Clinical and other Notes.

IMPROVISED RAFTS, PUNTS, AND BARGES.

By Lieutenant-Colonel E. A. Cormack,
Royal Army Medical Corps,

And
OFFICERS,
Of a Field Ambulance, R.A.M.C.

In action it may be necessary to cross a water obstacle, possibly without the immediate help from the Royal Engineers. In these notes methods are described for the construction of improvised rafts and punts suitable for ferrying casualties, stores, personnel and even vehicles across water, using only authorized Field Ambulance equipment.

I.—Rafts and Punts.

Many methods are already in use for floating single stretchers, including the use of the "Cover, rot proof canvas." As this has now been withdrawn from Field Ambulance G. 1098 equipment the following modification has been found suitable. To get a canvas of adequate size (10 feet by 6 feet), two smaller canvasses, such as the end curtains of a penthouse, are joined together end to end by rolling, the resulting rolled-joint being watertight.

(a) A single-stretcher float may be made by laying an open stretcher on the centre of the canvas, with a suspension bar fixed on each end. A penthouse rod is rolled in each edge of the canvas and the sides are lifted and tied on top of the suspension bars (figs. 1 and 2).

(b) Two single-stretcher floats placed parallel 2 feet apart and lashed together on top of two closed stretchers (one at each end) form a very stable raft, which will easily take three loaded stretchers laid across them.

(c) The Stretcher Punt.—A useful punt can be made with four stretchers and a large canvas, such as a penthouse cover. Two open stretchers, runners up, are placed in the centre of the canvas, with a pole through the runners. An open stretcher, runners inwards, is placed on each side at an angle of 60°. Adjoining runners are tied and a penthouse support fixed across each end at the top, being lashed firmly through the upper runners. Enclose the whole in canvas and tie firmly. This forms a very stable punt with good load capacity and is easily paddled with two G.S. shovels (figs. 2 and 3).

(d) The Spare Wheel Raft.—Four spare lorry wheels lashed together with two closed stretchers or baulks of wood form a raft capable of holding two stretchers (fig. 4).
FIG. 1.—Single Stretcher Float, method of construction in foreground.

FIG. 2.—Single Stretcher Float and Stretcher Punt.

FIG. 3.—The Stretcher Punt.

FIG. 4.—Spare Wheel Raft.

FIG. 5.—Simple Barge.

FIG. 6.—Simple Barge.

FIG. 7.—Lorry Covers—Method of joining.

FIG. 8.—Lorry Covers joined and ready for use.
Clinical and Other Notes

II.—Barges.

An extremely buoyant and stable barge can be made by removing and inverting the superstructure and canvas of a 30-cwt. or 3-ton lorry. The method is very simple and readily available, and using variations and modifications of this method it has been found possible to float vehicles up to the weight and size of a 3-ton lorry.

(a) Simple Barge.—Place the inverted superstructure in the centre of the canvas. Lash up sides to the uprights, using bolts or sticks through the bolt holes as supports for the ropes. Lash up one end, folding in the surplus canvas. The remaining end is left open as a gangway, being tied up when loading is completed (figs. 5 and 6).

(b) Twin Barge.—Similar to above, using two frames end to end. Two canvasses are joined by firm rolled joint (figs. 7 and 8). The roll is included between, and overlaps, the adjacent frame ends. These are joined together by lashings passing over the rolled canvas, making a secure watertight joint. Six lorry tailboards placed lengthways, three each side, form the deck, and with two tailboards as gangway a small car can be run on (figs. 9 and 10). This barge may also be used as a ferry (fig. 11) or for transport of six stretcher cases (fig. 12).

(c) Transport of Lorry.—The width of a superstructure is sufficient for the normal lorry wheel base, but to allow for the width of the body the uprights are forcibly splayed outwards for about a foot at the top. Extra length may be obtained by adding a third frame. With firm lashing of joints, extra strengthening by closed stretchers lashed across centre of joints and overlapping tailboards padded with camouflage netting as a runway, it is possible to float a 3-ton lorry. Extra stability may be given by fixing another barge alongside.

(d) Approximate Capacities of Barges:

One 30-cwt. cover (8 feet 8 inches by 6 feet 10 inches), 15 men.
One 3-ton cover (11 feet 3 inches by 6 feet 10 inches), 2-seater car.
Two 3-ton covers (22 feet 6 inches by 6 feet 10 inches), small car and 25 men.

Three 3-ton covers (33 feet 9 inches by 6 feet 10 inches), 3-ton lorry.

(e) Propulsion may be by poles, rope or paddles improvised from flattened petrol tins.

(f) Canvas covers should be used with care to avoid damage. If intact covers are not available, two worn canvasses superimposed will be an efficient substitute provided holes in the canvasses do not correspond.

III.—Floating Bridge.

Lorry frames and canvasses, joined as in (b) under "Barges," can be extended to form a floating bridge suitable for traffic up to the size of a small car provided sufficient "decking" is available.
Clinical and Other Notes

Fig. 9.—Twin Barge, launched, ready for loading.

Fig. 10.—Twin Barge, with utility van and 8 men.

Fig. 12.—Twin Barge, loaded with 6 stretcher cases.

Fig. 11.—Twin Barge with personnel.

Fig. 13.—Floating Bridge.
CONCLUSIONS.

It will be seen from the above notes that it may be possible for a Field Ambulance to negotiate a water obstacle without outside help. The methods are simple and provide for the transport of casualties, equipment, personnel and vehicles. It is also suggested that combatant units might in emergency make use of similar methods for the transport of weapons such as guns and small A.F.V.s., though this has not yet been tried out.

The chief advantage claimed for these methods is that they are easy to apply and only authorized equipment is used throughout.

IMPROVISED RAFT FOR STRETCHER CASES.

As Suggested by Major I. B. Rees-Roberts,
Royal Army Medical Corps.
Field Ambulance.

The improvised raft described below is constructed from Field Ambulance equipment and material readily available under active service conditions. It can be assembled in three minutes, is very stable and one or two stretcher cases can be placed on it without removing the patient from the stretcher.

**Equipment Required.**

- Two stretchers.
- Eight straps securing.
- Two six-foot poles that will fit into the runners of a stretcher.
- Sixteen 4-gallon non-returnable petrol tins.

![Diagram of the improvised raft](image)

**Fig. 1.—End view—Carrying one stretcher.**
(1) 6 foot pole. (2) 4-gallon petrol tin. (3) Strap.

The petrol tins do not require sealing if they are emptied by two puncture holes in opposite corners of the lid.

**Assembly of Raft (see diagrams).**—Two petrol tins placed side by side and lid uppermost fit exactly underneath a stretcher between the stretcher poles.