

C.G. 4

H.M. COASTGUARD



ISSUED BY THE
BOARD OF TRADE

*South Shields
Brigade.
J. T. Robson
Capt*

Detail of Drill and Notes on
the use of
**The Rocket Life-Saving
Apparatus**



LONDON:
Printed by His Majesty's STATIONERY OFFICE PRESS,
11-17, Hare Street, E.C.2.

1926.

T.	311	202	643	367	20	825	146
S.S.	20	304	563	24	20	7-4	164
R.	271	303	622	4	20	10-4	150
S.S.	302	305	509	22	6	-14	120
S.P.	28	304	3018	4	15	6-22	95
C.	221	125	87	42	0	-12	42
B.	265	261	1420	12	16	-26	68

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DETAIL OF DRILL AND NOTES ON THE USE OF THE ROCKET LIFE-SAVING APPARATUS

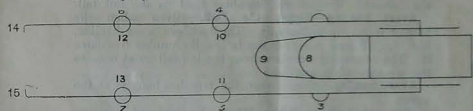
I.—NUMBERING OF COMPANY.

For Drill or Service.—The Company falls in as follows:—

Rear rank ... 2 4 6 8 10 12 14, etc.
Front rank ... 1 3 5 7 9 11 13 15, etc.

(Note.—If no Coastguard or Volunteer-in-Charge is present, command of the Company is taken by No. 1.)

Should it be required to move the vehicle by hand, the order "FORM THE ORDER MARCH" is given, when the Company man the drag ropes and shafts as follows:—



On arrival at the scene of a wreck or on the exercise ground, the vehicle is placed, if possible, 8 paces from where the anchor is to be buried and the order "ACTION" is at once given.

If for exercise, tent pegs are placed on the drill ground (1) where the anchor is to be buried; (2) 17 paces from the other and in direct line with the exercise post so as to mark the position of the white leg of the triangle. No other pegs are to be used to mark the position of any other gear. The anchor and water-breaker are to be placed on the ground under the vehicle on arrival.

II.—EXECUTIVE ORDERS—HAWSER DRILL.

Stations.—The Company take up their Stations as detailed.

Action.—Given when the men are correctly at their Stations. Numbers place the gear as hereafter detailed.

Fire.—Given when ready to fire the rocket.

Right and Left Whips in.—Given when the whip block is out at the wreck. The lee whip is brought in and secured to the hawser, and a bowline is made with the end of the

hawser round the weather whip unless rocks or piles intervene between the wreck and the shore in which case the lee whip only is ordered in.

Haul out.—Given as soon as the signal is made from the wreck that whip is secured. The hawser is hauled out by the men manning the weather whip.

Avast hauling. Right (or left) whip in.—Given when the hawser is out at the wreck. The lee whip is brought in and secured by a clove hitch to the traveller block, after which the breeches-buoy is secured.

Man the Hawser.—The hawser is manned by unemployed numbers.

Haul taut the Hawser.—Given when the signal has been made that the hawser is secured.

Avast hauling the Hawser—on Luff.—Given when the hawser is hand-taut.

Haul taut the Luff.—Given when the luff is secured to the hawser. Unemployed numbers haul on the luff fall.

Avast hauling—Nipper the Luff.—Given when the hawser is set up sufficiently. The numbers cease hauling, Nos. 1, 5, 7, and 8 nipper the luff while number 6 secures it. The remaining numbers from the luff-fall go at once to the weather whip and haul out.

Avast hauling.—Given when the breeches-buoy is at the wreck.

Man the Left or Right Whip.—Unemployed numbers man the lee whip.

Haul ashore.—Given when the signal has been made that a man is in the buoy. The breeches-buoy is hauled on shore. Hauling the breeches-buoy out and ashore is repeated as necessary.

(Note.—Whip should always be designated "Right" or "Left" not "Weather" or "Lee.")

III.—DUTIES OF NUMBERS—HAWSER DRILL.

No. 1.—Provides himself with two portfires, two fuses and the fuse box which he straps across his back.

At the order "STATIONS" he touches "THE ROCKET MACHINE." At the order "ACTION" assisted by No. 6 he places "THE ROCKET MACHINE" in a convenient position on level ground if available, preferably about 8 paces to the weather side of the triangle; then lifts the rocket out of the machine, unscrews the base plug, breaks the paper inside the rocket with his finger, and inserts the fuse, then replaces the rocket in the machine, receives the end of the rocket line from No. 3, and assisted by No. 3 secures it to the snorter with a double-sheet bend, adjusts the machine for elevation and direction, lays it

level, and sees that line box is in correct alignment with rocket machine and that the line leads direct to the box, then ignites the portfires and waits for the order "FIRE."

As soon as possible after the rocket is fired, he removes the machine out of the way and fits another rocket. When the hawser is going out, he takes the traveller-block, when clear, to the front of the triangle, and holds it knee-high toggle down for Nos. 2 or 3 and No. 5 to secure the whip and breeches-buoy to it as soon as the end of the hawser is out at the wreck.

At the order "ON LUFF," No. 1 holds the tailblock up, while No. 6 dogs the tails round hawser.

When the luff is hand-taut the hawser is let go, and No. 1 takes a half-hitch round the tails of the luff with the right of the hawser. At the order "NIPPER THE LUFF" he nippers the luff assisted by Nos. 5 and 8.

Nos. 2 and 3.

At the order "STATIONS" they touch "THE LINE-BOX." At the order "ACTION" they provide and place THE LINE-BOX end on 9 feet in rear of the rocket machine with the end of the box having the inner end of the rocket line to the rear, taking with them the "CANTING LEGS" and the "WATER-BREAKER." They then lift the line-box off the pins and leave it on the ground until the rocket is laid.

No. 2 then unreeves the inner end of the rocket line from the hole in the box and secures it to the whip by reeving the end through the becket and making two half-hitches round the swivel of the tail block.

No. 3 wets three fathoms of the outer end of the rocket line, reeves the end through the hole in the end of the rocket stick, makes a figure of 8 knot at the mark on the stick and assists No. 1 to secure line to the snorter, seeing that the line leads straight from stick to box.

As soon as the rocket machine has been laid, Nos. 2 and 3, under the supervision of No. 1, cant the line-box in the line of fire by means of the canting legs and then take charge of the right and left whip respectively. The number in charge of the weather whip removes the line-box, canting legs and water-breaker out of the way as soon as the line has ceased running out.

At the order "RIGHT AND LEFT WHIPS IN," Nos. 2 and 3 bring their whips into the centre in front of the triangle, the lee whip being then secured to the hawser by

reeving about an arm's length of the bight through the bucket towards the wreck and making the first part of a clove hitch round the hawser on the wreck side of the bucket, completing the hitch on the inner side of the bucket; the weather whip being held whilst No. 5 makes a bowline round it with the end of the hawser.

(Note.—When there are rocks or piles between the wreck and the shore the bowline is not used and the lee whip only is brought into the centre.)

At the order "RIGHT (OR LEFT) WHIP IN," the lee whip is again brought in to the centre and secured by a clove hitch to the traveller block, and whilst the hawser is being set up the number in charge of the weather whip commences to haul out the breeches-buoy, assisted by numbers above 16.

(Note.—When whip is being hauled out to wreck the two parts should be opened from the centre as much as possible in order to prevent fouling, and when the hawser is being hauled out the lee whip should be kept well clear of it.)

No. 4. Hears the knife.

At the order "STATIONS," touches the "WHIP-BOX."

At the order "ACTION," assisted by Nos. 8, 12, and other high even numbers, provides and places the WHIP-BOX two paces in rear of the line-box. He then places the whip-block on the lee side close alongside the line-box, and then keeps the whip, which he never leaves, all clear.

When the whip is nearly all out of the box on one side (the last flemish), he turns the box right over and back again (thus emptying the whip on the ground); the running part will then be uppermost.

No. 5.

At the order "STATIONS," touches the "TRIANGLE."

At the order "ACTION," assisted by Nos. 11, and other odd high numbers, provides and places the TRIANGLE in its required position, then assists No. 6 to put the lee whip over the triangle and then places the end of the HAWSER 8 paces in front of the white leg of the triangle passing it over the bight of the whip, then places the BREECHES-BUOY between the front legs of the triangle and remains there.

While the lee whip is being secured to the hawser, No. 5 takes the end of the hawser, passes it over the weather whip and makes a bowline hitch on its own part. This is not done when there are rocks or piles between the shore and the wreck.

At the order "HAUL OUT," he guides the hawser out clear, and when the hawser is out, and the lee whip is secured to the traveller-block, he toggles on the breeches-buoy and then snatches the hawser and mans it and afterwards the luff.

At the order "NIPPER THE LUFF" he assists No. 1 in this duty. When the luff is secured, he goes to the right or left (weather) whip as ordered and does not leave it.

No. 6.

At the order "STATIONS" touches the "TAIL-BLOCK OF THE LUFF."

At the order "ACTION" stands clear until the rocket line-box is out, then places the BREECHES-BUOY on the ground, then takes THE TAIL-BLOCK OF THE LUFF to the white leg of the triangle, then assisted by Nos. 8, 10, and 12, etc., buries the ANCHOR, and, where necessary, the BACKER, hooks the hook-block of the luff to the ring of the anchor, taking care that the tackle is all clear, and that it is over the inner bight of lee whip, then mans the weather whip and hawser as ordered.

At the order "ON LUFF" he dogs the tails of the luff up the hawser while No. 1 holds the tailblock close up.

At the order "NIPPER THE LUFF" he takes the bight of the luff-fall through the ring of the anchor and a half-hitch round all parts of the luff, and tends it.

No. 7.

Provides and wears the knife.

At the order "STATIONS" touches the "TRIANGLE."

At the order "ACTION," assists No. 5 to provide and place the TRIANGLE, then takes the bight of the lee whip from the box and assisted by No. 5 places it over the triangle, taking care the whip is clear of turns before doing so, after which he assists No. 5 with the hawser. He then provides the LIFE-LINE, FLAG, or LANTERN, placing them by the breeches-buoy on the lee side of the hawser and remains in front of the triangle. He then assists No. 8 to put on the life-line, and attends to signals reporting loudly to the officer conducting operations as each signal is made from the wreck as follows:—"Lane held," "Whip fast," "Hawser fast," and "Man in buoy."

At the order "NIPPER THE LUFF," he assists No. 1 in this duty, and, when No. 6 has secured the luff, assists No. 8 to put on the life-line, and attends that number if he should go out into the water; taking care not to go into the water himself.

*Not provided by a diver's attendant
By itself only.*

No. 8.

At the order "STATIONS," touches the "WHIP-BOX."

At the order "ACTION," assists No. 4 to provide and place the WHIP-BOX, then assists No. 6 in burying the ANCHOR, and where necessary, the BACKER, after which he provides himself with, and assisted by No. 10, puts on the LIFE-BELT, then mans the weather whip, hawser and luff as ordered. *Life line, slipping it up to the wreck.*

At the order "NIPPER THE LUFF," he assists No. 1 in this duty. When the luff is secured he, assisted by No. 7, puts on the life-line and, if necessary, attended by No. 10 goes out as far as possible to assist men through the surf and helps them out of the breeches-buoy, when they are in safety.

No. 9.

At the order "STATIONS" he touches the ROCKET MACHINE. *Card*

At the order "ACTION" he assists No. 1 with the ROCKET MACHINE, then takes charge of the CART and stores, taking care that the hawser goes out clear.

Nos. 10, 12, 14, 16, 18, 20, &c.

At the order "STATIONS" touch the "WHIP-BOX."

At the order "ACTION" assist No. 4 in providing and placing the WHIP-BOX, then assist No. 6 in burying the ANCHOR, and where necessary the BACKER, then man the right or left whip, hawser and luff as ordered.

Nos. 11, 13, 15, 17, 19, 21, &c.

At the order "STATIONS" touch the "TRIANGLE."

At the order "ACTION" assist No. 5 in placing the TRIANGLE, then assist in getting the end of the HAWSER out, after which they man the right or left whip, hawser and luff as ordered.

The two highest numbers may be told off to work the hand bearer if required.

A high number should be detailed to provide and attend the Eels Lamp and tripod.

IV.—DUTIES OF WRECK PARTY—HAWSER DRILL.

When the rocket is fired and the wreck party have hold of the line they signal to the shore party, who, at a wreck, cut the line and re-secure the whip block, then signal to the wreck to haul off the whip. (At an exercise the line is not out.)

When the whip is out, the wreck party secure the tail block to a convenient place as high up as possible, but with room for the hawser to be secured two feet above it. When the

*No 10 attach No 1 with Rocket machine ships to 5 feet. See which our man will, attach 8 to feet life line belt and attend to him taking care not to pull the work. *Life line**

tail block is secured they will cast off the rocket line, signal to the shore, and the hawser is then hauled out.

When the wreck party have secured the hawser about 2 feet above the tail block of the whip, they cast off the whip from the hawser and signal to the shore; the breeches-buoy is then hauled out. As soon as the man is in the breeches-buoy the wreck party again signal to the shore, and the rescue is effected.

Care should be taken that the whip block and tally board on the hawser are close up to the mast where they are secured, as otherwise the breeches-buoy cannot be hauled close out.

Signals are made from the wreck on the following four occasions:—

First—When they have hold of the rocket line.

Second—When the whip is secured.

Third—When the hawser is secured.

Fourth—When the man is in the breeches-buoy.

No signal is made at other times, and no signal is made when the gear arrives out at the wreck.

When the ground is very rough it will often save the whip unnecessary wear if, after the exercise, the whip is cast off, a bowline made round the hawser with the tail of the whip block, and both parts hauled to the smooth ground before the hawser is let go.

The end of the rocket line should be sent in attached to the breeches-buoy, except at places where the whip block is sent in along the hawser, in which case the rocket line is secured to the whip block.

The wreck party should bring in the end of the hawser as soon as it is cast off.

V.—RECOVERING GEAR AT CONCLUSION OF SERVICE—HAWSER DRILL.

At an exercise the cutter is not to be placed on the hawser. It should be provided however, secured to the whip and then left on the ground. When ready the order "HAWSER CUT" is given and a signal made to the wreck party to let it go. Similarly, the splice of the whip is not drawn at an exercise. The tail-block is to be cast off by the wreck party at the same time as the hawser. At exercises a spare tail-block should be provided.

At the conclusion of a wreck service, the following action is, however, taken:—

At the order "CAST OFF"

No. 2 and 3 bring their whips in to the hawser.

No. 4 provides hawser cutter and secures it outside the traveller block

No. 5 untoggles the breeches buoy and casts off the whip from the traveller block and attends the block.

No. 6 attends luff.

Remainder of odd numbers man left whip.
Remainder of even numbers man right whip.
The cutter is hauled out, and hawser cut.

Then even numbers except Nos. 2 and 6 haul in the whip, No. 4 drawing a splice and providing spare tail block when the whip is re-rove.

Odd numbers haul in the hawser, Nos. 1 and 6 coil down the whip end of hawser, and fix spare tally board. No. 2 keeps the end of the rocket line clear, if necessary. When hawser is in, give the order "Stow the Cart," and all numbers proceed as usual.

If any rocket lines have to be hauled in, it is done by the numbers who stow the line before commencing to stow.

VI.—RESTOWING GEAR—HAWSER DRILL.

At the order "STOW THE CART"—

- No. 1, assisted by Nos. 6 and 9, stows the CART and all the gear except the rocket line and whip.
- No. 2 places the pins in the rocket line box, then, assisted by Nos. 3, 5, 7 and 11, etc., stows the ROCKET LINE.
- No. 3 places the water breaker and canting legs alongside the cart, then assists No. 2 in stowing the ROCKET LINE.
- No. 4 gets the swivel, then, assisted by Nos. 8, 10, 12, etc., stows the WHIP.
- No. 5 places the BREECHES-BUOY alongside the cart, then, assisted by Nos. 7, 11, 13, etc., places the triangle alongside the cart, then assists Nos. 2 and 3 in stowing the ROCKET LINE.
- No. 6 lets go the luff when ordered, and, assisted by Nos. 11, 13, 15, etc., overhauls the luff, takes the tails off the hawser, then assists No. 1 in stowing the CART, first placing the backer and anchor close to vehicle.
- No. 7 places the life-line, flag or lantern alongside the cart, the knife in the foot board, and assists No. 5 to place the triangle alongside the cart, then assists Nos. 2 and 3 in stowing the ROCKET LINE.
- No. 8 makes up and places the lifebelt alongside the cart, then assists No. 4 in stowing the WHIP.

No. 9 assists No. 1 in stowing the CART.

Nos. 10, 12, 14, 16, 18, 20 assist No. 4 in stowing the WHIP.

Nos. 11, 13, 15, 17, 19, etc., assist No. 6 in overhauling the luff, then unanatch the hawser, and assist No. 5 in placing the triangle alongside the cart, then, assist Nos. 2 and 3 in stowing the ROCKET LINE.

VII.—EXECUTIVE ORDERS—WHIP DRILL.

Stations.—The Company take up their stations as detailed.

Action.—Given when the men are correctly at their stations. Numbers place the gear as hereafter detailed.

Fire.—Given when ready to fire the rocket.

Secure the Breeches-buoy.—Given when the whip-block is out at the wreck. The lee whip is secured to the breeches-buoy and the weather whip is placed in the brass snatch-block.

Man the Right or Left Whip.—Unemployed numbers man the weather whip in rear of the snatch-block.

Haul out.—The breeches-buoy is hauled out.

Avast hauling.—Given when the breeches-buoy is out at the wreck.

Ease the Right or Left (Weather) Whip.—Given when the man is in the buoy. The whip is eased until the man is in the water (see Note).

Man the Left or Right Whip.—Unemployed numbers man the lee whip (see Note).

Haul on Shore.—Given when the signal is made that the man is in the breeches-buoy. The breeches-buoy is hauled on shore. Hauling the breeches-buoy out and ashore is repeated as necessary.

Note.—Whip should always be designated "Right" or "Left," not "weather" or "lee."

If the snatch-block is used both whips must be kept manned.

VIII.—DUTIES OF NUMBERS—WHIP DRILL.

No. 1 provides himself with two portfires, two fuses, and the fuse-box, which he straps across his back.

At the order "STATIONS" he touches "THE ROCKET MACHINE"

At the order "ACTION," assisted by No. 9 he places "THE ROCKET MACHINE" in the most convenient

place on level ground if possible; then lifts the rocket out of the machine, unscrews the base plug, breaks the paper inside the rocket with his finger and inserts the fuse, then replaces the rocket in the machine, receives the end of the rocket line from No. 3 and assisted by No. 3 secures it to the snorter with a double-sheet bend, adjusts the machine for elevation and direction, lays it level, and sees that the line box is in correct alignment with rocket machine and that the line leads direct to the box, then ignites the port-fire and waits for the order to fire.

As soon as possible after the rocket is fired, he removes the machine out of the way and fits another rocket.

Nos. 2 and 3.—At the order "STATIONS" they touch the "LINE-BOX." At the order "ACTION" they provide and place the Line-Box end on 9 feet in rear of the Rocket Machine with the end of box having the inner end of the rocket line to the rear, taking with them the "Canting Legs" and the "Water breaker." They then lift the line-box off the pins and leave it on the ground until the rocket machine is laid.

No. 2 then unreeves the inner end of the rocket line from the hole in the box and secures it to the whip by reeving the end through the becket and making two half-hitches round the swivel of the tail block.

No. 3 wets three fathoms of the rocket line, reeves the end through the slot of the rocket stick, makes a figure of 8 knot at the mark on the stick and assists No. 1 to secure line to the snorter, seeing that the line leads straight from stick to box.

As soon as the Rocket machine is laid Nos. 2 and 3, under the supervision of No. 1, cant the line box in the line of fire by means of the canting legs and then take charge of the right and left whips respectively.

The number in charge of the weather whip removes the line-box, etc., out of the way as soon as the rocket line has ceased running out.

No. 4.

At the order "STATIONS" touches THE WHIP-BOX.

At the order "ACTION," assisted by Nos. 6, 8, 10, 12 and other high even numbers, provides and places THE WHIP-BOX two paces in rear of the line-box. He then places the whip block alongside the line-box, and then keeps the whip, which he never leaves, all clear. When the whip is nearly all out of the box on one side (the last femish), he empties the box by turning it right over and back again; the running part will then be uppermost.

No. 5.

At the order "STATIONS" touches the BREECHES-BUOY.

At the order "ACTION" provides the BREECHES-BUOY and places it on the lee side of, and close to, the whip-box, the arrows painted on buoy pointing to the wreck.

At the order "SECURE THE BREECHES-BUOY" he secures the whip to the breeches-buoy, passing the bight of the lee whip (towards the wreck) through the thimble of the long sling on the breeches-buoy, and making two half-hitches round both its own parts, then takes the bight of the lee whip (towards the box), passes it through the thimble of the short sling, making two half-hitches round both its own parts, taking care to leave a bight of about 6 feet under the buoy, and then mans the weather whip and never leaves it.

No. 6.

At the order "STATIONS" touches the WHIP-BOX.

At the order "ACTION" assists No. 4 to place the WHIP-BOX. If the breeches-buoy is not fitted for whip apparatus, he provides the brass snatch-block, if it should be necessary to use it, and secures it to the thimble on the sling of the breeches-buoy.

At the order "SECURE THE BREECHES-BUOY" he places the weather whip in the snatch-block and then mans the right or left whip as ordered.

No. 7.

Provides and wears the knife.

At the order "STATIONS" touches the LIFE-LINE.

At the order "ACTION" provides the LIFE-LINE, flag or lantern, assists No. 8 to put on the life-belt, and attends to signals, reporting loudly to the official conducting operations as each signal is made from the wreck as follows:—"Line held," "Whip fast," and "Man in buoy." When the breeches-buoy is being hauled out, he assists No. 8 to put on the life-line, and attends that number who goes out into the water—taking care not to go into the water himself.

No. 8.

At the order "STATIONS" touches the WHIP-BOX.

At the order "ACTION" assists No. 4 to provide and place the WHIP-BOX. He then provides the life-belt, and, assisted by No. 7, puts on the life-belt and life-line; then, attended by No. 7 goes out as far as possible to assist men through the surf and helps them out of the breeches-buoy, when they are in safety.

No. 9.

At the order "STATIONS" touches the ROCKET MACHINE.

At the order "ACTION" assists No. 1 with the ROCKET MACHINE, then takes charge of the cart and stores.

Nos. 10, 12, 14.

At the order "STATIONS" touch the WHIP-BOX.

At the order "ACTION" assist No. 4 in providing and placing the WHIP-BOX, and then man the right or left whip as ordered.

Nos. 11, 13, 15.

At the order "STATIONS" remain where they are.

At the order "ACTION" man right or left whip as ordered.

IX.—DUTIES OF WRECK PARTY—WHIP DRILL.

When the rocket is fired and the wreck party have hold of the line they signal to the shore party who, at a wreck, cut the line and re-secure the whip-block, then signal to the wreck to haul off the whip. (At an exercise the line is not to be cut.)

When the whip is out, the wreck party secure the tail block to a convenient place as high up as possible, and when secured, cast off the rocket line and signal to the shore. The breeches-buoy will then be hauled out.

As soon as the man is in the breeches-buoy, the wreck party again signal to the shore and the rescue is effected.

Care should be taken that the whip block is close up to the mast where it is secured.

Signals are made from the wreck on the following three occasions:—

First—When they have hold of the rocket line.

Second—When the whip is secured.

Third—When the man is in the breeches-buoy.

No signal is made at other times, and no signal is made when the gear arrives out at the wreck.

At an exercise, the end of the rocket line should be sent in attached to the breeches-buoy.

X.—RESTOWING GEAR—WHIP DRILL.

At the order "STOW THE CART"—

No. 1, assisted by No. 9, stows the CART.

No. 2, places the pins in the rocket line-box, then, assisted by Nos. 3, 5, 7 and 11, etc., stows the ROCKET LINE.

There should be two swivels on the whip dividing it equally.

Note.—When stowing the lines and the whip do not coil them down near the boxes, but keep them out as straight as possible to avoid turns and kinks.

The WHIP and LINE BOXES must NEVER be passed over the rocket machine to their positions on the vehicle, nor must any man climb into the vehicle over the rocket machine.

OUTSIDE THE VEHICLE:—

Drag ropes complete with shoulder straps, heaving canes and lines, head guard, 2 lanterns and hawser-cutter (where supplied).

In brackets: Rocket machine, triangle, with head to the rear, sticks for life-saving rockets, tripod for illuminating light, and signal flags on staves in a cover.

Underneath: Anchor (close to tail-board), water-breaker, hand-bearer, pickaxe, shovel, 2 spades, also in a cart, the backer; the hand-bearer, if room cannot be made for it underneath the cart, being placed on top of the boxes.*

The TENT PEGS are secured to the lanyards of the vehicle cover, and rolled up inside, but two or three spare ones for marking the exercise ground may be stowed in the foot-board or kept in the house.

XIV.—THE HEAVING CANE.

The best method of using the heaving cane is as follows:—

In the heaving-hand should be coiled as much line as can be thrown—the forefinger of this hand being passed through the coil and then through the becket of the cane, and coil and cane should be thrown together—the other part of the line being held firmly in the non-heaving hand.

It is of no use to coil the line on the ground in front and then heave, for, in actual practice, this would be impossible, as the thrower would either be knee-deep in the water, or out on the rocks or down a cliff. The above method should be taught generally, and whilst it is not necessary to restrict the heaving cane prize to those who use this method, that prize must not be awarded in respect of any throw by a method which could not be employed if the thrower were standing knee deep in water or which entails letting the line fall after heaving.

At exercises it will be found convenient to use two nets stretched on pegs 14 inches above the ground so that the thrower stands between them, to represent the water knee-deep.

* Where stretchers are supplied in lieu of a hand-bearer they should be stowed in the brackets (outside vehicle).

XV.—HAWSER CUTTER.

When it is necessary to cut a hawser, the hawser cutter is used in the following manner:—

The lanyards should be secured to the whip by means of two half hitches on the toggle end and a sheet bend on the other end. The cutter is then hauled out by the whip until it is brought to a stop by the toggle taking against the tail block of the whip. The hauling part of the whip is then let go when the re-action of the knives together with a sharp jerk on the cutting end should cause them to engage for cutting without any appreciable pull back along the hawser.

The hawser must not be cut for the purpose of testing the cutters, but an old piece of rocket line should be used for this purpose.

XVI.—NOTES ON DRILLS.

During the initial training of a new company, or when in an old company a large proportion of the members are new to their duties, it will be found preferable not to attempt to give the detail of drill in the usual manner, but to demonstrate the placing of the gear and its working item by item. When a recently formed company is being drilled, the officer should pay particular attention to the following points:—

No. 1 should carry the machine with the tail to the rear, taking care that the rocket does not slip out of the trough in front.

The proper way to raise the machine is to place it on the ground in line with the wreck, or a little to windward of it, cast off the leg strap, then No. 1 stands with the right foot in line with the slot and the left foot in line with the head of the machine; grasp the machine by the slot with the right hand, raising it, slip the left hand under the head and raise it up straight until the legs are clear of the ground. No. 9 swings the legs forwards, opens them out to the full extent. No. 1 then places the machine in its correct position.

To lift the rocket out of the machine No. 1 should place his left leg across the left leg of the machine and raise the rocket with the left hand. When firing the rocket No. 1 should stand to windward.

Nos. 2 and 3 should be careful to lift the line-box square off the pins, as otherwise a pin may be broken and remain unnoticed and, in consequence, the rocket line will part.

At a wreck service, after the line has ceased running out it is cut and re-secured to the whip block, but it is

important that the line should be secured to the whip block before the rocket is fired, as it sometimes happens that a rocket takes all the line out of the box. The line should not, however, be cut until it is certain that those on board the vessel have got hold of it. When bringing in the whips to the centre this must be done from the rear, the part leading to the wreck being allowed to remain quite slack; special attention is necessary to this point as otherwise the whip-block may be dragged out of the hands of those at the wreck—possibly numbered with cold—whilst endeavouring to secure it.

No. 5 (Hawser Apparatus). Triangle should be erected as follows:—

Place the white leg in line with, and head towards, the wreck and on top of the blue legs, which are taken out at right angles to it. One man grasps the blue leg each side of and close to the block, raises it, letting the block rest on the ground to steady it (otherwise the block may swing and hit one of them in the face); they then raise the triangle to the full extent of the arms over the head (the base of the blue legs coming in towards the centre); each then takes a pace in from the base of the blue legs towards the centre and places the blue leg by the hollow of the foot. The triangle will be almost in a correct position. No. 5 should, however, go back in rear of anchor and see that the head is in line with the wreck. If it requires alteration, this should be done, but never move a blue leg afterwards. When snatching the hawser the white leg should be moved to the rear, to lower the head, and then back again.

No. 6 (Hawser Apparatus). When the backer is used it is buried before the anchor lengthways and vertically, at right angles to the line of wreck, and a small channel made for the chain; then the anchor is buried, the fluke of the anchor being passed through the loop of the chain (formed by passing the chain through the large open link at the end) as taut as possible, so that when the strain comes on the hawser the anchor is not disturbed before the backer also takes the strain. When burying the backer in sand it should be sunk at least 18 inches deep and should slope from the top rear edge of the trench to the bottom front edge. It will then tend to bury itself when the strain comes on.

When securing the luff to the hawser, each tail should be alternately over and under the other; the easiest way to do this is every time to place the tail in the right hand next to the hawser, the tail in the left hand being outside it.

Care should be taken that the bight of the luff-fall is properly secured and tended by No. 6, for if the wreck is

working much it may be necessary to easy up and set taut the luff when required. The end of the luff-fall should never be taken through the ring of the anchor if it can be avoided.

XVII.—NOTES ON USE OF CLIFF LADDER.

In a wagon the ladder is stowed on the tail board and in a cart it is stowed on the two front line boxes, but it is not possible to carry more than two full lengths of ladder rolled up together.

If more than one length of ladder is required for a cliff the length fitted with chains must be unrolled and the other end secured to the lanyards of a second length, the tripping-lines being secured together, and all rolled up before putting over the cliff. The tripping-line is secured by passing it through the two thimbles and hitching it to its own part, then brought straight up on top of the rounds and rolled up with the ladder. The tripping-line is *never* to be rove in and out of the rounds.

When driving in the stakes and putting the ladder over the cliff care must be taken that the chains take the edge of the cliff. The life-line should be secured to the man going down the ladder by a bowline round the life-belt with the knot at the front. The life-line must be properly tended; it is advisable to take a turn round one of the stakes, close to the ground, if there are not plenty of helpers.

Should it be required to use the cliff ladder in connection with other Apparatus the Officer in charge must be guided by circumstances in arranging for the provision of gear, and the placing of the ladder, but generally speaking this should be done by the higher numbers.

Careful supervision is necessary to ensure that the stakes are driven in properly, that the numbers rolling over ladder have their breast ropes on, and that the life-line is properly tended.

At an exercise, when cliff ladders are placed, the officer in charge should tell off the numbers for their duties and the detail as laid down for Cliff Ladder Stations should be followed; No. 8 taking No. 4's duties, etc.

XVIII.—GENERAL NOTES—INSPECTION—DUTIES OF OFFICER IN CHARGE—WRECK SERVICE.

When inspecting a Life Saving Apparatus particular attention should be paid to the stowage of the gear and its condition generally. The rocket in the machine should be examined in order to see that the base plug works freely and that there is no paper on the base of the rocket. The

rocket in the machine should be the oldest on charge and it should be ascertained that the stick is straight and rocket band engaged by spring, and that the rocket works easily in the machine, and does not bear against either side of it. Care should be taken to see that the washers are correctly placed (the metal washer nearest the knot) and that the snorter is drawn as far through the stick as possible and the knot made close to the washer.

Care should also be taken that the bight of the hawser has not been hitched over the toggle of the traveller block and that the records of the measurements of the rocket lines, whip and hawser are correctly placed and give the exact lengths of these articles. The tally boards in use should be secured to the hawser and whip block respectively so that they stand out from the rope, care being taken that the correct tally boards are in use.

After an exercise the hawser should be shifted end for end, and care taken that all the gear is thoroughly dried after an exercise or service. Rocket line boxes are to be shifted each time they are used, the one that has been next the tail board being restowed against the box seat and the others shifted accordingly.

Officers in charge must refrain from shifting the men's numbers more than is absolutely necessary. If it is required to complete, on account of absentees or withdrawals from the Company, the highest numbers should be taken, if possible, in the following manner:—No. 12 to replace No. 2, No. 13 to replace No. 3, No. 14 to replace No. 4, etc. Opportunity should occasionally be taken to train the higher numbers in substitute duties. It is desirable that a specially selected number be trained to undertake the duties of No. 1 in event of the absence of latter number.

On service or at an exercise the Officer in charge before giving the order "FIRE" should take special note that the pins are out of the line box and that the line is rove through the lower slot of the rocket stick and secured to the snorter, also that the machine is level and the line box directly in rear of the machine. In practice it will usually be found that the rocket machine should be at an elevation of 35° to 40°. If the machine is brought into action on uneven ground, causing the foot on one side to be lower than the other, or if one foot sinks deeper in the ground than the other, the effect will be to carry the rocket towards the lower side. When firing from a slope on the side of a hill or cliff a trench will have to be dug for the tail of the rocket machine in order to obtain sufficient elevation, and the rocket line box should be placed close up to the rocket machine.

In the event of a leg of the rocket machine being broken on service it can at once be replaced by reeving a rocket-stick between the stay pieces at the rear of the trough. Care should be taken to get the protecting tin sheet opposite the rocket and also to see that the stick is embedded in the ground or under a stone, otherwise it will slip before the rocket leaves the machine and cause a bad shot.

In cases where it is impossible for the vehicle to approach near the scene of the wreck, and it is consequently necessary to transport the gear by hand, all the line boxes, whip boxes, carrier boxes, extra rocket sticks and breeches-buoy should be taken first so as to obtain communication as soon as possible. The triangle, hawser, etc., being taken directly afterwards if necessary.

On service it is preferable to await a suitable moment for firing the rocket—a lull in the wind, for instance—than to be over anxious to fire as soon as possible after arrival on the scene. In the event of communication not being effected with the first rocket, or subsequent rockets, immediate steps should be taken for the recovery of the rocket lines and their preparation for use again if necessary. When using a rocket line after it has been hauled in over sand it is advisable, if possible, when stowing it in the box, to pass it through fresh water in order to remove the sand which would reduce greatly the range of the rocket.

The efficacy of the measures taken to save life will depend primarily on the knowledge and judgment of the Officer in charge combined with the intelligent co-operation of the Company and their strict obedience to orders. Although with a well-trained Company the working of the apparatus should proceed smoothly, the success of the measures for the preservation of life depend to a very large degree on local knowledge. Especially is this the case where cliffs are concerned as, wherever possible, it is better to avoid firing the rocket and working the apparatus from the top of the cliff. In cases of this nature the gear should either be transported to the beach at the cliff foot or to a suitable ledge on the cliff face. Generally speaking the lower down a cliff the apparatus can be worked the more the life saving operations will be facilitated. When working from the top of a cliff it may be found convenient to secure the small brass snatch block well up on the lee leg of the triangle in order that the lee whip can be snatched and kept clear of the cliff edge. If it should prove necessary to work the apparatus from the top of a cliff at night the gear should be set back sufficiently to obviate the risk of men falling over the cliff. Nos. 2 and 3 should take up position in relation to edge of cliff and allow no one to pass beyond them.

Similarly, local conditions may render imperative a departure from the drill as taught at exercises. If, for instance, the vessel is working considerably it is not advisable to set up the hawser with the luff but to keep it as taut as possible by hand, also when working on a ledge on the face of a cliff there may not be sufficient room to set up the hawser; in cases of this nature the hawser must be kept as taut as possible by hand, or taken round a convenient rock or projection, precaution being taken against chafing.

In the event of a vessel showing signs of breaking up rapidly the rescue should be effected by using the whip and breeches buoy only. It must never be forgotten that when the whip only is being used the weight of the man when he gets into the buoy is entirely supported by the weather whip. As the whip block is generally secured well above the deck the man must be "eased" over the side otherwise he will be dropped and probably injured. This applies equally whether the brass snatch block is being used or not, but if the snatch block is in use at least half of the numbers should remain on the weather whip. When using whip and small snatch block with a hawser apparatus it may be found convenient to erect the triangle and snatch the weather whip in the snatch block, thus obtaining a better degree of lift for the buoy. The triangle should in this case be erected with the white leg towards the wreck, or it would capsize when the whip is eased with a strain on it.

Should it happen that the whip is not long enough to reach the wreck it should be tailed with a length of the rocket line. Generally speaking it may be assumed that if the whip will not reach the wreck the hawser will not do so either and consequently it is in such cases advisable to tail the whip and use it with breeches buoy. In these circumstances the whip should be tailed by cutting it at the splice on the swivel, and the ends of the portion of rocket line employed—which should be of sufficient length—knotted to each end of the whip. When securing the lee whip to the breeches buoy the whip should be so adjusted after the whip block is fast at the wreck that the knot is on the shore side of the short sling of the breeches buoy.

At the conclusion of a service as much as possible of the gear should be recovered. The hawser cutter should be hauled out as far as possible before cutting and should it be impossible to recover the whip block the whip should be cut at the swivel and unrove, after which it should be rove through the spare tail-block and re-spliced at the swivel.

XIX.—RESTORATION OF THE APPARENTLY DROWNED.

Send immediately for hot bottles, blankets, and dry clothing, and medical assistance, but proceed to treat the patient *instantly* on the spot.

The points to be aimed at are—first and *immediately*, the *Restoration of Breathing*; and secondly, the *Promotion of Warmth and Circulation*.

The efforts to *restore Breathing* must be commenced *immediately* the patient is removed from the water and persevered in energetically for five or six hours, but should a medical man pronounce life to be extinct before that time he should be informed of the instructions, and that the Coastguard are quite prepared to continue for the maximum period. Efforts to promote *Warmth and Circulation* must be postponed until after the first appearance of natural breathing, unless other assistance is available (see below).

TREATMENT.

Do not waste time in removing or loosening clothing. This can be kept until others arrive to assist.

Immediately after removal from the water, lay the patient in a completely flat position face downwards with the arms extended. Turn the face to the side, taking care that the mouth is clear of the ground and the arm pit. Kneel or squat astride or on one side of the patient (fig. 1 A, B).

Place the hands on the small of the patient's back, one on each side, with the thumbs parallel and nearly touching (fig. 1), one inch above the pelvis.

Bend forward with the arms straight so as to allow the weight of the operator to bear on his wrists and thus make a steady, firm, downward pressure on the lower part of the patient's back (the loins and lowest ribs), as shown in fig. 2. (This part of the operation should occupy the time necessary to count—*slowly—one, two, three*.)

Immediately after making this downward pressure the operator should swing backwards so as to relax the pressure, but without lifting his hands from the patient's body (fig. 1). (This part of the operation should occupy the time necessary to count—*slowly—four, five*.) There should be no alteration in the interval between each count.

Repeat the forward and backward movements (that is, the pressure and relaxation of pressure) without any marked

Note The man restoring the "apparently drowned" must on no account cease his movements if required to speak or give orders to others.

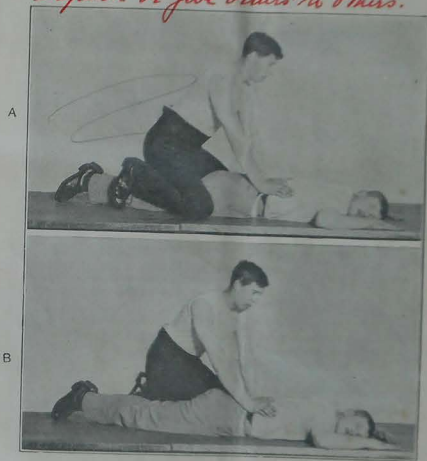


FIG. 1.

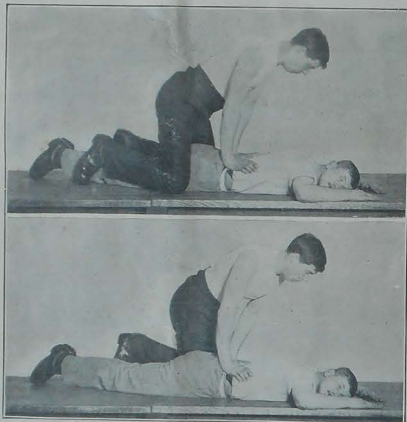


FIG. 2

pause between the movements. The downward pressure forces the air out of the lungs and the relaxation of pressure causes the air to be drawn in again.

Continue the movements at the rate of about 12 to 15 per minute until natural breathing has recommenced.

When natural breathing is fairly begun, cease the movements. Watch the patient closely, and, if natural breathing ceases, repeat the movements as before.

When natural breathing has commenced, the patient should be allowed to lie in a natural position on one side, and treatment for the promotion of warmth and circulation may be continued or proceeded with, the patient being kept covered as much as possible.

The movements of artificial breathing are of the first consequence. If the operator is single-handed, he must attend to these alone until natural breathing is restored. If other assistance is at hand, one person should at once be sent for hot bottles and medical assistance, as described in the first paragraph, and others should be directed to promote warmth and circulation, taking care not to interfere with the person who is restoring respiration. To promote warmth and circulation the limbs should be rubbed upwards with firm grasping pressure and energetically, using handkerchiefs, flannels, etc. In this way the blood is propelled along the veins towards the heart. After that a dry and warm covering may be placed over the patient and warm wrung-out flannels, hot bottles, &c., may be applied between the thighs, to the palms of the hands, arm-pits and feet; but the movements of artificial breathing must not be interfered with. Care must be taken that the hot bottles are covered with flannel or other material before applying them to the naked body.

After natural breathing is restored, the wet clothing may be removed and a dry covering substituted. This must be done without disturbing the patient, who should be allowed to lie quiet, and watched, for at least an hour, before being removed, and encouraged to sleep.

TREATMENT AFTER NATURAL BREATHING HAS BEEN RESTORED

On the restoration of life, when the power of swallowing has fully returned, small quantities of warm coffee, or tea, or milk, or broth, or other light warm nourishment, should be administered. No alcohol is to be given except on the explicit instructions of a medical man present at the time. The patient should be kept in bed, and a disposition to sleep encouraged.

XX.—CLIFF RESCUES.

The following notes on cliff work should be studied closely by those who may be called upon to assist in rescues from cliffs:—

1. In general, when any considerable height is involved, the lowering or raising of the rescued person by *stages* is advisable, where possible, as a short rope is easier to manipulate by the rescuer who is down the cliff. The more dangerous the cliff may be, the easier should be the stages in which either the ascent or descent is made. Stakes should be used on every possible occasion, both on the top of the cliff and by the rescuer down the cliff, if the rescued person is to be lowered.

2. A running rope is likely to dislodge much more material than the movement of persons on the cliff, and if the cliffs are very crumbly, it is advisable (if the rescuer who is to descend the cliff is experienced in holding on by a rope) to place the rope over the cliff before the descent is made, rather than to lower him from the cliff top. Those on the top of the cliff should remain still while the rescuer is lowering himself or the rescued person, in order that the danger run may not be increased by falling stones, earth, etc.

3. When the cliff is overhanging and friable at the edge, or when a fall of cliff is likely, owing to the nature or condition of the soil, it is preferable, if circumstances permit, to lower the rescued person to the beach rather than to haul him to the top of the cliff, even if this may entail waiting some little time for the tide to ebb. The advantage of this method, if it can be employed, is that the rescuer is in a position to see the rescued person as he is being lowered, whereas those on the top of the cliff will probably not be able to approach the edge of the cliff to see what is being done.

4. Where it is possible to lower the person being rescued to the beach, the lowering can, of course, be done either by the rescue party on the top of the cliff, or by the rescuer. If by the former, then two ropes should be used, and the rescuer should, so far as may be possible, keep in hand the rope attached to the person being rescued.

5. If the lowering is to be done by the rescuer, then he should use a stake, if possible, and where this is impossible should, if he has a good stance on a ledge, lower with the rope over his shoulder and under the opposite armpit so as to obtain the greatest amount of friction and command.

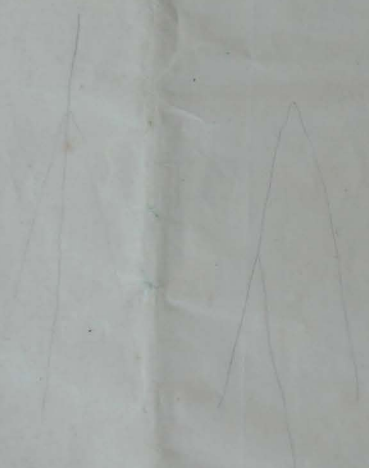
6. When it is necessary to bring up the cliff a person who is in possession of his faculties, and the raising can best be done in stages, then it is generally advantageous to arrange, if possible, for the rescuer to be always above the person being rescued during the stages taken to reach the top. In such cases two ropes should, of course, be used, one for the rescuer and one for the person being rescued, and, again, the rescuer should, so far as possible, keep in hand the rope attached to the rescued person, as this will greatly facilitate the passage to the top.

7. Whenever possible, the rope or ropes should be handled from the cliff edge, and the rescuer, and person being rescued, should be lowered or raised on different ropes, either singly or together, by the rescue party.

Notes on New R. L. Method. (18 min)

No attempt must be made to get a lot of making in.

Making & taking to be perfect - every even must be correct



Dropout forms.

Withing lines.

Holding survival.

Roaming east.

Rowline tops

paying out hands.

standing by ships.

Restrictions on intervals.

primary houses cells.

medium on sleep & eat.