MEMORANDA ON THE USE OF HIRED BUILDINGS FOR THE ACCOMMODATION OF TROOPS.

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I.—Generally.

(a) The principles governing the accommodation of troops in hired and other buildings are set out in detail in the "Quartering Regulations, 1917." Reference is not made in these notes to the organization of the administrative machinery, but it may be noted that each Command in the United Kingdom is divided into areas administered by an Area Quartering Committee with a permanent president.

The Regulations, Chapter III, paragraph 66, state that it is desirable the composition of the Committee should include a sanitary officer. This officer would be, normally, the sanitary officer working under the A.D.M.S. of the medical district within which the Quartering Committee operated.

The term "hirings" is limited to:—
Buildings hired under formal agreement.
Premises taken under the Defence of the Realm Regulations.

The duties of the sanitary officer in relation to these hirings fell naturally into two parts:—
Advisory work before and after acquisition of premises.
Routine inspections after occupation.

With regard to advisory work the most practical method was for the sanitary officer to accompany the president of the quartering committee on his preliminary visit and advise him on the sanitary aspect of the proposals on broad lines—such as local conditions as regards conservancy arrangements and bathing facilities—the possibility of a suitable and well-placed central mess—and the provision of sleeping and storage accommodation. When the scheme had progressed a full list of the hirings was sent to the sanitary officer with a view to detailed recommendations as to the suitability of the various hirings from a sanitary point of view.

With regard to supervisory work after acquisition, it was found that owing to military exigencies troops often occupied hirings before the Royal Engineer services were completed. An early visit was, therefore, found necessary so that the sanitary officer could get in touch with the incoming unit, and, in conjunction with the officer commanding, the medical officer in charge, and the Royal Engineers, assist in the early establishment of satisfactory conditions. When the Royal Engineers' services were completed, sanitary inspection became a simpler matter, although work of this
character amongst troops in hired buildings differs from that in hutment camps in that improvements constantly suggest themselves as the unit settles down in its quarters, owing largely to the improvised character of the accommodation.

In both aspects of the work given above important questions and points involving principle were dealt with by reports to the A.D.M.S. for such action as he thought desirable with the unit concerned, the C.R.E. or the president of the quartering committee.

(b) It was found a matter of great importance for the sanitary officer to be in close touch with the Royal Engineers, as so much could be done to promote the comfort and health of the troops if cordial co-operation was initiated at the earliest stages, and maintained throughout the progress, of a quartering scheme.

The importance of the Royal Engineers' services in relation to the well-being of troops need not be elaborated, but notes on the sanitary aspect of the use of hirings for military purposes would be incomplete without reference to the ingenuity and resource shown by the Royal Engineers in their work of adapting hirings and the erection of auxiliary structures in connexion with them. Full consideration was given by the Royal Engineers to recommendations affecting the sanitary conditions and many improvements were initiated, and given effect to, by them.

(c) The quartering of troops in hirings, more especially when large numbers were involved, presented special difficulties and called for vigilance on the part of all concerned. Additional responsibility was thrown on the officer commanding if a satisfactory standard of sanitary efficiency was to be maintained. Houses, situated singly or in small groups, in a more or less scattered manner amongst a civilian population, offer a great contrast to the compact areas formed by barracks, hutments or canvas camps. The general sanitary condition of a hutment camp can be readily envisaged. The cleanliness and state of ventilation, for instance, of two huts where sixty men sleep can be much more rapidly appreciated than one, hiring accommodating an equal number of men, divided into storeys and having a number of relatively small rooms.

It was, at times, necessary to urge the importance of daily visits by an officer to every part of the hirings. This is an onerous task where the area and number of hirings is large and the work has to be done on foot. Unless it is done, however, unsatisfactory conditions can quickly arise. Latrines and ablation places can become in a bad state, gullies be stopped up with refuse, rubbish can collect in cellars, outside areas and the cupboards of rooms and passages. Overcrowding and lack of proper ventilation may occur in individual rooms unless a close watch is kept.

There was again the interests and reasonable wishes of the civil population. Little friction, however, was noted in this respect provided care was exercised in the disposition of outside latrines and ablation places and the co-operation of the medical officer of health and local surveyor was sought at an early stage.
II.—CENTRAL MESSING (Quartering Regulations, 1917, para. 73 a).

(a) The selection of a hiring for this purpose was considered a matter of especial importance in relation to the health and comfort of the troops. The aim was to secure accommodation that, with a minimum of Royal Engineer services in adaptation or new structures, would give facilities for the efficient preparation of food and its prompt and easy distribution, whilst still hot, in a dining-room where adequate air and floor space, ventilation, and heating could be obtained. An important factor was its accessibility from sleeping and other quarters of the troops using it.

One mile was taken as the extreme limit of distance for the hirings most remote from it; apart from economy of time many of the troops were of low category. As a general rule most of the hirings would, however, lie within a half mile radius of the mess.

Eastern Command Order No. 1428 of July 6, 1918, states that, “separate dining accommodation should normally be provided for two-thirds of the total numbers at 6ft. per man.” In practice two sittings were usually found necessary.

(b) The accommodation acquired varied occasionally and included:

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<tr>
<th>Public and drill halls</th>
<th>Swimming baths</th>
<th>Race course buildings</th>
<th>Groups of shops</th>
<th>Large houses</th>
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<td>For large messes.</td>
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<tr>
<th>Village and small halls</th>
<th>Cinema halls</th>
<th>Groups of stable buildings</th>
<th>Sheds and outbuildings</th>
<th>Moderate sized houses</th>
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<td>For serjeants' and other small messes.</td>
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For large messes the public and other large halls were found the most suitable. They are generally centrally placed and in good condition; the dining accommodation in the main hall is usually adequate and adjoining compartments can often be adapted for cookhouses, washups, and food storage: if new structures are required open space adjoining is usually available. In the case of swimming baths the Local Authorities have often a floor ready to place over the bath. The other buildings noted have all been found capable of providing reasonably good accommodation—as a unit consolidates its position improvements suggest themselves, and if effect be given to these central messes fulfilling the primary sanitary requirements are the result.

(c) The extent of Royal Engineers' services necessarily varied—in some instances all the essentials of a central mess were present—such as in houses for the use of serjeants or small detachments—in others cook-
houses, washups, and food stores had to be built. After acquisition it was found desirable, whenever practicable, for the sanitary officer to meet the D.O.R.E. and an officer of the unit at the building and settle details. The general disposition of new structures and adaptation of existing ones, improvement of lighting and ventilation, the means of drainage, the suitability of existing floor surfaces, the question of sleeping accommodation for the cooking staff near their work and the relation of the cookhouse and mess to adjoining buildings in civil occupation all came within the purview of the sanitary service.

A general survey of surrounding properties was found essential with a view to the elimination or modification of conditions liable to operate unfavourably, e.g., in one case the removal of horses stabled close by, with unsatisfactory conditions as regards the disposal of manure, was effected with the co-operation of the Local Medical Officer of Health.

It was found desirable to arrange for a group of latrines near at hand for the use of the troops and for ablution arrangements for the cooking staff. If the latter is not provided the misuse of sinks where food is prepared inevitably follows.

Paved areas for swill and refuse bins and grease traps were provided; the provision of the latter, apart from fat saving, was found desirable to prevent the stoppage of drains.

(d) One example may be cited of the work carried out to improve sanitary conditions in a somewhat unpromising hiring for a large mess. The unit moved into the area in 1918 when suitable halls had already been taken for housing furniture (largely stored by men serving with the Forces). The premises acquired were a group of suburban shops thrown together as the original business expanded. In the immediate rear was a group of dilapidated sheds in a somewhat confined area, but having the advantage of a separate approach from a side street. The shops were allotted as dining accommodation for about 1,000 men in two sittings, the sheds at back for cookhouses and ancillary structures. The plate glass windows of the shops, running from floor to ceiling without openings, invited damage and militated against efficient ventilation. They were removed and stored for re-use, the space thus left was filled in the lower part with coke breeze concrete slabs, in the upper part with ventilation louvres and windows centre hung to open. Stoves were placed and connected to existing flues. The main shed in the rear, originally a stable with loft over it, was adapted as a cookhouse by removing the loft floor (thus opening up the interior), enlarging the existing windows, providing ventilation at the apex of roof, laying a concrete floor inside and paved space outside connected to a gulley, and cleaning and limewashing the walls. The smaller sheds were adapted for washup, vegetable preparation, etc. A minor improvement made here was the elevation of the farm boilers (for supplying hot water in washups) to a sufficient height to allow of pipes being carried from them to supply water to sinks by gravitation. Food storage was
temporarily arranged in a portion of the basement under shop with a new ventilation shaft, pending erection of permanent food stores in yard. The sinks from cookhouse, washup and vegetable preparation room were taken into one water-cooled grease trap connected to existing drainage.

Those portions of the shops not required for dining accommodation were partitioned off for quartermaster's stores, the rooms over shops were adapted as a serjeants' mess and sleeping accommodation for the cookhouse staff, etc.

III.—LIVING ACCOMMODATION.

Some principles governing the selection of this accommodation are laid down in paras. 69 to 78 of the Quartering Regulations, 1917. They are amplified by Eastern Order, No. 1,428 of July 6, 1918.

The premises acquired again varied greatly in character—ranging from a training college to race-course buildings, from country houses to shop premises. The bulk of the accommodation, however, was large and medium sized houses. So far as possible it was found desirable for all hirings to be inspected by the sanitary officer. In the later stages of the war the difficulties experienced in obtaining suitable premises in the outlying suburbs and environs of London increased. The factors were the cessation of normal building operations and the removal of certain elements of the civil population from the central areas to outlying districts to escape air raids. The class of property left available needed close attention before occupation. It was found necessary in many cases for the sanitary officer to definitely advise against acquisition. Saturated walls, defective drainage and water supply, and the presence of dry rot were often noted. Whilst the majority of such structures can be rendered suitable for military occupation the expense incurred by the necessary Royal Engineers' services often negative the advantage of cheap acquisition. Hirings for living accommodation may be conveniently considered by division into (a) sleeping; (b) ablution; (c) latrine accommodation; and (d) water supply.

(a) Sleeping Accommodation.

Generally.—The condition of walls as regards dryness, the suitability of flooring and the adequacy of the means of ventilation were the principal points borne in mind. Others were the elimination of dust and dirt collecting surfaces, such as loose paper and plastering, old oilcloth on floors and defective venetian blinds and woodwork. Dampness was dealt with by ordinary Royal Engineers' services (such as unstopping gutters) and by the use of fires in rooms before occupation. Ventilation could often be materially improved by making fixed windows to open, removing panels from doors and, in a few bad cases, forming ventilation shafts. Units were often able to supply troop labour for cleaning and distempering walls; the materials and supervision being provided by the Royal
Engineers. Washing down and disinfecting wall surfaces was necessary at times. Quarters in such places as racecourse buildings and rooms over disused stabling needed close attention. An apartment well lit and ventilated over a portion of its area might be unsuitable for sleeping purposes in the remainder. The ordinary fixed skylights in lofts following the line of the roof could be made into a good ventilating dormer by hinging it at the top end, raising it up and providing louvre boards at the sides and front.

Basements.—These were not used for sleeping purposes—owing to shortage of accommodation it was, however, necessary at times to occupy rooms partly in the ground. In such cases the height of ceiling and windows above the external ground level, the width of the outside area and the possibility of foul air from the floor were considered before the rooms were allotted.

Routine inspections showed the necessity of impressing on units the importance of cleaning out unused cellars immediately below sleeping rooms. Accumulations of rubbish were often left or deposited in such places, and there was the danger of vitiated air arising through the floor boards.

Attics.—It was noted the ventilation of these rooms was conspicuously defective; where it was necessary to occupy them it was dealt with by providing additional facilities or by reducing the number of men to the estimated extent of the available ventilation and not basing the accommodation on cubic space or floor areas.

Schedules of Accommodation.—A point always insisted upon, when troops came into occupation, was the preparation of labels for fixing to the doors of each sleeping room stating clearly cubic space, floor area and number of men to be accommodated. The tendency to overcrowding in excess of the forty square feet and four hundred cubic feet per man is always liable to arise. Even when the total sleeping capacity of a hiring is not exceeded N.C.O.s i/c may crowd one room and leave others not fully occupied.

Refuse Disposal.—This is usually effected by the Local Authority. In some cases, however, the units supplied the men; the Local Authority providing carts and horses.

It was found desirable on routine inspections after occupation to make a point of examining unlikely places. Men on special duties, such as the cooking staff, batmen, &c., often have been found occupying unofficial sleeping quarters, and these are usually dark and ill-ventilated. Church and village halls, at times used for sleeping purposes, are liable to have the benches and chairs stored at the stage end. It was found necessary to have these removed and stored elsewhere, otherwise an area was formed that could not be kept clean and free from dust.
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(b) Ablution Accommodation.

In small hirings for twenty to forty men, a bench was usually fitted up in the scullery to drain into the sink. A scullery has the advantage of being a room that is usually paved with impermeable material, such as tiles or concrete. In larger hirings, unless a very large paved scullery or conservatory was available, the ablution bench was usually arranged outside—either in paved outbuildings, such as stabling or garage, or by the erection of a shelter having a concreted floor, a bench and connexion to the draining system. It was found desirable wherever possible to allow of no ablution bench in a room having a wooden floor. After a period of military occupation the floor and the surface beneath becomes sodden with water and dirty saponaceous matter.

A large conservatory often made a good ablution place. Water supply, means of drainage, and a paved floor were usually available, and the existing benches could be utilized. The removal of any earth beds on the floor, was, however, necessary, as dirty water was liable to be thrown about.

(c) Latrine Accommodation.

With a few exceptions, such as racecourse buildings, the existing latrine accommodation in hirings accommodating over fifty men was inadequate.

The six per cent basis was interpreted as including groups of latrines erected near gathering points such as the central mess.

Where a hiring accommodated less than fifty men the existing arrangements—usually two or three w.c.s—were utilized. In many cases where tiles or concreted floor and pedestal closet were present nothing was necessary except ordinary supervision. In other cases, the older type with a pan entirely enclosed with woodwork and having a boarded floor, it was found they were the subject of progressive deterioration; seats, enclosure and floor becoming in a most insanitary condition. In such cases the following work was advised—the removal of all superfluous woodwork, the provision of an impermeable coating to the floor and the benching up of the pan in concrete. Where hirings accommodated over fifty men a range of latrines was erected in the garden or suitable outbuildings. As hirings are often placed in proximity to buildings in civil occupation care was necessary as to the position of the latrines and screening them from observation.

Hirings are often acquired in a group of three or four houses; in such cases it was found best to erect one group of ablution places and latrines to serve them all: the division walls or fences of gardens having openings formed for access. The latrines constructed were of a simple water carriage nature, having a concrete floor, enclosure and a roof, an automatic cistern flushing a trough pattern latrine with seats, and a urinal space.

The work was simplified in the great majority of cases by the existence
of a public drainage system (the few large houses in outlying districts where this did not exist were specially dealt with). Recourse was made to pail closets (with seats and an enclosure and roof) in a few instances. This method was adopted as a temporary measure only, owing to shortage of material or labour or where difficulty was experienced in obtaining definite information as to the duration of stay of a unit in the hirings. It was found that if there was close supervision as regards cleanliness, if care was exercised in the disposal of excreta and if measures were taken in regard to flies, pail closets could be used for a time without causing annoyance or friction. The buildings being connected to the drainage system, a covered manhole or inspection chamber in the garden of the hiring was used for emptying the contents of the pail into the drain. It was necessary to secure adequate flushing of manhole and drain after each use and to approach the officials of the local authority concerned before adopting this temporary measure.

(d) Water Supply, etc.

This question was greatly simplified in the area under consideration by the fact that practically all the hirings had a water supply laid on, and obtained from the public main. In a few cases where accommodation was sought for outlying detachments and a well supply only was available, action was taken as laid down in the Regulations for the Army Medical Service. Efforts were made to secure water for drinking purposes being taken directly off the rising main and not drawn from the cisterns, suitable cocks being labelled for this purpose. Disused cisterns, receptacles for water in gardens and other likely places were watched and treated with a view to preventing the breeding of mosquitoes.

IV.—Bathing.

The normal arrangement for the troops to obtain hot baths was the utilization of the provision made for the public in this respect. Public baths were within reach of most units, either by marching, or transport in trams or lorries. All that was necessary in this case was the arrangement with the local authorities of bathing parades at suitable times. Authorities were found willing, when the numbers were sufficient to warrant it, to set aside days, or parts of days, for the use of the baths by troops only and in one case the public baths were wholly acquired for military use.

Use was made of both slipper and swimming baths; when large numbers were present the slipper baths were supplemented by tubs in the cubicles.

For men on special duties—cooking and office staffs—who could not parade at the usual hours, use was made of the ordinary baths fitted in the hirings. This method was considered auxiliary only owing to difficulties in supervision and in obtaining sufficient fuel. Cases arose where the methods previously indicated were not practicable. In such instances
suitable outbuildings, stabling, or a garage attached to a centrally-placed hiring, were adapted. Paved flooring, water supply and a drainage system already existed and the necessary work included fixing a boiler, piping and the division of the selected area into cubicles by light partitions and the fixing of concrete curbs of the usual camp type.

In units of a nature where men were constantly coming and going, the organization of bathing parades is arranged with some difficulty, and it was found desirable for the sanitary officer to bear this in mind on routine visits and impress on those concerned the importance of a weekly hot bath and change of underclothing for each man.

V.—Disinfection.

The control of infectious disease and the disinfection of quarters do not call for special comment in the case of hirings. No difficulties were noted in applying the usual principles in such cases. The disinfection and disinfestation of blankets, clothing, etc., was dealt with in three ways.

(1) By arrangement with the local authority.
(2) By the use of existing provisions at adjoining standing camps, barracks or hospitals.
(3) By the provision of "Thresh" disinfectors or the erection of a steam disinfecting chamber.

The locality of the station and the number of men present varied so much that each of the arrangements given above was found to have points of advantage in certain cases.

Wherever the number of troops is large enough, however, it is undoubtedly desirable for units to have their own means of disinfection and disinfestation. When articles are sent to the local authority the question of cost arises and when sent to adjoining military establishments difficulties are apt to arise in speedily arranging for transport and suitable hours for disinfection on a large scale.

A note may be made of the arrangements at Sutton:

The public baths were acquired wholly for the troops and were in use by the Eastern Command Labour Centre and also for a time by the Eastern Command Discharge Centre. In both these units men were constantly coming and going and blankets were handed on from one man to another.

A steam chamber, on the lines of the "Grant" hut, and capable of dealing with 200 blankets per hour, was erected in a yard adjoining the boiler house of the baths from which an ample supply of steam was available.

In addition to the treatment of infected articles a system for the routine disinfestation of all blankets in use was initiated—the aim being to secure that each blanket was passed through the chamber once a fortnight.

As the number of troops was considerable and occupied hirings in all
parts of Sutton and the outlying districts, transport was found necessary for the blankets, and a lorry was ultimately secured.

A reduction in the incidence of scabies was noted after the method had been in force for a little time and although other causes doubtless operated the system adopted was believed to be one of the factors.

At these baths a Scabies Treatment Centre was also placed to serve troops in the district and at Croydon, Purley, Redhill, and Reigate if necessary. A group of the slipper baths having a w.c. and dressing rooms immediately adjoining (the whole capable of separation from the rest of the building) was set aside for the purpose, the disinfecting chamber being near at hand for the treatment of clothing. A small hir ing was allotted for the living accommodation of the patients; their food was brought from the central mess and means of warming it up were provided.

VI.—OFFICES, STORES AND REPAIR SHOPS.

(a) Offices.—The provision of orderly rooms and company offices did not present special difficulties, the larger rooms of dwelling houses being well adapted for the purpose. At racecourses, training colleges and in large shop premises suitable portions of the structures were found available and little alteration was needed. In all cases the imperative necessity of securing ample ventilation was found to be the important point: men engaged on clerical work at such offices worked long hours and there was also a tendency to overcrowd the rooms.

(b) Stores.—In large units the quartermaster’s stores needed close attention if satisfactory conditions were to obtain. At times the accommodation was necessarily somewhat scattered, but when the storage of meat, bread, groceries, equipment, clothing, bedding, blankets and fuel were grouped together alterations to the premises acquired were found essential. Separate bread, meat and grocery stores were arranged by the adaptation of existing buildings or sheds. In some cases portions of buildings were found fulfilling practically all the requirements and needing only fly-proof wire over the openings—in others, such as a large shed with a galvanized iron or other light form of roofing, it was necessary to partition off into compartments and provide a ceiling and cross ventilation to them to secure the necessary reduction of temperature during the hot weather. This was of special importance where meat was drawn three times a week only.

Suitability of flooring, both as regards the surface and facilities for washing out, needed attention and also the condition of the yard space outside used by lorries and other transport for drawing and issuing supplies.

The importance of a well-paved surface to the yard of a quartermaster’s stores is obvious if mud in the wet, and dust in the dry, weather is to be avoided in the compartments opening from it.

Small coach-houses and similar outbuildings often gave good food storage room—the paved floor, however, was sometimes drained into a
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gulley within the structure, which was connected to a drainage system. To prevent the possibility of contamination of food supplies, these gullies were disconnected and sealed off, arrangements being made to get rid of water used in washing down floor, on the outside.

Dryness and good ventilation were aimed at in the accommodation for storing clothing, bedding and blankets. Fuel storage was placed as far away as practicable from bread and meat stores on account of the dust generated in loading up handcarts for supplying fuel to the hirings.

The small stores of company offices, where blankets and palliasses were kept for direct issue to men were examined on routine visits: at times there was a lack of care in the storage of these and they were found placed by open windows where rain could drive in, or kept in damp basements. The most convenient place is an airy room where they can be placed against inside walls.

(c) Repair Shops.—Provision was necessary in the larger units, for tailoring and boot repairs. Good light being essential in both cases ordinary shop premises could be made suitable.

The shop forms a good working area, and rooms at the back can be used for storing boots and clothing awaiting repairs. The great defect of nearly all shop premises, however, is inadequate ventilation. The glass front often runs from sill to ceiling without opening; or where a ventilation panel at the top is provided it is too small to allow of the necessary change of air; in addition the rooms behind usually open into a confined yard. Much could be done to promote good cross ventilation by making fixed lights to open and forming fanlights over the doors. The aspect of the shop needed attention; in the summer months, if an outside blind was not provided in certain cases, the conditions for men working behind an unscreened area of plate glass became most unsatisfactory.

VII.—Officers’ Quarters.

Two broad considerations were presented when the acquisition and adaptation of quarters for officers was undertaken.

It was obviously desirable the accommodation should approximate, on simple lines, to the standard of comfort and refinement that obtained in other messes of a more settled character. The influence of environment on young officers, newly commissioned, and also on cadets, was an aspect of the case often brought forward by officers commanding. Efforts were accordingly directed to securing quarters well situated and in good order, and to improving the general conditions, where necessary, by cleaning and distempering walls and providing facilities for bathing within the hiring.

The second consideration was the proximity of the mess to the headquarters. In small units as a matter of convenience the orderly room and officers’ mess were often grouped in the same hiring, and in any case, a house or other building was acquired within easy distance.
(a) Messes.—These were generally arranged in large houses where two or three rooms of good size were available for dining and anterooms. The kitchens, sculleries, larders and pantries were usually sufficient to meet the requirements, although it was often necessary to supplement the kitchen range with a gas stove, to improve the ventilation of larders and provide fly-proof wire.

In one instance, where the number of officers was at times very large, a Masonic hall was acquired for their use. This building had all the essentials, and many of the amenities, of an officers' mess. Dining and anterooms, ample lavatory and latrine accommodation and good facilities for cooking were available. A few improvements were effected to extend the provision for washing up and secure the better storage of food. At one of the racecourses, again, good accommodation was found, although in this case sufficient anteroom space was not available and extension was necessary.

(b) Sleeping Quarters.—Where the mess was in a house, the bedrooms in the same building were used. Additional rooms were often necessary, however, and it was found a convenient course to set aside a hiring, especially for officers, their batmen having quarters in the same building. Many units detail a room for an officer for each of the large hirings occupied by men, with a view to more effective supervision. Even in the case of officers there is a tendency at times towards the overcrowding of sleeping rooms. Units training officers for overseas duties were especially liable to have their strength increased at short notice, and it was important to arrange for some reserve accommodation to meet a rush.

These notes have reference to the Woolwich medical district only. In this district the number of troops accommodated in hirings alone was at one time considerable and reached about 48,000.

So far as the area in which the writer worked was concerned a review of the conditions leads to the conclusion that a very large variety of buildings, ordinarily in civil use, were capable of adaptation for military occupation, and that troops in large numbers, and often of low medical category, could be accommodated in them without detriment to health, provided care was exercised in the selection of the hirings, that the Royal Engineers' services were adequate, and that an efficient sanitary standard was continuously maintained.

Permission was kindly given by the A.D.M.S., Colonel H. V. Prynne, D.S.O., for the preparation of these notes.

Until April, 1919, the Specialists Sanitary Officer responsible for the whole district to the A.D.M.S. was Lieutenant-Colonel A. Butler-Harris, R.A.M.C., with whom the writer was fortunate to be associated, as Assistant Sanitary Officer, for fifteen months.