





REGULATIONS  
OF THE  
**LIFE SAVING SERVICE**  
OF  
OF CANADA.  
1888.

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# REGULATIONS

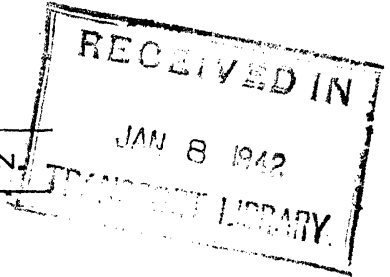
FOR THE GOVERNMENT OF THE

# LIFE SAVING SERVICE

OF CANADA,

UNDER THE CONTROL OF THE DEPARTMENT OF MARINE.

FIRST EDITION.



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## TABLE OF CONTENTS.

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|   | PAGE. |
|---|-------|
| Regulations for the government of the Life-Saving Service ..... | 5-12  |
| Duties of Coxswains .....                                       | 5     |
| Life-Boat Crews .....   | 10    |
| Miscellaneous .....   | 11    |
| Regulations for the care and use of the Life Boat .....         | 13    |
| Instructions for the management of Life-Boat Carriages.....     | 18    |
| Towing of Life-Boat .....                                       | 21    |
| Rules for the management of open boats in a surf, &c.....       | 22    |
| Instructions for saving drowning persons .....                  | 30    |
| Directions for restoring the apparently drowned.....            | 32    |
| Treatment of frost bites.....                                   | 36    |
| Articles of engagement for Life-Boat crews.....                 | 37    |

# REGULATIONS

FOR THE

## GOVERNMENT OF THE LIFE-SAVING SERVICE OF CANADA.

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1. The Life Saving Service of Canada is under the control and management of the Minister of Marine and Fisheries.

2. The Humane and Life-Saving Stations at Sable Island and St. Paul's Island are under the immediate charge of the Superintendents of those Islands respectively. All other duly organized Life-Saving Stations shall be in charge of coxswains appointed by the Minister of Marine.

3. All officers and members of the Life-Saving Service shall be subject to Rules and Regulations made, from time to time, for the proper and effective working of the service.

4. The Life-Boat crews shall be organized at the several Stations, from duly qualified residents of the respective localities, who will be required to formally subscribe to Articles of Engagement, in which will be set forth the duties required and the remuneration to be allowed for their faithful performance.

### DUTIES, ETC., OF COXSWAINS.

5. No person shall be appointed as coxswain until he shall have produced satisfactory evidence of good moral character, and sober and correct habits. A coxswain must be not less than twenty-one, nor more than fifty years of age, and be able to read and write a fair legible hand, must be able-bodied, familiar with the line of coast embraced within his district, and possess a thorough know-

ledge of the management of surf and life-boats, and of the use of the various apparatus employed in the service

6. Each coxswain will receive an annual allowance of seventy-five dollars, as remuneration for taking charge of the life-boat and station. In addition to that, he will be paid at the same rate as other members of the crew for his services at wrecks and at the ordinary practices of the boat and apparatus.

7. Coxswains will be held to a strict accountability for the proper care, preservation and good order of the apparatus, boats, buildings and their appurtenances, and for the economical use of all supplies placed in their charge. They must be careful to prevent waste, theft and misapplication of all Government property entrusted to their care and management, and the value of all articles not satisfactorily accounted for will be deducted from their pay.

8. Coxswains must not use or permit to be used for private purposes, the boats, carts, or any of the equipments of the station.

9. Whenever anything belonging to a station is lost or destroyed, the fact and attendant circumstances must be immediately reported to the Deputy Minister of Marine, at Ottawa.

10. Immediately upon the discovery of a wreck or vessel in distress, signal will be made in the manner hereinafter prescribed, and such signal having been made, the coxswain will proceed to prepare the boat, apparatus, &c., for instant service.

11. In case of necessity coxswains are authorized to obtain from the neighborhood the use of horses or carts to facilitate or hasten the conveyance of the boat or apparatus to the scene of the wreck, for which a reasonable compensation will be allowed. When such expense has been incurred, the coxswain will attach to the bill for the same a full statement showing the necessity thereof and the extent of the service.

12. Coxswains are strictly charged to see that every member of their respective crews is properly equipped with his life belt before taking his place in the boat at any time. Each member of the crew is to have his own belt, properly fitted to him and marked so that he can secure it without delay. Coxswains will assure themselves by personal inspection on every occasion of their use, that the life belts are in good condition, and especially that the strings are strong. They are enjoined to give particular attention to the fastenings of the belts upon the men, to insure which object it is indispensable: 1st. That the upper back strings of the belts should be drawn tightly over the shoulders, after being crossed behind, and tied carefully and tightly to the front strings on the chest, so as to make it impossible for the belt to drop down over the hips; 2nd That the waist strings should be drawn tightly around the body between the rows of cork, and then tightly and carefully tied, so as to prevent the sea from getting under the belt and breaking the strings, and also to preserve bodily warmth by keeping the belt in contact with the person. Coxswains will be held responsible for any neglect or infraction of this regulation on the part of any member of their respective crews.

13. On boarding wrecks, the preservation of life will be the coxswain's first consideration, and he will on no account take in goods or merchandize which may endanger the safety of his boat or the lives of those entrusted to his charge, and should anything of the kind be brought in against his remonstrance, he is fully authorized to throw it overboard.

14. In all cases of stranded vessels, coxswains will exercise a watchful care over such portions of the cargo as may be landed or come on shore, in order to preserve the same, as far as possible, for the owners thereof, as also to protect the revenue; and with this view, dutiable goods and valuable merchandize, other than combustibles and explosives, may for security, be stored within the stations, but the boat rooms must not be encumbered with articles which might affect the instant availability of the apparatus.

15. Coxswains will keep as accurate an account as possible of the cargo landed, and make a return of the same to the Deputy Minister of Marine, who will turn it over to the Collector of Customs within whose district the wreck may have occurred.

16. As soon after the occurrence of a wreck as it can be done, without interruption of his duty thereat, the coxswain of the nearest station will forward, by telegraph or by mail, a preliminary report of the casualty to the Deputy Minister of Marine, at Ottawa.

17. As soon after duty at a wreck as practicable, the coxswain of each station engaged will enter all the requisite particulars in a journal, and will fill up and forward the necessary report according to form, stating what appliances were used upon the occasion, whether mortar, gun, rocket, life-boat, surf-boat, life-car, life-raft or breeches buoy, and with what success, and also appending to the report a full narrative of the entire transaction, giving, with the utmost detail, every particular.

18. On returning from service, the boat will be placed in the boat-house immediately, and on the first fine day after, it will be drawn out, that any dampness about it may be dried up. Any damage to the boat must be immediately repaired.

19. After the apparatus has been used either in actual service or for exercise, each coxswain will see that every part thereof is restored to its proper place in the house, after being cleaned of sand or dirt. All metallic substances are to be wiped dry, and all lines and hawsers thoroughly dried at the first opportunity of fair weather.

20. In order to preserve the lines from rot, and for the purpose of properly ventilating the houses, coxswains will frequently avail themselves of fair weather to open all doors and windows during the daytime to permit the free passage of air throughout the houses, and will avail themselves of every opportunity and means to disperse whatever dampness or moisture may have accumulated.



21. A signal shall be agreed on by which the life-boat crew can be called together when required, such as a flag hoisted by day, and the firing of a carronade (or other alarm signal) by night. In addition coxswains will use all other means that may be available for speedily collecting their respective crews.

22. In case of the failure of a sufficient number of the enrolled members of the life-boat's crew to arrive seasonably upon an occasion of wreck, the coxswain is authorized to accept, if necessary, the services of any competent person or persons who will volunteer to make up the full number required, and each such person who participates in the life-boat service on such occasions will receive reasonable compensation.

23. The life-boat will be manned by the coxswain in charge and as many boatmen as the boat pulls oars, and the coxswain shall have full command of the boat.

24. Should any coxswain become incapacitated through illness, accident or otherwise, to properly discharge, at any wreck, the duties appertaining to his station, the most competent member of the crew present shall be selected by a majority vote of the boat's crew about to go on service, who will temporarily assume command, and must be obeyed and respected as coxswain.

25. Coxswains are required to make themselves familiarly acquainted with these regulations and the instructions for drill with the apparatus, and also in the use of the Code of Signals and the prescribed method for restoring the apparently drowned.

#### LIFE-BOAT CREWS.

26. Crews for the life-boats will be selected by the coxswain, from able-bodied and experienced boatmen residing near the station.

27. Life-boat crews will be required to sign articles in accordance with the form attached to these regulations,

binding themselves to a faithful performance of the duties therein specified.

28. Before signing the articles of engagement each man will either read, or have read to him, the regulations setting forth his duties. The compensation will be specified in the articles of agreement.

29. As the efficiency of a life-saving station depends upon the good training and discipline of the crew, the strictest attention must be paid, by the members thereof, to the directions of the coxswain on all occasions, and implicit obedience to all lawful orders from officers must be rendered.

30. All members of life-boat crews, when not at the stations, will be expected, in inclement or thick weather, to be on the lookout for the signal to assemble, and on seeing or hearing it must repair immediately to the station.

31. Each crew shall be exercised fourteen times per annum, at regular intervals during the season of navigation to be fixed by the coxswains.

32. These exercises to occupy half a day, or five hours' time, and to include drill in managing the life-boat and other duties connected with the station, the boat sometimes to be exercised in rough water.

33. Pay at the rate of \$1.50 for each such drill will be allowed each man, including the coxswain; when the boat has been on service about the time of any drill, that drill is to be omitted.

34. Whenever a life-boat has been on service at a wreck the crew will be reimbursed for the work done, the amount to be settled by the Minister of Marine and Fisheries, who will consider each case on its own merits.

35. The crews of life-saving stations may assist in saving property from wrecked vessels, so far as it can be done without interfering with the duty of saving life, which

must be always the paramount consideration, or injuring the effectiveness of the appliances for prompt service at any moment. They may also claim reasonable compensation for the use of boats, waggons or other appliances personally belonging to them, which may be employed on such occasions, and may receive such rewards for labor performed, or risk incurred at wrecks as owners or masters of vessels, or other persons, may see fit to voluntarily bestow upon them, but they are strictly forbidden to solicit such rewards.

#### MISCELLANEOUS.

36. The apparently drowned are to be treated according to the printed directions on page 32 of this manual, and all members of the Life-Saving Service are enjoined to make themselves familiar therewith.

37. Prompt measures must be taken to revive or resuscitate all persons found apparently drowned or insensible from exposure to cold.

38. All officers and other persons of the Life-Saving Service are required and strictly enjoined to properly observe and obey the orders of their superiors, and to use their utmost exertions to carry such orders into effect with promptitude.

39. No person belonging to the Life-Saving Service is permitted or authorized to take out of any wrecked vessel any money, plate, goods or any part of her cargo, or to take or remove any part of her rigging, stores or outfits, unless it be for the protection or preservation of the same, in which case the whole amount taken must, without fraud, concealment or embezzlement, be delivered to the coxswain in charge, or to the parties entitled to it.

40. The exterior of the boats will be painted annually by the coxswain. If the boat has been much used during the preceding twelve months, she should have two coats of paint; but if little used, one will suffice, but the painting should be very carefully performed, and the paint well worked into the seams. The Department will furnish the necessary paint, oil and brushes for this work.

41. Persons found in the surf or upon the beach, after death, are to be properly cared for, and where they cannot be otherwise identified, a description, as complete in details as possible, will be made upon the journal of the station, and a copy sent to the Deputy Minister of Marine, Ottawa.

42. Where articles of value or trinkets that might assist in identification, are found upon the bodies of deceased persons, they will be carefully preserved and forwarded with a list thereof, to the Deputy Minister of Marine, Ottawa.

# REGULATIONS

RELATIVE TO THE

## CARE AND USE OF THE SELF-BAILING AND SELF-RIGHTING LIFE-BOAT.

[Adapted from instructions published by the Royal National Life-Boat Institution of Great Britain.]

### STOWAGE OF LIFE-BOAT GEAR.

The stowage of life-boat gear is a matter of very great importance; in fact, the success of the life-boat in attempts at rescue, and the safety of her own crew, may largely depend upon it. The stowage space is necessarily limited, owing to so large a part of the boat being taken up by the air-cases and compartments which give her buoyancy; yet, in order to meet the conditions and emergencies of her work, she is obliged to carry a great number of articles, and these must be so placed as to be readily available for action and to not impede in any way the movements of the crew.

Two principles must never be lost sight of in stowing the life-boat—1st. Every article ordinarily in use should be *always* in the boat ready for service. 2nd. Every article should be carefully disposed in a particular manner. In these matters nothing should be considered trifling or unimportant. The smallest deviation from these two rules may involve disastrous failure.

The object of having all articles ordinarily used kept constantly in the boat, is to prevent anything from being forgotten and left out in the excitement attendant upon a sudden summons to put out to sea for a rescue. At such times something of importance is very apt to be overlooked, all hands being mainly intent upon the work of getting afloat and saving those in peril.

The object in having all the articles in the boat arranged in a particular manner is to allow the men to work the boat without the slightest hinderance and with the best possible

results. It must be borne in mind that to have to row at even the slightest disadvantage, in a heavy sea, might give the mastery to the waves, and involve the loss of human life. If, for example, the ropes were not well coiled beneath the thwarts and clear of the footboard, the legs of the rowers would be cramped, the muscles of the back chest, and arms could not work freely, and the result would be, discomfort, early fatigue, and general inefficient action. Or, if the masts, when the boat was under oars, were not securely lashed, and the boat happened to be thrown on her beam-ends by a broadside sea, the masts, being stowed amidships between the two lines of rowers, would then fall over on the lee side, and the crew, struggling in the water with this load upon them, would find difficulty in getting free, while the boat, held in this dangerous position by the combined weight of the men, masts, and water on her lee side, would probably be upset by the next sea on her broadside. In a similar instance, the oars, if not well lashed, might be lost altogether, and the boat be left without the means of managing her. It is obvious, also, that articles should be so placed as to be seized for use at exactly the right moment. A secondary purpose is to enable any inspector, when he visits the station, to see at a glance that all the equipments are in the boat and disposed in the best possible manner for service.

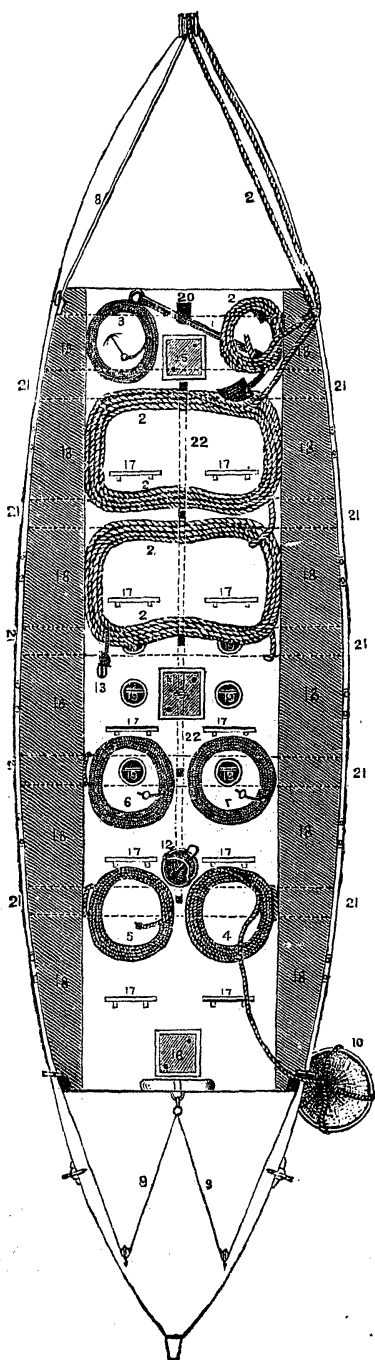
In stowing the ropes, two general rules must be observed : 1st. Every rope must be fastened securely around a thwart by one end, leaving the other end clear for use. 2nd. Every rope must be stowed away, as far as possible, under a thwart, so that the end can be handed out, if wanted, by the man on the thwart above it, while it is in nobody's way, and not liable to be trampled on or disarranged, as it would be if coiled in the spaces between the thwarts. 3rd. Ropes should be coiled loosely, so as to allow the air to have access to all parts of them.

The accompanying diagram shows the deck of a life-boat, with the stowage arranged in accordance with these principles and rules. The thwarts are merely indicated by fine dotted lines, and the ropes are shown coiled beneath them. The anchor, drogue, life-buoy, and other articles, are shown in their appropriate places.

DECK-PLAN OF A SELF-RIGHTING LIFE-BOAT, SHOWING THE MANNER  
IN WHICH THE GEAR IS STOWED.

*Boat and Gear.*

*List of Articles Shown*



1. Anchor.
2. Cable.
3. Bow heaving-line or grapnel-rope and grapnel.
4. Drogue-rope.
5. Stern heaving-line.
6. } Veering lines.
7. }
8. Jib outhaul or tack.
9. Mizzen-sheets.
10. Drogue.
11. Life-buoy.
12. Loaded-cane, heaving-line, and tub.
13. Tailed block.
14. Pump-well hatch.
15. } Deck ventilating-hatches.
16. }
17. Foot-boards for rowers.
18. Side air-cases.
19. Relieving tubes and valves.
20. Samson's post.
21. Thwarts.
22. Central batten, to which the masts and boat-hooks are lashed.

NOTE.—In many of the Canadian life-boats the side air-cases (18) are dispensed with, and there are less thwarts than shown on this plan. The same general arrangement is, however, applicable to all boats, with such slight modifications for changed spaces as experience may suggest.

The spare oars, masts and sails, and boat-hooks, are not shown in the diagram, lest their representation should so crowd the drawing with objects as to make it difficult to be understood. They are to be stowed above the thwarts. The masts, boat-hooks, and spare steering-oar are stowed amidships, and securely lashed to the central batten, so that they will in no event break adrift. The sails are stowed at the fore end of the boat, one on each side, with two spare oars on each side, all securely lashed.

#### REGULATIONS.

1. The coxswains of life-boat stations will be held responsible to the Government for the proper care and order, cleanliness, and efficiency of the life-boat, and everything pertaining to her.

2. The coxswain of each life-boat station will frequently open the doors and windows of the boat-house ; keep the pump-well hatch and ventilating-hatches of the boat open when the boat is not in use ; and often examine such of her gear as would suffer injury from dampness, and dry it by exposure to the sun or wind. He will exercise proper precautions against the warping of the oars by their remaining long in one position, and see that they are not left supported only at the ends.

3. The coxswain will keep all the boat's gear as far as possible in the boat, except the lantern (which has first to be trimmed and is only wanted for night service) and the life-belts, so that no delay may take place in handing gear into the boat when going on service, and no risk be run of leaving anything behind.

4. The ropes and other gear of the life-boat must on no account be used for private purposes, nor, where avoidable, for any other purpose than that for which they are provided.

5. Whenever any small articles are injured or destroyed, they should be instantly repaired or replaced, and the Deputy Minister of Marine informed accordingly ; and



when any ropes or other articles of importance are worn-out or destroyed, the fact should be made known at once.

6. Whenever the life-belts have been wet through with salt water, they should be dipped and washed in fresh water if practicable, and perfectly dried as soon as possible, their durability, without repair, much depending upon this being done.

7. Where there is a carriage to the boat, the wheels should be taken off at least twice a year and the axle-arms greased, and the roller-skids should be kept in good order by oiling their axle-bolts occasionally. .

8. To provide against the liability of the breakage of oars, either on service or in exercise, the coxswain will see that not less than four spare oars are carried in the boat whenever afloat, and that they are securely lashed so that they cannot be washed overboard, nor lost should the boat be upset.

# INSTRUCTIONS

FOR THE

## MANAGEMENT OF THE LIFE-BOAT TRANSPORTING CARRIAGE ON OCCASIONS OF LAUNCHING AND HAULING UP.

[Reproduced from instructions published by the Royal National Life-Boat Institution of Great Britain.]

### I.—READINESS FOR SERVICE.

1. The life-boat is kept on the carriage in the boat-house, ready for launching at a moment's notice ; all her ordinary gear being in her, and the hauling-off or launching ropes ready rove.

2. Each launching-rope has a thimble-eye at one end, which hooks over the corresponding hook at the lower part of the sternpost, thence it reeves downward through the sheave on the same side of the rear end of the carriage, the hauling part being hauled taut, and belayed to a cleat, at the fore end of the keelway of the carriage.

3. A stout securing-rope, in the fore end of the keelway, is rove through the hole, at the aft end of the boat's keel, and belayed. This rope prevents the boat from running off the carriage when being drawn, and the hauling-off ropes, being hauled taut and belayed, prevent her running forward on the horses when going down a hill. No other ropes or lashings are required to steady or secure the boat on the carriage.

### II.—LAUNCHING.

4. Preparatory to launching, the carriage should, according to circumstances, be either drawn into the water, and then turned short round, or be backed in far enough to launch *afloat*, and her bow pointed fair toward the surf before the crew get into the boat. Should, however, the carriage have to be drawn a considerable distance into the water before the boat will launch *afloat*, if there be sufficient horsepower available, the crew can all take their places in the boat before she is drawn into the water. In general,

however, it will be best to turn the carriage round before arriving at the water's edge, to take the horses out of the shafts, and to let the crew and assistants push the carriage into the water by the shafts, taking care to keep the boat's bow toward the sea, and to push the carriage far enough into the water to insure the boat's launching afloat.

5. The boat being properly placed, and each of the crew sitting on his thwart with his oar over the side, ready to give way, the hauling-off ropes are led up the beach and manned by the bystanders, or the assistants who are engaged for the purpose; or, if men are not at hand, a horse may be attached to them.

6. All being ready, and one man attending the securing-rope at the stern, in readiness to let it go, the coxswain will watch the surf as it breaks, and at the right moment will give the word to launch, when the men or horses on the launching-ropes, running up the beach with all the speed possible, the boat which is entirely supported on the rollers of the keelway, will be shot rapidly off the carriage, and, the crew instantly giving way with their oars, she may thus be got fairly under command, before the surf has time to beat her back broadside to the shore, as would be the case if launching without the aid of the carriage.

7. As soon as the boat is afloat, the horses or assistants should draw the carriage out of the water and a short distance up the beach, and the assistants should prepare the tackle for hauling-up the boat on her return to the shore, and should see the skids and hauling-up hook-rope also ready for use.

### III.—HAULING UP.

8. On the boat's returning to the shore, it is desirable that she should, as quickly as possible, be hauled up beyond the reach of the surf; and as she could not be kept sufficiently steady in a surf to be hauled at once from the water on to the carriage, she is first hauled up on the roller-skids supplied for the purpose, until altogether clear of the water and up the heaviest part of the beach.

9. The judicious use of the skids much facilitates the operation of hauling up, as on a soft beach or a steep incline

a boat can be dragged with greater ease over them than she can be drawn on a carriage.

10. On the boat approaching the shore, bow foremost, one or two hands quickly place a skid under her bow, while another hooks the hauling-up rope into the hole at the fore end of the keel, the same being ready manned by those on shore. The boat is thus run over the first skid while she is still water-borne. Her crew then jump out of her and aid in hauling her up, two or more on each side of her keeping her from falling over on one side. A line of skids being then placed at suitable intervals, she is drawn on them out of the water and as far up the shore as may be found convenient.

11. The fore body of the carriage is then detached, and the fore end of the keelway, resting on the ground, is run under the boat's bow, forming an incline, up which she may be easily hauled.

12. The hauling-off ropes are then doubled by toggling a single-snatched block and pendant to the standing part of each, and reeving their hauling part through the blocks. The pendants then hook over the slip-hooks on the stern-post, thus forming two single-block purchases, which are found sufficient.

13. A few men on the tackles are sufficient to haul the boat on the carriage, some on each side keeping her upright until her bilge-pieces take the sideways at the rear end of the carriage.

14. When far enough on the carriage to pass the securing-rope, the same is made fast and the tackle-falls belayed. The fore body of the carriage is then again attached, and the boat is ready for transit.

15. Drag-ropes are provided, with which the crew and assistants may aid the horses over very soft parts of the beach or up heavy hills, and check speed going down hills.

16. The wheels should be occasionally taken off and the axle-arms greased; a lifting-jack is supplied with every carriage for that purpose.

## TOWING OF LIFE-BOATS.

[Reproduced from instructions published by the Royal National Life-Boat Institution of Great Britain.]

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On no account must any life-boat be towed, either by a steamer or sailing vessel, without her crew being in her, or at least a sufficient number of men to manage her in the event of her breaking adrift, or having to cast off from the towing vessel.

A life-boat may be towed by either one or two tow-ropes. If the former be adopted, it is recommended to tow with a long scope, from forty to sixty fathoms, the tow-rope being rove through a fair-leader or lizard at the stem-head, and screwed to a bollard shipped in the trunk or tabernacle of the foremast.

If towed with two ropes, one from each quarter of the towing-steamer, they should not be taken to the stem of the boat, but be made fast, one to each bow, for which purpose some life-boats are fitted with a bollard on each bow. In either case, the crew should be seated well aft in the boat to weigh her by the stern, excepting one man forward with a small hatchet by him, ready to cut the tow-rope in a moment if it should become necessary.

A life-boat will always be found to tow better against a heavy head-sea than away from one, as there will be a more steady and regular strain on her, and she will tow less wildly, and therefore with less violent jerks and strains on the tow-rope.

Great advantage is found, when towing a life-boat before a heavy sea, by towing a drogue astern of the boat, to prevent her running ahead in front of a sea (at risk of damage against the towing vessel,) and to keep up a more equable strain on the tow-rope.

# RULES

FOR THE

## MANAGEMENT OF OPEN ROW-BOATS IN A SURF--BEACHING THEM, &c.

[Reproduced from instructions published by the Royal National Life-Boat  
Institution of Great Britain.]

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### RULES OF MANAGEMENT.

#### I. *In rowing to seaward.*

As a general rule, speed must be given to a boat rowing against a heavy surf. Indeed, under some circumstances, her safety will depend on the utmost possible speed being attained on meeting a sea. For if the sea be really heavy, and the wind blowing a hard, on-shore gale, it can only be by the utmost exertions of the crew that any headway can be made. The great danger then is, that an approaching heavy sea may carry the boat away on its front, and turn it broadside on, or upend it, either effect being immediately fatal. A boat's only chance in such a case is to obtain such way as shall enable her to pass, end on, through the crest of the sea, and leave it as soon as possible behind her. Of course, if there be a rather heavy surf, but no wind, or the wind off shore, and opposed to the surf, as is often the case, a boat might be propelled so rapidly through it that her bow would fall more suddenly and heavily after topping the sea than if her way had been checked; and it may, therefore, only be when the sea is of such magnitude, and the boat of such a character, that there may be chance of the former carrying her back before it, that full speed should be given to her.

It may also happen that, by careful management under such circumstances, a boat may be made to avoid the sea, so that each wave may break ahead of her, which may be the only chance of safety in a small boat; but if the shore be flat, and the broken water extends to a great distance from it, this will often be impossible.

The following general rules for rowing to seaward may, therefore, be relied on :

1. If sufficient command can be kept over a boat, by the skill of those on board her, avoid or "dodge" the sea, if possible, so as not to meet it at the moment of its breaking or curling over.

2. Against a head gale and heavy surf, get all possible speed on a boat on the approach of every sea which cannot be avoided.

3. If more speed can be given to a boat than is sufficient to prevent her being carried back by a surf, her way may be checked on its approach, which will give her an easier passage over it.

## II. *On running before a broken sea, or surf, to the shore.*

The one great danger, when running before a broken sea, is that of *broaching-to*. To that peculiar effect of the sea, so frequently destructive of human life, the utmost attention must be directed.

The cause of a boat's broaching-to when running before a broken sea or surf is, that her own motion being in the same direction as that of the sea, whether it be given by the force of oars or sails, or by the force of the sea itself, she opposes no resistance to it, but is carried before it. Thus, if a boat be running with her bow to the shore and her stern to the sea, the first effect of the surf or roller on its overtaking her, is to throw up the stern, and as a consequence to depress the bow ; if she then has sufficient inertia (which will be proportional to weight) to allow the sea to pass her, she will in succession pass through the descending, the horizontal, and the ascending positions, as the crest of the wave passes successively her stern, her midships, and her bow, in the reverse order in which the same positions occur to a boat propelled to seaward against a surf. This may be defined as the safe mode of running before a broken sea.

But if a boat, on being overtaken by a heavy surf has not sufficient inertia to allow it to pass her, the first of the three

positions above enumerated alone occurs ; her stern is raised high in the air, and the waves carries the boat before it, on its front or unsafe side, sometimes with frightful velocity, the bow all the time deeply immersed in the hollow of the sea, where the water, stationary or comparatively so, offers a resistance, whilst the crest of the sea, having the actual motion which causes it to break, forces onward the stern or rear end of the boat. A boat will, in this position sometimes, aided by careful oar-steerage, run a considerable distance until the wave has broken and expended itself. But it will often happen that if the bow be low it will be driven under water, when, the buoyancy being lost forward, whilst the sea presses on the stern, the boat will be thrown (as it is termed) end over end ; or if the bow be high, or it be protected, as in most life-boats, by a bow air-chamber, so that it does not become submerged, that the resistance forward, acting on one bow, will slightly turn the boat's head, and the force of the surf being transferred to the opposite quarter, she will in a moment be turned round broadside to the sea, and be thrown by it on her beam-ends or altogether capsized. It is in this manner that most boats are upset in a surf, especially on flat coasts, and in this way many lives are annually lost among merchant seamen when attempting to land after being compelled to desert their vessels. Hence it follows, that the management of a boat, when landing through a heavy surf, must, as far as possible, be assimilated to that when proceeding to seaward against one, at least so far as to stop her progress shoreward at the moment of being overtaken by a heavy sea, and thus enabling it to pass her. There are different ways of effecting this object.

1. By turning a boat's head to the sea before entering the the broken water, and then backing in stern foremost, pulling a few strokes ahead to meet each heavy sea, and then again backing astern. If a sea be really heavy and a boat small, this plan will be generally the safest, as a boat cannot be kept more under command when the full force of the oars can be used against a heavy surf than by backing them only.

2. If rowing to shore with the stern to seaward, by backing all the oars on the approach of a heavy sea, and rowing



ahead again as soon as it has passed to the bow of the boat, thus rowing in on the back of the wave ; or, as is practised in some life-boats, placing the after-oarsmen with their faces forward and making them row back at each sea on its approach.

3. If rowed in bow foremost, by towing astern a pig of ballast or large stone, or a large basket, or a canvas bag, termed a "drogue" or drag, made for the purpose, the object of each being to hold the boat's stern back, and prevent her being turned broadside to the sea or broaching-to.

Drogues are in common use by the boatmen on the Norfolk coast ; they are conical-shaped bags of about the same form and proportionate length and breadth as a candle extinguisher, about two feet wide at the mouth and four and a half feet long. They are towed with the mouth foremost by a stout rope, a small line, termed a tripping-line, being fast to the apex or pointed end. When towed with the mouth foremost they fill with water and offer a considerable resistance, thereby holding back the stern ; by letting go the stouter rope and retaining the smaller line their position is reversed, when they collapse, and can be readily hauled into the boat.

Drogues are chiefly used in sailing-boats, when they both serve to check a boat's way and to keep her end on to the sea. They are, however, a great source of safety in rowing-boats, and rowing life-boats should be provided with them.

A boat's sail bent to a yard and towed astern loosed, the yard being attached to a line capable of being veered, hauled, or let go, will act in some measure as a drogue, and will tend much to break the force of the sea immediately astern of the boat.

Heavy weights should be kept out of the extreme ends of a boat ; but when rowing before a heavy sea the best trim is deepest by the stern, which prevents the stern being readily thrown on one side by the sea

A boat should be steered by an oar over the stern, or on one quarter, when running before a sea, as the rudder will then at times be of no use. If the rudder be shipped, it should be kept amidships on a sea breaking over the stern.

The following general rules may therefore be depended on when running before, or attempting to land, through a heavy surf or broken water :

1. As far as possible, avoid each sea by placing the boat where the sea will break ahead or astern of her.

2. If the sea be very heavy, or if the boat be very small, and especially if she have a square stern, bring her bow round to seaward and back her in, rowing ahead against each heavy surf that cannot be avoided sufficiently to allow it to pass the boat.

3. If it be considered safe to proceed to the shore bow foremost, back the oars against each sea on its approach, so as to stop the boat's way through the water as far as possible, and if there is a drogue, or any other instrument in the boat which may be used as one, tow it astern to aid in keeping the boat end on to the sea, which is the chief object in view.

4. Bring the principal weights in the boat towards the end that is to seaward, but not to the extreme end.

5. If a boat, worked by both sails and oars, be running under sail for the land through a heavy sea, her crew should, under all circumstances, unless the beach be quite steep, take down her masts and sails before entering the broken water, and take her to land under oars alone, as above described. If she have sails only, her sails should be much reduced, a half-lowered foresail or other small head-sail being sufficient.

### III. *Beaching or landing through a surf.*

The running before a surf or broken sea, and the beaching or landing of a boat, are two distinct operations; the

management of boats as above recommended has exclusive reference to running before a surf where the shore is so flat that the broken water extends to some distance from the beach. Thus, on a very steep beach, the first heavy fall of broken water will be on the beach itself, whilst on some very flat shores there will be broken water as far as the eye can reach, sometimes extending to even four or five miles from the land. The outermost line of broken water, on a flat shore, where the waves break in three and four fathoms water, is the heaviest, and therefore the most dangerous ; and, when it has been passed through in safety, the danger lessens as the water shoals, until, on nearing the land, its force is spent and its power harmless. As the character of the sea is quite different on steep and flat shores, so is the customary management of boats on landing different in the two situations. On the flat shore, whether a boat be run or backed in, she is kept straight before or end on to the sea until she is fairly aground, when each surf takes her farther in as it overtakes her, aided by the crew, who will then generally jump out to lighten her, and drag her in by her sides. As above stated, sail will in this case have been previously taken in if set, and the boat will have been rowed or backed in by oars alone.

On the other hand, on the *steep* beach, it is the general practice, in a boat of any size, to retain speed right on to the beach, and in the act of landing, whether under oars or sail, to turn the boat's bow half round towards the direction from which the surf is running, so that she may be thrown on her broadside up the beach, where abundance of help is usually at hand to haul her as quickly as possible out of the reach of the sea. In such situations, we believe, it is nowhere the practice to back a boat in stern foremost under oars, but to row in under full speed as above described.

#### IV. *Boarding a wreck or a vessel, under sail or at anchor, in a heavy sea.*

The circumstances under which life-boats or other boats have to board vessels, whether stranded or at anchor or under way, are so various that it would be impossible to draw up any general rule for guidance. Nearly everything

must depend on the skill, judgment, and presence of mind of the coxswain or officer in charge of the boat, who will often have those qualities taxed to the utmost, as undoubtedly the operation of boarding a vessel in a heavy sea or surf is frequently one of extreme danger.

It will be scarcely necessary to state that, whenever practicable, a vessel, whether stranded or afloat, should be boarded to leeward, as the principal dangers to be guarded against must be violent collision of the boat against the vessel, or her swamping or upsetting by the rebound of the sea, or by its irregular direction on coming in contact with the vessel's side; and the greater violence of the sea on the windward side is much more likely to cause such accidents. The danger must, of course, also be still further increased when the vessel is aground and the sea breaking over her. The chief danger to be apprehended on boarding a stranded vessel on the lee side, if broadside to the sea, is the falling of the masts; or if they have been previously carried away, the damage or destruction of the boat amongst the floating spars and gear alongside. It may therefore, under such circumstances, be often necessary to take a wrecked crew into a life-boat from the bow or stern; otherwise a rowing-boat, proceeding from a lee shore to a wreck, by keeping under the vessel's lee, may use her as a break-water, and thus go off in comparatively smooth water, or be at least shielded from the worst of the sea. This is, accordingly, the usual practice in rowing life-boats. The larger sailing life-boats, which go off to wrecks on outlying shoals, are however, usually anchored to windward of stranded vessels, and then veered down to 100 or 150 fathoms of cable, until near enough to throw a line on board. The greatest care, under these circumstances, has, of course, to be taken to prevent actual contact between the boat and the ship, and the crew of the latter have sometimes to jump overboard and to be hauled to the boat by ropes.

In every case of boarding a wreck or a vessel at sea, it is important that the lines by which a boat is made fast to the vessel should be of sufficient length to allow of her rising or falling freely with the sea; and every rope should be

kept in hand ready to cut or slip it in a moment if necessary. On wrecked persons or other passengers being taken into a boat in a sea way, they should be placed on the thwarts in equal numbers on either side, and be made to sit down. All crowding or rushing headlong into the boat should be prevented as far as possible ; and the captain of a ship, if a wreck, should be called on to remain on board to preserve order until every other person had left her.

# INSTRUCTIONS

FOR

## SAVING DROWNING PERSONS BY SWIMMING TO THEIR RELIEF.

[Reproduced from the Rules of the Royal National Life-Boat Institution of Great Britain.]

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1. When you approach a person drowning in the water, assure him, with a loud and firm voice, that he is safe.

2. Before jumping in to save him, divest yourself as far and as quickly as possible of all clothes; tear them off, if necessary; but if there is not time, loose at all events the feet of your drawers, if they are tied, as, if you do not do so, they fill with water and drag you.

3. On swimming to a person in the sea, if he be struggling, do not seize him then, but keep off for a few seconds till he gets quiet, for it is sheer madness to take hold of a man when he is struggling in the water, and if you do you run a great risk.

4. Then get close to him and take fast hold of the hair of his head, turn him as quickly as possible on his back, give him a sudden pull, and this will cause him to float, then throw yourself on your back also and swim for the shore, both hands having hold of his hair, you on your back and he also on his, and of course his back to your stomach. In this way you will get sooner and safer ashore than by any other means, and you can easily thus swim with two or three persons; the writer has even, as an experiment, done it with four, and gone with them forty or fifty yards in the sea. One great advantage of this method is that it enables you to keep your head up, and also to hold the person's head up you are trying to save. It is of primary importance that you take fast hold of the hair and throw both the person and yourself on your backs. After many experiments, it is usually found preferable to all other methods. You can in

this manner float nearly as long as you please, or until a boat or other help can be obtained.

5. It is believed there is no such thing as a death-grasp ; at least it is very unusual to witness it. As soon as a drowning man begins to get feeble and to lose his recollection, he gradually slackens his hold until he quits it altogether. No apprehension need, therefore, be felt on that head when attempting to rescue a drowning person.

6. After a person has sunk to the bottom, if the water be smooth, the exact position where the body lies may be known by the air-bubbles, which will occasionally rise to the surface, allowance being of course made for the motion of the water, if in a tide-way or stream, which will have carried the bubbles out of a perpendicular course in rising to the surface. A body may be often regained from the bottom, before too late for recovery, by diving for it in the direction indicated by these bubbles.

7. On rescuing a person by diving to the bottom, the hair of the head should be seized by one hand only, and the other used, in conjunction with the feet, in rising yourself and the drowning person to the surface.

8. If in the sea, it may sometimes be a great error to try to get to land. If there be a strong "outsetting" tide, and you are swimming either by yourself, or have hold of a person who cannot swim, then get on your back and float till help comes. Many a man exhausts himself by stemming the billows for the shore on a back-going tide, and sinks in the effort, when, if he had floated, a boat or other aid might have been obtained.

9. These instructions apply alike to all circumstances, whether as regards the roughest sea or smooth water.

DIRECTIONS  
FOR  
RESTORING THE APPARENTLY DROWNED.

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[Reproduced from the Regulations of the United States Life-Saving Service.]

**RULE I.** *Arouse the patient.*—Unless in danger of freezing, do not move the patient, but instantly expose the face to a current of fresh air, wipe dry the mouth and nostrils, rip the clothing, so as to expose the chest and waist, and give two or three quick smarting slaps on the stomach and chest with the open hand. If, however, there is reason to believe that considerable time has elapsed since the patient became insensible, do not lose further time by practising Rule I, but proceed immediately to Rule II. After loosening clothing, &c., if the patient does not revive, then proceed thus :

**RULE II.** *To expel water, &c., from the stomach and chest.*—

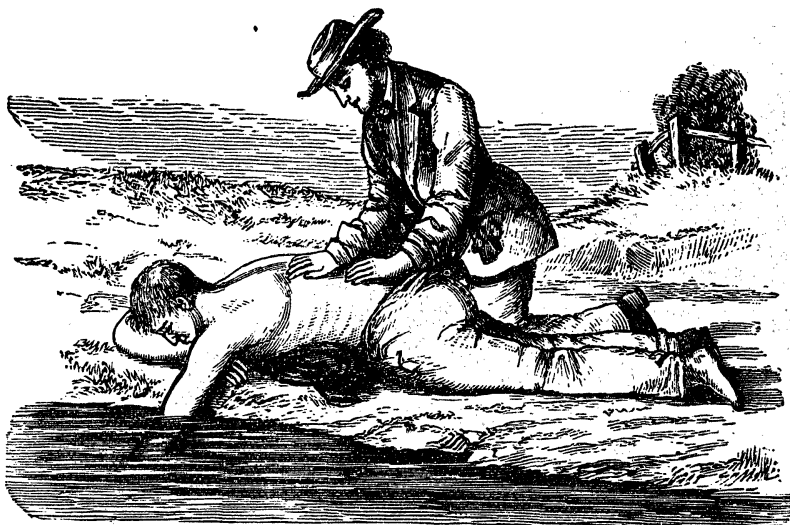


FIG. I. Showing the first step taken, by which the chest is emptied of air, and the ejection of any fluids swallowed is assisted.



(See Fig. I.)—If the jaws are clinched, separate them, and keep the mouth open by placing between the teeth a cork or small bit of wood ; turn the patient on the face, a large bundle of tightly-rolled clothing being placed beneath the stomach, and press heavily over it for half a minute, or so long as the fluids flow freely from the mouth.

RULE III. *To produce breathing*—(See Fig. II.)—Clear

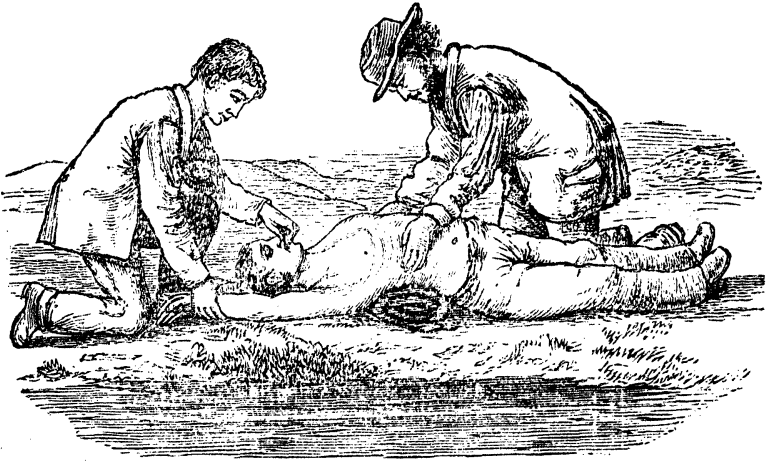


FIG. II. *Showing the position and action of the operator, in alternately producing artificial expiration and inspiration of air.*

the mouth and throat of mucus, by introducing into the throat the corner of a handkerchief wrapped closely around the fore-finger ; turn the patient on the back, the roll of clothing being so placed beneath it as to raise the pit of the stomach above the level of any other part of the body. If there be another person present, let him, with a piece of dry cloth, hold the tip of the tongue out of one corner of the mouth (this prevents the tongue from falling back and choking the entrance to the windpipe,) and with the other hand grasp both wrists and keep the arms forcibly stretched back above the head, thereby increasing the prominence of the ribs, which tends to enlarge the chest. The two last named positions are not, however, absolutely essential to success. Kneel beside or astride the patient's hips, and

with the balls of the thumbs resting on either side of the pit of the stomach, let the fingers fall into the grooves between the short ribs, so as to afford the best grasp of the waist. Now, using your knees as a pivot, throw all your weight forward on your hands, and at the same time squeeze the waist between them, as if you wished to force everything in the chest upward out of the mouth; deepen the pressure while you can count slowly one, two, three; then suddenly let go with a final push which springs you back to your first kneeling position. Remain erect on your knees while you can count one two, three; then repeat the same motions as before at a rate gradually increased from four or five to fifteen times in a minute, and continue thus this bellows movement with the same regularity that is observable in the natural motions of breathing which you are imitating. If natural breathing be not restored, after a trial of the bellows movement for the space of three or four minutes, then turn the patient a second time on the stomach, as directed in Rule II, rolling the body in the opposite direction from that in which it was first turned, for the purpose of freeing the air-passages from any remaining water. Continue the artificial respiration from one to four hours, or until the patient breathes, according to Rule III; and for a while, after the appearance of returning life, carefully aid the first short gasps until deepened into full breaths. Continue the drying and rubbing, which should have been unceasingly practised from the beginning by the assistants, taking care not to interfere with the means employed to produce breathing. Thus the limbs of the patient should be rubbed, always in an upward direction towards the body, with firm-grasping pressure and energy, using the bare hands, dry flannels or handkerchiefs, and continuing the friction under the blankets or over the dry clothing. The warmth of the body can also be promoted by the application of hot flannels to the stomach and armpits, bottles or bladders of hot water, heated bricks, &c., to the limbs and soles of the feet.

**RULE IV. AFTER-TREATMENT.**—*Externally*: As soon as breathing is established, let the patient be stripped of all wet clothing, wrapped in blankets only, put to bed comfortably warm, but with a free circulation of fresh air, and

left to perfect rest. *Internally*: Give whisky or brandy and hot water in doses of a teaspoonful to a tablespoonful according to the weight of the patient, or other stimulant at hand, every ten or fifteen minutes for the first hour, and as often thereafter as may seem expedient. *Later manifestations*: After reaction is fully established, there is great danger of congestion of the lungs, and if perfect rest is not maintained for at least forty-eight hours, it sometimes occurs that the patient is seized with great difficulty of breathing, and death is liable to follow unless immediate relief is afforded. In such cases apply a large mustard-plaster over the breast. If the patient gasps for breath before the mustard takes effect, assist the breathing by carefully repeating the artificial respiration.

NOTE.—Dr. Labordette, the Supervising Surgeon of the Hospital of Lisieux, in France, appears to have established that the clenching of the jaws and the semi-contraction of the fingers, which have hitherto been considered signs of death, are, in fact, evidences of remaining vitality. After numerous experiments with apparently drowned persons, and also with animals, he concludes that these are only signs accompanying the first stage of suffocation by drowning, the jaws and hands becoming relaxed when death ensues.\* This being so, the mere clenching of the jaws and semi-contraction of the hands must not be considered as reasons for the discontinuance of efforts to save life, but should serve as a stimulant to vigorous and prolonged efforts to quicken vitality. Persons engaged in the tasks of resuscitation are, therefore, earnestly desired to take hope and encouragement for the life of the sufferer, from the signs above referred to, and to continue their endeavors accordingly. In a number of cases Dr. Labordette restored to life persons whose jaws were so firmly clenched that, to aid respiration, their teeth had to be forced apart with iron instruments.

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\*The muscular rigidity of death (*rigor mortis*) occurs later, after the temporary relaxation here referred to.

## TREATMENT OF FROST-BITES.

AS RECOMMENDED BY THE SURGEON-GENERAL OF THE UNITED STATES MARINE HOSPITAL SERVICE.

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1. Do not bring the patient to the fire, nor bathe the parts in warm water.

2. If snow be on the ground, or accessible, taken a woollen cloth in the hand, place a handful of snow upon it, and gently rub the frozen part until the natural color is restored. In case snow is not at hand, bathe the part gently with a woollen cloth in the coldest *fresh* water obtainable—ice-water if practicable.

3. In case the frost-bite is old, and the skin has turned black or begun to scale off, do not attempt to restore its vitality by friction, but apply carron oil on a little cotton ; after which wrap the part loosely in flannel.

4. In all cases, as soon as the vitality has been restored, apply the carron oil, prepared according to Service formula. As it contains opium, do not administer morphia or other opiate.

5. In the case of a person apparently dead from exposure to cold, friction should be applied to the body and the lower extremities, and artificial respiration practised as in cases of the apparently drowned. As soon as the circulation appears to be restored, administer spirit and water at intervals of 15 or 20 minutes until the flesh feels natural. Even if no signs of life appear, friction should be kept up for a long period, as instances are on record of recovery after several hours of suspended animation.

*Carron Oil*—(Service formula :)

Olive-oil or linseed-oil (raw ;)

Lime-water, of each 12 parts.

Tincture of opium, 1 part.

Mix.

## ARTICLES OF ENGAGEMENT FOR VOLUNTEER LIFE-BOAT CREWS.

We, the subscribers, do, and each of us doth, hereby agree to and with \_\_\_\_\_, Coxswain of Life Boat Station, in the Life Saving Service of the Dominion of Canada, in manner and form following, that is to say :—

In the first place, we do hereby agree, in consideration of the compensation against each of our names hereunto set, payable at such times and in such proportions as is or may be prescribed by the Department of Marine of the Dominion of Canada for the term of one year, unless sooner discharged by the order of the Deputy Minister of Marine at Ottawa, to repair to \_\_\_\_\_ Station on the occurrence of any wreck within the scope of the operations of said Station, or whenever notified by proper authority by signal or otherwise, and unless sooner discharged by proper authority, to the utmost of our power and ability, respectively to discharge our several duties, and in everything to be conformable and obedient to the lawful commands of the coxswain and officers who may from time to time be placed over us.

Secondly. We do also oblige and subject ourselves, and for that purpose do hereby covenant and agree to serve during the term aforesaid, and to comply with and be subject to such regulations, rules and discipline as are, or may be, established for the government of the Life Saving Service of the Dominion of Canada.

Thirdly. The said \_\_\_\_\_, for and in behalf of the Dominion of Canada, doth hereby covenant and agree with the parties who have hereunto severally signed their names and each of them respectively, that the said parties shall be paid, in consideration of their services, the compensation which, in the column hereunto annexed, is set opposite to each of their names respectively at such times, and in such proportions as are or may be allowed by law and the regulations for the government of the Life Saving Service.

| Name. | Date of entry. | Term.     | In what capacity. | Compensation.   | Remarks. |
|-------|----------------|-----------|-------------------|---|----------|
|       |                | 1 year... | Boatman.          | An allowance on each occasion of going out to a wreck in a Lifeboat or \$1.50 per day when attending drill. |          |