

CONSEIL DE L'ATLANTIQUE NORD  
NORTH ATLANTIC COUNCIL

EXEMPLAIRE N° 130  
COPY

ORIGINAL: FRENCH  
31st March, 1955

NOT CONFIDENTIAL  
DOCUMENT  
AC/23(CD)D/103

CIVIL DEFENCE COMMITTEE

THE RESCUE OF TRAPPED PERSONS AND THE TREATMENT  
AND REMOVAL OF INJURED PERSONS

Supplementary note by the Experts

At its last meeting, the Civil Defence Committee, after considering AC/23(CD)D/90, requested the experts to collate the work done by countries on the points mentioned in paragraph 12.

From the United States, Belgian, United Kingdom, Canadian, French, Greek and Luxembourg replies, the experts have been able to prepare the present note, in compliance with the Committee's request in AC/23(CD)R/5 (item IX).

2. Paragraph 12 of AC/23(CD)D/90, referred to above, contained two separate sub-paragraphs. Sub-paragraph (i) concerned investigations on the best type of manpack for rescue and first aid teams and the appropriate equipment for each, to enable them more readily to move about over heavy débris. Sub-paragraph (ii) dealt with finding a method by which stretchers could be conveyed over heavy débris by some mechanical or other device to spare casualties discomfort.

The present note is made up of two parts, dealing separately with each of the above problems.

I. MAN-PACK AND EQUIPMENT FOR RESCUE AND FIRST AID TEAMS

3. The United Kingdom Delegation has already given the characteristics of the man-pack with which the members of rescue teams will be equipped (see United Kingdom paper CDI 8/310, circulated at the last meeting of the Committee). A few minor modifications have been made in respect of the equipment and tools carried in the man-pack. Gloves and ground-sheets are no longer included. On the other hand, a digging tool (such as pick or entrenching tool), pliers, an auger etc., have been added to the equipment.

The personal equipment has also been slightly modified. In the carrier attached to the belt, the small handsaw has been omitted. On the other hand, a tin of first aid plasters and a small hack-saw has been added. Finally, the shovels which were previously slung through the pack-straps will be carried by hand.

The United Kingdom authorities consider that with this equipment, and however widespread the damage caused by nuclear weapons, the rescue teams will always be able to reach the scene of operations on foot, and to a large extent with their hands free.

4. Belgium and Luxembourg consider that the man-pack adopted by the United Kingdom will be suitable for their teams. These two countries have not yet, however, been able to try out this equipment. They propose doing so shortly, Greece has already adopted the United Kingdom type of man-pack and personal equipment, but does not comment on it. France has not yet adopted any type of man-pack. They are at present considering a tool case to carry all the equipment required by an eight-man rescue team. This is another problem, of unquestionable importance, but one which does not come within the scope of this note.

5. The United States are of the opinion that the following items should be included in the man-pack tools:

- a pair of locking pliers
- a medium weight hammer;
- a cold chisel;
- a multiple interchangeable shank screwdriver (4 size shanks);
- a short-handled foxhole shovel for shoveling and light picking;
- a saw frame of the interchangeable blade type, with several blades;
- one 50' length of 1/2" diameter manila rope;
- one lightweight 7/8" shackle for snubbing and fair leading the 1/2" rope.

The factors in choosing these items, or substitutes or additions, would involve weight, compactness and cost.

It should be noted that part of the equipment recommended by the United States Delegation is included in the man-pack adopted by the United Kingdom or in the hand-tools carried by the members of rescue teams.

6. From delegations' comments, the type of man-pack adopted by the United Kingdom would appear to provide a solution although not necessarily the final one, to the problem of light equipment to be carried by members of rescue teams when proceeding on foot over débris to the scene of operations.

Canada is at present carrying out experiments to enable men to carry heavier loads by the use of pack-boards and thump-line. SCD/D/6 gives all details of the experiments in progress. No conclusions, however, can as yet be drawn from them. Delegations will be informed as soon as the Canadian authorities have obtained conclusive results. The provisional opinion is expressed that the lines on which they are developing will be an improvement on the United Kingdom man-pack.

## II. STRETCHER BEARING OVER DEBRIS

7. The problem of transporting casualties as far as the ambulance is a most important one; all countries are trying to devise some way of conveying stretchers through or over débris or of using a mechanical device for lifting them over piles of rubble. No one yet appears to have found a solution.

8. The United Kingdom Delegation points out moreover that though débris will probably halt the ambulances far away from the casualties, which will entail stretcher bearing over considerable distances, it does not necessarily follow that vast heaps of rubble will have to be negotiated. Most of the stretcher bearing will be

done through streets piled up with debris but where a footway may have been cleared, covered only with light rubble, over which the stretcher bearers will be able to pass.

This being so, the main problem will consist in providing sufficient numbers of stretchers and bearers to enable the wounded to be moved easily, often over long distances.

In parts of the bombed areas it will be possible, without much delay, to clear a way enabling stretcher bearers to pass through the debris. Relays will be cleared in order to lighten their task, for the same team of stretcher bearers cannot be expected to carry a stretcher over a long distance; they can also be helped by various devices, such as bridges, strong cables, ladders or other apparatus of which the adoption is recommended by the United Kingdom, Luxembourg and France. The difficulty will be the large numbers of personnel who may be required.

However there are bound to be cases where stretchers will have to be moved over large piles of rubble.

9. The United States in this case recommend the use of span lines supported by portable lightweight towers equipped with legs designed to permit adjustment to the contour of the debris. At present this seems to be merely an idea which has not been given practical expression.

Belgium is proposing to experiment on the use of derricks, but no information is as yet available.

Canada is also experimenting on span lines for carrying the wounded, but has not yet reached any conclusions.

Greece is considering the use, in some cases, of cranes with a long boom for moving wounded over large heaps of rubble. However this supposes the possibility of bringing the crane to the site and, in any case, its field of action is unlikely to be very extensive.

Countries thus seem to be trying to devise some form of airlift for carrying casualties, at least for comparatively short distances, over obstacles which the stretcher bearers would not be able to negotiate.

On this point, the United Kingdom Delegation does not share the views of the countries mentioned above. The United Kingdom authorities do not consider that the use of span lines would provide a satisfactory solution. In the German authorities' report on the clearance of debris, they too had objected to this system, on technical grounds. The United Kingdom agrees with these objections and also foresees other difficulties of a general nature. The cable spans would have to be so long that it would be almost impossible to erect them in time to deal with the wounded.

10. The United States advocate yet another process, namely the use of light vehicles made of aluminium and provided with multiple wheels with very low pressure tyres, capable of traversing debris. This solution is similar to that envisaged by the Germans for rescue team vehicles. However, there is apparently some difficulty in developing such a vehicle, for none of those so far tested have been able to traverse debris of any great volume.

At all events, this idea is only in the theoretical stage in the United States.

11. Canada is studying the possibility of having a wounded person carried by a single man. This process has been described in document SCD/D/6 paragraph (b). It would be interesting to learn the results of these experiments, which may provide a new solution to the problem.

It should also be noted that France is considering the possibility of adopting a device used in mountain rescue. The wounded person is placed in a kind of cradle suspended to a metal pole. At each end of this pole are fixed two steel tube branches shaped like the handle bars of a bicycle and fitting the shoulders of the stretcher bearers. The latter thus have their hands free while carrying the stretcher and so can move more easily over rough ground.

### III. CONCLUSIONS

12. It is still too early to define the best type of individual man-pack for the rescue and first aid teams. The results of the experiments now in hand in Canada should first be known. However the man-pack adopted in the United Kingdom is an interesting contribution towards solving the difficulty of transporting the essential equipment required by rescue and first aid teams; most of the countries now have very similar ideas on the nature of this equipment.

13. As for carrying stretchers over débris, though it may be admitted that some of the stretcher-bearing will be done over cleared footways where the bearers will not encounter any insurmountable difficulty, the wounded will sometimes have to be moved over great piles of débris. The study of devices for conveying stretchers over such débris must therefore continue, since no practical solution has yet been found.