INTRODUCTION.

In view of potential attack from the air, the protection of Medical Establishments by signs is of extreme importance at the present time, in all areas where the Medical Services may be engaged, in the field, on lines of communication and at the base, whether at home or abroad.

Fast, long-range bombers can carry a ton of high explosive, incendiary or gas bombs. These machines will fly at a height of from 15,000 to 20,000 feet, a height from which it is difficult to pick out and operate on a definite target with perfect accuracy.

Public opinion demands some form of protection by signs at any rate for home hospitals, which may contain civilian patients. The question of Protection in the Field must be left to the General Officer Commanding the Force, who may not wish to reveal the disposition of any of his troops to the enemy air reconnaissance.

A valuable paper with the above-mentioned title was published as Document No. 11a, by the Sixteenth International Red Cross Conference held in London in June, 1938.

Observations of the Swiss Military Department and a report by Major-General Schickelé of the French Army Medical Service are published in Appendix 11.

General Schickelé insists on the use of the colours red and white prescribed by Geneva, and the use of the cross as defined by the Geneva Convention. The dimensions suggested are a cross with a total width of 25 metres and arms 3 metres across. This he considers visible from 4,000 metres.

The Swiss Report points out that emblems 5 by 5 metres "as employed at present" are inadequate, also that larger emblems should not be spread over the ridge of a roof, since these cannot be recognized in time by aircraft even when flying at low or medium altitudes.

General Schickelé admits the usefulness of accessory and additional means to facilitate the observation of the Red Cross, but does not venture to make any suggestions.

In the course of the present article the use of the letter H will be recommended as a ground sign, additional to the Red Cross.

Protection of Field Medical Units.

Experience in Abyssinia has shown that the Geneva Cross cannot be relied on for protection against air attack.

Concealment of troops previous to any attack is extremely important in modern warfare. The General Staff will not give away the disposition of their troops by well-marked medical establishments. Advanced dressing stations and main dressing stations will, therefore, in future rely for a measure of protection on the following points: (1) Choice of situation as far as possible from Artillery formations and definite targets such as crossroads, dumps, etc. (2) Taking all possible advantage of natural cover such as woods, etc. (3) Artificial camouflage to protect temporary buildings or tents. (4) Parking of vehicles in the shadow of trees; and (5) Instruction of the personnel to remain still in the shade without exposing their faces on the approach of aircraft.

In an exercise on concealment at Farnborough Aerodrome, the 131st Field Ambulance, T.A., covered their tents with branches of trees, parked their vehicles amid the gorse and kept the men in the shade. I was taken up as an observer and although I knew exactly where to look, failed to see signs of the unit even at 3,000 feet (See page 291).

Stretcher bearer parties should be taught to estimate the height of
approaching aircraft. From 10,000 feet and over they will not be distinguishable whatever they do. If the machines are lower the men should put their stretcher down and lie down themselves. In open fields groups of bearers look like cattle or sheep grazing. If there is time to get into the shadow of hedges or woods concealment is obviously more successful. The difficulty of distinguishing enemy from friendly aircraft is so great that the only safe course is to regard all machines as hostile and act accordingly.

These remarks do not apply to the putting up of directing signs to field medical units. Well-shaded illuminated signs should be placed on the ground for night work. These may be improvised by placing a hurricane lamp in a suitably prepared packing case. Direction signs are painted on suitable blue-tinted semi-transparent material. Arrows painted with luminous paint, mounted on small posts, are useful.

**Protection of Casualty Clearing Stations and Base Hospitals.**

By the kind co-operation of the 615 Auxiliary Squadron, R.A.F., I have recently been able to make observations myself on the visibility of the Red Cross and the use of auxiliary signs.

Photographs taken at 5,000 feet show that a Geneva Cross 25 by 25 feet can be distinguished without much difficulty.

Direct observation, however, of crosses 30 by 30 feet improvised by
spreading white sheets and red blankets on the ground, when made from
a height of 10,000 feet, shows: (1) It is difficult to distinguish the sign at
all. (2) The red colour can no longer be distinguished. (3) The sign is
confused with small flat-topped out-buildings or sheds.

From 15,000 feet it is doubtful whether even the large crosses suggested
by General Schickelé can be accurately distinguished by a fast bomber
in time to avoid dropping his bombs near the hospital buildings. An
accessory sign such as the letter H made out of hospital sheets laid on
grass or other suitable background with vertical lines 70 feet long, and
the horizontal 30 feet, was tried out. This was picked out 3 to 4 miles
away at 5,000 feet oblique view and could still be seen at 15,000 vertical
observation.

Quite apart from the visibility of any sign that may be agreed upon,
the question of accuracy in bombing arises and what is more important,
proximity to a definite target such as a railway line, gasworks,
factory, etc.

From the height of 20,000 feet at which enemy bombers might be
expected to operate, various factors will come into play to induce the
crew to off-load their bombs as soon as possible after arriving in the
neighbourhood of their objective. It is unlikely that careful observation
will be made to seek hospital signs, and even if recognized it is doubtful
whether careful aim can ensure that medical establishments are not hit.

A recent instance in China was described to me verbally, where a
large Red Cross 60 by 60 feet, supported on poles to ensure its visibility,
failed to secure protection for a large hospital building which was heavily
bombed from a height of 500 feet.

At the present time the International Red Cross Committee is con­
sidering the recognition of certain areas as neutral zones to be left immune
from bombing attacks, "Villes Sanitaires."

CONCLUSIONS.

(1) Forward medical units should be prepared to rely on camouflage
for protection.

(2) The medical staff should be responsible, after consultation with A,
for the location of forward units as far away as possible from definite
targets.

(3) Medical officers in charge of advanced dressing stations and main
dressing stations should possess some practical knowledge of field engineer­
ing to enable them to render buildings proof against splinters, incendiary
bombs and gas.

(4) As regards medical establishments on lines of communication and
at the base, a very large Geneva Cross must be laid out on the ground as
suggested by General Schickelé. In addition, as an accessory sign a
letter H is suggested.
(5) All buildings used should be rendered proof, as far as possible,
against incendiary bombs and protected against splinters and gas. Covered
slit trenches in the hospital grounds may be advisable in certain cases.
(6) At night protection is best afforded by a black out.

ADDENDUM.

Since this paper was written the author had an opportunity of visiting
Republican Spain before the cessation of hostilities.
The remarks on forward medical units were confirmed—even the
motor ambulances were camouflaged and their little red crosses were
hardly visible.
As regard hospital buildings in towns, no attempt was made to use
any protective signs.
It was felt that the display of any emblem might invite attack.