in the vicinity of Losheimergraben. The Division Headquarters and Division Troops remained in vicinity of Hunningen.

The terrain occupied by the infantry was wooded and hilly. The majority of battle casualties during this period continued to be those incurred from mines. Mines continued to be a menace and the principal agent causing battle casualties during this period, although much had been done to neutralize these. Engineers continued to improve the road net and made possible ambulance and jeep evacuations from the aid station to the Collecting Station. Forward of the Aid Station evacuations were still difficult since the battalion fronts remained extended as during the previous month. Each Aid Station, therefore, continued to operate forward and rear stations, and "weazels" continued to be used between the forward and rear aid stations. Out of the battle area the roads were somewhat better and evacuation progressed normally.

The Collecting Stations maintained contact and worked closely throughout this period with its combat team. From its location at Honsfeld it continued to adequately support the Infantry, the artillery and the Division troops in the sector.

The clearing company continued to operate a forward station in Butgenbach and a holding station in Weverce. The forward station concerned itself with triage while the holding station cared for all cases which could be returned to duty within 5 to 10 days.

On the 8th of March the 424th CT was pinched out by elements of the 69th Inf Div driving S, and elements of the 87th Inf Div and the 6th Cav Gp driving E.

The Battalion Aid Stations advanced with their respective battalions and continued their close support.

The Collecting Station displaced one-half of its station forward in the vicinity of Losheimergraben in order to better support the forward units.

The forward and rear platoons of the Clearing Station remained in their respective locations. However, one platoon was in continuous alert for a possible move forward to a predesignated site in Hunningen.

Casualties were extremely light and evacuation presented no unusual problem.

On the 8th of March, units of the Division were ordered to remain in their present location. The medical units, during the remainder of this period, busied themselves with the care of cleaning of equipment, resupply, and providing for the increased comfort of the men. Company "A" of the Medical Battalion, continued to

train throughout the period of 1 March to 14 March. The cadre personnel of Co "B" busied itself with training and continued efforts to obtain and maintain T/E equipment.

On 14 March 1945 the Division was alerted for a move to St Quentin, France. The Clearing Station closed at 1400, and all medical units made preparations for the move. A plan for medical service was developed and all subordinate units were familiarized with this plan. The move was made by train and motor. On 16 March the Division had closed in its new location at St Quentin, France.

Troops were housed in warehouses, factories, and the like. All medical installations were in continuous operation. Sanitation was stressed and a rigid venereal disease control program was initiated. Inclosure No. 8 presents a detail description of the venereal control program that was initiated. Each unit dispensary operated a prophylactic station, and additional stations were installed within the city. Continued orientation was given all personnel on venereal disease.

All medical units continued training in technical subjects. Rest and comfort of the troops were provided for.

Inclosure No. 9 is the medical bulletin for month of March put out by the Division Surgeon's Office.

Early in April the medical units of the Division continued to be billeted at St Quentin. The organic medical detachments of battalions, regiments, and special troops were operating dispensaries and prophylactic stations - both in troop areas and in centrally located sites in town. The prophylactic stations were well attended and functioned well. On 1 April the Medical Battalion (less "C" Company) were ordered to the vicinity of Rennes, France. The move was completed in two days. The remaining Collecting Company furnished ambulance service to the Division dispensaries in St Quentin.

On 4 April the Division Clearing Station opened and began to function for the troops in that area.

Between the 6th and 8th of April 1945, the Division moved by rail and motor to the vicinity of Rennes, France. Ambulance service was furnished by "C" Company of the Medical Battalion. No casualties were encountered enroute. At Rennes, the Medical Detachment of the 159th and 3d Infantry Regiments, and the 401st and 627th Field Artillery Battalions became a part of the Division Medical family. The organic medical detachments were complete.

Reinforcements for the reconstituted units began to flow in. Medical profiling (physical classification) teams under Division control, profiled and classified all the new men upon reception. A thorough complete dental survey of all reinforcements was completed. Those with disabling defects were hospitalized for study and possible reclassification. Physically and mentally they were an exceptionally fine group of men.

Training in basic and technical subjects was begun for all medical personnel, with the exception of the reconstituted units who began training on 16 April. This Headquarters (Surg) conducted weekly training inspections of all units.

Sanitation in the Division bivouac area, because of the high water level, provided an interesting bit of study in the problem of waste disposal. The problem was satisfactorily solved by various methods, in the areas of the various organizations. Water was supplied by Engineer water units.

Com Z Medical Section informed this Headquarters (Surg) that venereal disease rate in the Rennes area was exceptionally high. Therefore, a vigorous venereal disease control program was instituted. Its results could not be judged - for the Division was preparing its next march order.

On 15 April the newly reconstituted units were attached to the 66th Infantry Division for training. The Surgeon of this Division was given a status of training report as well as factual and statistical information as to the health of the troops, status of immunization, dental health, etc.

Between the 21st and 30th of April 1945, the Division moved by motor and rail to the vicinity of Stromberg, Germany. Advance elements prepared plans for the Division's present mission - guarding POWs. By the month's end, four large PWTEs were being secured and administered by troops of the Division. Plans for the medical service of the 100,000 POWs were prepared and issued. P.W.T.E. Memo No. 3 dated 30 April 1945 was put out by the Division Surgeon's Office and outlined the plan for medical service rendered the Prisoners of War. This is submitted as Inclosure No. 10. Medical personnel servicing PWTEs under Division control were doing excellent work in the organization and rendition of medical service. Sanitation is, in the estimation of this office, the biggest problem in the PWTE - and will soon become a large Engineer project.

The month of May found the medical units of the division stretched from Buderich in the north to Heilbronn in the south. Organic medical detachments operated dispensaries, prophylactic stations and rendered medical service to all troops assigned, attached and casual, all along the Rhine River. This, in addition to rendering great help in the organization of PWTEs, physical classification of all troops (profiling) and the multitude of other duties considered routine.

Administrative Memo No. 37 dated 5 May 1945, submitted as Inclosure No. 11, was information for the medical service to be rendered the organic troops of the Division.

The care of the sick and wounded PWs held in enclosures operated by division was the priority mission of the division medical services. Care of the sick resolved itself, not only in the treatment, evacuation, hospitalization and supply of medical items, but also in the feeding, sheltering and the controlling of sanitation within the enclosure. PWTEs containing up to 168,000 louse infected people, a high percentage of whom were either sick or wounded, cramped into spaces initially meant for 20 to 50 thousand was not a pleasant picture. The picture of each of the 100,000 PWs having more than one bowel movement (1 to 4 thousand cases of dysentery in each enclosure) daily, did not comfort the medical officer. Compartmentation and construction of the enclosures seemed to come along slowly and the water supply was at best inadequate or minimal. Housing or shelter for the young or old was non-existent. Food was not plentiful. All this added up for more and more potential work for the medical service, and a maximum effort was obviously necessary.

During this period 6 PWTEs were placed in operation by the division. Each enclosure was furnished one or more medical teams consisting of 3 officers and 12 enlisted men to organize, administer, and render medical service to the enclosures. The Medical Battalion was thoroughly exploited of its officer and enlisted personnel to form teams, and of its organic equipment to aid in the accomplishment of the mission. Additional medical teams were placed at our disposal by the Advance Section of Com Z. Each team before attachment to an enclosure, was given a blue print or basic plan of operation. Guide T/O's & T/Es for infirmaries, special medical centers and administrative headquarters were furnished. This is submitted as Inclosure No. 12.

Hospitalization policies and plans for evacuation of personnel from enclosure to hospital were issued. These are submitted as Inclosure No. 13. Orientation talks were held and problems to be met and goals to reach were outlined, so that medical teams did enter their enclosures well oriented as to their mission and as to the means available in the accomplishment of its mission. It was not at all, therefore, surprising that the medical service was always the first to be thoroughly organized and functioning. This usually within the first 36 hours after the opening of the camp.

German POW medical officers and personnel were screened, secured and rapidly organized. Infirmarys were set up in compartments and in places where it was hoped compartments would be. Each infirmary was staffed by two or three German medical officers and 12 German enlisted medical personnel. The infirmary consisted of a dispensary and a small 25-bed hospital, and generally serviced some 5,000 POWs. Special medical centers (hospitals of 100 to 500 beds) were set up to handle the more severe diarrheas or other special type cases. All possible medical service that could be adequately rendered within the enclosure, within the means and capabilities of the staff, was accomplished. Adequate medical service was available. Cases which needed more extensive hospital care were upon approval of an American medical officer transferred to an adjoining hospital.

Sanitation within the enclosure was a first priority project. A plan for the control of sanitation was issued and placed into effect in many enclosures. This plan was issued 7 May 1945 as unnumbered memorandum and is Inclosure No. 14. Inclosure No. 15 was the monthly sanitary report that was to be submitted from the PWTEs. However high water tables, poor drainage, rainy weather, lack of shovels, latrine boxes and the ever present thousands of dysentery cases, were only a part of the sanitation problem encountered. Lice and delousing was ever present. Delousing teams were trained and DDT, when available, was used. Delousing because of incomplete compartmentation of camps and lack of DDT made little progress in this period.

Medical men cannot work without medical supplies and therefore the medical supply problem was fundamental. During this period no medical supplies were delivered either to the division or the enclosure by any higher headquarters. All medical battalion trucks and all agencies of the surgeon's office were on a constant 24-hour medical supply hunt. All dumps and caches, true or rumored, were investigated. Kassel, Burg, Frankfurt, Lever Kruesen, were ferretted. Camp medical supply officers were requested to and did join the hunt. A minimum of supplies was obtained. The hand to mouth supply existence continued. Sick calls varying from 1 to 10 thousand daily caused pressing needs. Though the cry for supplies was incessant and the deliveries spasmodic, the quantities delivered did furnish a bare minimum for a day to day basis. Cots, tentage, litters and basic instrument sets were the most critical of items; necessary expendable drugs less critical.

During this period the personnel of the Surgeon's Office were augmented and office facilities enlarged. The reason for this was that more PWTEs came under our control; Hospital Units were attached; Medical supply points were placed in operation, and the evacuation service was completely re-organized.

Two additional PWTEs were placed in operation by the division. Teams of medical personnel, placed on detached service with the division by higher headquarters, aided our own medical personnel in rendering medical service to the PWs. The new teams were oriented and were further trained on the ground. They were then sent out to supervise in the new PWTEs. German medical personnel who were trained to assist the new organization of enclosures accompanied the new team to the new enclosures.

On the whole, the trained personnel handled the problem more efficiently than when the division was given its assignment. Medical service has been adequate. Because of the inclement weather, sick rates were very high. The most common cause was dysentery, and upper respiratory infections were the next most prevalent.

During this period the Hospital Units supporting the PCTs were attached to the division. I.T.L. Memo No. 16, 24 May 1945, Inclosure No. 16, outlined the operation of the Hospital Units. Reports and personnel problems began to filter in the Surgeon's Office as mass. Two officers, one Army Nurse, and enlisted men made up the Hospital Section which handled all matter pertaining to hospitalization. Thus, these matters were handled promptly and well co-ordinated. Each hospital unit, normally, is able to accommodate 150 patients. However, it was found necessary to expand each of them so that there would be accommodations up to 2,000 patients. The T/O & T/E of these units had to be increased. Supply depots issued the necessary tents, cots, and medical supplies which were available. Early during this period this was quite a problem, but it was being eased toward the end of the period. To accommodate the increased number of patients in the units more German medical personnel was required. PWs in the enclosures were screened and assigned to the Hospital Units who needed them. The German medical personnel were under the supervision of the American medical personnel in addition to nurses obtained from PWs. In some cases civilian nurses and nurses' aides obtained thru the German Red Cross, and local Wapenweisters, were utilized. By the end of this period there was sufficient German personnel to care efficiently for the sick PWs. Some Hospital Units were set up in buildings; others in tents; however, all the units were in close proximity to their respective PWs. Each hospital had an adequate water supply. Some of them have the water brought to the hospital and set up in 5,000 gallon containers; others obtain the water from local sources and rechlorinate it. Laundry facilities for the hospitals during this period has presented a major problem. The most common cause of admission to the hospitals during this period was dysentery and the second most common was upper respiratory infection.

The Nursing Section was inspected and aided in the organization of the nursing service in hospitals. Nursing care given the PWs improved. The need for continued and increased effort to insure the maintenance of high standards of nursing care on the part of the German nurses was continually stressed.

Early in this period the evacuation service from the enclosures to the hospital units, and the hospital units to the base holding hospital was not satisfactory, because of the increased number of patients requiring evacuation and the insufficient quantity of transportation. I.T.L. Memo No. 11, 13 May 1945, was distributed denoting the responsibility of the Group Commanders in the policy of evacuation. This is submitted as Inclosure No. 17. The inclement weather caused an increase in those requiring hospitalization. The 554th and 596th Ambulance Companies, as well as those of the 331st Medical Battalion were over-taxed, working 24 hours a day. At times it was necessary to utilize trucks to assist in the evacuation. The assignment of the 423 Medical Battalion (Headquarters and four Ambulance Companies) to the division gave us sufficient transportation to render more than adequate service. An ambulance company was available for each group and there were sufficient ambulances in reserve for any emergency. Ambulances of the 331st Medical Battalion were still in use; however, their primary mission was evacuation of organic troops.

The attachment of the hospital units to the division placed an added huge burden on the supply section. I.T.L. Memo No. 14, 19 May 1945, Inclosure No. 18 outlines the medical supply policies for PWs. On 14 May ARSG set up three supply points at

Rheinberg, Sinzig and Bingen. Each of these supply points stocked approximately two weeks of medical supplies and 48 to 72 hour service has been given on all requisitions. For the setup of these supply points the division medical supply dumps were dissolved as sources of supply for PWTEs. Each sector has a Division Supply Officer who controls not only POW medical supplies but also American Supplies for the organic troops.

Near the end of May, all sections were operating smoothly and efficiently. New PWTEs came under the control of the Division so that at the close of the month 17 enclosures were being operated. Two of these enclosures contained respectively Russian and Czechoslovakian displaced personnel. The American and German teams have been operating very efficiently. Sanitation has improved markedly. The water supply for all the enclosures has been improved but still presents a problem. Dysentery and upper respiratory infections have been on the decline.

Hospital units and medical units were operating efficiently in the enclosures. There has been a noted improvement in all phases of all activities. All classes of medical supplies were being obtained. Hospitals and enclosures were well stocked with medical supplies. Hospital expansion reached the desired capacity.

Inclosures No. 19 through 24 comprises letters and memorandums on medical records, DDT and fly control, delousing, movement of German medical personnel, as well as authorization for discharge of POWs from a medical stand-point.

During the first half of June personnel of the Medical Battalion and attached medical personnel continued to administer and render medical service to the POWs within the enclosures. Twenty thousand three hundred and fifty six (20,356) infirmary beds were in operation within the enclosures aside from 16,000 hospital beds operated by fifteen hospital units attached to the Division placed either within or adjacent to the enclosure and considered an integral part of that enclosure. POW medical personnel (doctors, nurses, and corps men) were organized to render the bulk of the medical service. Training schools for POW nurses and corps men were found necessary and this training was accomplished. Adequate and satisfactory medical service for the POW's was available throughout the organization.

During this period, adequate sanitary installations and facilities were nearing completion. With advent of cooking facilities and fuel, the enclosures were beginning to serve more hot meals and as a result a better state of health was becoming manifest among the POW's. Facilities for cleaning of mess gear and cooking utensils were being made available. Marked improvement in installations for the disposal of both kitchen and human waste was noticed. During this phase, cases of typhoid fever were being admitted to hospital units of two enclosures in the Blue Area. This expedited the previously recommended closure of one camp, which, because of the soil and the high water table, was untenable from the sanitary point of view. An epidemiologic study of the cases in the other enclosures did pin point the source. Corrective action was taken and improvement noticed.

During this period the plans for and actual transfer of PWTE, medical facilities, and supplies in the Red or Northern Sector, were accomplished. All personnel and facilities attached to Division, by a rapid orientation of British in the PWTE project and by leaving them a well organized functioning medical service, caused the turnover to be accomplished on the planned target date. On 122400 June the British assumed control of northern enclosures with its approximate 200,000 POW's.

The discharge of POW's was instituted and by the end of the period, the POW population dropped from 665,068 to 347,724. This figure excludes the two PWTE's

operated by the Artillery and includes the bulk transfer to the British. Consequently there was a marked decrease in the daily sick rate. However, since only the physically fit POW's were being discharged the number of patients remaining in the Infirmary and Hospital beds was almost static. Only gradually did the medical burden recede.

Supply and evacuation facilities which were such major problems during May, ran smoothly and efficiently throughout all of June. There was no shortage of any major item of medical supply.

The reconstituted units of the 106th Division, namely the 422d and 423d Infantry Regiments, the 589th and 590th Field Artillery Battalions, and the 106th Reconnaissance Troop were in training in the vicinity of Nachtsheim, Germany. Satisfactory medical service was rendered through the aid stations. They were supported by a platoon of ambulances from the 592d Ambulance Company and a Hospital Unit of the 64th Field Hospital. The 64th Field Hospital was relieved by a unit of the 53d on 7 June 1945.

A ten chair Dental Clinic was set up in the vicinity of Nachtsheim, to render dental service and to improve the dental health of the troops in this area. The staff was comprised of dental officers from the division as well as those that were placed on detached service from Hospital Units attached to the Division. In Bad Ems, Germany, a Division dental laboratory was established and rendered dental repaid service for all troops in the Division.

A Medical and Surgical Technician's school was conducted for reconstituted units. All Aid Men as well as Medical and Surgical Technicians attended and results of the school as attested for by examination was satisfactory.

During the latter half of June, sick rates in the POW enclosures continued to decrease with the discharge of POW's. Hospital and infirmary beds were very gradually becoming empty. By the month's end seven enclosures were completely evacuated. However, the hospital units of all enclosures except for those in the northern sector were still in operation. They gradually discharged patients to duty to the closest operating enclosure or were evacuated to a POW Hospital Center. However, on 20 June the Division took over four empty enclosures East of the Rhine. On that date, all medical facilities were in place and trained cadres of POW medical personnel were either in the new enclosures or enroute. By 25 June when the first POW's arrived at the new enclosures, fully staffed medical facilities were completely set up, supplied and in operation. The hospital capacity was based on 3% of the enclosure population.

On 23 June, all attached medical personnel who helped comprise the teams servicing enclosures were relieved. A new plan of operation was instituted which provided the same standard of medical service but under the control of the Hospital Unit Commander. The revised plan was placed in effect and was operating smoothly by the 23d of June.

Typhoid fever cropped up in two other enclosures in the Blue Sector. Epidemiologic study revealed that the water supply was the source. It was corrected and by the month's end a very definite decrease in the occurrence of typhoid was noted. The relatively large amount of diphtheria occurring among the POW's responded to isolation techniques and to improvements in sanitation.

Laboratory facilities were troublesome. Because of deployment, all medical laboratories in this area were removed. However by the acquisition and utilization

of much liberated German laboratory equipment augmented by scrounged American material and excellent complete medical laboratory was put in operation in the Division area. It now adequately services both organic units and POW installations.

At the conclusion of this period, the POW population, though reduced to a mere 192,000, still found the operating hospital units working at 75% capacity. Only two hospital units in the Blue Sector were able to close. The others receiving patients from these hospitals were kept busy. However, the decline in bed occupancy is still receding.

Among the organic medical troops redeployment was taking its toll. Approximately 700 medical soldiers were sent to other Divisions. The medical service, however, was not affected.

Medical training in Mayen area progressed satisfactorily. This headquarters conducted a Status of Training examination on 23 June in which all medical troops were tested by a group of 12 officers. Training was found to be satisfactory. The deficiencies noted were recorded and forwarded to the Unit Surgeons for correction. The training section from this headquarters, by close supervision and guidance of training, has been helpful to the under-officered medical detachments. The Collecting Companies of the Medical Battalion during the week of 25 June ran a Medical and Surgical Technician's School.

Medical service in the Division Rest Centers at Namur and Eupen has been operating smoothly.

The Status of the dental health of the command was markedly improved by the efforts of the dental clinic, dental laboratory, aided by the 92d Mobile Dental Laboratory.

Inclosures No. 25, 26, 27 and 28 are memorandums and changes put out by the Division Surgeon's Office during the month of June.

Early in July the medical units of the Division were stretched from Sinzig, Germany in the north, to Heilbronn, Germany in the south. The organic medical detachments operated dispensaries, infirmaries, prophylactic stations and rendered medical service to all troops assigned, attached and casual--all along the Rhine River. This was in addition to rendering adequate medical service to the PWTE's and continuing the multiplicity of so-called normal routine duties.

Concerning the German prisoners of war, there was a marked over-all-decrease in the sick call rate, in cases evacuated to the hospitals and in deaths within the enclosures and in the hospitals. The improvement in the health of the POW's was attributed to the marked improvement in sanitation, the adequate preparation and quantity of food, and the improved weather conditions.

The division medical laboratory established at Coblenz, Germany, continued to operate efficiently, servicing adequately not only the prisoners of war, but also the U. S. Forces. Medical supply and evacuation presented no problems.

During this period plans for the turn-over of PWTE's to the French Military was in process. American medical equipment was replaced by captured medical materiel. On 10 July 1945, the French 10th Division took over the operation of the PWTE's, the medical service and its affiliated hospitals.

In the meantime, the troops of the reconstituted units of the division continued

in their training about 10 miles west of Mayen, Germany at Camp Alan W. Jones. Battalion exercises were in progress. Intensive reviews in first aid, bandaging and splinting aided the corps men immeasurably in their practical knowledge of caring for the sick and the wounded. During this period there occurred a minor outbreak of gastro-intestinal disturbances. The cause was determined, and the deficiency corrected. DDT spray is effective in fly control. On 10 July 1945, two men were killed and 10 men injured in the 2nd Battalion of the 422nd Infantry Regiment due to misplaced mortar fire. The aid men of the detachment were commended very highly by the medical officers of the 53rd Field Hospital, for the excellent emergency treatment these corps men had administered.

During this period, in addition to the above activities, redeployment was in process. There was an approximate 8% turn-over in the medical personnel. The majority of officers and men were redeployed to the 28th and 35th Infantry Divisions. Throughout the turn-over, the medical service was adequately covered.

During the last half of the month the entire division, less the 3rd Infantry Regiment, made a motor movement to its new site in the vicinity of Karlsruhe, Germany. The mission of the division was that of occupying the Karlsruhe sector. The clearing station opened as a hospital in the Stadt Krankenhaus Karlsruhe. The clearing station also served other troops in the area by daily sick-call and rendered necessary hospital service. The organic medical detachments continued to serve the troops. The training program of the reconstituted unit continued in the new area. The venereal rates of the Division had begun to rise and an intensive venereal control program was planned and put into effect.

Inclosures 29, 30 and 31 are memorandums put out by the Division Surgeon's Office during the month of July.

Inclosure 32, PWTS Situation Map.

Inclosure 33, Medical Historical Reports, Bad Kreuznach PWTE.

Inclosure 34, Medical Historical Reports, Remagen PWTE.

Inclosure 35, Medical Historical Reports, Sinzig PWTE.

Inclosure 36, Medical Historical Reports, Coblenz PWTE.

During the period 1 August to 10 August 1945 the medical units of the Division were in operation in the province of Baden Germany. The Division Clearing Station was located in Karlsruhe and acted as a central clearing point for patients from the various units within the division as well as other 7th Army units located in this vicinity. Evacuation was to the 45th, 103rd or 111th Evacuation Hospital by ambulances of the 31st Medical Battalion.

The 422nd, 423rd Regiments were located in the training areas northeast of Karlsruhe. The medical detachments beside providing medical services for the organic troops also participated in field maneuvers, stressing problems involving combat teams while evacuating patients. Division artillery was located in the vicinity of Bretten. The medical detachment was concerned primarily with providing medical services for the various Artillery Battalions. Ambulance service was provided by ambulances from the 31st Medical Battalion.

Division troops were located in the Karlsruhe - Durlach area and the 424th Infantry Regiment was located south of Karlsruhe in the Ettlingen area. The medical detachments of these units were concerned primarily in providing medical care for organic troops.

The number of cases of infectious and contagious diseases during this period were very low. The principle medical problem was the control of venereal disease which showed a marked increase for all units.

At the beginning of the period 11 August to 31 August 1945 the reconstituted units 422nd, 423rd Regiments, 589th and 590th Field Artillery Battalions completed training and were released to occupational duties.

Venereal Disease continued to increase as a problem. Thousands of men were in process of transferring into and out of the Division, bringing with them a high venereal disease rate. The Division VD program was sound and renewed efforts at indoctrination and education were made. However, having no stabilized command, training and education of troops was difficult. The Surgeon's Office decided that the easiest and quickest approach to the problem would be to clean up the German community and make them VD conscious.

Plans for an intensive crack down on venereal disease were formulated by the Division Surgeon's Office. These plans culminated in a large mass raid 25 August 1945 by military and civil police. Places of business, restaurants, dance halls and beer parlors were cordoned and entered. All women associating with soldiers in the streets and parks were picked up, jailed, and an examination to determine the presence or absence of venereal disease was made. The large scale round-up lasted 4 hours from 1900 to 2300 and netted 453 German women. In the city of Durlach alone, 160 women were picked up in 1 hour. Complete statistics are not available, however, even though no Wasserman reports are in, 26% of the women were found infected with venereal disease and it is estimated that when all reports are in over 30% will be found infected. It is an astounding fact that one out of every three women picked up are infected with venereal disease. Those found infected are hospitalized and incarcerated until cured.

In addition venereal disease control programs and pre-stations of the various divisional units were checked. Corrections of deficiencies were made. A substantial decrease in the number of cases of venereal disease is expected. The weekly venereal disease rate per thousand per annum for the last three weeks has dropped progressively from 382 to 279 to 190 -- evidence of progress.

During the latter part of this month the medical personnel in the Division was concerned primarily in the processing of troops due to be returned to the U. S. with the Division. This process was complicated by the large number of high point men coming into the Division from other units and the completion of the medical records of the low point men moving out. A total of approximately 12,000 men were received in the Division within the month while 7,000 men were removed. Medical processing progressed smoothly and effectively.

During the period 1 September to 8 September, the Division, now a category IV unit, received warning orders to move to a staging Area pending redeployment to the states. The personnel after the huge turnover in August is almost entirely made up of high point (ASR) men. Medical processing of the personnel received high priority. All personnel were physically inspected. All immunizations were brought up to date. Profiling, status of spectacles, teeth and other remediable defects were reported and acted upon. People with Scabies and/or lice were disinfected and vigorously treated. All personnel who could be safely moved from hospitals to the staging area with the Division, were released and prepared for the move. All pre-staging area medical processing was completed well before 8 September 1945.

The period from 9 September to 13 September was occupied with a rail-motor movement from Karlsruhe, Germany to Camp Lucky Strike (near Le Havre, France). The move was uneventful. Medical processing required at the staging area was begun immediately upon arrival and for the most part was completed within 24 hours.

From 14 September to 17 September it was contemplated now that all medical processing was completed--and only routine medical duties were being performed--that the medical units of the Division will soon embark for the states. In the states deactivation of the Division will occur.

The medical units of the Division have performed well throughout training and combat. The record is one which all are and should be justly proud of.

W. S. B. L. J. M.
W. C. L. M. C.

CONSOLIDATION - CASUALTIES EVACUATED (1 Jan. thru 30 June 1945)

	DISEASE							INJURY						
	Jan.	Feb.	Mar.	Apr.	May	June	Total	Jan.	Feb.	Mar.	Apr.	May	June	Total
<u>DIV. UNITS</u>														
Admitted	436	361	283	367	227	356	2030	159	124	62	58	39	106	548
Transferred	175	191	80	209	140	106	901	94	80	25	57	25	27	308
Died	0	0	0	0	0	0	0	0	0	0	0	1	3	4
Duty	234	203	140	238	38	146	999	49	31	25	14	9	21	149
<u>ATTACHED UNITS</u>														
Admitted	43	1	0	74	155	259	532	10	0	0	26	31	60	127
Transferred	25	0	0	39	89	63	216	7	0	0	20	15	12	54
Died	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Duty	18	1	0	33	62	87	201	1	0	0	5	7	7	20
<u>CASUALS</u>														
Admitted	30	63	19	0			112	5	23	6	0			34
Transferred	6	35	9	0			50	3	22	5	0			30
Died	0	0	0	0			0	0	0	0	0			0
Duty	21	24	13	0			58	2	2	1	0			5
<u>ENEMY, ALLIED, CIVILIAN</u>														
Admitted	0	0	0	0			0	0	0	0	0			0
Transferred	0	0	0	0			0	0	0	0	0			0
Died	0	0	0	0			0	0	0	0	0			0
Duty	0	0	0	0			0	0	0	0	0			0
<u>TOTAL FOR PERIOD</u>														
Admitted	509	425	302	441	382	615	2674	174	147	68	84	70	166	709
Transferred	206	226	89	248	229	169	1167	104	102	30	77	40	39	392
Died	0	0	0	0	0	0	0	0	0	0	0	3	3	6
Duty	273	228	153	271	100	233	1258	52	33	26	19	16	28	174
<u>TOTAL SINCE ENTERING COMBAT</u>														
Admitted	891	1316	1618	2059	2441	3056		830	977	1045	1129	1199	1365	
Transferred	490	716	805	1053	1282	1451		650	752	782	859	899	938	
Died	1	1	1	1	1	1		1	1	1	1	4	7	
Duty	357	585	738	1009	1109	1342		187	220	246	265	281	309	

BATTLE CASUALTIES

TOTAL

Jan. Feb. Mar. Apr. May June Total Jan. Feb. Mar. Apr. May June TOTAL

540	121	22	9			692	1135	606	367	434	266	462	3270
415	108	22	3			548	684	379	127	269	165	133	1757
0	0	0	0			0	0	0	0	0	1	3	4
130	11	1	6			148	413	245	166	258	47	167	1296

108	1	0	0			109	161	2	0	100	186	319	768
91	1	0	0			92	123	1	0	59	104	75	362
0	0	0	0			0	0	0	0	0	2	0	2
17	0	0	0			17	36	1	0	38	69	94	238

21	65	3	0			89	56	151	28	0			235
15	65	2	0			82	24	122	16	0			162
0	0	0	0			0	0	0	0	0			0
4	0	1	0			5	27	26	15	0			68

0	10	1	0			11	0	10	1	0			11
0	10	1	0			11	0	10	1	0			11
0	0	0	0			0	0	0	0	0			0
0	0	0	0			0	0	0	0	0			0

669	197	26	9			901	1352	769	396	534	452	781	4284
521	184	25	3			733	831	512	144	328	269	208	2292
0	0	0	0			0	0	0	0	0	3	3	6
151	11	2	6			170	476	272	181	296	116	261	1602

1422	1619	1645	1654	1654	1654
1262	1446	1471	1474	1474	1474
9	9	9	9	9	9
160	171	173	179	179	179

3143	3912	4308	4842	5294	6075
2402	2914	3058	3386	3655	3863
11	11	11	11	14	17
704	976	1157	1453	1569	1830

HEADQUARTERS 106TH INFANTRY DIVISION

CONSOLIDATION - CASUALTIES EVACUATED (1 July thru 17 Sept 1945)

	DISEASE			INJURY			TOTAL	TOTAL
	July	Aug.	Sept.	July	Aug.	Sept.	DISEASE	INJURY
<u>DIV. UNITS</u>								
Admitted	353	192	38	58	44	4	2613	654
Transferred	203	43		49	19	1	1147	377
Died				3	4		0	11
Duty	124	149	6	16	20		1278	185
<u>ATTACHED UNITS</u>								
Admitted	122	43		12	5		697	144
Transferred	82	11		9	4		309	67
Died								2
Duty	39	30		6	2		270	28
<u>CASUALS</u>								
Admitted							112	34
Transferred							50	30
Died							0	0
Duty							58	5
<u>ENEMY, ALLIED, CIVILIAN</u>								
Admitted							0	0
Transferred							0	0
Died							0	0
Duty							0	0
<u>TOTAL FOR PERIOD</u>								
Admitted	475	235	44	70	49	4	3428	832
Transferred	285	54	0	58	23	1	1501	474
Died	0	0	0	3	4	0	0	13
Duty	163	179	6	22	22	0	1606	218
<u>TOTAL SINCE ENTERING COMBAT</u>								
Admitted	3531	3766	3810	1435	1484	1488		
Transferred	1736	1790	1790	996	1019	1020		
Died	1	1	1	10	14	14		
Duty	1505	1684	1690	3331	353	353		

CONSOLIDATION - MEDICAL SERVICE RENDERED POW'S (1 May thru 10 July 1945)

	MAY	JUNE	JULY	TOTAL
Total Cases treated on Sick Call.	1,143,177	603,568	70,648	1,817,393
Total Cases evacuated to Hospital Units	26,366	14,745	3,535	44,646
Total Number of Deaths within the Enclosures.	1,404	214	79	1,697

EVACUATION STATISTICS

Total number of trips made by the ambulances.	1,288	1,146	291	2,725
Total mileage covered by the ambulances	100,770	93,179	24,820	218,769

HOSPITAL UNIT STATISTICS (11 May thru 10 July 1945)

Total cases returned to enclosures after treatment.	3,325	6,734	2,727	12,786
Total cases died in hospital units.	733	567	92	1,392
Total cases evacuated further to the rear	7,568	10,477	3,506	21,551
Total admissions of Communicable Diseases (listed below) .				

	MAY	JUNE	JULY	TOTAL
Respiratory.	2034	858	158	3050
Gastro-intestinal.	2409	1876	463	4748
Diphtheria	232	267	77	576
Typhus	11	10	3	24
Typhoid.	45	377	242	664
Venereal Disease	148	105	33	286
Other.	736	1016	231	1987

5,615	4,509	1,207	11,331
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FORWARD SURGERY
OF THE
SEVERELY WOUNDED

VOL I

Personal Copy: Col. M. E. DeBakey, M.C.

ETOUSA

SURG GEN'L Sec

2d Ave Surg Grp.

H. story

1942-1945

THE EMPLOYMENT AND FUNCTION OF TEAMS OF THE 2ND AUXILIARY SURGICAL GROUP

No nation had attained the high standard of surgical training available to as large a number of young surgeons as the United States at the time of its entry into World War II. However, economy in their employment and the proper utilization of their surgical talents were required if soldiers wounded in battle were to receive the best surgical care that this nation was capable of extending. For a brief period near the close of World War I, certain qualified young surgeons were selected to be in charge of surgical teams which functioned in the most forward hospitals. These teams successfully operated upon many casualties who could not be safely transported further to the rear without surgery. This experience indicated the feasibility of employing surgical teams in the forward hospitals in order to attain the most efficient use of such personnel. Also surgical specialty teams were designated to function in other hospitals, including maxillofacial and neurosurgical teams. Upon this basis, there was planned within the United States Army an organization composed of highly qualified surgeons, nurses and enlisted men constituted into surgical teams. Their function was, primarily, to augment the staffs of forward hospitals in the surgical management of battle casualties. This organization was designated as an Auxiliary Surgical Group. It is composed of general and specialty (thoracic, neurosurgical, orthopedic and maxillofacial plastic) surgical teams and shock teams. The activities of the Group are directed by its Group Headquarters. This scheme of organization has been successful in effecting a readily available source of well qualified professional personnel for immediate employment in forward hospitals. It has achieved a uniformity of control of this portion of surgical personnel which has produced a high level of competence as well as economy in the deployment of specialized skill and talent. The teams are equipped with instruments and an anesthesia apparatus. From their Group Headquarters they are sent on short notice to any hospital needing their assistance.

The developments in World War II led to a broadening of the concepts relative to the surgical care of the most seriously wounded battle casualties. This permitted the focusing of attention on such casualties so that they might receive expert surgery at the farthest point forward where proper facilities for their care could be made available. It was at this level in the chain of evacuation and in the surgical care of the desperately wounded casualties that the employment and functions of the surgical and shock teams of this Group were concentrated. The general surgical and thoracic surgical and shock teams were of greatest usefulness in the surgical care of first priority casualties, i.e. nontransportables. The developments in NATOUSA led to the establishment of a first priority surgical hospital (a platoon of a Field Hospital) located adjacent to the division clearing station. This priority hospital was devoted exclusively to the care of the nontransportable casualties. The professional care of patients in these hospitals was the responsibility of the surgical teams of this Group functioning in the Fifth and Seventh Armies. The method of employment of the priority surgical hospitals and the manner

The Employment and Function of Teams of the 2nd Auxiliary Surgical Group (contd)

in which the functions of the surgical and shock teams of this Group were coordinated in these installations to effect the high standard of surgery maintained in the care of the most seriously wounded casualties are detailed elsewhere in this report. A brief presentation of this information even at the sake of repetition will permit a better understanding of the conditions under which the surgery recorded in this report was accomplished.

A first priority surgical hospital is a small mobile installation which was usually established in tents; buildings were used when available. At the division clearing station triage based on the urgency of the wound and the condition of the casualty was accomplished. Nontransportable patients were transferred immediately to the priority hospital, often by hand litter. "Expert surgical management that embraces resuscitation, operation and prolonged postoperative care, becomes immediately available and the desperately wounded receive expert care as far forward as it can be provided".¹ The surgical and shock teams functioned in these hospitals on a temporary duty status and had complete responsibility for the professional care of the patients treated. Four to six surgical teams, ideally one thoracic surgical and the others general surgical, and two shock teams were required in a busy priority hospital. To support adequately one actively engaged infantry division, two platoons were required. The assigned staff of the hospital was small. One medical officer of the regular staff was usually available to assist in the administration of shock therapy; other male officers were engaged in the operation of the hospital. The nursing staff of the hospital provided the ward nursing service while the surgical nurse members of the attached teams functioned with their respective teams in operative surgery. The hospital and attached surgical teams were able to move on short notice and on arrival at their new location to begin functioning in two hours. In practice these hospitals leapfrogged one another, and the hospital or part of it was left behind to become the "holding unit". Sufficient hospital personnel remained with the "holding unit" to care for patients until they could be safely evacuated. One surgical team remained with the "holding unit". The facilities afforded in a first priority hospital must be limited in comparison to a fixed hospital (Station or General Hospital). However, all essential equipment were available and highly qualified surgeons were charged with the care of the severely wounded casualties. This combination achieved a degree of success which adds a new phase to American surgery in modern warfare.

"A well run first priority surgical hospital exerts a remarkably favorable effect on the morale of combat troops and their officers".¹ The front line soldier knew that if he should be seriously wounded he would receive immediate and expert priority surgical care and that such care would greatly enhance his chances of recovery.

The casualties admitted to the division clearing station suffering from less urgent wounds and in condition to be transported were transferred to Evacuation Hospitals located usually five to fifteen miles

The Employment and Function of Teams of the 2nd Auxiliary Surgical Group (contd.)

behind the division clearing station. These hospitals handled the great bulk of wounded in the forward area as the group diverted to the first emergency surgical hospital constituted approximately 85 of the total number. These installations had trained and experienced professional staff. During periods of heavy fighting their staff were augmented by surgical teams from the Auxiliary Surgical Group. These teams included particularly the specialty teams, i.e. thoracic, neurosurgical, and orthopedic surgical. The general surgical teams were often required in Evacuation Hospitals. When teams functioned in these hospitals they worked under the direction of the Chief of the Surgical Service.

It is desirable to emphasize at this point that a new era in the surgical management of desperately wounded battle casualties has been achieved. The remarkable results obtained in the surgical care of these casualties will become evident from a study of the data detailed in the subsequent sections of this report. Certain data available from the records of the American Expeditionary Force of World War I are significant in demonstrating the marked advances noted in the experience of the Auxiliary Surgical Group. In the American Expeditionary Force, World War I, 11 per 1000 patients admitted to hospitals suffering from abdominal wounds.² The mortality rate among these patients was 66.8%.² During the 20 months fighting experience of the Fifth Army, 35 battle casualties per 1000 admitted to hospitals suffered from intra-abdominal wounds. The mortality rate of 3154 patients with intra-abdominal wounds treated during 1944 and 1945 by members of this Group was 24%. These data become even more significant when it is appreciated that the increased rate of admission of such casualties is in the group of the most severely wounded. If only the less severe abdominal wounds are considered, which probably would be more nearly comparable to the World War I series, the mortality rate closely approximates 13% (page 110). A similar marked improvement in the management of thoracic wounds has been achieved. In World War I, the frequency of admissions to hospitals was 10.5 per 1000 with a mortality rate of 47.68%. In the Fifth Army, the frequency was 40 per 1000, and the mortality rate among 1364 patients suffering from intrapleural injuries, treated by members of this Group, was 9.00%. Figures are not available from World War I relative to thoraco-abdominal wounds, but a mortality rate of 27.35 among 903 casualties suffering from such injuries treated by members of this Group is a worthy achievement.

The careful recording of data relative to the surgical management of rendered casualties by members of this Group has enabled a detailed study of the problems of forward surgery. These records have been made by the surgeons of the Group while working under the extremely hazardous conditions of enemy observation, shelling and bombing, often during inclement weather while living in tents, and during periods of rapid movements and prolonged and sustained periods of intense surgical activity. The records have been meticulously preserved and have become the source material

The Employment and Function of Teams of the 2nd Auxiliary Surgical Group (cont'd)

for the material data recorded in this report. It is urgently hoped that they will be maintained for future reference and study coordinated with follow-up data.

The professional service section of this report represents the combined surgical experience of the Group. The compilation of the data contained in the report has been accomplished through the efforts of the great majority of the medical officers of the organization and has been in progress at varying periods during the past two years. In fact, plans were formulated for recording the combined surgical experience of the Group even before it participated in an active Theater of Operations. The final effort to compile these data was accomplished after the end of the war in Europe. At that time certain members of the Group were not available to assist in this work as some were employed with functioning teams and some had returned to the United States. All other medical officers of the Group participated in the final compilation of this report. Major Luther H. Wolff, MC, was in charge of the final preparation of the professional service section of this report. For the past eight months the major portion of his time has been devoted to this work. His able direction of this large undertaking is reflected in the excellence of the professional service section. In July 1945, a board of officers was designated as an editorial board for the preparation of the professional service section of this report. Captain Maurice J. Walsh, MC, ably assisted the board in preparation of the report. Captain Paul A. Kennedy, MC, assisted by Pfc Walter Neigs, Jr., was responsible for the preparation of the charts and graphs contained in this report.

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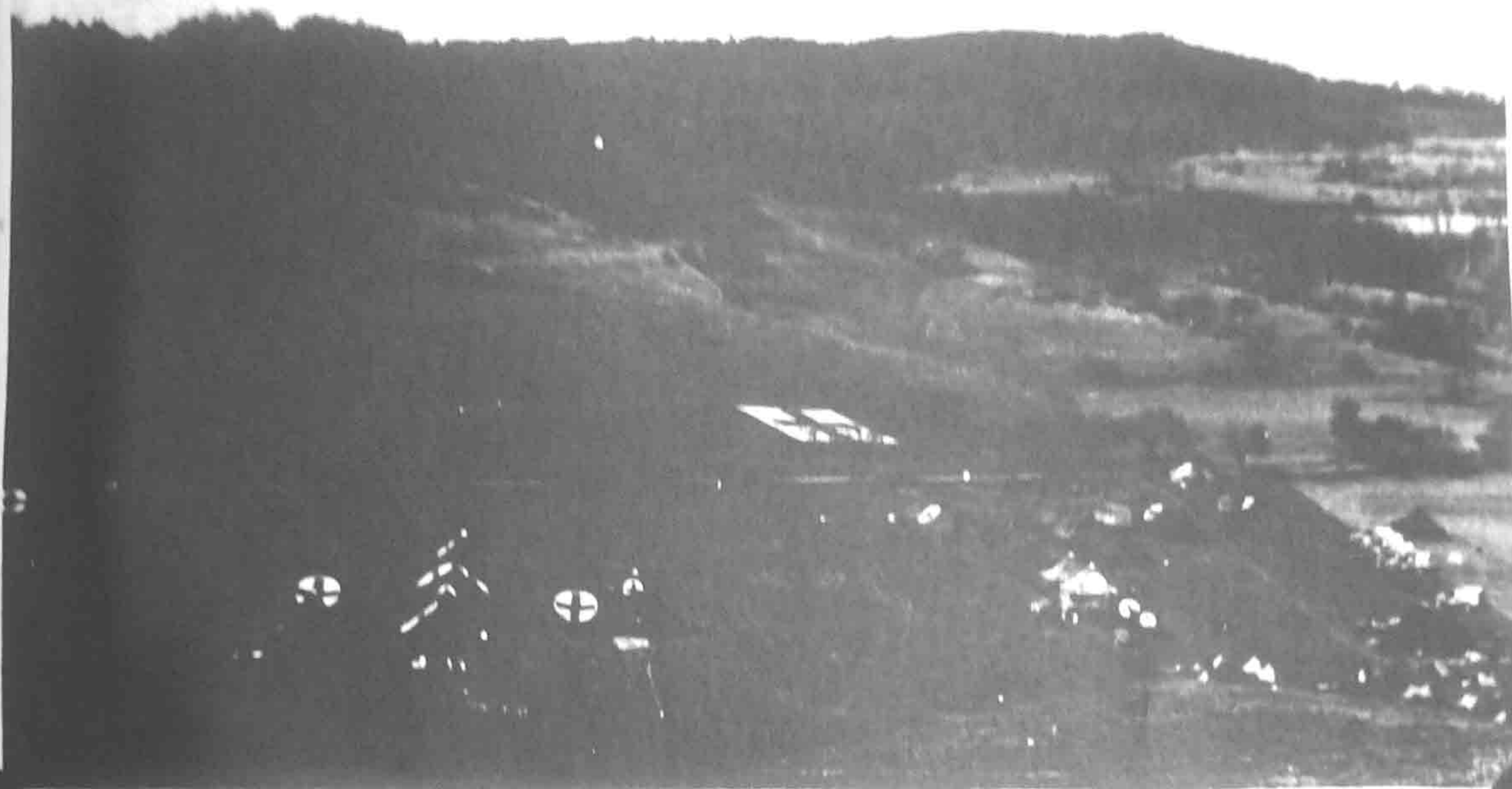


Figure 1

Figure 1. Panorama of Field Hospital (left foreground) and Division Clearing Station (right foreground).

PREOPERATIVE DIAGNOSIS AND TRIAGE

PREOPERATIVE DIAGNOSIS AND TRIAGE

Preoperative diagnosis in War Surgery is simply the study of injury and its effects upon the wounded man. If the injury is severe, grave physiological disturbances often result which threaten life and successful resuscitation cannot be accomplished without an evaluation of the responsible factors. If fulminating infection is beginning but escapes detection, life may be lost as the result of incomplete diagnosis and the consequent delay in operative care. Likewise, intelligent surgical care is impossible without an accurate knowledge of the extent and nature of the injury as well as the structures which are involved.

In evaluating the condition of the severely wounded it is first necessary to attend to those disturbances which constitute an immediate threat to life or jeopardize the ability of the patient to withstand operation. Of greatest importance in this respect is traumatic or wound shock; its evaluation and management become the immediate problem which takes precedence over other diagnostic measures.

THE DIAGNOSIS OF SHOCK: THE EVALUATION OF THE DEGREE OF SHOCK

A reduction in circulating blood volume and concomitant decrease in peripheral blood flow are believed to be the most early disturbances in the syndrome of shock (1). It is important to realize that the recognition of shock depends upon the clinical manifestations of these circulatory disturbances. The determination that the shock does not exist is ordinarily not difficult. It appears that individuals vary considerably in their response to trauma and that the degree of shock is not always strictly parallel to the blood volume loss, particularly when this loss has not been severe (2). This fact must always be remembered in any discussion relative to the degree of shock.

It has become customary to speak of shock in which the blood pressure is normal as "incipient shock". This is a useful concept for two reasons: first, it indicates that the fundamental disturbance of shock may exist without a fall in the blood pressure; secondly, it implies the progressive nature of the peripheral circulatory failure which follows trauma. The recognition of incipient shock depends largely upon evidences of decreased peripheral blood flow (pallor and coldness of the skin and extremities; collapse or constriction of the superficial veins; and tachycardia with a pulse of poor volume). The degree of these changes may vary considerably from patient to patient but is of extreme importance in indicating that a reduction of the circulating blood volume has occurred, regardless of the level of the blood pressure.

Preoperative Diagnosis and Triage. (The Diagnosis of Shock: The Evaluation of the Degree of Shock , contd).

Blalock (3) has repeatedly called attention to the fact that the blood pressure is a poor index of the degree of shock and that a considerable reduction in blood volume and blood flow often occurs prior to a fall in blood pressure. Studies in this Theater (2) have shown that a blood loss of 20-30% of the expected blood volume may occur in battle casualties without an appreciable reduction in the blood pressure. Richards (1) cites evidence for a strong selective vasoconstrictor activity in shock which curtails markedly the blood flows to organs not immediately necessary for survival. He also states, "Spontaneous and abrupt failure of this selective vasoconstriction may precipitate fatal collapse". These findings support the conclusion that a fall in blood pressure indicates a reduction in the circulating blood volume for which vasoconstriction cannot fully compensate or that a failure of the vasoconstrictor mechanism has occurred. In previously healthy soldiers intense vasoconstriction usually persists until death occurs and little clinical evidence exists that vasoconstriction fails in the sense that arteriolar dilation supervenes. However, the marble-like mottled cyanosis which is occasionally seen in moribund patients may constitute evidence for arteriolar dilatation in such cases.

In the recognition of the more severe degrees of shock, a falling blood pressure will always remain as one of the cardinal signs of progressing circulatory failure. Experience with the severely wounded indicates that this fall in blood pressure is almost always associated with increasing vasoconstriction and progressive reduction in the peripheral blood flow. Hence, the clinical correlation of the state of the peripheral circulation with the level of the blood pressure constitutes an important means of evaluating the severity of shock. The skin may be excessively cold and pale; the pulse may be barely perceptible or tend to disappear with inspiration and the rate very rapid; often there is evidence of marked constriction of the superficial veins. As the manifestations of stagnant anoxia become apparent the skin exhibits the ashen-gray cyanosis so characteristic of profound shock, and cerebral anoxia often results in restlessness, apathy, or stupor. True coma is relatively rare except in the moribund patient. In the most severe examples of shock the blood pressure in the brachial artery may be unmeasurable, even impalpable - and death is immediately threatened. Sweating may be observed in severe shock but it also occurs when shock is minimal or absent and has proved to be of little aid in evaluating the degree of shock.

In the use of the blood pressure level as an indication of the degree of shock it is important to determine, if possible, the trend of the blood pressure; obviously a rapidly falling blood pressure is indicative of more severe shock than a blood pressure which has become stabilized. There has been a tendency to underestimate the importance of the blood pressure in evaluating the degree of shock. In this respect

Preoperative Diagnosis and Triage. (The Diagnosis of Shock: The Evaluation of the Degree of Shock, contd).

the following facts are of interest: In a series of 957 cases with intra-abdominal injury the degree of shock was based upon the level of the admission systolic blood pressure. The average amount of plasma and blood which was required to accomplish resuscitation was determined for each of the four groups. It was found that the average amount of replacement therapy varied inversely with the systolic blood pressure, being greatest for the group with the lowest blood pressure. (See "The Problem of Shock Therapy in Abdominal Wounds", Table I and Figure 20 pages 124-25). It is important to remember that the adequacy of resuscitation therapy was determined upon the basis of the clinical response in addition to the rise in the blood pressure level at the time such replacement was being carried out. Hence, it appears that in a relatively large series of cases the blood loss (as indicated approximately by the amount of replacement therapy required) is related to and within limits predictable by the admission blood pressure level. In brief, reliance in diagnosis should never be based solely upon the blood pressure nor should the importance of a low blood pressure be overlooked.

The changes and character of the pulse in patients who exhibit shock deserve some comment. The fullness of the pulse wave at the wrist should be noted carefully; its character is of importance and is of more diagnostic value than the rate, since the latter may vary over a wide range. Severe shock may occasionally be present in a patient with a relatively slow pulse and the true reduction in the peripheral blood flow is more accurately indicated by the "thready" pulse. The trend of the rate and character of the pulse is of more diagnostic importance than an isolated determination. For this reason it is important to record the pulse rate, as well as the blood pressure, at the time the patient is admitted to the hospital so that these factors may be re-evaluated from time to time.

The appearance of the patient may be modified by virtue of the fact that he has received a relatively large volume of plasma prior to admission to the hospital. Pallor may be present out of proportion to other evidences of reduced peripheral blood flow; not infrequently a peculiar waxy yellow tint is noticeable. It has been noted also that the diastolic pressure may be unusually low in patients who have received large amounts of plasma. The diastolic pressure often rises more slowly than the systolic in response to blood transfusion. In a few such cases physical signs of aortic regurgitation were sought but were found to be lacking and the changes in the diastolic pressure may depend upon the lowered blood viscosity and anemia which follow liberal plasma therapy.

APPRAISAL OF THE TYPE AND EXTENT OF INJURY

Shock and resuscitation cannot be carried out intelligently without a prompt appraisal of the number, location, and extent of the injuries. Ordinarily, as stated above, the presence of or degree of shock is

Preoperative Diagnosis and Triage. (Appraisal of the Type and Extent of Injury, contd).

determined immediately and before attention is directed to the wound itself. However, physical examination must not be delayed and unless the patient is in severe shock this is best made as soon as possible. In cases in extreme shock the need for immediate resuscitation is urgent and complete examination must await improvement in the patient's condition. Even in these cases, however, examination must not be delayed unnecessarily - bleeding from an inaccessible wound may explain a poor response to transfusion therapy.

In accomplishing an adequate examination it is necessary to examine all aspects of the body. The patient's clothing is cut apart and gently removed. At this time the clothing and litter are inspected for the presence of blood and if possible the patient is moved to a clean, properly dressed litter. This can be accomplished by lifting the recumbent patient carefully and sliding the fresh litter beneath him. In the event that it is impractical to move the patient (spinal cord injuries) it may be necessary to place a clean, dry blanket beneath the patient to prevent further loss of body heat. Throughout all of these procedures the patient is constantly kept covered with a blanket to prevent chilling.

It is desirable, if possible, to make the physical examination complete before beginning intravenous therapy since this may hamper examination at a later time. The posterior aspect of the trunk and the gluteal region must always be carefully inspected; wounds in these locations are frequently overlooked. Palpation along the expected path of the missile may frequently result in detection of the missile (particularly a bullet) lying beneath the skin on the side of the body opposite the wound of entry. Also, it is very desirable to establish whether or not a perforating wound exists. Location of the missile by palpation or the definite establishment of the existence of a perforating wound may greatly simplify x-ray examination or render such examination unnecessary. This is particularly true in abdominal injuries and may result in considerable curtailment of the preoperative delay, especially during rush periods. Not infrequently the roentgen examination is repeated because no foreign body appears on the films, only for subsequent examination to reveal the wound of exit.

The detailed examination of the patient logically starts by focusing attention upon the wound itself. All wounds and the bandages covering them should be closely inspected for evidence of continuing hemorrhage. Failure to discover external hemorrhage may affect significantly the subsequent course of the patient. In appraising the probable extent of the injury it is best to visualize as nearly as possible the track of the missile and a statement by the patient as to his position at the time of wounding may be of great help in this respect. Certain

Preoperative Diagnosis and Triage. (Appraisal of the Type and Extent of Injury, contd).

general types of injury will be discussed.

Wounds of the Abdomen.

In the selection and care of first priority casualties it is important to determine whether injury to a hollow viscus has resulted in soiling the peritoneum. In the usual case the location of the wound and unmistakable signs of established peritoneal irritation leave no doubt that laparotomy is required. However, the occasional case presents sufficient difficulty in diagnosis that an exploratory laparotomy may be indicated. In evaluating such cases the absence of audible peristalsis, the presence of blood in the urine, gastric contents or rectum are valuable aids. If soiling is localized to the retroperitoneal tissues or lesser peritoneal sac audible peristalsis may be misleading. Blood in the peritoneal cavity may result in sufficient evidences of peritoneal irritation so that laparotomy is necessary to rule out hollow viscus damage; usually however, abdominal rigidity and pain are less marked than when bowel contents are present within the peritoneum. Severe retroperitoneal injury alone may simulate peritonitis but in our experience such cases are infrequent. It must be remembered that previous morphine medication may alter the signs and symptoms of peritonitis.

Rectal examination may be of great diagnostic aid, particularly in wounds of the buttocks or upper thighs; too often this examination is neglected. Rigid reliance should not be placed upon the absence of blood in the gastric contents, since wounds of the stomach may be present without grossly demonstrable blood. Similarly, the absence of blood in the urine does not exclude renal or urinary tract injury.

Wounds of the Thorax.

In examination of a patient with thoracic injury attention should first be directed toward the general effects of respiratory embarrassment. Cyanosis should be searched for constantly since it is an important indication of well advanced anoxia. In patients who have suffered from severe hemorrhage the degree of cyanosis may be relatively slight even though oxygenation of the blood is seriously reduced. In many of the more critically wounded it may be difficult to determine whether shock or cardio-pulmonary dysfunction is responsible for the cyanosis. Since severe hemorrhage usually precedes severe shock, marked cyanosis is usually not attributable to shock alone but to the added factor of reduced pulmonary ventilation.

The character and rate of respirations should be evaluated; if severe dyspnea is observed its cause should be sought immediately. The influence of previously administered morphine upon respiration must

Preoperative Diagnosis and Triage. (Appraisal of the Type and Extent of Injury, contd).
not be overlooked.

Examination of wounds of the chest should be thorough but not often repeated; further contamination of the pleura may occur and air enter the chest through a sucking wound. If possible it is desirable thereafter the newly dressed wound need not be disturbed. At the time of examination the following facts are established: the size of the wound and the extent of damage to the chest wall; the loss of blood from the wound; the probable direction of the missile; the presence of bowel contamination in thoraco-abdominal wounds; and last but not least, the determination as to whether or not communication exists between the pleural cavity and the exterior. A sucking wound may be simulated by tangential wounds of the thoracic wall in regions where subcutaneous tissue and muscle are of considerable thickness, (e.g., in the axillary and scapular regions). Usually the true state of affairs may be established by observing the wound while the patient coughs.

Hemopneumothorax is present to some degree in practically all wounds of the chest in which the normal pleura is lacerated. The volume of blood and air which accumulates within the pleural cavity varies considerably; consequently there is wide variation in the clinical picture and one of the chief problems of the preoperative period is the diagnosis and management of hemopneumothorax. Simple observation, percussion and auscultation will provide important information and should not be neglected. The signs vary depending upon the predominance of blood or air in the pleural cavity but not infrequently the condition of the patient or the presence of other wounds restricts the usefulness of physical diagnosis. Mild degrees of subcutaneous emphysema are common, particularly if marked adhesive pleuritis and/or bronchopleural fistula are present. Pressure pneumothorax, though relatively uncommon, is usually not difficult to recognize. Characteristically, dyspnea and cyanosis are severe; the trachea and cardiac impulse are shifted toward the opposite side; often the patient gives a history of increasing dyspnea prior to admission. Except for evidences of mediastinal shift a similar picture may be seen in large pneumothoraces. In both instances collapse of the lung may be incomplete in areas in which there has been considerable trauma to the pulmonary parenchyma. One should be cognizant of this fact as well as search carefully for evidence of intrapleural adhesions in the interpretation of roentgenograms of the chest in such cases.

Aside from its therapeutic value, thoracentesis is capable of supplying helpful diagnostic information, particularly when other measures prove to be inconclusive. By this means the amount of blood

Preoperative Diagnosis and Triage. (Appraisal of the Type and Extent of Injury, contd).

and air in the chest may be determined within fairly close limits. The continued removal of air indicates the presence of a significant broncho-pleural fistula and the need for establishing continuous decompression of the pleural cavity. Once this has been instituted (by means of a needle or preferably a catheter in the second anterior intercostal space) the amount of air lost through the water seal affords a means of evaluating the size of the broncho-pleural fistula. Thoracentesis is also helpful in that the removal of blood and air may simplify the interpretation of subsequent roentgen films. Furthermore, in rare instances gross and microscopic examination of the aspirated fluid may definitely establish the presence of severe bacterial contamination in patients that have been wounded for many hours.

When the pulmonary parenchyma is injured varying degrees of hemorrhage may occur depending upon the nature and extent of the trauma and the type and caliber of the vessels involved. Injury to a hilar vessel is of grave significance; certainly the majority of patients with such injuries become exsanguinated or are asphyxiated by massive intrabronchial hemorrhage before reaching a forward hospital. Even moderate degrees of hemorrhage into the bronchi are important because of the likelihood that atelectasis of a considerable portion of the lung will result. In the presence of hemopneumothorax typical signs of atelectasis may be absent or greatly modified. Evidence of a shift of the mediastinum toward the affected side is important but it is probable that a considerable degree of atelectasis may exist without producing a shift in the trachea or cardiac impulse. If signs of decreased pulmonary ventilation persist after thoracentesis one should suspect the presence of atelectasis. Severe degrees of atelectasis may be encountered following maxillo-facial wounds or cervical wounds with injury to the respiratory passages. Similarly bronchial obstruction and atelectasis may occur in the unconscious patient following the aspiration of vomitus.

It is important if possible to establish the presence of mediastinal involvement in all thoracic injuries. This is best accomplished by visualizing the path of the missile with the aid of x-ray studies. Isolated injury of the esophagus is uncommon and substernal pain upon swallowing may be the only indication of esophageal injury. Evidence of cardiac injury may be deduced from the type of pain, cardiac irregularity or widening of the pericardial shadow by x-ray. Often an accurate diagnosis of a wound of the heart is difficult to establish and the greatest aid is to be derived from the projected course of the missile. (See section dealing with Cardiac Wounds, page 463). Mediastinal emphysema has not proven to be of great importance in the experience of thoracic surgeons of this Group; concomitant laceration of the mediastinal pleura may prevent the accumulation of a large volume of air just as the majority of pericard

Preoperative Diagnosis and Triage. (Appraisal of the Type and Extent of Injury, contd).

lacerations prevent the development of cardiac tamponade. If a major bronchus is lacerated near the hilus of the lung one may suspect a rapid accumulation of air within the pleural cavity and pressure pneumothorax may follow within a relatively short time.

Thoraco-Abdominal Wounds.

All wounds of the chest below the seventh interspace posteriorly and the fourth rib anteriorly should be considered as potential thoraco-abdominal wounds. However, perforation of the diaphragm may occur from missiles which enter via the gluteal or shoulder region but in the average case the wound of entrance lies in the lower half of the chest. Very uncommonly the diaphragm is perforated from below.

It is of utmost importance to establish the presence of intra-abdominal injury in all thoracic cases and such a diagnosis may be rendered difficult by virtue of pain arising in the lower thoracic wall. The usual diagnostic measures are employed as discussed above. In such cases adequate roentgen studies are invaluable in arriving at a correct diagnosis. Re-examination of the patient following intercostal nerve block may be helpful since abdominal rigidity due to peritonitis remains unchanged whereas pain and voluntary muscle spasm due to thoracic wall injury may be considerably reduced. However, too much emphasis upon the effect of nerve block may lead to erroneous conclusions. The presence of pain referred to the shoulder is important evidence of injury to the diaphragm; such pain is very infrequent in simple thoracic wounds, but it may be absent even though injury to the diaphragm is found subsequently at operation.

If, after careful study, it cannot be established definitely that intra-abdominal injury does not exist, operative exploration is indicated.

Wounds of the Spinal Cord.

In wounds of the trunk or cervical region the examiner should always be cognizant of the possibility of spinal cord injury. Unless one is sufficiently aware of this possibility it may easily be overlooked in the pre-occupation with other more obvious injury. Often simple inspection of the patient will indicate the probable diagnosis; priapism, unusually full superficial veins of the lower extremities or loss of abdominal respiratory motion are signs of importance. Absence of deep tendon reflexes and loss of sensation and motor activity below the level of injury serve to establish the diagnosis. The level and completeness of the lesion should be determined prior to operation. Also, the patient should be questioned as to the rapidity with which paralysis ensued after injury; in the vast majority of cases loss of function will be immediate but in rare cases delayed paralysis may indicate that compression

Preoperative Diagnosis and Triage. (Appraisal of the Type and Extent of Injury, contd).

of the cord has occurred subsequent to the initial injury.

Maxillo-Facial Wounds.

All but the slightest maxillo-facial injuries are commonly associated with considerable oral or nasopharyngeal hemorrhage and aspiration of blood must be prevented, particularly in the stuporous or comatose patient. All such patients should be evacuated in the prone position with the face slightly lower than the trunk. In both maxillo-facial and cervical wounds severe tracheal obstructions may occur with alarming rapidity and the need for immediate tracheotomy must be evaluated promptly, particularly in injuries of the hypopharynx or larynx. The source and degree of hemorrhage deserve careful attention.

Wounds of the Extremities.

Major vascular injuries are common in extensive wounds of the extremities and the examination should determine initially the presence or absence of a tourniquet and whether or not active bleeding is in progress. Likewise, one must determine the state of the circulation of the extremity. The character of the peripheral pulse in the injured limbs should be compared with that of the normal extremity; cyanosis, edema, induration and the response of the skin circulation to localized momentary pressure are points worthy of notice. The examination should establish the fact that adequate splinting of fractures has been accomplished and that no constricting bandages encircle the extremity. Nerve injury should be assessed as completely as possible during the preoperative examination, particularly in wounds which involve the upper extremity. This is equally true in wounds of the pelvic or shoulder girdle which may result in nerve or nerve plexus injuries.

Cranial Injuries.

Wound shock is not often a major problem in those patients with cerebral injuries who live to reach the forward hospitals. The immediate threat to life is determined not by failure of peripheral circulation but by the extent of brain damage. Often it is well to keep such patients under observation in the Field Hospital for a short time to establish definitely the fact that no rapid increase in intracranial pressure is occurring. However, evacuation of the patient to the care of a neurosurgeon (Evacuation Hospital) must not be delayed unnecessarily. In our experience signs of an appreciable increase in intracranial pressure are not common. In the stuporous or comatose patient aspiration of vomitus may occur with grave embarrassment of pulmonary function. Likewise, severe cerebral injury may occasionally produce pulmonary vasomotor changes which result in pulmonary edema indistinguishable from that caused by blast injury of the lungs.

Preoperative Diagnosis and Triage. (Appraisal of the Type and Extent of Injury, contd).

In the examination of cranial wounds great care must be exercised to prevent further contamination. Time rarely permits exhaustive neuro-surgical examination prior to evacuation of the patient from the Field Hospital; however, when important localizing signs are observed these should be noted upon the patient's record.

In ocular injuries the visual defect should be evaluated as well as possible. The presence of blood in the anterior chamber should be noted because of the indication for the prompt use of mydriatics in such cases to prevent the formation of synechiae. Again, evacuation of the patient for expert ophthalmological care should be accomplished without delay unless other injury requires prompt initial surgery.

Blast Injury.

The organs which are most commonly injured as the result of concussion from a nearby explosion are the lungs and hollow viscera. The brain is not believed to suffer damage from the blast wave (4) but traumatic concussion may result if the patient is thrown forcibly against a stationary object. Examples of solitary blast injury are infrequent - usually the soldier sustains shell fragment wounds at the same time.

Patients suffering from pulmonary blast injury may experience moderate dyspnea and tachypnea may be present. Scattered moist rales may be heard throughout the chest and small amounts of serosanguinous fluid may be expectorated. Cyanosis may be present, usually it is not marked but is often not completely relieved by the inhalation of 90-100% oxygen. It is important to remember that pulmonary fat embolism (following fractures and, less frequently, extensive trauma of adipose tissue) may be indistinguishable from pulmonary blast injury.

Lacerations of the bowel may result from blast injury or extensive necrosis of the bowel wall may occur. (See Case No. 8 page 48 "Resuscitation and Preoperative Care of the Severely Wounded"). In the patient who has received previous morphine medication and in whom no abdominal wound is present intra-abdominal blast injury may easily be overlooked.

In patients suffering from partial or complete traumatic amputation of the foot due to mine explosion one may rarely observe extensive edema of the entire leg. This appears to be due to vascular damage caused by direct concussion of the limb and not by the effect of the blast since the opposite leg may escape injury completely.

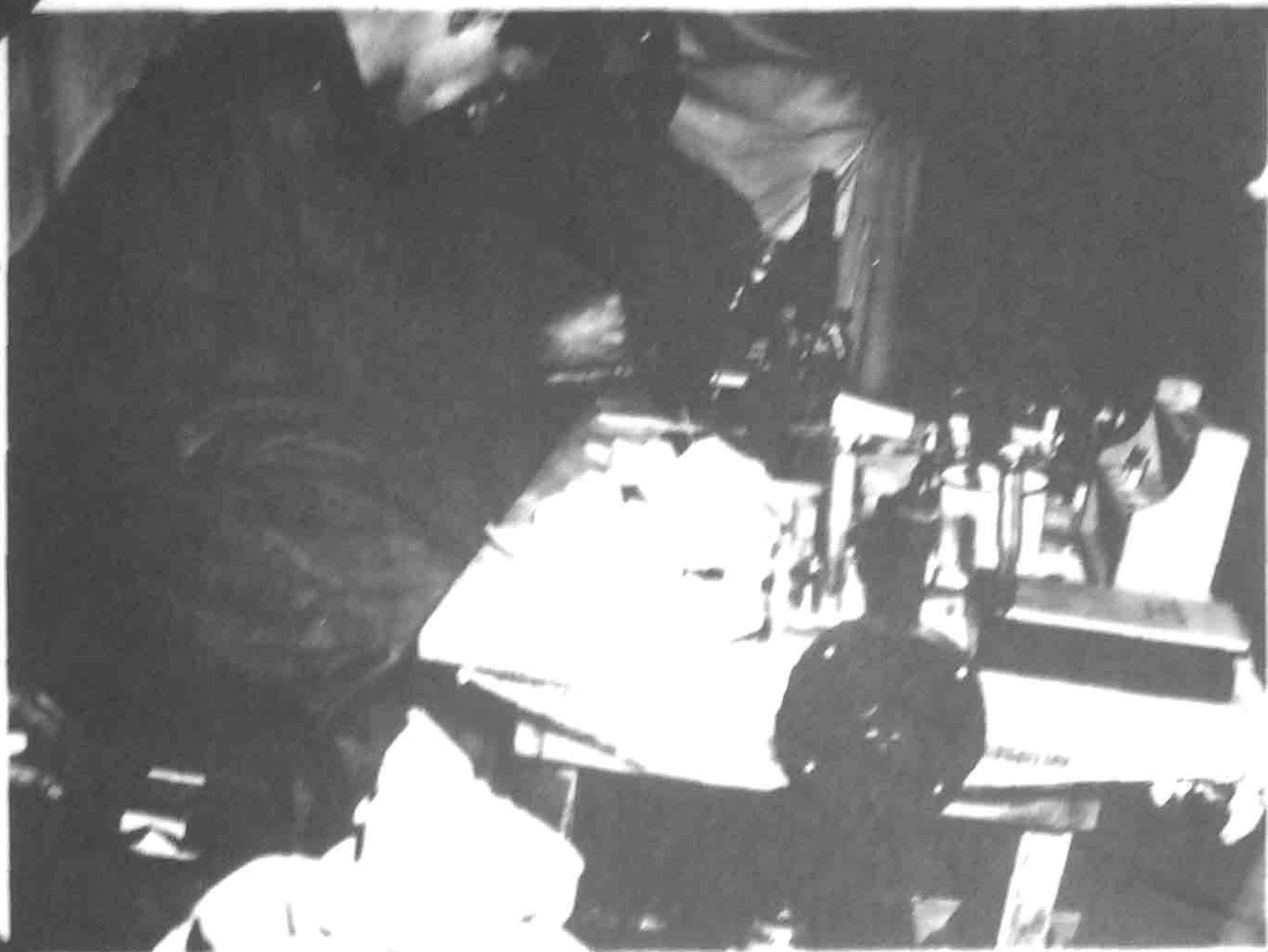


Figure 2

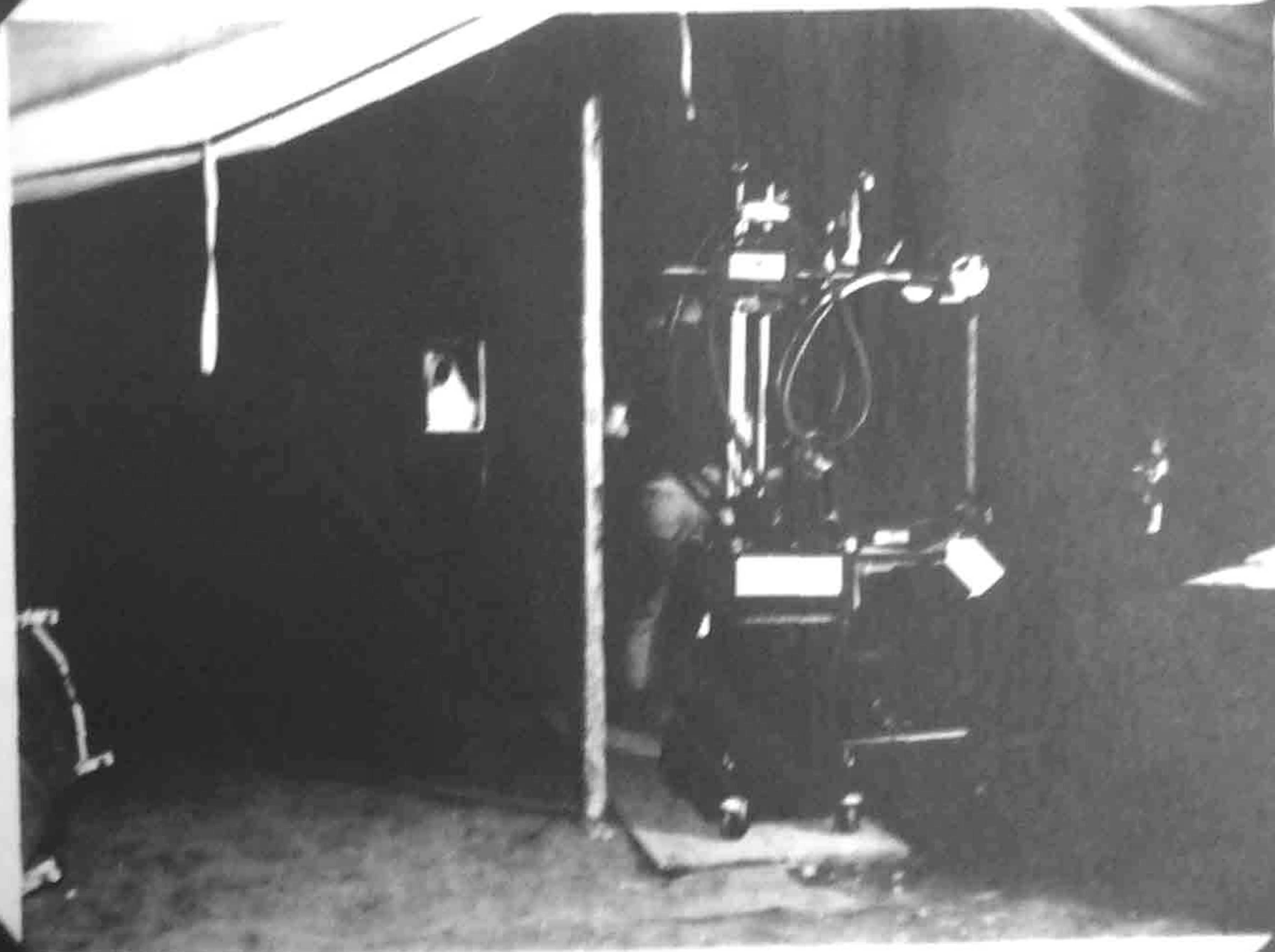


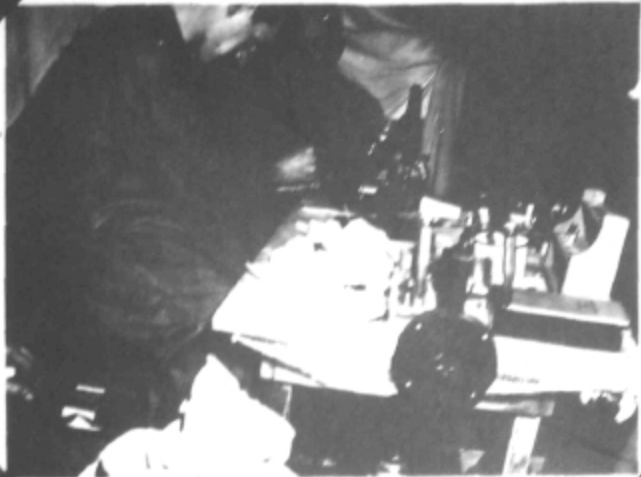
Figure 3

Figures 2 and 3 Laboratory and X-ray Facilities
in Field Hospital



Figure 1

Figure 1. Panorama of Field Hospital (left foreground)
and Division Clearing Station (right foreground).



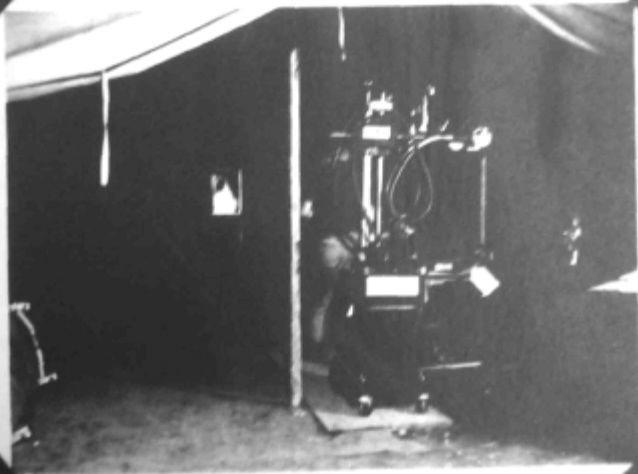


Figure 3

Figures 2 and 3 Laboratory and X-ray Facilities
in Field Hospital