THE COLLECTION AND EVACUATION OF SICK AND
WOUNDED IN THE TERRITORIAL FORCE.

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Apart from the prevention of disease, the main function of the medical services is the speedy evacuation of the sick and wounded from the fighting units to general or temporary hospitals. This is necessary not only for the sake of the wounded, but also to free the fighting troops from the encumbrance caused by large numbers of non-effective men. The expression "general or temporary hospitals" is used advisedly to indicate that although the majority of the wounded will be evacuated down the lines of communication, yet there are two classes which will require temporary accommodation up near the front, namely, those that are too seriously injured to be moved, and those that are so slightly wounded as to require only a short time under medical care before rejoining their units. The care of the sick and wounded during evacuation and the provision of medical and surgical equipment are also functions of the medical service, but they are so inseparably bound up with the question of evacuation as to justify their being included with it. No system of evacuation can be considered adequate which does not also provide for the care of the wounded, and for a sufficient supply of medical and surgical equipment.

The object of the present article is to endeavour to lay down the rôle played by each of the medical units of the Territorial Force, and to describe how they may be best employed in the various situations that are likely to arise, not only in action, but also on the line of march, and during periods of inactivity. Though primarily written for territorial officers, it is thought that it may be of interest to the readers of this Journal.

Before proceeding further it will be necessary to get a clear idea of the functions of field ambulances and clearing hospitals. In addition to their normal function of the collection of wounded and the formation of dressing stations, field ambulances will have to establish divisional collecting stations as laid down in R.A.M.C. Training, para. 185; but there is a third function, and that is the leaving behind of one or more of the tent sub-divisions to care for wounded not yet evacuated to the clearing hospital, in other words the formation of field hospitals. This function is indicated
in para. 209, R.A.M.C. Training, and was also laid down by Surgeon-General W. G. Macpherson in an article published in the Journal of the Royal Army Medical Corps about eighteen months ago. Further, field hospitals as distinct units are provided for in the organization of the medical services of practically every other army, and there is no doubt that our tent sub-divisions are intended to be used as such in suitable cases.

In the report on the medical arrangements of the South African War, page 92, the committee recommended the adoption of the combined unit system, "not, of course, to the exclusion of field hospitals for divisional use," and further on, page 100, "Field hospitals continue and complete the work of the ambulance and enable the latter to advance or retire without hindrance." Tent sub-divisions which have thus become stationary must of necessity lose touch with the commanding officer, and their administration and control by the assistant director of medical services is rendered difficult. Would it not be better therefore to remove them from the field ambulances altogether and organize them into separate units directly under the control of the assistant director?

The addition of extra stretchers and blankets to the equipment of these units would add materially to their efficiency.

The clearing hospital of the Territorial Force is a small unit consisting of three officers and five other ranks, and is comparable to the sick and wounded transport department of the Japanese Army. Its function in peace time is to assist in the training of the voluntary aid detachments, and on mobilization to take charge of and superintend their work in connexion with the care and evacuation of wounded. At first sight it would appear a very simple matter to organize an efficient clearing hospital by filling up this skeleton unit with voluntary aid detachments, but two difficulties stand in the way: firstly, the lack of a medical officer in the establishment of a women's detachment, and secondly, voluntary aid detachments can only be called upon to serve in their own area. This limitation of the sphere of work of voluntary aid detachments renders it probable that the clearing hospital will not be working in war with the same personnel it has trained in peace, and further that it will probably be working with different personnel from day to day. It is therefore very necessary that the system of training and organization should be the same in every division.

The functions of a clearing hospital are to form:

(1) Rest stations where convoys of sick and wounded will halt for rest and refreshment, and, if necessary, accommodation over-
night. The establishment required is one medical officer and personnel for nursing and cooking, say about half a men's, or one women's detachment.

(2) Temporary hospitals for the care of those cases that are unfit for further transport, and of those that are so slightly wounded as to be able to rejoin their units after a week or two. One women's detachment, and one or two medical officers should be a sufficient personnel for these hospitals.

(3) The clearing hospital proper to take over the wounded from field ambulances and transfer them to railhead or the temporary hospitals prepared for their accommodation. The clearing hospital would usually be situated on a railway, but should not be more than ten or twelve miles from the fighting line; if there is no railway within that distance, the clearing hospital should be opened in some suitable buildings, and an entraining station opened on the line where the ambulance trains are to be loaded.

The following organization is suggested for a clearing hospital:

(a) A receiving department where the wounded would be classified into slightly wounded, fit for transport, and unfit for further transport. The employment of clerks is necessary, as a record must be kept of the disposal of each case, particularly of those that are to be sent to the temporary hospitals. The personnel, therefore, should consist of one medical officer, two clerks from the permanent personnel, and an unloading party from the voluntary aid detachment. (b) Wards prepared for the wounded and staffed by two medical officers and nurses. (c) A discharge department staffed by one medical officer and a men's detachment. If the unit was situated on a railway this department would also carry out entraining duties. (d) The steward's store under the quartermaster of the unit. (e) The pack-store in charge of one of the permanent personnel, assisted by some of the voluntary aid detachment. (f) The kitchen. Sanitary and water-duty men may also be required, but as the hospital will always be in buildings, a good water supply will, as a rule, be available, and probably sanitary conveniences also.

The additional personnel required under the above scheme would consist of two medical officers, one men's and one women's detachment.

(4) The collection and preparation of country carts for the transport of the wounded from the field to the railway. The employment of motor transport for this purpose would be a distinct advantage, owing to its greater speed and comfort. For sitting
Collection of the Sick in the Territorial Force

cases private motor-cars would be useful, but the best type for all purposes would be motor-omnibuses or vans. Large numbers of the latter type, built to carry from fifteen to twenty hundredweight, are employed in all the large towns, and could easily be adapted for ambulance use. Were the British Red Cross Society to take this matter up and raise new detachments, called Red Cross motor detachments, and register these vehicles in peace, it is certain they would be able to raise units that would be invaluable in war. These convoys would be employed not only to carry wounded to railhead, but also in suitable cases to evacuate direct to general hospitals. The advantage of the latter method, especially for serious cases, is obvious, as the wounded are brought direct to hospital with only one move, and the discomforts of entraining and detraining are avoided.

(5) Improvisation of ambulance trains. The medical and surgical equipment required could probably be obtained locally, but if not, there would, it is presumed, be depots of these stores formed on the line of communication. To carry out this scheme the officer commanding a clearing hospital would have to be granted requisitioning powers, and also be authorized to employ civilian medical practitioners; but in connexion with this point, as it is probable that two or more divisions would be grouped together into one army, one clearing hospital might be sufficient for both, and by using the permanent personnel of two clearing hospitals the aid of civilian medical men could be dispensed with.

DURING PERIODS OF INACTIVITY.

The assistant director of medical services will establish a daily service of ambulance wagons to collect the sick of all the units and bring them into the field ambulance detailed to receive them. These arrangements will be published in divisional orders, and will include a time-table of the service of wagons. The tent sub-division detailed to receive the sick should be preferably one of those earmarked as a field hospital, thus leaving the first line of medical units (i.e., bearer division and dressing station) free to advance with the troops at short notice. The regimental medical officer has to decide which cases should be sent back and which retained. He is influenced on the one hand by the desire to keep the fighting line of his unit as full as possible, and on the other by the fear of receiving a sudden order to advance when he has some sick on his hands. Further, officers commanding field ambulances will
not be over-pleased if, after receiving an order to march, there is a large influx of sick from the various units. It is impossible to lay down any rule, but the principle to be observed is, if there is any probability of a move, evacuate all, but if the unit is likely to remain in quarters for a few days doubtful cases may be kept for forty-eight hours.

The final disposal of these cases will rest with the clearing hospital; serious cases will be sent down the line to a general hospital, for which purpose a specially equipped coach might be attached to the supply trains. If the railhead is some distance away a rest station may be required, and the sick will be transported in the supply wagons returning empty. Slight cases will be kept in the field units if the military situation permits, otherwise they will be cared for in a temporary hospital staffed by a voluntary aid detachment. The best method would probably be to establish the field unit in buildings and to warn a voluntary aid detachment to be ready to take over the hospital at short notice.

ON THE LINE OF MARCH.

The medical arrangements on the line of march are very similar to those adopted during periods of inactivity. The assistant director of medical services will detail one field unit to receive the sick on arrival in camp; the service of ambulance wagons would not be established, and units would be responsible for sending in their own sick. The distances, especially if the troops are billeted in depth, may be so considerable that hand carriage will be out of the question; therefore carts will have to be requisitioned and prepared for the purpose. If none are available the sick must be left in charge of the inhabitants and picked up next day by the advancing field ambulances; but this is to be avoided at all costs, as it means so much extra travelling for the sick before they reach a hospital.

The cases must arrive at the tent sub-division opened to receive them in time for classification and treatment preparatory to further evacuation. This hour must be notified in divisional orders and will depend on the time of marching, or the time that the supply wagons start on their return journey, if that method of evacuation is to be used. As an alternative it is suggested that the country carts, requisitioned by the units, carry the sick on to railhead, or, if the distance is not great, the ambulance wagons could be detached and ordered to follow up and rejoin their unit during the day.
The principle of distributing ambulance wagons throughout the column to take up those men that fall out on the march is a very good one, as many of these cases if given a lift at the time will be quite well again next day. It can, of course, only be adopted if the military situation permits and by order of the commander. Failing this, men falling out may be able to march if relieved of their arms and kit, or they may be carried for a time on the first line transport. If too ill for this they must be left on the roadside or in charge of the inhabitants to be picked up by the field ambulances. From the field ambulances sick will be evacuated daily, by means of the empty supply wagons or by one of the other methods alluded to above, to railhead, where the clearing hospital will have established a rest station to look after them pending their further evacuation down the line; trivial cases may, however, be kept in the field units provided no engagement is imminent.

In the Austrian organization provision is made for the establishment of "collecting stations," not only during periods of inactivity but also every three days or so on the line of advance, the personnel being furnished by a unit called a mobile reserve hospital, supplemented by civilian aid as much as possible. The equipment is drawn almost entirely from local resources. The function of these stations is threefold: (1) To treat those cases that are likely to recover soon, and send them forward to rejoin their units; (2) to retain and treat the more serious cases until they are fit for transport; (3) to evacuate those cases that require prolonged hospital treatment, but are fit for transport, and to provide rest and refreshment for such cases passing down the line. In other words, they perform the functions of clearing hospitals on a small scale. These stations are only formed when the sick have to be evacuated by road. Similar stations might with advantage be used in the territorial organization to undertake the care of trivial cases, even when the evacuation is carried out by rail. They could be staffed by a women's detachment, and their formation would keep the field units empty and lessen unnecessary evacuation; the patients when recovered could be sent forward with the supply columns to rejoin their units.

ON THE EVE OF AN ENGAGEMENT.

The wounded that first arrive from a battle consist of: (1) those who are so slightly wounded that it is advisable to retain them near the front, and (2) those who though seriously wounded are yet fit for transport. The former should be kept at the head
of the line of evacuation until it is seen what the issue of the battle is likely to be, so that in the event of a retirement they can be removed out of danger of capture; the latter should be evacuated at once. With this object in view the officer commanding the clearing hospital under the orders of the director of medical services will prepare to open his unit on the morning of the battle.

The type of action, i.e., defence, attack, or encounter battle, will, of course, influence the medical dispositions, so it is proposed to deal first with an attack and later indicate how the arrangements would differ in the other cases.

The director of medical services of the army will draft a plan of evacuation for the approval of his commander; this will include the sites of the clearing hospitals, the collection of auxiliary transport, and the places where it is to be assembled, the site of rest stations if such are necessary, the roads to be used by the convoys, the stations where the wounded are to be entrained, and the number of trains that are to be prepared. Probably the best distance from the firing line for the clearing hospital is about ten miles, and if there is a railway available within that distance the hospital should be situated on it. Otherwise a suitable situation will be chosen within that radius and the sick evacuated thence to the nearest railway, where a detachment will be posted to entrain them, with rest stations along the route if necessary. The possibility of having to evacuate the wounded by road must be considered, and here the motor convoys already referred to would be very useful. Based on this plan the director will draft paragraphs for insertion in operation orders for the information of the commanders and assistant directors of medical services of divisions; and he will also issue orders for the officers commanding clearing hospitals and indicate if necessary what personnel they are to use. Thus, if two divisions are acting together, but with separate lines of evacuation, two clearing hospitals might be established, and it would be advisable to allot certain voluntary aid detachments to each. At any rate, it will probably be his duty to call up the voluntary aid detachments, and he would order them to report to officers commanding clearing hospitals at definite hours and places. The collection of transport and its preparation should be done by the detachment before they report themselves. In this way a larger area would be drawn on both for transport and material for its preparation. Having been collected, the officer commanding a clearing hospital would merely have to send the transport under a competent guide to the place selected.
for its assembly. The duty of collecting medical and surgical material will devolve on the personnel of the clearing hospital; the best method would probably be to requisition some carts and go round and collect it; this should be done as early as possible, so that any deficiencies might be wired for in time to be sent up on the first ambulance train. Then having collected personnel, transport, and equipment the officer commanding will proceed to establish his clearing hospital in the manner already suggested.

The assistant director of medical services, on receipt of the information that an engagement is imminent, will clear his units of any sick they may contain. He will then select a site for the divisional collecting station in accordance with para. 185, R.A.M.C. Training. The early opening of this station is of importance, as it is the first link in the chain of evacuation during the preliminary stages of the battle, and if not opened, the wounded who first come out of the firing line, i.e., walking cases, will wander back in all directions towards the rear instead of being collected in one place. The next point to be considered is the dispositions of the field ambulances, and here a point of unorthodoxy creeps in. Instead of allotting the field ambulances to areas, it is suggested that a rendezvous be appointed, where the units would assemble and await final orders, then when the action had developed the assistant director would be in a position to decide on the most advantageous dispositions, with definite knowledge to act on. It may be said that this would keep the medical units back too long, but on reading accounts of battles one is forced to the conclusion that, until a lull occurs, or the action moves on, very little can be done beyond attending to the slightly wounded who make their way out of the firing line, and here the value of the divisional collecting station is apparent. At the same time the assistant director, accompanied by the officers commanding ambulances, should make a reconnaissance of the ground to select alternative sites for dressing stations, and draw up a general outline of the scheme. If a reconnaissance is not possible sites should be selected from the study of the map. Another argument in favour of holding back the medical units as long as possible is that it lessens the danger of their betraying the movements of the fighting troops.

In making arrangements for feeding the wounded the difficulty will be to have the food coming up for the combatant units diverted to the medical units. Two methods are suggested: one is to get out a rough estimate of the number of wounded per unit, and ask the
staff to send it to the officer commanding the supply column in
time to divert the rations; the other, probably the more preferable,
is to divert, as a routine measure, five per cent of the rations
intended for the troops that are actually engaged. A message to
this effect could easily be sent to the supply column in time to be
effective. As regards distribution, it is estimated that in the most
favourable circumstances not more than fifty per cent of the
wounded will have reached the clearing hospital by the evening,
therefore half the rations should be sent to that unit and half to
the field ambulances. The officer commanding the former unit
should further have instructions to send forward any rations he
receives in excess of his requirements.

**DURING AN ACTION.**

The duties of the regimental personnel are to render first aid,
to collect wounded into groups where possible, and to direct cases
able to walk to the divisional collecting station. The medical
officer, accompanied by his lance-corporal, will go into the firing
line; his presence there is necessary if only for its effect on the
*moral* of the troops. Regulations state that the lance-corporal is
to carry the field medical companion, but it is questionable if such
an article of equipment is required. It weighs about thirteen
pounds and contains material which is rarely needed in the field.
Would it not be better if he carried a surgical haversack or even
a simpler form of haversack containing nothing but supplies of
dressing material?

The regimental stretcher-bearers should deploy with their
companies and act as dressers during the fighting; it would be
a great advantage if each pair carried a supply of dressings, and
each man a water-bottle. During lulls in the fighting, or when
the nature of the ground allows it, efforts should be made to collect
wounded into groups. The stretcher-bearers should endeavour to
keep in touch with the bearers on each side, and through them with
the medical officer. Should they carry the stretchers or not?
Undoubtedly, if they leave them behind they will be less hampered
in their movements, and probably better able to attend to the
wounded; but, on the other hand, they will not be able to avail
themselves of the many opportunities that will occur for the collec­
tion of the wounded, and at the end of the day may be left without
stretchers for a long time. The medical equipment cart ought to be
brought up as close as possible, with orders to the man in charge
to follow the battalion when the latter advances; some reserve of
water should also be brought up close to the front, so that if opportunity arises the stretcher-bearers can refill their bottles. It might be possible, with the concurrence of the commanding officer, to have a water-cart up with the medical equipment cart.

The attachment of tallies to every man in the field appears to be a waste of time; would it not be sufficient only to put them on the more serious cases such as haemorrhage, abdominal wounds, etc.? For this purpose special tallies might be issued on which no writing was required, the presence of the tally in itself being sufficient to draw attention to the case and indicate that it was serious, the real tally then being attached at the dressing station.

Lastly comes the question of aid posts. As will be seen from the foregoing all the personnel, except the driver of the cart and the men of the R.A.M.C. for water duty, are in the firing line, so that it is difficult to see how personnel is to be provided for these posts. The medical officer, however, should select positions and point them out to the bearers, beforehand if possible, as the places where the wounded are to be collected if opportunity occurs, while if the advance is checked, or long intervals occur in the fighting, he would establish an aid post and work there till the unit moves on again.

The first duty of the field ambulance is to establish the divisional collecting station; the tent sub-division detailed for this purpose will therefore march direct to the site selected by the assistant director of medical services. This post will be organized in the following departments: (1) Receiving and recording departments staffed by one officer and the clerks. (2) A place for dressing where the senior officer will work assisted by the dispenser and two nursing orderlies. (3) Wards in two sections in charge of the wardmaster (senior non-commissioned officer) and the remaining five nursing orderlies. (4) Steward's store, where the steward will be assisted by the pack-storekeeper, the latter not being required. (5) Kitchen and water-duty men. (6) Sanitary area. (7) Transport park.

At this station the wounded will be classified into (a) those requiring transport, (b) those able to walk; the latter will be collected into batches and marched to the clearing hospital under the senior amongst them, and the former will be sent back in the improvised transport. Tallies will be attached to all cases that come in without them, and the best place to make them out is the dressing tent, at the dictation of the medical officer who is dressing
the case. But this would mean the employment of an extra clerk or an extra nursing orderly for the purpose. The latter could easily be spared for this duty as the wounded would not require very much attention. The present tally is too small, and the one described by Captain F. W. Cotton in the Journal of the Royal Army Medical Corps for March, 1912, would be much more useful.

The commanding officers having marched their ambulances to the appointed rendezvous will report in person, each accompanied by a second officer, to their assistant director. On receipt of final orders a commanding officer will send the second officer to lead the unit to the area selected, and go direct himself to select a site for the dressing station, if this has not already been done by the assistant director. If buildings are selected as a site for the dressing station they should be large and easily accessible to stretchers; such places as schools, barns, and large out-buildings suit very well, but small rooms are not advisable owing to the difficulty of looking after cases in them. The risk of tetanus infection in dressing cases of open wounds in the vicinity of stables, etc., has to be considered, and it would be interesting to have an authoritative opinion as to whether there is any real danger to be apprehended from this source.

On arrival of the unit the bearers will be disengaged and sent forward under their officers, and accompanied by the wagons as far as is consistent with safety. The commanding officer will indicate how he requires the dressing station to be laid out, and then ride on after the bearers, select the site where the wagons are to be halted, and see that the bearer sub-divisions engaged know exactly what areas they have to cover. He will then return and take up his duties at the dressing station. The organization of this post and the distribution of its personnel is similar to that of a divisional collecting station with the following exceptions: (1) There are two places set apart for dressing, one for slight and one for severe cases; the latter will be staffed by one officer, a dispenser, and two nursing orderlies, the former by the junior officer assisted by one orderly. This officer will also be in charge of the receiving department, and in addition will have to assist in the serious case department when anaesthetics are required. It is obvious that this multiplicity of duties will seriously interfere with the efficient working of the system. The obvious solution is the addition of an extra officer to the establishment; failing this, the system adopted in the Austrian organization of reinforcing the
dressing station with officers from the field hospitals might be adopted. (2) Wards will be organized into four sections, for walking, sitting, and lying cases, and for officers respectively. (3) A pack-store will be required. (4) Places will also have to be set apart for the dying and for the dead.

Diagram of Disposition of Medical Units on the second day of a battle. The route of evacuation of slightly wounded is shown in broken line.

The unloading of wagons and the carrying about of patients within the dressing station causes a good deal of confusion, owing to the fact that there is no one to do it except the nursing orderlies, who are as a rule fully occupied with their own duties. It is suggested that men might be withdrawn from the bearer subdivision for this purpose by reducing to five the number of bearers in six of the squads. The filling in of tallies at the dressing station can be done by the orderlies employed in the dressing departments, but the addition to the personnel of two men for this purpose would be of very great advantage.
The formation of an advanced dressing station will only be required when for any reason it is impossible to get the wounded back to the dressing station, or the dressing station up to the wounded. It corresponds to the old collecting station of the bearer company. Thus at the battle of Modder River, when owing to the Boer fire and the flat nature of the ground it was impossible to get wounded back, a collecting station was formed by the bearer company of the Guards' Brigade right up behind the firing line. An advanced dressing station consists principally of personnel and as much material as can be got up, the essential things being water, restoratives, and dressings.

The wounded when treated and fed at the dressing station will be evacuated to the clearing hospital, either on foot or by improvised transport. On arrival at the latter station they will be classified and dealt with as follows: (1) Those unfit for further transport will be handed over to a temporary hospital. (2) Those who require prolonged treatment and are fit for transport will be evacuated. (3) Those who will be able to return to their units after a week or two will be retained. If the result of the action is favourable they will pass to a temporary hospital; if not, they will be evacuated to a place of safety on the line of communication.

In the case of the action ending unfavourably the assistant director of medical services will be warned beforehand that the troops will probably have to retire; he will then accelerate the evacuation by every means in his power; the staff will be asked for all available wagons. All cases that can possibly march will be sent away, and there will be no delay for rest or refreshment at the field stations. The latter will not be closed till the assistant director receives orders to do so; finally, when the order to retire does come, if some wounded remain he must ask the commander for permission to leave personnel behind.

Should the troops be victorious the object is to collect the wounded as rapidly as possible, and to bring up the field hospitals to take over the cases at the dressing stations, thus setting the latter free to proceed with the troops. If there is a pursuit one field ambulance will be sent with the pursuing troops; but should the enemy merely retire to another position a short distance in rear, then probably our troops will hold the position gained, and all the medical personnel can concentrate their efforts on the collection of the wounded. As many field hospitals as are required will be opened, and the dressing station will be packed up ready to advance.
In defensive operations the medical arrangements are similar to those for an attack; they only differ in the more deliberate manner in which they are made, and the proximity of the positions to the firing line. The divisional collecting station and clearing hospital may be further forward and more permanent in character. The dispositions of the field ambulances can be gone into much more fully, and alternative schemes prepared for possible or probable contingencies; but, as in attack, it is suggested that they be held back till the enemy's intention is revealed. Owing to the stationary nature of the fight, and the probable presence of cover, the regimental personnel will be enabled to form aid posts, and these should be reinforced by personnel from the field ambulances (para. 211, R.A.M.C. Training). These temporary dressing stations, which constitute the only fundamental difference between arrangements for attack and defence, can be withdrawn when the field ambulances come into operation.

In an encounter battle the regimental personnel will act as in attack, i.e., follow up if the troops advance, rendering first aid and collecting wounded into groups; while should the troops act on the defensive, they will endeavour to form aid posts. The field ambulances may have to act on their own initiative, but the assistant director of medical services should endeavour to give them a rendezvous and deal with situations as they arise. He should establish the divisional collecting station as soon as possible and inform the troops of its position by means of messages sent to the brigade commanders. If acting independently, officers commanding field ambulances will endeavour to get into touch with the regimental personnel by means of the bearers. Dressing stations should not be pitched until the action has developed, and altogether their policy should be to remain in the background until they are required.

No remarks on field medical organization can be considered complete without a reference to aviation; and here, owing to my thorough ignorance of the subject, I must tread warily. It would appear, however, that in two directions at least aviation is already able to render great assistance in the treatment of the wounded: the first is the sending of medical aid to detached parties, e.g., cavalry raids; and secondly, the possibility of saving valuable lives, by bringing wounded quickly and easily within the reach of efficient treatment.