

required, should be available to send to the assistance of another hospital needing it. Visiting physicians and specialists and additional surgeons should all find some place in the composition of the teams.

The whole A.R.P. system is founded on the idea of mutual support. In general it has worked extremely well, but, as was to be expected, experience has revealed loopholes in the organization of various departments. As has already been stressed, the principal fault is failure to make preparations in advance down to the smallest detail, and this applies to the reception not only of relief surgical teams but of police, firemen, rescue and stretcher parties, ambulances, mobile units, and so forth, which have to be met, distributed, housed, or sheltered. Failure in preparation often means that the heads of the various services have, during their urgent duties in a raid, to be called away to improvise arrangements that should have already been made.

Hospitals that have adopted the principles outlined above and have perfected their plans have successfully undertaken arduous work under the most adverse conditions. When such hospitals put in a call to be switched, then their request will be accepted without question; when the hospital is once again ready to receive casualties it must inform Control of this fact. Here it might be added that no hospital should be reluctant to send out a relief team on the grounds that in their absence it might itself be damaged in a raid, as it is obvious that it will have its one or more basic teams in reserve.

The lesson of all this is that the work must be done at the spot where it is needed, no matter who does it.

AIR-RAID PRECAUTIONS

The February issue of the bulletin *A.R.P. Progress*, published by the National A.R.P. Co-ordinating Committee, 30, Bedford Row, London, W.C.1, summarizes recent progress in our preparedness against air attack and gives some useful information about gas—information which should certainly be more generally known.

Precautions against Gas Attack

The following are the main types of gas attack which may be expected: (1) Non-persistent gas or smoke released from planes either by bombs or by generators. (2) Persistent gas sprayed or scattered from low-flying planes, or dropped in containers. (3) Clouds of gas or smoke released from ships (this would be possible over the South-East and as far as London). (4) Gas from shells, tanks, or grenades if troops are landed.

Because the enemy is nearer, and especially because people have become careless about gas masks, such methods of attack are at present more likely to be successful than at the beginning of the war. They might be used to cause disorganization, since a heavy attack of mustard gas would compel wholesale evacuation from the areas affected, these areas remaining unsafe until they had been decontaminated either naturally or artificially. Alternatively gas might be used simply as a means of destruction and to bring about panic. As surprise would be an important factor, such an attack would be made in the first place on a large scale. The public cannot be too strongly urged to carry their masks with them wherever they go, especially at night, when a large-scale attack would be most probable. In the House of Commons on March 27 Mr. Herbert Morrison said: "The Government are taking fresh steps to ensure that every member of the population carries, practises with, and is in every respect familiar with the use of his gas mask. The authorities responsible for the periodic inspection of gas masks should be punctilious in their duties. Although

in some areas inspection is frequent and efficient, there are some vulnerable parts of the country where it is not carried out at all.

The *Bulletin* advocates proofing all shelters and Tube stations. It is pointed out that large, well-designed shelters can be easily gas-proofed, whereas small ones are on the whole more difficult.

It is recommended that the following facts should be impressed upon shelter marshals and on the public: (1) that an ordinary room with windows shut and chimney packed gives considerable protection; (2) that the danger of suffocation in shelters from vitiation of air by breathing is negligible, since overheating of the air and panting would give ample warning; (3) that there is extreme danger of bringing liquid mustard gas or gas-generating substances into shelters or houses on boots and shoes; (4) that the civilian gas masks can be relied on.

Table Shelters

The National A.R.P. Co-ordinating Committee is unfavourably disposed towards the new indoor "table" shelters. The Government itself has said¹ that indoor sectional steel shelters would take up space increasingly needed by the bombed and homeless; that they "provide no additional protection against splinters beyond that which the walls of the room provide"; that they might well be driven through the floor or displaced by the weight of the collapsing house, or the exit from them might be blocked by falling masonry and those within might find themselves trapped and threatened by fire or escaping gas. The Co-ordinating Committee points out that these objections apply equally to the table shelters. Protection in them is below "code standard," since house walls are commonly of 9-inch brickwork, while the standard wall for a surface shelter is 17½ inches. Moreover, it is impossible to gas-proof these shelters. Most important of all, they use up steel which is badly needed for other purposes, particularly for the construction of heavy shelters.

The committee's criticism is not destructive only. It believes that an indoor shelter could serve a useful purpose in scattered areas where the communal shelter may be far from home. Home Security Bulletin C.14 describes a good indoor shelter with a cross-braced framework independent of the structure of the building, supporting a canopy which would catch falling debris. It is recommended that in any case windows and doors should be provided with baffle walls as a protection against splinters, that there should be an emergency exit, and that the room chosen should face soft ground to avoid damage from concrete which an explosion might throw up in splinters. A room prepared in this way could be used for other purposes.

While the new fire-fighting arrangements are justly praised, two dangers are emphasized—that of reduced output owing to the extra hours and strain, and the difficulty of protecting fire-watchers while they are on duty. Some kind of protection even against shrapnel and splinters would be a help.

The problem of fire-fighting, like the earlier one of utilizing the Tubes as shelters, has been met by sheer force of circumstances. But in less obvious matters—urgent though they may be—officialdom is still adopting, the *Bulletin* states, a blundering, half-hearted policy. The Board of Education states: "Damage to schools has been almost wholly confined to the hours of darkness when children are not at school, and this is a factor which is clearly relevant to the consideration of the type of protection to be provided." Building of shelters is still talked of as in some instances "impracticable," to be supplemented by the admittedly makeshift method of scattering school children to neighbouring houses during an alert. The Co-ordinating Committee, on the other hand, has prepared drawings of a modified "Haldane" shelter—classrooms by day, safe shelters by night. Drawings can be obtained from the committee at 1s. 6d. each post free.

¹ *Air Raid Shelter Policy*. H.M.S.O., Cmd. 5932. (2d.)