

**AWM4**

**Australian Imperial Force unit war diaries,  
1914-18 War**

Medical, Dental & Nursing

**Item number:** 26/79/25

**Title:** 4th Australian Sanitary Section

October 1918



AWM4-26/79/25

**CONFIDENTIAL.**

ORIGINAL.  
~~DUPLICATE.~~  
TRIPLICATE.

Australian Imperial Force.

**WAR DIARY**

OF

*4th Australian Sanitary Section*

FOR

*October* 1918

4th AUSTRALIAN SANITARY SECTION.
No. <i>31/10/18</i>
Date

221

Signature of Officer compiling

*[Handwritten signature]*

Signature of Officer Commanding

*[Handwritten signature] Capt*

400  
AUSTRALIAN  
SANITARY SECTION.  
No. 3/10/18  
Date.....

Army Form C. 2118.

WAR DIARY

or

INTELLIGENCE SUMMARY.

October 1918

(Erase heading not required.)

Instructions regarding War Diaries and Intelligence Summaries are contained in F. S. Regs., Part II. and the Staff Manual respectively. Title pages will be prepared in manuscript.

Place	Date	Hour	Summary of Events and Information	Remarks and references to Appendices
HERBECOURT	1		HQ still at Herbecourt and Herbecourt and Suzanne Areas were operated	
	2		HQ of 32nd American Division moved into Herbecourt from front line	
	4		824 W/pt Behrendt Co. and 3104 W/pt Almond L. (1914 men) reported to Aust Corps Furlough Depot Bray for return to Australia on 6 months furlough. Received sanitary instructions No. 7.	
	5		Sections personnel moved to La Chapellelle Reinforcement Camp, did not entrain that day owing to the congestion on lines. Night spent under canvas. All documents which would be useful to the incoming section were handed over to QDms Aust Corps in accordance with sanitary instruction No. 7.	
	6		Sections gear conveyed to Peronne Station by motor lorry provided by Aust Corps. Mechanical transport moved independently. Sections personnel entrained at La Chapellelle railhead 7.30 AM. Detrained Amiens (Gare du Nord) 11 AM.	

WAR DIARY

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4th  
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2

Place	Date	Hour	Summary of Events and Information	Remarks and references to Appendices						
BREILLY	6		<p>Marched to Army Rest House, Entrained Avenir Station 6PM, detrained Ailly-sur-Somme. Marched to section's billets Breilly arriving 7.30 PM.</p>							
	7		<p>Office situated N°13 Route Nationale, Breilly-men in billets Grande Rue Breilly</p> <p>Inspectors detached as follows:-</p> <table border="0"> <tr> <td>4th Aust Inf Bde, Picquigny</td> <td>2</td> </tr> <tr> <td>13th " " " Bovelles</td> <td>2</td> </tr> <tr> <td>12th " " " Pissy</td> <td>2</td> </tr> </table> <p>remaining inspectors working from Section HQ</p> <p>The following villages occupied by 4th Aust Divisional Troops came under section's supervision for sanitation:</p> <p>Breilly, Ailly-sur-Somme, Picquigny, Drenil, Hangest, Prouy, Bavillon, Pissy, Revelles, Bovelles, Clary, Brignemecourt, Ferrières, Pavense, Saissival, Brignemessil, Florencourt, Fluy, Foudrinoy, Reincourt, Le Mesge.</p>	4th Aust Inf Bde, Picquigny	2	13th " " " Bovelles	2	12th " " " Pissy	2	<p>20 21 22</p>
4th Aust Inf Bde, Picquigny	2									
13th " " " Bovelles	2									
12th " " " Pissy	2									

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3

WAR DIARY  
or  
INTELLIGENCE SUMMARY.

(Erase heading not required.)

4th  
AUSTRALIAN  
SANITARY SECTION.  
No. ....  
Date. ....

Army Form C. 2118.

Place	Date	Hour	Summary of Events and Information	Remarks and references to Appendices
BREILLY	9		<p>Sections equipment arrived at Poulainville Railhead and transported to HQ. Suitable premises were found at Breilly for workshops and arrangements were made with A.D.M.s. 4th Aust Div for two carpenters to be attached from each Brigade to construct sanitary appliances for the Division.</p> <p>6 carpenters benches were secured from Poulainville Railhead.</p> <p>As engineers supplies were obtained with some difficulty from CR Division from Poulainville and Transit Dump near Cagny also from Flisacourt engineers were able to supply transport.</p> <p>As practically no troops had occupied this area for any length of time previously there were no sanitary conveniences of a public nature. Units themselves had prior to sections arrival in many cases installed some more or less permanent structures. The Brigade carpenters under supervision of sections carpenters turned out a number of sanitary appliances viz latrines food safes grease traps etc.</p>	221

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(A10266) Wt W5306/P713 750,000 2/15 Sch. 52 Forms/C2118/16

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WAR DIARY  
or  
INTELLIGENCE SUMMARY.

(Erase heading not required.)

4th AUSTRALIAN SANITARY SECTION.
No. ....
Date. ....

Army Form C. 2118.

4

Place	Date	Hour	Summary of Events and Information	Remarks and references to Appendices
BREILLY.	14		<p>later on Divisional Engineers were able to supply some things for the Area so that by the end of October the sanitary condition of the Area was good.</p> <p>A School of Sanitation for M<sup>o</sup>s Details was carried out by Section at Breilly from 14<sup>th</sup> to 19<sup>th</sup> inst. The course consisted of lectures on principles on sanitation by CO and camp sanitation given by WO Stewart H. F. and Staff Sgt Brooks. At the lectures sanitary models and working diagrams were used.</p> <p>Members of school also received practical demonstration at sections workshops.</p> <p>The laying out of a camp was also demonstrated to the personnel of school.</p> <p>Second course of school of sanitation was carried out from 21<sup>st</sup> to 26<sup>th</sup> inst.</p> <p>Third course commenced on 28<sup>th</sup> inst members dispersing on 2<sup>nd</sup> November 18.</p> <p>4<sup>th</sup> and Divisional instructions regarding</p>	

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221

4

4th  
AUSTRALIAN  
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5

BREILLY

Place	Date	Hour	Summary of Events and Information	Remarks and references to Appendices
			<p>the reporting of personnel for second and third schools attached.</p> <p>Practically the whole of Division's Sanitary Details attended the schools.</p> <p>casualties etc during the month are as follows:-</p> <p>7439 Pte Watson J Taken on strength from 1<sup>st</sup> Aust San Sec. 4 10.18</p> <p>824 Sgt Behrendt G Struck off strength on return to Australia (Furlough) dating 6 10.18</p> <p>3104 Pte Almond H Struck off strength on return to Australia (Furlough) dating 6.10.18</p> <p>13354 Pte Sandrett R R admitted to British Hospital Astoria Paris and Struck off strength 7 10.18</p> <p>18754 Pte Polkinghorne A admitted to British Station Hospital Paris and Struck off dating 19.10.18</p> <p>11269 Dr Peterson H temporarily attached from 4<sup>th</sup> am Coy dating 20.10.18</p> <p>5039 Pte Smith G B reported sick to A 7 HQ whilst on leave and Struck off dating 20.10.18</p> <p>13197 Pte Wadley B taken on strength from 13<sup>th</sup> Aust Field Ambulance dating 25.10.18.</p> <p>H W Gairlands Capt oc 4<sup>th</sup> ...</p>	

D. D. & L., London, E.C.  
(A10266) Wt W 5309/P713 750,000 2/10 Sch. 52 Forms/C2118/16

122

4th AUSTRALIAN SANITARY SECTION.
No. ....
Date. ....

# WAR DIARY

OF

221

*4th Australian Sanitary Section*

FOR

*October*

*1918*

## LIST OF APPENDICES.

No.

Subject.

1

*Sanitary Instructions No 7.*

2

*Circ memos 4th Aust Div  
Sanitary Schools (2<sup>nd</sup> & 3<sup>rd</sup> course)*

3

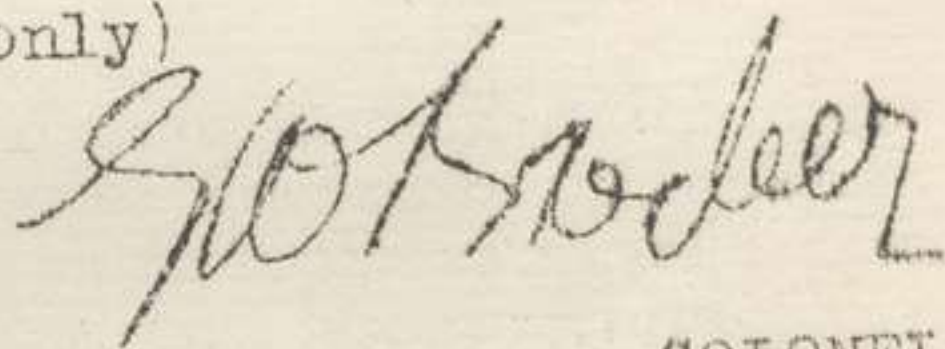
*Lectures & Demonstrations on  
Camp Sanitation by W. Stewart*



A U S T R A L I A N   C O R P S

4th  
AUSTRALIAN  
SANITARY SECTION.Sanitary Instructions No. 7.No. ....  
Date. ....

1. Sanitary Sections will rejoin their respective Divisions and come under the orders of the A.D.M.S.
2.
  - i. 2nd and 4th Australian Sanitary Sections will report to Corps Reinforcement Camp, LA CHAPELLETTE. on 5-10-18 where arrangements will be made for their entrainment.
  - ii. 1st, 3rd and 5th Australian Sanitary Sections will report to 2nd 3rd and 5th Australian Divisions respectively, forthwith and entrain with same.
3. All documents necessary for handing over will be forwarded to D.D.M.S. Office.
4. R.E. Stores will be handed over to the nearest R.E. Dump.
5. Demands for additional transport necessary will be made
  - i. in the case of 1st, 3rd and 5th Aust. San. Sects to respective Division, to which allotted.
  - ii. in the case of 2nd and 4th Aust. San. Sects to D.D.M.S. Aust. Corps.
6. Acknowledge. (Sanitary Sections only)



COLONEL

Headquarters  
4th Oct. 1918

D.D.M.S. Australian Corps.

Distribution :-

Os.C. Aust. San. Sects.  
 A.Ds.M.S. Aust. Divs.  
 D.M.S. Fourth Army  
 "AQ" Aust. Corps (copies for Divs)  
 War Diary  
 File.  
 O.C. Corps Rein. Camp.

221

No. G. 3/1636

Headquarters,  
4th AUSTRALIAN DIVISION,  
19th October, 1918.

4th Aust. Inf. Bde.  
12th " " "  
15th " " "  
4th Aust. Div. Engineers.  
4th Aust. M. G. Bn.  
4th Aust. Pioneer Bn.

4th AUSTRALIAN SANITARY SECTION.	
No.	.....
Date	.....

SANITARY SCHOOL.

1. The next course at the 4th Aust. Sanitary School will assemble on 21st October and disperse on 28th October. Students will report to the Commandant (Capt. H. W. FRANKLANDS) at the 4th Aust. Sanitary Section Office, BREILLY, by 11 a.m. on 21st instant - 48 hours rations to be carried.

2. Vacancies are allotted as follows :-

4th A. I. Bde.	8 O. Rs.	} 2 O. Rs. per Battalion.
12th " "	6 " "	
15th " "	6 " "	
O. R. E.	2 " "	
4th M. G. Bn.	2 " "	
4th Pioneer Bn.	2 " "	

3. The School is to train men in sanitation and construction of sanitary appliances. Brigades will arrange that Battalions send their sanitary details.

4. Nominal rolls will be forwarded direct to Commandant of the School.

5. Units will arrange their own transport to School.

*L. Craig Gapt*

for. Lieut-Colonel,  
General Staff,  
4th AUSTRALIAN DIVISION.

Copies to - Capt. FRANKLANDS - 4th San Sec.  
A. D. M. S.  
'Q'.

221

No. 91/16/6/1

Headquarters,  
4th AUSTRALIAN DIVISION.  
24th October, 1918.

- |                           |                             |
|---------------------------|-----------------------------|
| 4th Aust. Inf. Bde.       | 4th Aust. Div. Salvage Coy. |
| 12th " " "                | 4th Aust. M. T. Coy.        |
| 13th " " "                | 4th Aust. Mob. Vet Section. |
| 4th Aust. Div. Engineers. | Camp Commandant.            |
| 4th Aust. M. G. Bn.       |                             |
| 4th Aust. Pioneer Bn.     |                             |
| 4th Aust. Div. Sig. Coy.  |                             |
| 4th Aust. Div. Train.     |                             |

4th AUSTRALIAN SANITARY SECTION.	
No. ....	
Date .....	

SANITARY SCHOOL.

1. The 3rd Course at the 4th Aust. Sanitary School will assemble on 28th October and disperse on 1st November. Students will report to the Commandant (Capt. H.W. FRANKLANDS) at the 4th Aust. Sanitary Section Office, BREILLY, by 11 a.m. on 21st inst - 48 hours rations to be carried.

2. Vacancies are allotted as follows :-

✓ 4th A. I. Bde.	8 O.Rs.	} 2 O.Rs. per Battalion.
✓ 12th " "	6 " "	
✓ 13th " "	6 " "	
✓ 4th Aust. Div. Engineers	2 O.Rs.	
✓ 4th Aust. M. G. Bn.	2 " "	
✓ 4th Aust. Pioneer Bn.	2 " "	
✓ 4th Aust. Div. Sig. Coy.	2 " "	
✓ 4th Aust. Div. Train	3 " "	
✓ 4th Aust. Div. Salvage Coy.	2 " "	
✓ 4th Aust. M. T. Coy.	2 " "	
✓ 4th Aust. Mob. Vet. Sec.	2 " "	
✓ Camp Commandant	1 O.R.	

3. The School is to train men in sanitation and construction of sanitary appliances. Units will arrange to send their Sanitary details.

4. Nominal rolls will be forwarded direct to Commandant of the School by 27th inst.

5. Units will arrange their own transport to and from School.

Copies to - A. D. H. S., 'Q',  
D. A. D. V. S. &  
Capt. FRANKLANDS -  
4th San. Sec.

*L. Craig. Capt*  
for Lieut-Colonel,  
G. S., 4th AUSTRALIAN DIVISION.

- Subject headings:
1. Selection of camp site.
  2. Layout of camp.
  3. Temporary Sanitary measures.
  4. Improved " "
  5. Daily cleansing.
  6. Evacuation of camp.

Selection of camp site.

The proper location of the camp is a matter having a definite influence on the health and efficiency of soldiers, demand intelligent consideration. It is a good rule to select a site as if for continued occupancy, since the mere bivouac may, through necessity, become a camp of a more or less permanent character. When possible, camps should be placed on high ground, since not only is the surface drainage better, but exposure to air currents facilitates evaporation. Situations at the base of hills are usually damp. Beds of water courses unsuitable. Marsh or irrigated lands are always unhealthy. Abandoned camp sites should never be utilised except in circumstances of great necessity. Old camping grounds must be considered as more or less permeated with the organic soakage incidental to human occupations. Grass covered sites are to be preferred.

B.S. pgs Part 1, p. 45.

In the presence of the enemy, the tactical situation is the most important; when not in

proximity to the enemy, health and comfort are the first considerations 3 1/2

Note:

Experience has proved that small communities scattered far and wide under very primitive conditions and not suffer unduly from infectious disease

Effect of soils on health:

Soils are of two classes: surface soil and sub soil. Surface soil is derived partly from the products of decomposition of animal and vegetable (organic) matter.

Sub soil: The deeper portion consists chiefly of inorganic material, the direct result of the breaking up of rock under the various agencies. The most important property possessed by soil, owing to the presence in it of micro-organisms, is that of nitrification. Nitrification is the conversion by decomposition of organic matter into its simplest constituents, so as to be readily made use of by vegetation.

Note:

Manuring plant life.

Soils contain moisture and air. Moisture derived from two sources, rain and sub-soil water. It is well known that if a hole is dug in the ground, a certain spot will be reached at which water will be met. From this depth downwards there is a continuous sheet of water known as ground water or sub soil water. The depth at which this water will be met varies.

Above the ground water level

The soil is kept moist by capillary attraction and by evaporation, by rainfall and by movements of the ground water. On the other hand the upper soil layers are constantly losing moisture by evaporation from the surface and through vegetation.

Effect of ground water movement. When the ground water rises, it forces air out of the soil and at the same time may pollute wells by bringing into them the washings of impure soil. Attention to this effect requires constant consideration for, it is quite feasible for ground water to influence, directly or indirectly, the health of troops.

Water source. Water details pay special attention.

Experience has probably taught you that different soils allow water to "soak away" quicker than another soil. This "soaking away" is due to a permeability and absorbability of the soil. The absorbability of soil varies with the coarseness or fineness of the pores of the soil and is greater for soils which consist of fine particles. Clay holds water and it has been observed that the water percolates with increasing swiftness through marls, loams, limestones, cherts, coarse gravels and fine sand. Besides bringing this before you in relation to the effect of soils on health, it should also be useful in the estimation of how long and to what depth latrine pits, urine pits, soak pits will last and be dug.

Note:

Ground air :

Above the level of ground water, all soils contain air called ground air. Ground air fills all the space not occupied by either water or solid particles. The porosity of the soil has an effect on the ground air. This ground air, besides containing the usual constituents of ordinary air also contains the products of fermentation and decomposition. Ground air like ground water, is constantly moving, being influenced by rain, wind, (air in motion), the rise and fall of ground water, variations in temperature and barometric pressure.

Heavy rains will not only force ground air to a deeper level but will also force it out of the ground at places which are dry, for example, the floors of tents, bivouacs, engineer huts having floors very near the ground. Atmospheric temperature and ground air temperature ~~are~~ are rarely the same. This fact you have probably noticed in dugouts. This results in a constant ebb and flow ~~in~~ ~~and~~ of air in and out of the soil. The apparent effect of this is that if your Bivouac or tent is pitched on damp or ground liable to dampness or on foul ground, sudden rain, heat inside your bivouac or tent will result in polluting the atmosphere. An example, supposing your bivouac or tent is pitched over an old Latrine or Refuse pit

site, it is assumed that these physical conditions would cause an offensive smell to arise. The effect on your health being a general reduction of your natural resistance to disease.

### Drainage

Site selected should be capable of <sup>surface</sup> easy drainage so as to be prepared for sudden rain storms.

In this matter unless you have expert knowledge of draining, the drainage system should only be of a temporary nature capable of extension. The first heavy downpour will show in what direction you need to increase your drainage and an hours work on such an occasion will result in a better system and correct drainage scheme.

Another feature to be observed is the prevention of taking other camping area drainage over your own area. If this is unavoidable it is essential that all parties concerned should arrive at terms. Without enlarging on the selection of camp site attention to the facts quoted will enable you to select a suitable right site.

### "Layout" of Camp

In the laying out of a camp, provision has to be made for the following: Officers quarters, Mens quarters, Orderly Room, Bookhouse, Water supply, Latrines and Animal House.



Lines, Manure disposal and Refuse disposal. It is not to be expected that you will be able to have these necessary structures of a permanent nature immediately taking over your camp site, therefore temporary structures will have to suffice until for more permanent structures are available. In selecting the position of the temporary structures an endeavour should be made to so arrange them that as the camp assumes a permanent nature the original lay out of the camp is not interfered with. Many of the temporary structures will be capable of being converted into permanent structures thus time and labor will be saved.

The knowledge already given you concerning selection of site should serve as a guide in the arranging of the above conveniences, therefore it should be your endeavour to avoid pollution by your own men of the camp site. To do this it is essential that you have your temporary structures or conveniences ready at the first opportunity. Assuming that your unit have marched on to a new position and it is to be expected that some men will desire easement, it is necessary to arrange the latrine and urinal accommodation immediately. The Adjutant or Orderly Officer should point out

Temporary (that pollution must be avoided.  
 Convenience) Strict watch must be kept for the prevention  
 of feuling of undergrowth

Latrines +  
 Urinal  
 Accommodation.

Having planned out your camp and the situation of the various conveniences the first duty will be the provision of latrine and urinal accommodation. All British military manuals touching on the practice of Sanitation insist on the provision of what is known as the Japanese system latrine. This system is more generally known as the shallow trench system, which consists of an oblong trench, nine inches wide, three feet long and preferably one foot deep. They are ~~are~~ thought a depth of two feet and nothing more will be permitted. These should be provided in the proportion of five per cent.

Method of digging

Mark out sites, peg out trenches leaving a space of two and a half feet between each trench, remove the turf <sup>in blocks</sup> and placing pane three feet at the rear of trench excavate earth to the required depth, placing it between turf and trench; these trenches are used straddle system and an empty tin should be provided at each trench, to enable the user to <sup>cover</sup> deposit earth over his dejecta must be insisted upon. This serves a double purpose, in the first place preventing fouled paper (camp butterflies) and also has a tendency to prevent flies

Show diagram

being attracted thereto. This fact is frequently lost sight of and it is not at all unusual to find these shallow trenches a swarming mass of flies or else a crawling mass of maggots. Such defects indicate a lack of obedience to very stringent orders on the subject. An effort should be made to, in some way or other, screen these latrines. Brush wood in the place is suitable if Hessian or Bagging is unprocurable. This also has a tendency to prevent blowing about of "Camp Butterflies" H.

Urinal

Urinal Pits should be dug as deep as possible say 4 feet square. This size will permit of a deeper pit as men will be able to throw the excavated earth up to the top with more freedom. These pits should be filled with burnt tin, if procurable or fauling tin, if in filling any pits with brushwood is essential that the tin be perforated with pick hole. Separate latrines and urinals should be set aside for Officers, NCOs and Men. This system of Latrine accommodation provided it is sufficiently supervised and the ground space available can be maintained for a long period without in any way endangering the health of troops concerned. After the first day's use the trenches are filled in, earth replaced and similar trenches dug in the same manner in the 2 1/2 feet space.

Night urinals

Nitrication  
Takoban  
also.

It should it be essential to continue this system, a series of trenches are dug a foot in advance and in the same manner and so on.

Note:

It is <sup>highly</sup> ~~hardly~~ possible that in other than trench warfare and excepting base camps, this system would be the only one used.

Retreat. Advance.

Cookhouse: This is the next stage in the lay out of your camp. Should you have field cookers well and good. With a field cooker is so constructed that your only trouble will be in providing means for the disposal of Cookhouse refuse. Dairing provision of a 'cooker', open fires with dishes are resorted to; provision for the storage of food-stuffs and protected against flies requires attention.

Means of doing this will be discussed later. Regardless of type used, the provision of a soak pit for greasy and waste waters Bins and Bags for the retention of dry and wet refuse need to be provided. It is essential that Refuse Bins are kept constantly covered. Quick means of making these appliances will be shown you.

Provision of water.

All units other than small detachments, usually have a water cart as part of their equipment. This cart is capable of maintaining a fit supply of good water. The question of supply will be dealt with later.

Detachments not possessing a water cart usually resort to

collection and storage in Petrol cans,  
 - quite a convenient method.  
Water costs are usually <sup>placed</sup> convenient  
 for the cookhouse, the person is  
 obvious but it is essential that  
 the water cost "stand" receives attention  
 to prevent it becoming a quagmire and  
 also to prevent the washing of mess tins,  
dixies etc, about it. One frequently  
 sees water cost stands a quagmire  
polluted with tea-leaves and  
incidentally horse droppings and  
urine pools.

Collection &  
Disposal of  
Refuse.

This is one of the main features  
 in civil sanitation large  
sums of money being expended  
 in dealing with it. Recognizing  
 that an army in the field is the  
 majority of the male population  
 rendering active service but not  
 foregoing their individual habits it  
 will be seen that the question of the  
 collection and disposal of refuse  
 has still to be dealt with. As a  
 temporary measure, bags placed at  
convenient parts of the camp and  
tins covered with bags at the  
cookhouse will suffice. Disposal  
 of this should be by burial in  
 pits as deep as the time available  
 will permit. Refuse collected  
 should be dumped into this pit and  
 if the military situation permits  
 of incineration it should be set  
 alight to. Dairing this complete  
 covering with earth must be  
 resorted to.

One frequently notices this latter  
 system in vogue but the potholing  
 has been skummed over result  
 being empty unburned tins

affording attraction for flies. There is no excuse for burial without burning of dry refuse

### Manure disposal.

There are two methods of disposing of manure from a military hygiene standpoint. (1) burning, (2) tight packing and covering. First method requires construction of special incinerators and constant attention. It is rarely satisfactorily carried out in the field of operations. The second method is simple, equally as efficacious, does not require any skilled knowledge and is quite within the range of all units, independent of size. For various reasons it has been adopted as the "system" by Australian Corps. Method is as follows: To maintain regularity, a manure site is selected some distance say 100 yards from camping site, pegged out into a square ~~an oblong~~ shape of 10 feet width. The ground on which it is proposed to dump manure should be treated with wood preserving oil. On this the manure is dumped commencing at one side of the 10 foot width, carried across to the opposite side piled into a cubical shape beaten down with the back of shovel and covered with a 6 inch layer of beaten down earth. The stack is made 5 feet in height and as it progresses a trench a foot wide and a foot deep is made

Show Diagram

around the edge of it. This trench serves to collect the urine polluted water which flows out during wet weather thus preventing pollution. If manure dump is correctly mapped out at the start and transport personnel instructed as to what must be done with manure there should be little trouble in the disposal of this, otherwise troublesome refuse.

Manure is a frequent source of trouble and affords one of the most excellent breeding ground for flies.

1st Lecture  
Ends.

### Improvements

Yours camp is now ready for further improvements.

Quarters will remain unaltered if they be business unless the personnel effect their own improvements. A more orderly appearance which would assist in maintaining them in their clean condition would be the cutting of terrace and steps. If a tented camp made out in a regular manner, the cutting of drains, main thoroughfare, cross thoroughfare, should be attended to. Also the provision of dry refuse bags at frequent and regular intervals should be made. Night animal stand should be prepared at the end of the lines. A good idea is the digging out to a depth of six or nine inches, four feet square of the earth where it is proposed

2nd Lecture

Show Plans

Plans

to stand the night urinals filling in the excavations with stones. This provides a small soakage area for the consequent urine drips that eventuate through the negligence of the user of the urinal. Night urinal stands require frequent disinfection by Cresol Solution.

Latrines: Every effort should be made to install at the first opportunity, latrine seating accommodation of a fly proof nature construction with automatic self-closing lids. The construction of these is not a difficult matter and will be shown you. If the ground is suitable through the ground-water level not being high, the provision for such seating will obviate a great deal of labour tending to a more efficient lay out of the camp and providing more convenience. The initial labour of digging a deep trench is well repaid. Such trenches should be 2 feet wide, length according to the number of seats it is proposed to place thereon and depth at least 8 feet.

A latrine is not considered fly-proof if it permits of the entry of any flies. This point is highly important, and requires conscientious labour on the part of those who are installing same. This is known as the deep trench

Latrine  
Seating  
Paper Box  
Screening



## APPENDIX 3

System and is akin to the Septic tank system of civil life.

Should the ground be unsuitable for this system, pan system latrine will have to be adopted. This system, inefficiently carried out is more ins sanitary than sanitary, due to neglect and lack of proper supervision. It entails additional work and unless a sufficient incineration is adopted, necessitates frequent digging of shallow pits.

Provision of paper + box for same.

Shallow pits necessitated through the high level of ground water which prevented you in the first place from adopting the deep pit type.

For this system the Army have provided a special iron bucket weighty, cumbersome and after a short period of use frequently found filthy.

This type of bucket is suitable only for a special engineer constructed seat. Experience in trench warfare has proved that improvised pan system latrine are more efficient.

The pans for these can be improvised from oil drums + biscuit-tins, thus enabling less costly improvised seating accommodation to be provided.

Urinals: The urine pit previously constructed can now be easily converted into a closed in pit fitted with pan Biscuit tin urinals, Genophone or trough type of urinal. One point to be noted in connection with urinal accommodation is its height. Urinals should be at least 18 to 22 inches in height from ground level; improvised structures will be shown you.

Ablution Bench.

Plans

Cookhouse: Every effort should be made to enclose cookhouse on at least three sides, if open fires an improvised field screen should be aimed at.

This has a great tendency to influence the cook in maintaining clean premises, providing better variety of foods or diets and adds to the orderliness of the cookhouse.

Provision for the storage of food stuffs and protection against flies is imperative. As a temporary measure ration boxes covered with Hessian or bagging and nailed at least along one side, will meet the case but no keen sanitary detail should be satisfied until he has seen the cook provided with an efficient food safe well ventilated and of sufficient capacity for the storage of all food stuff. Bag coverings have a tendency to become fouled.

Refuse Bins: All cookhouses should be provided with sufficient refuse bins accommodation capable of taking at least half a days accumulation of refuse. These should be provided with tight loose fitting lid & water proof. Bag covering should be dispensed with at first opportunity as they have a tendency to become fouled themselves and are very rarely found to be efficient coverings. When emptied, refuse bins should be rinsed out with a cresol solution. The surroundings of Refuse Bin Stands require constant attention. They should be placed outside Cookhouse but convenient for Cook.

Don't do the same  
as the rest.

Grease Trap: The pit provided for cook's slops can now be improved and filled with a grease trap. This is essential otherwise the walls of the pit will soon become coated with a greasy slime preventing soakage (as it acts as an impervious water proof layer) and soon creating a nuisance. When the pit ~~is~~ <sup>has been</sup> provided with this appliance, it should be covered in. Cooks require frequent watching to prevent the spilling of greasy slops outside instead of into the Trap.

Cleanliness of Cookhouse It is frequently found that cookhouses and surrounding are neglected. Realizing that this is an avenue whereby many can be inoculated with disease germs, the necessity of scrupulous cleanliness is readily seen.

Cleaning of Cooking and eating utensils Cooking utensils should be kept scrupulously clean, special attention being paid to grooves and corners. Scouring with sand or ashes is a good substitute for bathe brick, if sand is used it needs "preparation" such as baking over a fire on a tray and should be stored in a covered clean receptacle. Cooks should be warned from using sand other than what is prepared for them.

The question of water storage will be dealt with under the heading of "water".

Incinerator: Apart from the refuse that will accumulate at cookhouse there will

also be a respectable quantity coming from the camping quarters. It is just possible that deep pits are impracticable or else the camping site may assume a permanent nature. In either of these cases, burial will not meet the case therefore incinerators must be provided at the first opportunity. The construction of these is not as difficult as appearance may suggest. A little ingenuity needs to be utilised and very few camp pits are so located that material for an improvised incinerator is unprocureable. A selected extemporized pattern will be shown you and you need to bear in mind that as a last resort, the shaft pattern incinerator ~~can~~ will always be dug. Points to be noted in the construction of incinerators are

- (1) Suitable distance and to leeward of camp (2) So constructed that draught is plentiful (3) A sufficient size to incinerate the whole days refuse accumulation (4) If fire bars are used, bars must be so spaced that nothing other than ash will fall through. Incinerators should be so placed, if circumstances permit, that they will be in the track of the prevailing wind, complete incineration should be obtained. It is not unusual to find charred masses surrounding incinerators reputed to have been incinerated. Such a mass is unsightly and indicates lack of intelligence and a very low standard of sanitation. If possible, a hay fork or some such,

Plan  
(model)

appliances be provided at the Incinerator, this will enable the attendant to frequently force the mass thus allowing evaporation of moisture to take place quicker, which results in a more complete incineration being attained. This has a direct result of increasing the capacity of the Incinerator. The attendant should never be changed more often than is possible. If one man is selected for the work and informed that that only will be his work, it will be found that before long he is taking a keen and intelligent interest in his work as well as respecting the construction of the Incinerator.

### Ash pit.

Ash pits require to be dug adjacent to the Incinerator, these should be reserved solely for the reception of ash. Burnt timbers should never be buried but stacked in a neat pile near the Incinerator. In winter time, burnt timbers are often utilised for the making of paths, horse standings, washhouse floors etc.

Regular time for the removal of refuse to the Incinerator should be detailed and if it is found necessary to deposit unburnt refuse at the Incinerator, through the Incinerator being loaded, it is a good idea to have a raised platform tray at hand, this prevents soiling of ground and blowing about of papers etc.

Horse Standings These should be placed like Incinerators and Latrines, on the

leeward side of camp. The area occupied should be drained to collect the horse manure and surface washing that would take place during rain. The question of manure disposal has already been stated. Should a spray be available, the dump should be sprayed at regular intervals with a solution of cresol - 1 volume kerosene or wood preserving oil - 20 volume water - 79 volume.

3rd Lecture  
Daily routine

An excellent idea is the mapping out of the daily duties. Individual members of the squad should be given set duties, these include the washing down with a cresol solution of latrine seats, ground surrounding urinal should be sprinkled with cresol, same remark applies to night urinal stands.

Cookhouse refuse Bins should be emptied after each meal and refuse Bin stands sprinkled with cresol solution, not forgetting the washing out of Bins with the same disinfectant.  
Grease Trap. Tin contains like refuse Bins should be emptied after each meal. The Grease Trap itself require skimming and sludge removed daily.

Cookhouse surroundings need daily attention. Dry refuse Bins or Sacks, previously placed throughout the camping quarters, require emptying as frequently as Refuse Bins.  
Surroundings of Quarters also need freeing from the inevitable accumulation of litter such as cigarette ends, dead matches and such waste matter.

**Ablution Bench.** Ablution bench should be washed and scrubbed down, to prevent the accumulation of soapy slime. Surroundings of bench will require to be freed from the small puddle holes that occur. This can be done by covering with a layer of earth. The draining of the trench should be attended to.

### Incinerator.

This should be inspected, and if necessary, minor repairs effected. If there is any accumulation of unburnt refuse, inquiry should be made and if the result of this indicates insufficient capacity then the question of increasing the capacity should be attended to. See that the surroundings are maintained in an orderly and proper manner.

### Evacuation of camp.

This is a detail to which little attention has been paid in the past, causing a great deal of friction between units and Division necessitating an elaborate system of orders to be issued on the subject. Allowance is always made for units that have had to evacuate in a hurry but despite hurried moves, if the sanitation of the camp has been maintained the incoming unit, should there be one, would have small cause for complaint nor would the sanitary section in the area have cause to complain. An effort should always be made to have a clearing up party detailed.

to remain behind and clean up following on after words. If this is not possible, the Sanitary detail of the unit should see that all refuse accumulations are placed in the Incinerator and left burning. Latrines if of the shallow trench type, should be filled in and marked "Doul ground". If no Incinerator has been constructed the Refuse pit should be properly earthed over and if nearly full, completely filled in and marked "Doul ground".

Pan Latrines. If these have been in vogue all pans should be emptied, washed with, cooled and stacked inside the Latrine Screening and seats of Latrines nailed down.

Cookhouse should be swept. Open food-stuffs not intended to be carried should be disposed of the same way as other refuse.

Gross Trap. The Tin container should be emptied and scum removed.

Salvage. Salvage should be collected into bags and placed convenient for collection.

In tented camps the Guy rope should be tightly fastened and curtains fastened up. These remarks concerning tented camps, apply only if there is an known meaning unit failing this tents should be struck. If bivouacing the structures should be dismantled. The whole object being to leave the site as though it had not been occupied.

Deep trench Latrine

Removal of seat and filling in.

?



Disposal of dead animal. It frequently occurs that dead animals such as horses and mules need to be disposed of.

This is an important matter and brooks no delay. There are two methods - burning and burial. On field service one is impracticable, the other necessitates time and labour but an endeavour should always be made to carry it out. Prior to burial after the animal has been placed in the pit, it should be gutted. This action prevents the collection of "gases" within the carcass and consequent swelling distension which would take place. Dead animals as described require at least 3 feet to 4 feet of earth, covering and position marked, failing this method, an alternative method is the opening of the carcass (burial deeply of the viscera) and stuffing of carcass with straw and lighting same. This assists the drying out of the carcass. Another method would be to build a pipe around the carcass. If procurable quick lime should be spread over the carcass, failing this chloride of lime should be used. This remark applies only to burial.

Billeting:

Remarks already made regarding Quarters apply particularly to encampments in open space such as fields and bush. It now rests to make remarks concerning billets. By billets I mean civilian houses or barns. Such billets are met with in villages of varying size.

APPENDIX 3

On initial occupation such billets are usually found to contain accumulations of various refuse and many of the troops do not consider it to be their duty to cleanse same. Considering Army Order 221 are explicit on the subject, there is no argument on this contention. The Billet itself should be thoroughly swept and if stone, or wooden floors, should be washed with a good solution.

The surroundings of the Billets require attention next. Refuse and lumber (which is not likely to be of use to the civilian) should be removed. If possible, manure middens should be earthed down, failing this, the drainage of same should be attended to. Under no circumstance should military refuse of any nature be allowed to be strewn about. If horses are stabled in these billet yards, manure from same should be removed and treated in the same manner as though you were camping in the open. One frequently receives the protest that the farmer demands the manure as his right. This is quite true on the farmer's part but the farmer has no right to demand that the manure shall be placed on his private midden. He can obtain it from the dump after it has become innocuous. In such localities and under such conditions there is nearly always a Town Major or Area Commandant appointed. These Officers are responsible for the sanitation of the village and their orders on this subject must be rigidly obeyed. These Officers are responsible for the selection of site for Public Latrines, erection

Manure

of same, selection of site for manure disposal, provision of one or more Incinerators, setting aside and controlling Public or private wells that are to be used as water points, if there be no military water point. If there is a military water point, public or private wells must not be used for any other purpose than ablution. These Conveniences are termed Public ~~and~~ <sup>as</sup> they are provided for the use of all troops billeted within the village. Town Mayor and Area Commandants represent the civic authority and to obtain labours for the various work and maintenance of same, are vested with authority to demand 4% of strength of each unit occupying billets.

Seeing that Public Conveniences have been supplied, units within these billeting areas have no necessity or authority to provide their own conveniences.

Individual billet latrines or urinals are not permitted and their provision contrary to orders only results in friction and action, against the unit concerned, being taken. In such areas, sanitary details of units require to be especially vigilant in the execution of their duties, as men frequently are too indolent and disrespectful of sanitary orders, resulting in hedges, mostly found at rear of Billets and back gardens, are used as Latrines and depositories of refuse. The provision of night urinals will

have to be made. The same remarks <sup>previously</sup> made concerning these conveniences, apply. Likewise with provision of Refuse Bin

for Quarters and backhouse, grass Trap  
for Cookhouse etc. Troops in billets consequently  
are scattered. This increases your work and  
introduces the question of village or 221  
Town sanitation. Army orders also lay  
down that besides being responsible  
for your Billet and immediate surroundings  
you are also responsible for the front  
and drains adjacent to your Billet.

With the object of avoiding large fatigues,  
it is more practicable and efficient  
to institute a Town scavenging system,  
this necessitates transport. ~~As a guide~~  
for the removal to Incinerator of collected  
refuse and road sweepings. Where  
town scavenging systems are instituted,  
it is essential that two clearances  
be made daily, one in the forenoon  
and the other in the afternoon. To  
simplify and expedite collection, arrange-  
ments and warning must be given  
to Billet occupants for them to place  
their refuse Bin and Bags @ convenient  
to the roadway. As the Refuse Bins are  
emptied, they are replaced.

Street Sweeping. In street sweeping it is essential that  
the little heaps be collected by cart  
immediately they are made. This prevents  
the blowing about and saves labour.  
Street sweepings which contain a lot  
of manure should be taken to the  
manure dump and disposed of in  
the same manner.

The size of village and number of troops  
billeted therein directly affect the size  
of fatigue party and quantity of  
Transport required. If essential, the  
Sanitation of civilians occupied premises  
will be attended to by the military.  
This is purely a town map matter.

Water:

The provision, collection, qualities and features concerning water, <sup>have been</sup> will be } given you by Ofc. School.

The collection of water for immediate use is a matter for which the water detail is immediately responsible. 221

All water points whether well or stand pipe, are tested by Sanitary Sections and notices posted indicating the result of test.

Water.

Notices.

These notices must be rigidly obeyed. All water required for drinking or cooking purposes must be looked upon as suspicious until they have been chlorinated. This is a process adopted by the British Army for making water suitable for domestic purposes. The object and process <sup>has been</sup> will be } explained to you.

Units of a certain size have, as part of their equipment, a water cart.

Capacity - 110 gallons. These carts are so fitted that they are capable of providing water fit for domestic use independent of the source of supply, provided such source is not over impure. This means that such a cart could draw water from a running stream.

Independent of these facilities an effort should always be made to obtain supplies from the purest sources. Units not possessing a water cart have to collect their supplies in dials or Petrol cans. Should water have to be collected in this manner and there is no other available source of supply other than running stream, arrangements should be made with the unit possessing a water cart to collect

water that has been passed through their cost. Independent of means of collection, the purest source available should always be used.

Chlorination:

The water cart is most convenient for chlorination purpose but the absence of such equipment does not absolute the unit from not chlorinating water supplies. Dixies or Petrol cans can be easily chlorinated in the following manner:

Set aside one 2-gallon Petrol tin for stock solution. Mark tin as such. Into this tin collect 2 gallons of the water to be used. Read the notice at source, add to the stock tin of water the equivalent number of measures Bleaching Powder. Stir well. Into each 2 gallon tin of water drawn add 6 2/3 ozs of the stock solution. Stock solution should not be retained for more than twenty-four hours. Bleaching Powder used must be dry and not of a cakey nature. Petrol cans hold 2 gallons. Dixies - 3 gallons. Mess tins - 1 quart. A wine Bottle contains, approximately, 20 ozs.

Boiling - trailing House in Hood

Storage.

In storing water, every effort should be made to prevent pollution by dust etc. Promiscuous dipping of vessel into same, should be prohibited. Water carts require frequent cleaning, this should be done at least once a week. Scouring with boiling water with brushes or by Pot Permanganate (1/500) solution - blood red, allowing to stand for a little while or by

Chloride of Lime Solution (1 in 1000) are suitable methods. Attention must be paid to the mechanical apparatus of the cost being that same is clean and not rusted and in good working order. Accumulation of dust and mud need removal from and about taps and joints. With reference to Petrol can storage, these require shining with either of the above-named solution.

Chlorinated water must be allowed to stand for at least an hour, this will avoid the objectionable taste. Water supplies not so treated must be considered as dangerous and likely sources of disease carriers.

Testing.

Shell hole and such types of storage must never be used. It is always dangerous having been contaminated in the first place by the chemicals within the shell adhering to the sides and is also polluted by surface washings.

Apart from Sanitary sections responsibility for testing supplies, units are also responsible for the frequent testing of their own water supplies and for this purpose are equipped with the essential apparatus.

Disinfectants.

There are many and without entering on the discussion of their merits, it is only essential to mention the one you will be able to obtain most generously and easily. This is a disinfectant known as Cresol and technical name "Cresolis Saponatus". This is a chemical. It is now issued in two

Cresol Solution

38  
APPENDIX 3

Strengths - one having a carbolic coefficient of 10-12 and the other a coefficient of 3. The first should be used in dilutions of  $1\frac{1}{2}$  ozs to a gallon and the other  $4\frac{1}{2}$  ozs to a gallon. Above these dilutions, it is nothing else than sheer waste and no greater beneficial result is obtained. They should always be measured. Food is issued in 5 gallon drums and the coefficients named above are marked on the outside of drum.

- (1) Hygienic principles
- (2) Efficiency of soldiers from health point of view.
- (3) Camp planning. Planned & unplanned.
- (4) Sites.
- (5) Camp sanitation. Developing camp.
- (6) Water problem & food.
- (7) General discussion.
- (8) Responsibility of sanitation.

29 Sheets  
1918



In all recent wars, body lice have been more or less prevalent amongst the soldiers. This was considered the <sup>unfortunate</sup> condition of soldiering and very little effort was made to overcome same. In the beginning of the present war, the same condition prevailed and it was not until this vermin made itself obnoxious by its numbers that the question of endeavouring to cope with what was then practically a plague, was taken in hand. This led to the introduction in the field, of steam disinfectors by Theodor Boden lorry. This again introduced improvised steam disinfectors, these are many - Serbian Barrel, Railway Truck etc, Sulphur chamber. German attempt to free men from Lice, is by Sulphur. The British army adopted the Clayton S.O.2. Disinfectors. The Medical Branch of the army are still fighting the problem and much sick wastage of the past has been, undoubtedly, through proved to be due to the body louse such as Trench Fever. The latest experience is, that the body louse, being a human blood sucking insect, infests the Trench Fever stricken Soldiers and thus becoming infested with the germ of Trench Fever itself and to which it is innocuous. By various means, this infested louse finds its way to another healthy soldier. It depends on blood for its food therefore "bites" the healthy Soldier causing an irritation of the skin resulting in constant scratching. In scratching, the soldier does not realize that he is rubbing into his body, the infested defects of the louse thus indirectly becoming infested with Trench Fever. Lice are also capable of spreading Typhus amongst soldiers. At the present, Typhus is "localized" to the East.

It will be seen that the Louse problem is an important one and every soldier, for the sake of his own health should endeavour to free himself from this vermin. It is not such a difficult problem as it may seem. Armies are constantly interchanging ideas and the latest interchange on the Louse problem has been Delousing by dry heat. This idea originated in Russia. Necessity being the mother to Invention, the necessity of the Russian army was the cause of the Invention of the dry heat method known as the Russian Delousing Chamber. This is a simple construction. The pit is dug 6 feet wide, 8 feet long, 7 feet deep. A means of entry and a sliding door are fitted. Corrugated sheet iron is used as roofing, supported by cross timbers. Two Stoves (Oil drums) are used as means of obtaining heat. Wires are stretched across the supporting timbers upon which to hang clothing. Dishes are set. This chamber is capable of doing 15 "kits" at one operation. A temperature of 122°

4th
AUSTRALIAN SANITARY SECTION.
No. ....
Date. ....