

APPENDIX 3 (a)War College Division  
9967 - 55War Department  
Office of the Chief of Staff  
Washington WPD  
J J B

April , 1918.

MEMORANDUM TO THE ADJUTANT GENERAL OF THE ARMY:

Subject: Gas Training.

1. The Secretary of War directs that orders be issued relieving the following-named medical officers from duty as divisional gas officers and directing them to report to their respective division commanders for assignment to duty:

Lieutenant Francis B. Furman,	Camp Beauregard, La.
Lieutenant Friend B. Gilpin,	Camp Bowie, Texas.
Lieutenant Asa L. Hieck,	Camp Cody, New Mexico.
Lieutenant Fred P. Nevius,	Camp Custer, Michigan.
Lieutenant Gibson Smith,	Camp Devens, Mass.
Captain John N. Boyce,	Camp Devens, Mass.
Major Fred R. Ilsley,	Camp Dix, New Jersey.
Captain Henry C. Woltman,	Camp Dodge, Iowa.
Lieutenant William Bane,	Camp Doniphan, Okla.
Lieutenant William S. Long,	Camp Fremont, Calif.
Captain Rutherford B. Irons,	Camp Funsten, Kansas.
Captain Ferdinand L. Benz,	Camp Gordon, Georgia.
Captain John H. Sweeney,	Camp Grant, Illinois.
Lieutenant Lamber Rosenbaum,	Camp Greene, N. C.
Lieutenant R. O. Singleton,	Camp Greene, N. C.
Lieutenant Clifford C. Wehn,	Camp Greene, N. C.
Lieutenant Lee E. Kelsey,	Camp Greene, N. C.
Lieutenant Arthur F. Kraetzle,	Camp Greene, N. C.
Captain Lee A. Stone,	Camp Hancock, Georgia.
Captain John N. Birnie,	Camp Jackson, S. C.
Major Arthur W. Yale,	Camp Kearny, Calif.
Lieutenant Thos. S. Green,	Camp Kearny, Calif.
Captain Nevin D. Pontius,	Camp Lewis, Washington.
Captain Fred F. Sprague,	Camp Logan, Texas.
Lieutenant Geo. S. Tillman,	Camp McClellan, Alabama.
Major Edgar S. Linthicum,	Camp Meade, Maryland.
Captain August A. Gessow,	Camp Pike, Arkansas.
Lieutenant Joseph Leidy,	Camp Sevier, S. C.

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Lieutenant James A. Work,  
Lieutenant Oliver O. Alexander,  
Lieutenant Albert J. Brainard,  
Lieutenant Lester J. Eford,  
Lieutenant Daniel Grant,  
Lieutenant Herbert S. Snyder,  
Captain Chelsea C. Pratt,

Camp Shelby, Miss.  
Camp Sheridan, Alabama.  
Camp Sherman, Ohio.  
Camp Taylor, Kentucky.  
Camp Travis, Texas.  
Camp Upton, N. Y.  
Camp Wheeler, Georgia.

2. The Secretary of War further directs that the following-named officers of the Engineer Officers' Reserve Corps (formerly Sanitary Officers, Gas Defense Service) be directed to report to their respective division commanders for duty as chief gas officers of the divisions and officers in charge of the divisional gas schools:

1st Lt. Frank O. Amon,	Camp McClellan, Alabama.
" " Carl N. Austin,	" " Cody, N.M.
" " Richard O. Bailey,	" " Wheeler, Georgia.
" " Ross A. Baker,	" " Pike, Arkansas.
" " Harold S. Bennett,	" " Kearny, Calif.
" " George M. Bishop,	" " Custer, Michigan.
" " James H. Bogart,	" " Sheridan, Alabama.
" " Albert Bolenbaugh,	" " Lewis, Washington.
" " M. B. Chittick,	" " Lee, Virginia.
" " Frederic Conever,	" " Devens, Mass.
" " Victor A. Coulter,	" " Beauregard, La.
" " Thomas B. Downey,	" " Gordon, Georgia.
" " Ellery K. Files,	" " Upton, N. Y.
" " John R. Finn,	" " Greene, N. C.
" " Edwin L. Frederick,	" " Meade, Maryland.
" " L. N. H. Henderson,	" " Grant, Ill.
" " Charles E. Howson,	" " Shelby, Miss.
" " George W. Keitt,	" " Lee, Virginia.
" " Wm. J. Knox, Jr.,	" " Doniphan, Okla.
" " Rolla W. Miller,	" " Bowie, Texas.
" " Eppa Rixey,	" " Fremont, Calif.
" " Ovid E. Roberts,	" " Wadsworth, S. C.
" " Geo. P. Russell,	" " Hancock, Georgia.
" " F. B. Sherwood,	" " Sevier, S. C.
" " Robert Smith,	" " Dix, New Jersey.
" " Francis Steenkin,	" " Travis, Texas.
" " E. Y. Titus,	" " Dodge, Iowa.
" " J. P. Trickey,	" " Sherman, Ohio.
" " H. D. Valentine,	" " Funston, Kansas.
" " Will E. Vawter,	" " Logan, Texas.
" " Alden H. Witt,	" " Taylor, Kentucky.
" " A. A. Wollin,	" " Jackson, S. C.

3. The Secretary of War further directs that the following-named officers now commissioned in the Sanitary Corps be recommissioned in the Engineer Officer's Reserve Corps in accordance with the policy

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established in WPD 9967-34, January 21, 1918, and directed to report as follows:

Lieutenant Frank W. Bliss, to commanding officer, Ambulance Corps, Allentown, Pa.

Lieutenant Roy A. Burt, to the commanding officer, 89th Division, Fort Riley, Kansas.

Lieutenant Ernest R. Schierz, to the Chief of Engineers, Washington, D. C.

Lieutenant Chester M. Scott, to the commanding officer, Fort Monroe, Virginia.

4. The Secretary of War further directs that the following enlisted personnel, Sanitary Corps, be transferred to the Engineer Corps, National Army, and assigned to duty in their present grades in the Gas Service, Engineer Corps:

Sergeant Walter H. Barrho,	Washington, D. C.
" Oscar F. Boyd,	Fort Riley, M.O.T.C.
" Arthur D. Ellison,	Camp Travis, Texas.
" F. C. Perkins,	Camp Dodge, Iowa.
" John Pfomm,	Fort Benjamin Harrison, M.O.T.C.
Private W. H. Emmons,	Washington, D. C.
" R. C. Gerber,	Washington, D. C.

5. The Secretary of War directs that the number of officers authorized for the Engineer Corps in WPD 10017-37, November 24, 1917, modified by WPD 9967-34, January 21, 1918, be further modified so as to authorize the following commissioned personnel:

3 majors  
15 captains, and  
60 lieutenants,

for the Field Training Section of the Gas Service and that the Chief of Engineers be informed that this personnel is authorized for the purpose of providing an officer to be in charge of the Field Training Section with adequate rank; two assistants for supervisory inspection and coordination of gas training; promotion for efficiency and to take care of present commissioned officers transferred from the Sanitary Corps and for further future needs and that promotion to the grades of captains and field officers be only for demonstrated fitness and the Chief of Engineers informed that he is in charge of and responsible for Gas Training in the United States.

6. The Secretary of War further directs that the enlisted personnel of the Engineers, National Army, be further increased so as to include 70 sergeants (20 first class and 50 sergeants), 70 corporals and 280 privates for assignment and detail in connection with the gas service.

7. The Secretary of War further directs that a communication substantially as follows be sent to each division and department



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Authority *AMM EO 12065*

By *SA/NARA* Date *2-28-08*

REPRODUCED AT THE NATIONAL ARCHIVES

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commander:

Upon the relief of the medical officer in charge of gas instruction in your division, gas instruction therein will be placed in charge of the Engineer officer now on duty with the division gas school in your division. This Engineer officer will be designated as the chief gas officer of the division and attached for duty at division headquarters, and suitable line officer from your division will be detailed monthly to act as assistant to the chief gas officer. Until further orders the Chief Gas Officer will not accompany the division abroad, in conformity with the direction of the Secretary of War that the Sanitary Corps officers (in Engineer offices) assigned to divisions for gas defense instruction be not considered as part of the division to go to France unless specially ordered. Prior to the departure of a division, orders will be requested of the Chief of Engineers for the disposition of this officer. At the end of every month the Chief Gas Officer will submit a report in triplicate showing the progress of training, state of supplies, equipment, etc., - one copy for record in the division, one copy for the Chief of Engineers, and one copy for the Director of the War Plans Division, General Staff.

## APPENDIX 3 (b)

War College Division  
9967-55War Department  
Office of the Chief of Staff  
WashingtonWPD  
J J B

April 6, 1918.

## MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Gas Training.

1. When instruction in gas defense was first undertaken and a gas school established at Fort Sill, Oklahoma, it was the intention to detail line officers to take the course there with a view to their subsequent assignment to divisions as divisional gas officers, and, in charge of the divisional gas schools.

It was, however, not practicable to secure the necessary line officers, so recourse was had to medical officers then available. These medical officers were given a course of instruction at this gas school and then assigned to the various National Army and National Guard divisions.

A number of chemists were given a course of training at the American University in Washington, D. C., and assigned to divisions as chemical advisers to the medical officers in charge of the gas schools. This was in accordance with the provisions of WPD 9967-11 dated October 3, 1917. There were 33 medical officers and 32 chemical advisers so assigned. In addition 12 chemical advisers were by request of General Pershing sent to France.

2. Soon after the arrival here of the British officers, advisers in gas training in gas warfare, the question came up as to whether or not it would be more advisable that gas officers should belong to the line rather than to the medical corps, as their duties abroad would be distinctly combatant and inasmuch as medical officers were classed as noncombatant.

From the training standpoint it appeared much more desirable to have a line officer rather than a medical officer in direct charge of the division gas school and gas instruction.

These chemical advisers were accordingly recommissioned in the Engineer Officers' Reserve Corps (WPD 9967-34, Jan. 21, 1918), with the intention of designating them as chief gas officers of divisions, thus relieving the medical officers.

3. This transfer having been partially effected, it is desirable that orders now issue relieving medical officers from duty as divisional gas officers and detailing these Engineer officers in their stead.

4. Inasmuch, however, as instruction has been given at scattered

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posts by medical officers detailed for that purpose, as well as at the Medical Training Camps at Fort Riley, Kansas, and Fort Oglethorpe, Georgia, and, as the number of chemists recommissioned in the Engineer Officers' Reserve Corps is not sufficient to replace the medical officers at these places, it is not believed that they should all be relieved for the present but rather only those attached to divisions in which there are also chemical advisers.

5. The field training section, Gas Defense Service, should now be put under charge of the Chief of Engineers, who should be made responsible for gas training in the United States and a definite system instituted by which the instruction heretofore conducted by the Medical Department should now be undertaken by the Engineer Corps under the supervision of the Training and Instruction Branch of the General Staff.

6. Captain James H. Walton, Engineer Officers' Reserve Corps, who has had charge of the personnel of gas instruction should, it is believed, continue in active charge of the Gas Training Section.

7. The original authorization for the personnel of the Field Training Section provided for ---

1 major  
8 captains  
40 lieutenants (all in the Sanitary Corps)

Upon organization it was deemed advisable to commission the candidates as lieutenants so that those who showed the greatest efficiency might be promoted. Likewise with the officer in charge of the personnel of this section, who was commissioned a captain rather than the major authorized.

A number of these officers are high grade men who have had years of professional training and have held positions of responsibility. It is believed that provision should be made for their promotion. In order to provide for such promotion and for an enlargement of the Field Training Section to take care of growing needs the number of officers authorized for the Engineer Corps in WPD 10017-37, Nov. 24, 1917, as modified by WPD 9967-34, Jan. 21, 1918, should be increased as follows:

3 majors  
15 captains  
60 lieutenants.

The senior major to be the officer in charge of the Gas Training Section, the other 2 majors to assist in the supervision, inspection and coordination of gas training in posts and camps. It is impossible for such supervision to be done efficiently for all contingents by an officer in Washington. The 15 captains to provide promotion for efficiency as stated



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above. The 60 lieutenants to take care of future needs (and includes those already commissioned).

9. There are 4 officers, chemists, now commissioned in the Sanitary Corps, belonging to the Field Training Section, Gas Defense Service, who under WPD 9967-34, Jan. 21, 1918, should be recommissioned in the Engineer Officers' Reserve Corps, as follows:

Lieutenant Frank W. Bliss  
Lieutenant Roy A. Burt  
Lieutenant Ernest R. Schiers  
Lieutenant Chester M. Scott.

10. The following enlisted personnel, Sanitary Corps, should be transferred to the Engineer Reserve Corps, in the same grade and assigned to duty in Gas Training Section, Engineer Reserve Corps:

Sergeant W. H. Barthe,	Washington, D. C.
Sergeant Oscar F. Boyd,	Fort Riley, M.O.T.C., Kansas.
Sergeant Arthur D. Ellison,	Camp Travis, Texas.
Sergeant Frank C. Perkins,	Camp Dodge, Iowa.
Sergeant John Pfromm,	Ft. Banj. Harrison, M.O.T.C.
Private W. H. Emmons,	Washington, D. C.
Private R. C. Gerber,	Washington, D. C.

11. Because of the large equipment of the Gas Defense School and the amount of detail work connected with it, one sergeant, one corporal and four privates should be attached to each divisional school.

Working under supervision of a commissioned officer, these men will be responsible for the following duties:

- (a) Issuing, disinfecting, and repairing respirators.
- (b) Preparation of toxic and lachrymatory atmospheres in gas chamber.
- (c) Preparation of bombs and smoke mixtures.
- (d) Assisting in construction of trenches, gas-proof dugouts, etc., and keeping them in repair.
- (e) Installation of material for surprise attacks by night.
- (f) Assistance in demonstration of trench duties.
- (g) Keeping records of:
  - Supplies and equipment.
  - Attendance at Gas School.
  - Grades and standard tests.
  - Men passed through gas.
  - Reports from unit gas officers, etc.

It is believed that the personnel of the Gas Training Section should include 70 sergeants, 20 of whom should be sergeants first class. There should also be 70 corporals and 280 privates.

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12. A communication should be sent to each division commander informing him in substance as follows:

Upon the relief of the medical officer in charge of gas instruction in your division, gas instruction therein will be placed in charge of the Engineer officer now on duty with the division gas school. This Engineer officer will be designated as the chief gas officer of the division and attached for duty at division headquarters.

A suitable line officer from your division will be detailed monthly to act as assistant to the chief gas officer.

Until further orders the chief gas officer will not accompany the division abroad, in conformity with the direction of the Secretary of War that the Sanitary Corps officers assigned to divisions for gas defense instruction should not be considered as a part of the division to go to France unless specially ordered. Before the division is to depart, orders will be requested of the Chief of Engineers for the disposition of this officer.

At the end of every month the chief gas officer will submit a report in triplicate showing the progress of training, state of supplies, equipment, etc., one copy for record in the division, one copy for the Chief of Engineers, and one copy for the Training and Instruction Branch, War Plans Division, General Staff.

13. The following medical officers should be relieved from duty as divisional gas officers and ordered to report to the division commander for assignment to duty:

Lieutenant Francis B. Furman,	Camp Beauregard, La.
Lieutenant Friend B. Gilpin,	Camp Bowie, Texas.
Lieutenant Asa L. Hickey,	Camp Cody, New Mexico.
Lieutenant Fred P. Nevius,	Camp Custer, Michigan.
Lieutenant Gibson Smith,	Camp Devens, Mass.
Captain John N. Boyce,	Camp Devens, Mass.
Major Fred R. Ilsley,	Camp Dix, New Jersey.
Captain Henry C. Woltman,	Camp Dodge, Iowa.
Lieutenant William Bane,	Camp Doniphan, Okla.
Lieutenant William S. Long,	Camp Fremont, Calif.
Captain Rutherford B. Irones,	Camp Funston, Kansas.
Captain Ferdinand L. Benz,	Camp Gordon, Georgia.
Captain John H. Sweeney,	Camp Grant, Illinois.
Lieutenant Lamber Rosenbaum,	Camp Greene, N. C.
Lieutenant R. O. Singleton,	Camp Greene, N. C.
Lieutenant Clifford C. Wehn,	Camp Greeno, N. C.
Lieutenant Lee E. Kelsey,	Camp Greene, N. C.
Lieutenant Arthur F. Kraetzke,	Camp Greene, N. C.
Captain Lee A. Stone,	Camp Hancock, Georgia.
Captain John M. Birnie,	Camp Jackson, S. C.
Major Arthur W. Yale,	Camp Kearny, Calif.
Lieutenant Thos. S. Green,	Camp Kearny, Calif.
Captain Nevin D. Pontius,	Camp Lewis, Washington.
Captain Fred F. Sprague,	Camp Logan, Texas.



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Lieutenant Geo. S. Tillman,	Camp McClellan, Alabama.
Major Edgar S. Linthicum,	Camp Meade, Maryland.
Captain August A. Gossow,	Camp Pike, Arkansas.
Lieutenant Joseph Leidy,	Camp Sevier, S. C.
Lieutenant Oliver O. Alexander,	Camp Sheridan, Alabama.
Lieutenant James A. Work,	Camp Shelby, Miss.
Lieutenant Albert J. Brainard,	Camp Sherman, Ohio.
Lieutenant Lester J. Eford,	Camp Taylor, Kentucky.
Lieutenant Daniel Grant,	Camp Travis, Texas.
Lieutenant Herbert S. Snyder,	Camp Upton, N. Y.
Captain Chelsea C. Pratt,	Camp Wheeler, Georgia.

14. Instruction in gas methods referred to in paragraph 4 above, now is being given at some of the smaller camps and posts as follows under the direction of medical officers. Until suitable chemists can be secured and commissioned in the Engineer Officers' Reserve Corps these medical officers should not be relieved:

Camp Walter R. Taliaferro, Calif.  
Corpus Christi, Texas.  
Del Rio, Texas.  
Douglas, Arizona.  
Eagle Pass, Texas.  
Fort Benjamin Harrison, Indiana.  
Fort Brady, Michigan.  
Fort Crook, Nebraska.  
Fort Douglas, Utah.  
Fort McIntosh, Laredo, Texas.  
Fort Niagara, <sup>New</sup> York.  
Fort Oglethorpe, Georgia.  
Fort Omaha, Nebraska.  
Fort Riley, Kansas.  
Fort Snelling, Minn.  
Hawaiian Department.  
Presidio of San Francisco, Calif.  
Edgewood, Maryland.

15. The Surgeon General (Colonel Miller) concurs.  
The Chief of Engineers (General Winslow) concurs.  
Action is recommended as set forth in the accompanying memorandum for The Adjutant General of the Army.

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D. W. KETCHAM  
Col. Gen. Staff,  
Actg. Director, W.P.D., A.A.C. of S.

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Authority AWM EO 12065  
By SN NARA Date 2-28-88APPENDIX 4EXTRACTS FROM REPORTS ON INSPECTIONS

1. In inspecting the Gas Defense Schools at these cantonments particular attention was paid to the following points:

(a) Equipment - Buildings and Trenches

Whether or not adequate facilities had been provided for:

Class room.  
Office.  
Storeroom.  
Gas chamber.  
Circular system of trenches for gas training.

(b) Supplies.

Masks.  
Chemicals.  
Alarm devices.  
Charts, gas shell and other demonstration apparatus.

(c) Instruction.

Courses given to senior officers.  
Courses given to other officers.  
Kind of training given enlisted men.  
Method of testing the training of enlisted men before they are taken into gas chamber.  
Gas attacks by night and by day.  
Number of officers trained in gas defense.  
Number of men trained in gas defense.

## (d) Discipline.

## (e) The disinfection of masks.

## (f) The attitude in the camp towards gas defense training.

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Feb. 23, 1918.

2. Camp Lee. The Gas Defense School at Camp Lee, Petersburg, Va., was inspected by Capt. Walton last week. This school is under the direction of Lieutenant M. B. Chittick. Capt. McClure of the British Military Mission is acting as Adviser. The discipline and general spirit of this school is excellent. Lieut. Chittick is using a great deal of initiative in bringing material together and devising demonstration methods for the classroom. A night attack, consisting of a march through the woods in which the detail was attacked by gas shell, and a further attack in the trenches was carried out on Friday night, Feb. 15th. The organization of the attack, and later discussion in the classroom deserve especial commendation.

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Authority AWACS EO 12065  
By SN NARA Date 2-28-88Appendix 4 (page 2)3. Camp Sherman.

March 28, 1918.

The work in gas defense at Camp Sherman has been sadly handicapped by the absence of a British Advisor. Captain Hunter, who has been appointed to this position, arrived about two weeks ago. The illness of the Medical Officer who had charge of the Gas Defense School has further retarded the work. This officer has now been removed.

As the result of an interview with the Chief of Staff and the officer who has charge of training at Camp Sherman, a definite plan of gas defense training was adopted. Since returning to Washington I have learned that this plan is now being carried out and is working very satisfactorily.

4. Camp Tayler.

The work at this camp is satisfactory. The school suffers from the lack of a proper classroom, however. A small room in a frame building has been fitted up as a gas chamber. The building originally constructed for this purpose is now being used as a class room. This is unfortunate because the improvised gas chamber is entirely too small and is dangerous, moreover, because there is but one door. A suitable classroom should be provided so that the gas chamber can be used for the purpose for which it was constructed.

5. Camp Grant.

The Gas Defense School at this camp is well organized and well equipped. The training is very satisfactory. There is need of a system of circular trenches so that field operations by night and by day can be carried out.

6. Camp Dodge.

The work at this camp is excellent. The officers who have taken the course are very enthusiastic.

7. Camp Funston.

This school is supplied with everything necessary for successful work. The Medical Officer, the British Advisor, and Chemical Advisor are working in harmony and are giving an excellent course.

8. Camp Custer.

Under the able direction of Captain Algie this camp has developed one of the best Gas Defense Schools that the Officer in Charge of Gas Defense Training has visited. The work has the sympathy and interest of the Senior Officers, and appears to have an excellent reputation throughout the camp. In spite of the unusually severe weather the occupants of this camp have been subjected to, the number of courses given and the number of men trained compare very favorably with the most advanced cantonments.



Appendix 4 (page 3)

April 9, 1918.

9. Camp Crane (Ambulance Concentration Camp) Allentown, Pa. The work at this camp is under the direction of Lieutenant F. W. Bliss. The school was started about two weeks ago, so that the equipment is in fair condition only.

About 125 officers and 50 non-commissioned officers have received a standard course of lectures and field work lasting about 18 hours. Considering the recent date at which construction was started, the gas defense school is doing very creditable work.

10. Camp Greeng. The work at this camp has been handicapped because of the lack of equipment. Masks and other equipment which had been sent down here were removed by the division previously occupying this camp when they left for the port of embarkation. As a consequence there was considerable delay in getting the school equipped and in collecting a corps of instructors. The officers and enlisted men of the 4th Division of the 47th and 59th Infantry are receiving an intensive course in Gas Defense training. This is necessitated by the fact that the division expects to move very shortly, probably in three or four weeks. In view of this fact it seems desirable that the present organization consisting of a chemical adviser, 5 medical officers and a British Adviser should be left intact until this training is completed, inasmuch as it is obvious that to recall the medical officers at this time would occasion a considerable loss of time.

11. Camp Wadsworth. The gas defense training at this cantonment is very satisfactory. A feature that has not been seen at other camps consists of sending a battalion at a time to the main trenches where they must stay for a period of 72 hours. The Battalion is furnished with respirators, standing orders are issued, and the trenches are completely equipped to simulate as closely as possible actual conditions of gas warfare. The battalion may be gassed at any time during the 72 hours. The value of training of this kind is obviously very great.

12. Camp Sevier. Owing to an epidemic of mumps this camp was quarantined from February 12th to April 8th. During this time no instruction in gas defense was given. As a result the training is far behind what it should be. It is probably not an exaggeration to state that not more than 10% of the work has been done. A system of demonstration trenches is in the process of construction.

13. Camp Jackson. This camp is very well equipped, a particularly notable feature being the system of trenches for demonstration in connection with gas defense instruction. Up to the present about 1200 officers have received a course of 12 hours' training. About 10,000 enlisted men have also been given approximately 12 hours' training in drill with the respirators.

(Sgd.) J. H. Walton,  
Captain, Engineers, N.A.

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Authority ~~XXXXX~~ EO 12065  
By SAJNARA Date 2-28-88APPENDIX 5

October 10, 1917.

From: Officer in Charge, Field Supply Section.  
 To: The Surgeon General, U. S. Army, Washington, D. C.  
 Subject: Material for instruction in Gas Defense.

1. Letter dated October 3rd from The Adjutant General of the Army to the Surgeon General has been sent to this office.

2. Paragraph #2 states as follows: "The Secretary of War directs that you furnish each of these schools with the necessary gas masks, chemicals and other apparatus requested for the course of instruction in gas defense."

3. Request that this office be authorized to purchase and furnish these materials.

BRADLEY DEWEY,

RD-MBG.

Major, Sanitary Corps.

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1st Ind.

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War Department, S.G.O., October 15, 1917, To the Officer in Charge, Gas Defense Service, Medical Department, U. S. Army, Room 135 Department of the Interior Building, Washington, D. C.

1. Purchase of the material and chemicals required authorized. The actual cost of articles purchased should be reported to this office as soon as ascertained.

By order of the Surgeon General:

C. R. DARNELL

Colonel, Medical Corps.

1 Inclosure.

DECLASSIFIED

Authority AMEREO 1205  
By SN NARA Date 2-28-88A P P E N D I X 6

November 9th, 1917.

From: Major S.J.M. Auld, Chemical Adviser, British Military Mission.  
To: Captain J. H. Walton.  
Subject: Equipment of Anti-Gas Schools at Training Camps.

1. The following materials should be provided as soon as possible for equipment of Anti-Gas Schools at the Training Camps.

(a) Chlorine Gas in portable (60-100 lb.) cylinders. These should be fitted with siphons; have a large and easily turned valve and a jet to which can be fitted a parapet pipe.

(b) Smoke Cases - Preferably the cheap and easily pitched smoke cases as in the Brock Smoke Case (samples available). Arsenic sulphide mixtures are not as good.

(c) Phosphorus Grenades. To contain 8-10 oz. of either red or white phosphorus.

(d) Supplies of Lachrymator. Suitable for mask-fitting. Bromacetone would do very well.

(e) Lachrymatory Grenades. Preferably a wax-paper or papier-mache grenade suitable for use in mimic warfare. Bursting charge should give a loud report and produce slight smoke.

(f) Mimic Gas Shell. Similar to "e" but containing a material sufficient to make a soldier cough if he does not adjust his mask. Must be non-lethal. The British are using a carbon-tetrachloride solution of capsicene for the purpose (extract of red pepper).

(g) Anti-Gas Fans. (Samples available.)

(h) Blanket material for dugouts. Ordinary blankets will do.

(i) Specimens. Specimens of shells, bombs, etc. Should be prepared in wood or plaster. (Specimens and drawings available). Specimens or photographs of British, French and German Masks. (British respirator can probably be supplied).

Specimens of: Xylol Bromide  
Brom ethylmethyl ketone or Brom acetone  
Phosgene  
Tri chlor methyl chloroformate  
Dichlorethyl sulphide  
(crude) Diphenyl arsenious chloride  
Chlor sulphuric acid  
Dimethyl sulphate  
Chloro picrin



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Authority AWW EO 12065  
By SN NARA Date 2-28-08

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Other materials to follow but above will permit of good schools being started.

(j) Alarms Rattles - Bells. Sufficient shell cases for instruction purpose. One Strombos Horn per School.

(k) Suit of Overalls. For use of Staff of Schools and classes.

(sgd) S.J.M.AULD, Major,

Chemical Adviser, B.M.M.

1st Ind.

From: Captain Walton  
To: The Surgeon General.

Request that steps be taken at once to equip Gas Training Schools in various cantonments with items "b", "c", "e", "f", "g", "i", "j", and "k" of above from Major Auld. The Gas Defense Schools already are provided with items "a", "d", and "h".

2nd Ind.

Officer in Charge, Gas Defense Service, Nov. 12, 1917.  
To: The Surgeon General, through Director of Gas Service.

1. Forwarded. The articles enumerated by Major Auld I believe are essential for proper instruction in Gas Defense. Request authority to purchase or manufacture the articles (b), (c), (d), (e), (f), (h), (i), (j), as will prove most advantageous to the service in quantities to be determined by the Gas Service. As instruction has already begun there should be no delay. Anti-gas fans under (g) have been authorized to the number of 10,000.

2. Articles under (j) are strictly defense articles though not Medical. Shell cases should be requested from the Ordnance Department or purchased if thought best.

3. Article (k) it is believed should be Quartermaster issue.

E. D. KREMERS.  
Major, Medical Corps.

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Authority ~~XXXXXX~~ EO 12065  
By SN NARA Date 2-28-88

3rd Ind.

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263 Gas Def.

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War Department, S.G.O., Nov. 14th, 1917. To the Officer in Charge,  
Gas Defense, Medical Dept., U. S. Army, New Dept. Interior Bldg.,  
Washington, D. C.

1. Approved - purchase of the articles enumerated in paragraph 1, 2nd indorsement authorized.

By order of the Surgeon General.

C. R. DARNELL  
Colonel, Medical Corps.

4th Ind.

From: Officer in Charge, Gas Defense Service, Nov. 17, 1917.  
To: Officer in Charge, Field Supply Section.

1. Forwarded calling attention to authorization of Surgeon General.
2. Request that steps be taken to procure 300,000 each, with possibility of renewal of contract, of articles "b", "d", "e", "f", supply of Bromacetone gas, necessary blankets for dug-outs, specimens of shells, bombs, etc. - and of the gases enumerated in Major Auld's letter.
3. Request that the officer in charge, Field Training Section, be consulted as to types and quantities of articles needed.
4. Request further that formal contract be not closed until preliminary data is at hand and officers representing the Gas Defense Service and the Field Training Section have met in conference to consider the data.

(signed) E. D. KREMERS  
Major, Medical Corps.

EDK-SW

A P P E N D I X 7TRAINING EQUIPMENT USED AT GAS SCHOOLS

1. Respirators, for General Use.
2. Lecture Room Equipment.
  - (a) Foreign Masks
    - P.H.Helmet (British)
    - Small Box Respirator (British)
    - M-2 Mask (French)
  - (b) Models of Gas Shell
  - (c) 6 Sec. Sand Glasses, for standard tests
  - (d) Wall Charts.
    - (1) German Gas Shell
    - (2) German Shell Fuses
    - (3) Smoke Producers (German)
    - (4) Chlorine Cylinders in Trench (German)
    - (5) Plans of Trenches
    - (6) Methods of Removing Gas from Trenches.
    - (7) Dugouts
    - (8) Strombos Horn (British)
    - (9) Wind Map and Wind Chart
    - (10) Horse Respirators (British)
3. Materials for Trench Demonstrations.
  - (a) Gas Alarms
    - Rattles
    - Klaxon Horns
    - Bells
  - (b) Canvas Trench Fans
  - (c) Trench Sprayers
  - (d) Blankets for Doorways of Dugouts
  - (e) Vacuum Sampling Bulbs
  - (f) Smoke Candles and Smoke Mixture
  - (g) Mimic Gas Shell
4. Gases.
  - (a) For Use in Gas Chamber
    - (1) Chlorine in Cylinders
    - (2) Lachrymator
  - (b) For Use in Mimic Gas Shell and Bombs
    - (1) Bromoacetone or Xylyl Bromide (Lachrymator)
    - (2) Stannic Chloride (Gives Dense Smoke)
    - (3) Perchlormethylmercaptan (Bad Odor)
  - (c) Samples of Various Shell Fillings.
    - (1) Chlorpicrin
    - (2) Chlorsulphonic Acid



Appendix 7 (page 2)

- (c) Samples of Various Shell Fillings. (Contd.)
- (3) Dichloroethylsulphide (Mustard Gas)
  - (4) Dimethyl Sulphate
  - (5) Diphenyl chlorarsine (Sneezing Gas)
  - (6) Phosgene
  - (7) Trichloromethylchloroformate (Superpalite)

## 5. Gas Chamber Apparatus.

Flowmeter to measure flow of Gas.

Chlorine tanks, valves, attachments, screw clamps

Apparatus and chemicals for determining concentration of gases:

Aspirator bottle, 2000 C.C.

Wide-mouth bottles

Graduated cylinder

Calibrated flask, 1 liter

Pipettes

Rubber and glass tubing

Copper wire

(Hydrochloric acid

(Potassium iodide

(Standardized solution potassium thiosulphate

(Soluble starch

Atomizer for spraying lachrymator

Kerosene stove and granite pan, for vaporizing lachrymator

Rubber stoppers

De Kohtinsky cement

Plasticene

Pliers 6" cutting

Wrench

File 5" triangular.

## 6. Mimic Gas Shell, Material for Assembling and Firing.

Dry cells

Insulated wire

Paraffined cups

Detonators, fuse and electric

Funnel

Fuse

Parawax

Friction tape

## 7. Miscellaneous Supplies.

Cement, Bicycle tire } for repairing facepieces of respirators

Rubber dam

Talcum powder

Lachrymatory cartridges

VERY pistols - for firing lachrymatory cartridges

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Authority *AWM EO 1205*  
By *SN NARA* Date *2-28-08*A P P E N D I X 9.TYPICAL FOUR-DAY COURSE FOR OFFICERSFirst Day

First hour: Lecture-Introductory, history of gas warfare.  
Second hour: Practical-Issue of respirators, preliminary drill.  
Third hour: Lecture-Description, inspection, and demonstration of drill with respirators.  
Fourth hour: Practical-Inspection of respirators and drill, practices A, B, and F.  
Fifth hour: Lecture-Methods of gas offensive, the cloud method.  
Sixth hour: Practical-Accurate fitting of respirators and removal in lachrymator.

Second Day.

First hour: Lecture-Gas shells.  
Second hour: Practical-Aspirator drill, practices C,D,E, and G.  
Third hour: Practical-Drill in breath holding.  
Fourth hour: Practical-Mutual instruction in respirator drill, all practices.  
Fifth hour: Lecture-Gas alarms.  
Sixth hour: Practical-Drills in breath holding in gas chamber; recognition of various gases used in war.

Third Day

First hour: Lecture-Dispersal of gas and protection of dugouts.  
Second hour: Practical-Use of fires, fans, blanket doorways, etc.  
Third hour: Lecture-Procedure before, during, and after a gas attack.  
Fourth hour: Practical-Respirator drill, all practices.  
Fifth hour: Practical-Testing respirators in various gases; adjustment in gas.  
Sixth hour: Practical-Night march in respirators with gas shell attack.

Fourth Day.

First hour: Hand in notebooks. Lecture and demonstration-Wind observations and use of smoke.  
Second and third hours: Practical-Demonstration of cloud and shell attack with trench duties.  
Fourth hour: Practical-Standard tests.  
Fifth and sixth hours: Examination.

APPENDIX 10

School For Officers of Field Training Section,  
Washington (American University)  
October-November, 1917.

The training received by the Instructors of the Field Training Section extended over a period of about six weeks and was approximately as follows:

- (a) Half the time was given to work on Infantry Drill Regulations.

This consisted of:

- School of Soldier
- School of Squad
- School of the Company

This work included both close and extended order, and included the Manual of Arms. Special emphasis was laid on military courtesy. The members of this Section were also given experience in taking command of a Company and giving military instruction. Setting up exercises was an important phase of this work.

- (b) The other part of the time was given to training in Gas Defense Methods. This included a week's course of Lectures and Field Training by Lieutenant A.W. Gauger, who was brought here from Fort Sill, Okla., for this purpose. A course of lectures and field operations was also given to the Field Training Section by Major Auld of the British Military Mission to America. This course is outlined below:

	<u>Saturday, November 3rd.</u>
Lectures:	Development of Gas Warfare. Cloud Gas Attacks. Methods of Protection.
	<u>Monday, November 5th.</u>
Lecture:	Completion of lecture on protection. Methods of fitting and testing masks. Demonstration of cylinders and accessories.
	<u>Tuesday, November 6th.</u>
Lecture:	Use of Projectors. Their effects on the enemy.
Lecture:	Use of Gas Shells & T.M. Bombs. Fillings for Shells.
Practical:	(American University) Fitting and testing Respirators. Drill with Respirators. Points on inspection.



Appendix 10 (page 2)Wednesday, November 7th

Lecture: Gas Alarms and arrangements for spreading the alarm.  
 Lecture: Clearing of trenches and dugouts. Protected dugouts.  
 Practical: Fitting and entering protected dugouts.  
 Use of fans and fires. Stripping the Strembos Horns. Testing.

Thursday, November 8th.

Lecture: Trench duties. Wind observation. Protection of Arms and equipment.  
 Lecture: Duties of Divisional Gas Officers. Organization. Standing Orders.  
 Practical: Wind observation. Drill in Anti-Gas Trench duties. Fitting new boxes to respirators.

Friday, November 9th.

Lecture: Sampling and testing appliances. Detectors.  
 Lecture: Hand Grenades. Smoke. Flammenwerfer. Breath holding. Demonstration of hand grenades.

Saturday, November 10th.

Lecture: Field operations. Principles of training.  
 Summing up.  
 Conference.

A P P E N D I X 11PERSONNELPresent StationCaptain:

J. H. Walton

Washington, D. C.

First Lieutenants:

Amon, Frank O.  
 Austin, Carl N.  
 Bailey, Richard O.  
 Baker, Ross A.  
 Bear, Herbert K.  
 Bennett, Harold S.  
 Bishop, George H.  
 Bliss, Frank W.  
 Bogart, James H.  
 Bohannon, Van L.  
 Bolenbaugh, Albert  
 Burt, Roy A.  
 Chittick, M.B.  
 Conover, Frederic  
 Coulter, Victor A.  
 Downey, Thomas B.  
 Files, Ellery K.  
 Finn, John R.  
 Frederick, Edwin L.  
 Henderson, L. M.  
 Howson, Chas. E.  
 Keitt, George W.  
 Knox, Wm. J., Jr.  
 Miller, Rolla W.  
 \* Murphy, R. V.  
 Rixey, Eppa  
 Roberts, Ovid E.  
 Russell, George P.  
 Schierz, Ernest R.  
 Scott, Chester M.  
 Sherwood, F. B.  
 Smith, Robert  
 Steenkin, Francis  
 Titus, E. Y.  
 Trickley, J. P.  
 Valentine, H. D.  
 Vawter, Will E.  
 Waitt, Alden H.  
 Wellin, A. A.

Camp McClellan  
 " Cody  
 " Wheeler  
 " Pike  
 Fort Oglethorpe  
 Camp Kearney  
 " Custer  
 " Crane  
 " Sheridan  
 Washington, D. C.  
 Camp Lewis  
 " Forrest  
 " Lee  
 " Devens  
 " Beauregard  
 " Gordon  
 " Upton  
 " Greene  
 " Meade  
 " Grant  
 " Shelby  
 " Lee  
 " Doniphan  
 " Bowie  
 France  
 Camp Fremont  
 " Wadsworth  
 " Hancock  
 Washington, D. C.  
 Fortress Monroe  
 Camp Sevier  
 " Dix  
 " Travis  
 " Dodge  
 " Sherman  
 " Funston  
 " Logan  
 " Taylor  
 " Jackson

Appendix 11 (page 2)Present StationSergeants:

Barrho, Walter H.  
 Boyd, Oscar F.  
 Ellison, Arthur B.  
 Perkins, Frank C.  
 Pfromm, John

Washington, D. C.  
 M.O.T.C., Ft. Riley,  
 Camp Travis  
 Camp Dodge  
 M.O.T.C., Ft. Benjamin Harrison

Privates:

Emmons, W. H.  
 Gerber, R. C.

Washington, D. C.  
 Washington, D. C.

\* NOTE: Lieutenant Murphy accompanied the 32nd  
 Division overseas, and has been recalled.



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Authority *AWR/EO 12065*By *SN* NAKA Date *2-28-88*OPERATION ORDERS

Bn.

Officer Commanding, Nth Inf. Reg. U. S. A.

1. Co. A, 1st Bn. will proceed to relieve Co. B. 1st Bn. in the occupation of Sparks' trench and Daniels' Trench - American-British Section, X.D. . . on the evening of the 23rd inst.
2. Route. No. 1 platoon will proceed by "A" Route, viz.: Hood Avenue, Pershing Road, Sage Avenue, Foch Support and Peachtree Rd. Communication Trench, leaving Co. billets X.A. . . in column of squads, advancing in half platoon at 50 yd. interval at point X.C. . . and by squads in column of twos, 25 yd. interval at point X.C. . .  
No. 2 platoon will proceed by "B" Route viz: Hood Ave., E. Second St., Haig Road and Candler Rd. Communication trench, leaving Co. billets X.A. . . in column of squads, advancing by half platoon at point X.B. . . 50 yd. interval, and by squads in column of twos, 25 yd. interval at point X. B. . .
3. Company Commander, Platoon commanders, guides and Company Gas M. C. O.'s will proceed to reconnoiter route to front line day previous to occupation.
4. Company B. on being relieved by Co. A will take up fire position in Foch Support Line.
5. Company B will reconnoiter route to front line in two places, other than by communicating trenches, as soon as occupation of Foch Support Line is complete.
6. Reconnoitering patrols will be sent out nightly, from each platoon sector and reports submitted to these headquarters.
7. Great care must be observed in the taking over of trench stores, especially gas alarms and anti-gas equipment.
8. Company Commander will note that, immediately after bombardment by gas shells, working parties will proceed to cover up shell holes in the immediate vicinity with chloride of lime. These parties will be covered by patrols.
9. Sentries should be thoroughly acquainted with their duties in reference to gas shell attack, projector, or for cloud attack.
10. Wind observations must be taken half hourly and reports submitted to these headquarters.

- 11. Immediately after any form of gas attack, Company Commander will render a report on form, Document A-72 to these headquarters.
- 12. Signals for artillery support will be as follows:

SIGNALS

To Artillery	S.O.S.	Green, Green, Red.
	Projector Attack	Red, Green, Red.
	Cloud Attack	Green, Green, Green.

To Aeroplanes To Indicate position Red Position flares.

Our Signal

To synchronize watches, three white flares will be discharged the last at 7:55 P. M.

To Advance - - - - - Red, Red, Red.

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