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**SAILING DIRECTIONS FOR PORT PHILLIP, PORT-  
LAND, PORT FAIRY, AND WARRNAMBOOL.**

**MAGNETIC BEARINGS, ETC.; DISTANCES OF THE VARIOUS  
HEADLANDS OF THE COAST OF VICTORIA; AND THE IN-  
STRUCTIONS FOR THE MANAGEMENT OF OPEN BOATS, ETC.,  
ISSUED BY THE ROYAL NATIONAL LIFE-BEAT INSTITUTION  
OF ENGLAND.**

**T**HE following Sailing Directions, Table of Magnetic Bearings, &c., and Instructions for the Management of Open Boats, &c., are published for general information.

The Sailing Directions published at pages 1163 and 1305 of the *Government Gazette* of 1854, for Portland, Port Fairy, and Port Phillip, and at page 1367 of the *Government Gazette* of 1857, for Warrnambool, are hereby cancelled.

By His Excellency's Command,  
**ROBERT S. ANDERSON,**  
Commissioner of Trade and Customs.

T.&amp;C.60/2836.

**SAILING DIRECTIONS FOR PORT PHILLIP, IN-  
CLUDING THE PORTS OF MELBOURNE AND  
GEELONG.**

BY CHARLES FERGUSON, CHIEF HARBOR MASTER  
OF VICTORIA.

**DIRECTIONS FOR APPROACHING PORT PHILLIP FROM THE  
WESTWARD.**

**Cape Otway.**—Vessels from the westward bound to Port Phillip usually make the land about Cape Otway, which, being high and bold, is easily distinguished by a white circular lighthouse (revolving light), electric telegraph station, and flagstaff on its southernmost extremity.

**Telegraphic intelligence.**—In passing within signalling distance of Cape Otway, vessels, whether bound to Port Phillip or not, are recommended to show their numbers, and communicate any public intelligence they may be in possession of.

A sunken reef lies off Cape Otway about one and a half miles in a S.E. to S.S.W. direction.

It is advisable to round the Cape at a distance of not less than four miles, and when the lighthouse bears W. by N.  $\frac{1}{2}$  N. six miles steer N.E. fifty-six miles to Port Phillip entrance.

**Keep an offing until daylight.**—Strangers, if when abreast of Split Point, find there is not sufficient daylight to take them to pilots' waters, should bring the ship under easy sail, and stand off and on shore till daylight, not shoaling their water to less than twenty fathoms.

**Henty Reef.**—In running for Port Phillip, be careful to avoid a sunken rock with not more than eighteen feet over it, which lies about two miles off shore, near Apollo Bay, and thirteen miles from Cape Otway.

Four beacons on the mainland mark the position of this rock, two on Cape Bunbury bearing from each other S.E.  $\frac{1}{4}$  S. and N.W.  $\frac{1}{4}$  N., the inner one painted *white*, the outer *red*; two on Point Mayley, situated about nine miles N.E. from Cape Otway lighthouse, bearing from each other E.  $\frac{1}{4}$  N. and W.  $\frac{1}{4}$  S., the inner one painted *red*, the outer *black*.

The position of the rock is marked by the intersection of two lines drawn through these beacons.

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This danger is known as Henty's Reef, is steep too, having ten fathoms all round within a cable's length of its shoalest part. As the sea only breaks on the reef in bad weather, vessels should give it a good berth in passing.

**Caution not to heave to.**—On no account should a ship be hove to when waiting for daylight near the Heads. Several vessels that have done so have drifted into danger; two (the *Sacramento* and the *Earl of Charlemont*) were lost, one on Point Lonsdale, the other on Point Flinders, from this cause, combined with inattention to the lead and state of the tide.

**Current.**—Should Cape Otway be rounded early in the evening, with a fresh southerly breeze, it is necessary to beware of overrunning the distance, as the current, after a prevalence of westerly or southerly gales, is often found to set strong along the land to the N.E.

**Cape Paton.**—**Arthur's Seat.**—**Appearance of the entrance.**—If the weather be at all clear after passing Cape Paton, high land will be seen opening out on the starboard bow: this is Arthur's Seat, rising inland over the waters of Port Phillip, with a steep declivity to the N.W., but sloping gradually with an even outline to the S.E. Proceeding onward, the land about Cape Schank will be seen more to the eastward, making at first like a long low island, and also trending to the S.E.; and as you near the entrance, Flinders Point will open out on the port bow, which is an isolated, saddle-shaped, scrubby hill, about 150 feet high, and is an excellent mark for the port, there being no high land at this part of the coast near it. Care, however, should be taken in thick or hazy weather not to mistake Flinders Point for Port Phillip Heads, which in several instances has led to vessels going ashore.

**Flinders Point Reef.**—A detached reef lies about a mile in a S.W. by W. direction from Flinders Point, with deep water just to the southward of it.

**Point Lonsdale.**—Point Lonsdale bears from Flinders Point E.  $\frac{1}{4}$  N. 6 miles. It is neither so elevated nor so well marked in outline as Flinders Point, but is now easily distinguished by a tidal flagstaff upon the sandy hummocks near the S.E. extremity of the point.

**Point Nepean.**—Point Nepean terminates the peninsula which slopes gradually W.N.W. from Arthur's Seat; it forms the eastern side of the entrance, is higher than Point Lonsdale, and consists of a series of sandy hummocks slightly covered with low bushes. A small rocky islet, upon which there is a cone-shaped *red* beacon lies W. two and a half cables' length from Nepean Point.

**APPROACHING THE HARBOR FROM THE EASTWARD.**

**Cape Schank.**—**Pulpit Rock.**—Vessels steering for the Heads from the southward and eastward usually make the land about Cape Schank, which cannot be mistaken, from the bold precipitous character of the coast. The opening into Western Port to the N.E., and the unbroken trending of the coast in a N.W. direction, thence to Port Phillip Heads. The extremity of Cape Schank is distinguished by a marked isolated basaltic rock, called the Pulpit, it and a small reef awash lies off the Cape three (3) cables' lengths in a S.E. direction, and has the appearance of a sail. There is a fixed and flashing *white* light upon the highest part of the Cape, the tower of which is painted *red*. Vessels having passed Cape Schank should keep a good offing in running down towards the entrance until they open out the

Shortland's Bluff lighthouses, which are not seen before bearing N.  $\frac{1}{2}$  E., owing to the high land of Point Nepean intervening, nor when near the Heads; bring the Point Lonsdale flagstaff to the westward of N.W. before opening out the Shortland's Bluff flagstaff, W. of the low lighthouse.

#### PILOT WATERS.

**Pilots.**—The pilot vessels cruise from three to twelve miles outside the Heads, borrowing on either shore according to the weather.

**Pilot vessels.**—These vessels are fore and aft schooners, and cutter rigged, painted from the copper upwards a light stone color, and their number painted in black on the mainsail.

**Pilot flag.**—Pilot vessels carry by day a red and white flag in horizontal stripes, white uppermost, at the mainmast head, and between sunset and sunrise exhibit a bright light at the foremast head, and show in the waist a flash light every half hour.

**Signal for a pilot.**—Strangers should take a pilot outside.

**Exemption flag.**—Vessels steering for the port are bound to show the usual flag for a pilot when within four leagues of the entrance; and if the pilot vessel be in sight, they must wait a reasonable time to allow a pilot to board. Vessels which miss the pilot schooner will be boarded by a pilot from a whaleboat when they are inside Point Lonsdale; but all strangers should, if possible, take pilots outside the Heads. All vessels trading between this and any other Australian port, and New Zealand, are exempt from pilotage, provided the master holds a certificate from the Victoria Pilot Board that he is competent to pilot his vessel. Such vessels, on arriving within four leagues of the entrance, must have a large white flag hoisted at the mainmast head, to be kept flying until past Swan Point, under a heavy penalty, which is rigorously enforced, in order to prevent the pilot's time being unnecessarily taken up running after ships which do not require their services.

**Tidal signals.**—Marryat's signals.—The following tidal signals are exhibited daily at Point Lonsdale flagstaff between sunrise and sunset, and the signal keeper has instructions, if he sees ships approaching the Heads and running into danger, to warn them by means of Marryat's signals. Strangers therefore should watch these signals.

**Flood-tide signals.**—A blue flag will be hoisted half-mast high when the tide begins to flow in the middle of the entrance between Point Lonsdale and Point Nepean; it will be kept flying all the first quarter of the flood tide.

The second quarter, a blue flag at the mast-head.

The third quarter, a red flag half-mast high.

The last quarter, a red flag at the mast-head.

**Ebb-tide signals.**—During ebb tide, the signals are as follow, viz. —

The first quarter, a blue flag half-mast high, with a ball underneath.

The second quarter, a blue flag at the mast-head, with a ball underneath.

The third quarter, a red flag half-mast high, with a ball underneath.

The last quarter, a red flag at the mast-head, with a ball underneath.

**Irregularity of tides.**—By attention to these signals, a shipmaster will know the true state of the tide, which cannot always be ascertained by the usual process of finding the time of high water, the strength and duration of the tide being so much influenced by the wind and weather.

**Causes of wreck at the Heads.**—A careful enquiry into the casualties which have occurred at the entrance of this port has shown that in nearly every case they have taken place in consequence of the vessels either attempting to enter the Heads at night without a pilot or against a strong ebb-tide, which it must be remembered runs partly athwart the entrance with great force, frequently at the rate of seven (7) knots an hour, causing a high, confused, tumbling sea, which in southerly or westerly gales often breaks from point to point. A shipmaster must not suppose that, because he has a fine fair wind outside the Heads he can always force his ship against the ebb. To this error is attributable the loss of several ships. The wind, although fresh outside, frequently falls light just as a vessel gets in the tide ripple between the Heads, when she becomes unmanageable; and even with a strong breeze, vessels often sheer athwart the tide, which, hereabouts forms a series of strong, irregular eddies.

**Entrance to Port Phillip.**—The entrance to Port Phillip is between Point Lonsdale and Point Nepean, and is bounded by reefs on each side, leaving a clear navigable channel of upwards of three-quarters of a mile, with not less than five fathoms, close to the Lonsdale Rock, and from seven to nine fathoms in mid-channel, deepening irregularly to twenty and thirty fathoms towards the Corsair Rock; but ships of heavy draught should not make too free with either side, as the strong tide ripples cause a ship to plunge, and send several feet below the level of the water.

**Lonsdale Reef.**—Lonsdale Reef extends S.E. from the Point three cables' length, is about one cable length broad. The greater part dries at low water.

**Lonsdale Rock.**—Lonsdale Rock lies S. 56° E., six cables' lengths from the tidal flagstaff; it is a small pinnacle rock, having only twenty feet water over it, with four and five fathoms close to. There is a navigable channel, one hundred and fifty (150) fathoms wide, between the end of the reef and the rock, for vessels, in daylight, drawing under fourteen feet.

The Point Lonsdale red beacon on with the tidal flagstaff bearing N. 56° W., and S. 56° E., and Swan Island beacon just shut in with Shortland's Bluff, places you on the rock.

**Nepean Reef.**—Nepean Reef extends from the point to the rocky islet, thence W. four and a half cables' lengths to the Corsair Rock. The reef dries at low water to the islet, the remainder is covered with from one to three fathoms water. A small detached ten-foot rock lies about 150 feet N.N.E. from

the Corsair; several pinnacle rocks have recently been found to exist between the latter and end of Nepean Reef, which completely blocks up the narrow channel hitherto supposed to exist there.

**Corsair Rock.**—The Corsair Rock is twenty feet in diameter, having eleven feet water over it, with four, five, and six fathoms close to.

The cone-shaped red beacon on the rocky islet on with Point Nepean white beacon bearing E. and W., and the Shortland's Bluff flagstaff open W. of low lighthouse, places you on the Corsair Rock.

**Victory Shoal.**—Victory Shoal lies nearly midway between the low lighthouse and Point Lonsdale, about half a mile off shore, in a line with the Shortland's Bluff and tidal flagstaffs. It is a rocky patch about half a cable's length in extent, with ten feet over it, and three and four fathoms a little outside.

**Royal George Sand.**—Royal George Sand lies on the eastern side of the entrance to the West Channel; its western end is about a mile S.W. by W. from the Swan Spit lighthouse, and a mile and a half east from upper lighthouse. The eastern end is separated from Symond's Spit by a seventeen feet channel, two cables wide. The knoll is marked by two white buoys bearing from each other W. by S. and E. by N., least water eleven feet about midway between the buoys, which lie in sixteen feet.

**Pope's-eye Shoal.**—Pope's-eye Bank. This shoal or sand is about a mile long, and two cables in width, having two feet on the northern and three fathoms on the southern end, which lies a mile and a half S.W. by S. from Swan Spit lighthouse, and nearly the same distance S.E. by E. from the upper lighthouse. The Pope's-eye is marked by two red buoys bearing from each other N.N.E. and S.S.W.; there is barely three fathoms between the buoys, and N.E. from the north buoy for four cables' length the water shoals gradually to two feet.

**Nicholson's Knoll.**—Nicholson's Knoll is a small sand ridge off the Quarantine ground, with three fathoms over it, and five, six, and seven fathoms close to. This ridge is of recent formation, and lies in a north and south direction, is about a cable's length in extent; it is marked by a chequered black and white buoy moored on the middle of it. The flagstaff on eastern end of Quarantine ground bearing S. by W.  $\frac{1}{2}$  W., and upper lighthouse bearing N.W. by W.  $\frac{1}{2}$  W., places you on the ridge.

**Inside the Heads.**—Inside the Heads for the first two and a half miles the Bay is free from other dangers; above that distance it widens to the north and east, and for ten miles is covered with sandbanks, through which there are several channels, three only being buoyed, namely, the South, West, and Cole's Channels; the others are narrow and intricate.

**South Channel.**—The South Channel is six miles long, free from dangers, varying from one to a quarter of a mile in breadth; soundings very irregular, varying in the centre from seven fathoms at the western to twelve and twenty fathoms off Point King, and decreasing to four and a half fathoms at the eastern end, shoaling gradually from the middle to three fathoms at the sides, then suddenly to two fathoms and less. It is marked by twelve buoys, seven black on the port hand, and five white on starboard, the former marked with odd, the latter with even numbers, commencing from seaward; the first and last black buoys and the easternmost or Capel Sound white buoy are each surmounted by a staff and ball.

**West Channel.**—The West Channel is five miles long and about half a mile broad, free from dangers with an even bottom having from three to four fathoms through it, shoaling gradually towards the west side, and suddenly towards the east side. This channel is most used, and is marked by a lighthouse, lightship, and fourteen buoys. The lighthouse is built on piles in fifteen feet water on the Swan Spit, two and a half cables' length off shore; it shows a fixed red light. The lightship is moored in seventeen feet, at the north end of the channel, is painted red, has two masts, and shows two fixed white lights. There are five (5) black buoys on the port hand with odd numbers, and eight (8) white buoys on the starboard hand with even numbers. The first white buoy on the Royal George bank and the large cone buoy (No. 12) on the N.W. elbow of the bank which forms the east side of the channel, are surmounted by a staff and ball.

**Cole's Channel.**—Cole's Channel is the westernmost, is three miles long, and about one quarter of a mile broad, with thirteen feet in the fairway, shoaling gradually to the shore, but suddenly towards the bank which separates it from the West Channel. The entrance to this channel is above Swan Island; it is but little used. There are two red buoys on the starboard hand.

#### MARKS TO CLEAR THE REEF AT THE ENTRANCE AND SHOALS INSIDE THE HEADS.

**To clear Lonsdale Reef.**—Vessels drawing under fourteen feet may, in the day time, pass between Lonsdale Reef and the rock, by keeping Swan Point a little open east of Shortland's Bluff.

**To clear the Lonsdale Rock.**—To pass to the eastward of this danger, keep Swan Point beacon open E. of Shortland's Bluff, until the red beacon on Point Lonsdale opens well out clear of the tidal flagstaff.

**To clear the Corsair Rock and adjacent dangers.**—Keep Shortland's Bluff flagstaff well open W. of the low lighthouse until the rocky islet opens out clear of Point Nepean.

**To clear Victory Shoal.**—Keep Swan Spit lighthouse open east of Shortland's Bluff.

**To clear Royal George Knoll.**—Keep Swan Spit lighthouse to the eastward of N.E. by E. until the outer end of Queens-cliff jetty bears W. by S.

**To clear Pope's-eye Bank.**—To pass to the westward of the southernmost end of the Pope's-eye, do not bring Swan Spit lighthouse to the northward of N. by E.  $\frac{1}{2}$  E.

**To clear Nicholson's Knoll.**—To pass to the northward, keep the rocky islet a little open of Point Nepean. To pass to the southward, shut in the rocky islet with Point Nepean; when the eastern flagstaff of the Quarantine ground bears S.W. by S. you are above the knoll.

## DIRECTIONS FOR ENTERING BETWEEN THE HEADS.

*Waiting the turn of tide.*—It is advisable for vessels waiting the turn of the tide outside the Heads to keep the Point Lonsdale shore aboard, as the tide runs fairer here, and in bad weather small vessels incur less danger from tide ripple, and will have smoother water.

*Proper time to enter the Heads.*—Should a pilot not have been taken on board outside the Heads, and the last quarter ebb signal be up, or it be flood tide, steer, when within three leagues of the entrance, to bring the high lighthouse (fixed white) on Shortland's Bluff to bear N.E. by N., upon which line of bearing, as you approach the Heads, the low lighthouse (fixed red) will be seen to seaward of the upper one, when steer as follows:—

*Fair wind and flood tide.*—With a fresh fair wind and flood tide, keep the two lighthouses in one, until you bring the rocky islet off Point Nepean open to the westward of that point, when you are in clear of the reefs.

*Scant wind and flood tide.*—With a scant or light wind (easterly) and flood tide, do not shut Swan Point beacon in with Shortland's Bluff.

*Entering against ebb tide.*—Directions for the West Channel.

—Directions for Hobson's Bay.—Entering the Heads with ebb tide, steer, when within two miles of the Heads, to get the low lighthouse about a point open east of the high one, until you draw near Point Lonsdale, when haul as close round the reef as practicable, taking care, however, if your draught is over fourteen feet, not to shut Swan Island beacon in with Shortland's Bluff, nor on any account to shut in Swan Point with the Bluff, until you are clear of the reefs and have the rocky islet off Point Nepean open to the westward of that point, when, if bound through the West Channel, steer N.E.  $\frac{1}{2}$  E. for the first white buoy, which is surmounted by a staff and ball, and lies on the E. side of the S.W. end of the West Channel, giving Shortland's Bluff a berth of two cables' length in order to avoid a ledge which runs about that distance S.E. of it; the white perch buoy and the two red buoys on the Pope's-eye Shoal are to be left on the starboard hand, and, when within a cable's length of the former, haul a little to the northward to pass between it and the Swan Spit lighthouse, taking care not to bring Point Lonsdale flagstaff to the westward of the low lighthouse until you bring Swan Island beacon on with the Swan Spit lighthouse, to which give a berth of half a cable's length in passing, then steer about N.N.E., keeping the lightship a little on the starboard bow until past No. 12 white buoy, which has a staff and ball, when bring the lightship on the port bow, passing her to the eastward; and if bound to Hobson's Bay, steer N. by E.  $\frac{1}{2}$  E. for Gellibrand's Point lightship; if to Geelong, steer N. by W. for Prince George buoy, and follow directions for that port.

Vessels under fifteen feet draught may enter the West Channel between the Royal George and Pope's-eye sands, by keeping about midway between the white perch buoy and the north red buoy until Swan Island beacon comes in with the white cask buoy bearing N.W. by N., when steer for the Swan Spit lighthouse, leaving the cask buoy on the port hand.

*With a scant wind against ebb tide.*—Vessels with a scant wind proceeding up channel against the ebb must not stand too close over toward the east bank, as they are liable to be horsed on it, especially at the north end of the channel.

Vessels working in between the Heads standing to the westward must keep Swan Island beacon open of Shortland's Bluff until Point Lonsdale red beacon is well open of the tidal flagstaff, when vessels of light draught may stand more in shore, keeping Swan Point a little open of Shortland's Bluff, making due allowance, however, for the set of the flood tide; and above the Bluff, standing to the westward, do not shut in the tidal flagstaff with the low lighthouse until above the pile lighthouse, when do not stand inside the line of buoys.

Standing to the eastward, keep the flagstaff on Shortland's Bluff well open to the westward of the low lighthouse, until the rocky islet opens out clear of Point Nepean; not standing too close over on the Nepean shore, lest they get embarrassed with tide eddies.

*South Channel inwards.*—If bound through the South Channel, after clearing the Heads, steer along the south side of the Bay, with Flinders Point kept just open of Point Lonsdale, in from nine (9) to eleven (11) fathoms, until Point King bears S. by E., leaving the two red buoys on the Pope's-eye Shoal on the port hand; and when the white buoy off Point King comes on with that point; keep the flagstaff on Observatory Point a large sail's length open to the southward of a small knob on the top of the western ridge of Point Nepean, which mark leads up in mid-channel, until the white cliff bears S. by E., when bring the flagstaff just open to the southward of the knob, until the easternmost white buoy comes on with a white tower on the top of Arthur's Seat, which will lead through the channel, leaving the perch white buoy on the starboard hand, and when to the eastward of it, keep it open of Observatory Point flagstaff astern until the easternmost black buoy is on with Mount Martha, then steer E. by N. for the latter buoy, leaving it on the port hand, when, if bound to Hobson's Bay, steer N.  $\frac{1}{2}$  W. twenty-seven miles, or, if bound to Geelong, N.W.  $\frac{1}{2}$  W. fourteen miles, for the red buoy off Prince George's Bank (see Sailing Directions for Geelong).

*Beating up the South Channel.*—Vessels beating through the South Channel must be guided by the lead, not standing into less than four (4) fathoms on either side, nor within the line of buoys; and when past the east white buoy, there is plenty of room between the middle ground and the shore, which may be approached within half a mile into five (5) fathoms, and when clear of the middle ground, and to the northward of Point Martha, you can stand to the westward until the northernmost land of Indented Head comes on with Station Peak.

*Course to Hobson's Bay.*—After passing the West Channel lightship, steer N. by E.  $\frac{1}{2}$  E. for Hobson's Bay, from the eastern shore of which a bank stretches out a mile and a half, the western end of which is marked by a white buoy with staff and ball, laid down in three (3) fathoms, bearing N.E. by N.  $\frac{1}{2}$  N. from

the lightship, with thirteen (13) feet a cable's length inside of it. The water shoals gradually from the buoy to high water mark. To the southward and eastward of the buoy the bank trends away in the direction of the Red Bluff between St. Kilda and Brighton.

A revolving light is exhibited from on board a lightship moored in five (5) fathoms off Gellibrand's Point.

## WEST SIDE OF PORT PHILLIP BAY.

*West Channel Lightship to Hobson's Bay.*—Gellibrand's Point.—Vessels beating up from the lightship to Hobson's Bay must not stand in to less than five (5) fathoms on either side, nor approach the western shore nearer than three (3) miles until Station Peak comes on with Point Cook; when, in standing to the westward, do not bring the lightship to the eastward of E.N.E., nor until you are to the northward of it approach Gellibrand's Point within a mile. The bottom, that distance off shore from Wilson's Point to Gellibrand's Point, is rocky, with patches having not more than eight (8) feet over them.

## EAST SIDE OF PORT PHILLIP BAY.

*East side of Port Phillip Bay.*—"Anonyma" Shoal.—The east side of the Bay is clear of danger, and may be approached within a mile from Arthur's Seat right up to the Red Bluff, off which a rocky shoal lies at the distance of a mile, with only four (4) feet water over it, and three (3) fathoms within a cable's length all round to within a quarter of a mile of the beach. A chequered beacon has recently been placed on the shoal, between which and Hobson's Bay do not stand in to less than three fathoms.

## RIVER YARRA.

The mouth of the Yarra is on the west side of Hobson's Bay; the fairway is marked by black beacons on the port and red on the starboard hand. A new entrance has recently been cut from Hobson's Bay into the river about two (2) cables' length N.E. of its mouth. This entrance is marked by a black cone-shaped buoy with staff and ball, moored in fourteen (14) feet water at the N.W. angle of Hobson's Bay, which, kept in one with two black dolphins, each surmounted by a staff and ball, bearing W. by N.  $\frac{1}{2}$  N., mark the port side of the channel, the starboard side being marked by red dolphins. This cut is 270 fathoms long, and thirty fathoms wide; least water, ten (10) feet at low water.

It is expected that by the end of 1861 a uniform depth of fourteen feet will be obtained right up from Hobson's Bay to the wharves at Melbourne.

*Tidal signals for the River Yarra.*—The following Tidal Signals are hoisted at the foremast head of the Water Police guardship to indicate the depth of water in the new approach to the River Yarra:—

	Feet.
One blue flag ... ..	10
One ball ... ..	10 $\frac{1}{2}$
One ball, blue flag over ... ..	11
One ball, blue flag under ... ..	11 $\frac{1}{2}$
Two balls ... ..	12
Two balls, blue flag under ... ..	12 $\frac{1}{2}$
Two balls, blue flag over ... ..	13
Two balls, red flag under ... ..	13 $\frac{1}{2}$
Two balls, red flag over ... ..	14
Two balls, red flag between ... ..	14 $\frac{1}{2}$
One red flag ... ..	15

## DIRECTIONS FOR GEELONG.

*Shoal off Point Richards.*—Point Wilson.—Inner Harbor of Geelong.—Ships bound to Geelong should steer from the West Channel lightship N. by W. six (6) miles for the red buoy, which lies in seven (7) fathoms at the north end of Prince George's Bank; when abreast of this buoy, and the extreme part of Indented Head bearing S.  $\frac{1}{2}$  W., steer W.  $\frac{1}{2}$  S. until Point Richards bears S. by E., off which a shoal lies due north about three-quarters of a mile, with not more than ten (10) feet on its northern end, which is marked by a red buoy bearing from Point Richards N.  $\frac{1}{2}$  E. in 4 $\frac{1}{2}$  fathoms of water; when the latter is on with Point Richards, haul up S.W. by W. for the white buoy on the southern part of Point Wilson shoal, which may be passed on either side, unless the vessel's draught of water exceed fourteen feet, in that case round the buoy as close as practicable, leaving it on the starboard hand. The course is then W. for the anchorage off Point Henry, about a mile off shore in four (4) fathoms, with the middle of the town of Geelong just open clear of Point Henry; but if bound into the inner harbor, steer, when you have the town open, to bring the beacon on the Bird Rock to bear N.W. by N., which will lead you down in three fathoms to the entrance of the ship channel, when the water shoals gradually to sixteen (16) feet within a few fathoms of the white buoy, which must be left on the starboard hand; then steer for the lightship, keeping it just on the starboard bow until close to; pass her on the port side, then haul up for the red buoy, and bring it half a point on the starboard bow, leaving it and all the red dolphins on the starboard hand, and black buoy and dolphins on the port hand. From thence a course may be steered S.W. by S. three and a half miles to the anchorage at three cables' length to the northward of the wharves, in four fathoms water. This ground being soft mud mixed with sand and clay, a long scope of chain is required in strong winds to prevent the ships driving.

*Tidal signals, Geelong.*—Tidal signals, the same as those shown for the Yarra, are exhibited on board the Geelong lightship, to indicate the depth of water on the bar.

*Vessels beating between the West Channel Lightship and Geelong.*—Vessels bound to Geelong, having a contrary wind between the lightship and Prince George's Bank buoy, should not stand into less than five (5) fathoms, nor bring the lightship

to the westward of S. by E.  $\frac{1}{2}$  E. until they open out Station Peak clear of Indented Head, keeping Leading Hill open of the south Red Bluff until they are to the north of the buoy, between which and the red buoy off Point Richards do not stand into less than five (5) fathoms, not bringing Point Richards to the westward of W. by S. Between Point Richards and Point Henry do not stand into less than four (4) fathoms on the south side, nor less than five (5) fathoms when standing to the north, keeping a good mile from the former and three miles from the latter shore.

**Point Wilson Shoal.**—A rocky bank, upwards of a mile in width, stretches due south from Point Wilson about three (3) miles, with very irregular soundings, varying from ten (10) feet to three fathoms; the white buoy on the southern end lies in four (4) fathoms, with sixteen (16) feet within a ship's length to the northward of it.

**Course between Hobson's Bay and Geelong.**—Vessels bound to Geelong from Hobson's Bay, whose draught of water exceeds fourteen (14) feet, should steer S.W.  $\frac{1}{2}$  S. twenty-four miles from a fair berth off Gellibrand's Point lightship for Point Wilson white buoy, bringing Point Henry to bear W.  $\frac{1}{2}$  S. before Station Peak bears N.W. by W., when follow the directions already given above.

**Point Henry to sea by West Channel.**—Vessels leaving Point Henry for sea by the West Channel should steer E. for Point Wilson buoy, and from thence keep about a mile off shore until Point Richards bears south by east, when haul up E.  $\frac{1}{2}$  N. for the red buoy off Prince George's Bank; a round lull, visible between the two highest hummocks of Station Peak, kept just open to the northward of the highest, will carry you clear of the bank. After passing the buoy steer S. by E. six (6) miles for the lightship.

**Point Henry to sea by South Channel.**—If bound to sea from Geelong by the South Channel, steer after passing Prince George's buoy S.E.  $\frac{1}{2}$  E. twelve miles for the easternmost black buoy, which is surmounted by a staff and ball, when follow the directions given for South Channel outwards.

#### WEST CHANNEL OUTWARDS.

**Best time to leave Hobson's Bay.**—Vessels bound to sea by the West Channel will generally clear the Heads the same day by leaving Hobson's Bay two or three hours before daylight, when there is frequently a moderate land or northerly wind. A S. by W.  $\frac{1}{2}$  W. course from a fair berth off the lightship leads down to the West Channel lightship, after passing which steer for Swan Spit lighthouse, leaving the black buoys on the starboard and the white buoys on the port hand, until you pass the lighthouse, when haul to the S.W., keeping Point Lonsdale a little open of Shortland's Bluff, leaving the Royal George buoy (white) on the port hand, after passing which, and the Pope's-eye (red buoys), the shoals are cleared, when a course may be steered for the extreme part of Shortland's Bluff, giving it in passing a berth of two cables' length, and in passing out between the Heads, bring the opposite marks on which are given for entering.

#### SOUTH CHANNEL OUTWARDS.

Vessels bound to sea from Hobson's Bay by the South Channel should steer from a fair berth off Gellibrand's Point S.  $\frac{1}{2}$  E. twenty-seven miles, for the easternmost black buoy off the middle ground, taking care to have the white cliffs bearing S.W. by W. before the top of Arthur's Seat bears S.S.E., and after passing the black buoy on the middle ground, haul up for the south white cliff until you bring the easternmost white buoy open to the northward of the Observatory Point flagstaff, then keep away for the latter buoy, leaving it on your port hand, when a W.  $\frac{1}{2}$  N. course will take you down mid-channel, keeping the easternmost white buoy on with the top of Arthur's Seat astern, and the knob on Point Nepean open to the northward of the flagstaff on Observatory Point, leaving the black buoys on the starboard and white buoys on the port hand, and when to the westward of Point King, steer to pass midway between Observatory Point and the lighthouses, bringing the latter to bear in one N.E. by N. with which marks on be guided by the state of tides in proceeding to sea.

Vessels leaving Hobson's Bay with strong southerly winds, especially during the summer months, when these winds prevail, will sooner get to sea by working down the east side of Hobson's Bay, and going through the South Channel, where having smooth water, they will be enabled to lead through the channel right out to sea, whereas by beating down the middle of the Bay and taking the West Channel, more swell is experienced, and a large vessel would possibly have to anchor off the lightship waiting for a shift of wind.

#### ANCHORAGES OUTSIDE THE HEADS.

**Louit Bay.**—Steamers and coasters bound round Cape Otway encountering heavy weather, might, instead of running back to the Heads, find shelter from all winds from S. round westerly to N.E. in Louit Bay, which is situate between Flat Top Point and Split Point. The anchorage is near Flat Top Point, within half a mile of the shore, in from five (5) to seven (7) fathoms. A reef lies about a cable's length to the S.E. of Flat Top Point, which bears from Point Lonsdale W.S.W. thirty-six (36) miles.

**Apollo Bay.**—The anchorage in Apollo Bay is situate about thirteen miles N.E. from Cape Otway. The *Corsair* anchored with Point Bunbury flagstaff S.W. by S. Cape Paton N.E. by E. in seven (7) fathoms, about a mile off shore. A reef, upon which the water breaks in bad weather, runs out to the S.E. about half a mile from Point Bunbury; the Henry's Reef lies about two miles off the shore.

**Western Port.**—Ships getting disabled or caught in a southerly gale, and unable to weather Cape Schank, will find good shelter in Western Port, the entrance to which is about nine miles E. from Cape Schank, wide, and free from danger. The S.W. extremity of Grant or Phillip Island may be approached

within three-quarters of a mile; after rounding which, run along the island, keeping about half a mile off shore, and anchor as soon as you are sheltered within a quarter ( $\frac{1}{4}$ ) of a mile of the beach, in from eight (8) to twelve (12) fathoms.

**Caution.**—No stranger should anchor close to the Heads, except it be to save the vessel from going ashore, although the coasters sometimes, to avoid being carried by the tide inside the Heads in a calm, anchor about a mile outside, where the bottom is sandy, and occasionally in the bight between Point Flinders and Point Lonsdale.

#### ANCHORAGE INSIDE THE HEADS.

The waters of Port Phillip Bay spread over a surface of upwards of eight hundred (800) square miles, three-quarters ( $\frac{3}{4}$ ) of which are available for anchorage, the depth nowhere inside the lighthouses exceeding fifteen (15) fathoms; below them the bottom is rocky, and ground foul, with very irregular soundings. Off Point Nepean there are several deep holes, with thirty, forty, and forty-five fathoms water, and eight and ten fathoms close to.

**Anchorage off the Lighthouse.**—Vessels detained inside the Heads by contrary winds or tide, may, during northerly or westerly winds, anchor with the high lighthouse bearing W., distant about a mile and a half, in from six to seven fathoms. The bottom below the above bearings is rocky, and vessels bringing up there are liable to lose their anchors. At night, keep the Spit light to the eastward of the West Channel lightship.

**Anchorage in southerly gales.**—With a southerly gale, haul over under Point Nepean, abreast of the Quarantine Station, between Observatory Point and Point King, in from ten (10) to fourteen (14) fathoms, a mile off shore.

**Not to anchor in the channels.**—**Capel Sound.**—It is not advisable in bad weather to anchor in either the South or West Channel, on account of the tide and loose nature of the bottom; but in S.W. gales small vessels will find good shelter under Swan Spit, in three and a half ( $3\frac{1}{2}$ ) fathoms, the upper lighthouse just shut in with Swan Point, about half a mile off shore, and vessels bound up and caught in the South Channel with a northerly or N.W. gale, will find anchorage in Capel Sound, by bringing the White Cliff to bear S.W., and the top of Arthur's Seat east in from five (5) to seven (7) fathoms, sandy bottom; but, if daylight permits, it would be better to run back to the anchorage off the lighthouses.

**Northern end of West Channel.**—Ships detained with southerly gales at the north end of the West Channel, will find good anchorage by bringing the lightship to bear S. by W., just shutting in Station Peak with Indented Head.

**Hobson's Bay.**—Hobson's Bay is capable of affording shelter to upwards of eight hundred (800) sail. The holding ground is excellent; the depth from three to five (5) fathoms over a bottom of stiff clay and mud.

**Point Henry.**—The best anchorage at Point Henry is with the hospital open clear of the point, in four (4) fathoms of stiff clay and mud, about three-fourths ( $\frac{3}{4}$ ) of a mile off shore.

**Port Phillip Bay.**—Vessels navigating the Bay above the channels may, if necessary, ride with good ground tackle in any part of it, there not being a greater depth than fifteen (15) fathoms all over the Bay, and the holding ground good; but the north side is preferable, as the wind usually veers from N. round westerly to S.W., making it the weather shore.

**Lead to be always kept going.**—In these directions it is taken for granted that when a ship is under weigh in pilot waters the lead will always be kept going; no man can be held blameless who neglects so valuable a guide.

#### TIDES IN PORT PHILLIP BAY.

**Times of high water.**—The tides are so much influenced by the prevailing winds, that only an approximate time of high water at full and change can be arrived at, which, with observations made at the undermentioned points, are as follows:—

High water at full and change.	Vertical rise and fall.		
	H. M.	Spring Feet.	Neap Feet.
High water, on the beach at Point Lonsdale	11 25	7	4
High water, mid-channel between Point Lonsdale and Point Nepean	1 50		
High water, lightship, West Channel	2 10	4	3
High water, east end of South Channel	2 25	4	3
High water, Bird Rock, Geelong	2 30	$3\frac{1}{2}$	$2\frac{1}{2}$
High water, Point Gellibrand and mouth of River Yarra	3 0	$4\frac{1}{2}$	$2\frac{1}{2}$

**Flood tides at the Heads.**—**Swan Point, West Channel, and South Channel.**—The flood tide comes from the southward and eastward, increasing in strength as it nears the Heads, setting right into the entrance, across and through the opening in the reefs with great force, spreading towards Shortland's Bluff and Point King, and decreasing in strength as it enters the channels, setting towards Swan Point, and through the West Channel in an oblique direction, tending towards the Duck Ponds and Indented Head, and above the lightship to the N.W. across Prince George's Bank, spreading from thence towards Geelong Bay, Point Cook, and Hobson's Bay. In the South Channel the flood tide sets to the E.N.E. across the middle ground, through the Pinnacle Channel, and spreads along the eastern shore towards Hobson's Bay.

**Set of ebb tide in the Bay.**—**Set of tide at the Heads.**—The ebb tide sets out of Hobson's Bay towards the S.E. for a few miles, when it takes a more southerly direction towards Prince George's

Bank, thence tending through the various channels in an oblique direction the stream from Simon's Channel joining and turning that of the West Channel below the Royal George buoy, setting away towards the bight between Shortland's Bluff and Point Lonsdale, thence out through between the Heads with great force, the body of the tide setting *athwart* the entrance towards Point Nepean, and away to the S.E. along the land and into the bight between Nepean Point and Cape Schank.

**Rate of tide at the Heads.**—Between the Heads the tide runs from five (5) to seven (7) knots; in the West and South Channels between two (2) and three knots, and about a knot and a half (1½) in the Bay above the channels.

**Current in Hobson's Bay.**—In Hobson's Bay during the winter months there is always a surface current running out, owing to the fresher which run down the river; this current frequently sets along both sides of the Bay, at the rate of two (2) knots. The tide is weak in Geelong Bay, except in the Ship Channel, where it sets two and a half (2½) knots across the bar, and becomes weaker as it spreads over Corio Bay.

**Influence of the wind upon the tides.**—The prevailing winds have a great effect upon the tides, both as regards their height and the time of high water.

A gale from N.N.W., N., and N.E. will keep back the flood tide for an hour or even an hour and a half later than the time by calculation, and also decrease the height of the tide.

Winds from W. to S.S.W. considerably increase the height of tide.

#### GENERAL REMARKS.

Before entering the Heads vessels should have their anchors, chains, and everything clear for bringing up; for want of this ordinary precaution many vessels have had very narrow escapes, and several instances have been reported of the pilots having to heave ships to, inside the Heads, until such time as the chains were cleared away.

**Quarantine Ground.**—The Quarantine ground is situated just inside the Heads, between Observatory Point and Point King; the boundary is marked by two conspicuous flagstaves. All vessels from other than Australian ports must undergo an examination at the Heads by the health officer. This examination has been rendered very strict in consequence of the continued influx of ships and passengers from all parts of the world, several of which having had great mortality, on their voyage out, had consequently to be put in quarantine. To prevent this, masters of vessels would do well to aid the surgeon by every means in his efforts to land his charge in a healthy state, and from sixteen (16) years' experience in the conveyance of free passengers, troops, emigrants, and convicts, I am persuaded that inattention at the very outset of the voyage to cleanliness, ventilation, and diet, is the prevailing cause of much of the sickness which occurs in passenger ships.

**Mails.**—All letters and mail bags on board must be delivered, immediately on arrival, to the mail boat; those for Geelong will be taken out of the vessel at Shortland's Bluff. A penalty of £5 is inflicted for every letter or newspaper detained. This regulation applies to passengers as well as masters of vessels, and is rigorously enforced.

**Passengers Act.—Sale of spirits.**—The penalties under the Passengers Act are also rigorously enforced, especially the 58th clause, which prohibits the sale of spirits on board during the voyage, a practice which is most detrimental to the comfort and well-being of passengers, and leads to much insubordination amongst the crew.

**Mooring swivel.**—As all vessels at Hobson's Bay and Point Henry must moor with two anchors, shipmasters are recommended to provide themselves with a stout mooring swivel.

**Repairs.**—There are two patent slips and a floating dock in Hobson's Bay, and one slip on the south bank of the Yarra. Vessels of 2000 tons and under can have every description of repairs, above or under water, promptly effected. There are several extensive foundries in Melbourne and Geelong, where steam vessels can get any part of their machinery repaired. It is advisable, however, that steamers coming direct from England or America should be provided with duplicates of such portions of their machinery as are most liable to give way.

**Teredo navalis.**—The bottoms of boats and all craft not coppered should be frequently scrubbed and coated with stuff to prevent injury from worms, which, in these waters, attack and destroy every description of unprotected timber except Swan River mahogany.

**Water police.**—The water police are quartered on board a vessel in Hobson's Bay, and at all times row guard amongst the shipping. The signals for their services are the ensign at the main-topgallant-mast-head by day, and two lights vertical at the mast-head or peak, having five feet between the two, by night.

**Hospital.**—About eighty (80) beds are appropriated to sick sailors in the Melbourne Hospital. Masters of vessels, on application to the Chief Harbor Master or to the Government Shipping Master, will obtain the requisite order for admission for any of their crew, subject however to the provisions of the Merchant Shipping Act, clause 223.

**Sailors' Home.**—Several attempts have been made to organize a sailors' home here, but as yet without success. The benefits which have elsewhere resulted from these establishments, both to seamen and all concerned in maritime pursuits, have been so marked that it is to be hoped our port will not be long without one.

**Seamen's Church.**—There is a seamen's church at Sandridge, the chaplain of which visits vessels in Hobson's Bay, and holds service on board vessels, the masters of which are willing to grant the necessary accommodation, as opportunity offers.

No work is permitted to be done on board any vessel on Sunday except what may be absolutely necessary for safety and cleanliness.

No. 32.—MARCH 4, 1861.—2.

**Discharge of cargo at Melbourne.**—Within the port of Melbourne, including Sandridge and Williamstown, there is wharfage accommodation for eighty-five vessels of different sizes and draught of water to lay safely afloat, each having a quay berth at the same time where cargo may be discharged, according to its nature, at the rate of from sixty to two hundred tons per diem.

Melbourne, 36 vessels, ranging from 100 to 400 tons, greatest draught of water 12 feet.

Sandridge, 10 vessels, ranging from 100 to 1100 tons, greatest draught of water 19 feet.

M. and H. B. Railway Pier, 15 vessels, ranging from 100 to 2000 tons, greatest draught of water 21 feet.

Williamstown Railway Piers, 20 vessels, ranging from 100 to 2000 tons, greatest draught of water 22 feet.

Williamstown Pier, 4 vessels, ranging from 100 to 200 tons, greatest draught of water 10 feet.

A further extension of wharfage room at Sandridge and Melbourne is now going on. Some idea of the present wharfage accommodation within the port of Melbourne may be gathered from the fact that, at the ordinary rate of discharge, four thousand tons of merchandise can be landed from vessels alongside the wharves per working day.

**Discharge of cargo at Geelong.**—Large vessels having goods on board for Geelong lie at Point Henry, which is five (5) miles distant from the town, and discharge their cargoes into lighters. Early in 1851 vessels drawing eighteen feet will be enabled to go through the new entrance into Corio Bay and thence right alongside the town wharves. At present there is wharfage accommodation for fourteen vessels of from one hundred to one thousand tons each having a berth alongside the wharves at the same time.

**Ballast.**—All ballast lighters are marked on the stem and stern post, showing the amount they carry, to prevent disputes about the weight of ballast. Officers in charge of vessels are recommended before commencing to discharge the lighter to compare her marks with those shown in her printed certificate, and should also satisfy themselves that she has nothing on board but ballast, and that they get the whole.

**Port charge.**—There is a duty of one shilling per ton which is levied once every six months upon all vessels arriving within Victoria.

**Latest intelligence.**—Masters of vessels are recommended to have ready a summary in triplicate of the latest and most important intelligence they may be in possession of, for the purpose of affording the public early information.

**Extract of a notice issued by Victorian Government respecting wrecks, marine casualties, and vessels in distress.**

**Wrecks, marine casualties.**—As it is desirable that the Government should receive the earliest intimation of wrecks or marine casualties, or of the necessity for rendering assistance to vessels in distress, all masters of vessels and persons connected with Her Majesty's Customs, Police, and Harbor, and Telegraph Departments, and others who may be in possession of information in respect of such cases, are directed to avail themselves of the most accessible and speedy means of communication to place such information in the hands of either the Honorable the Chief Secretary, the Commissioner of Trade and Customs, or the Chief Harbor Master.

**Life-boats.**—Life-boats, built at Williamstown by the Government upon Peako's principle are stationed at Port Phillip entrance, Warrnambool, Port Fairy, Portland Bay, and Port Albert. The boats are fully equipped, are manned by volunteer crews, and are capable of carrying thirty persons each, in addition to their crews.

The life-boat stations are also supplied with rocket and mortar apparatus.

The attention of all persons interested is drawn to the following extract from instructions issued by the Board of Trade conveying the action to be taken by vessels in distress on the shores of the United Kingdom. The same rules apply here when vessels are wrecked near any of the Victorian life-boat stations.

**Ships in distress.**—**Notice to masters and seamen.**—In the event of your vessel stranding within a short distance of the United Kingdom, and the lives of the crew being placed in danger, assistance will, if possible, be rendered from the shore in the following manner, namely:—

1. A rocket or shot, with a thin line attached, will be fired across your vessel. Get hold of this line as soon as you can, and when you have secured it, let one of the crew be separated from the rest, and if in the daytime, wave his hat or his hand, or a flag or a handkerchief, or if at night, let a rocket, a blue-light, or a gun be fired, or let a light be displayed over the side of the ship and be again concealed, as a signal to those on shore.

2. When you see one of the men on shore separated from the rest, wave a red flag, or if at night, show a red light and then conceal it, you are to haul upon the rocket line until you get a tailed block with an endless fall rove through it.

3. Make the tail of the block fast to the mast about fifteen feet above the deck, or if your masts are gone, to the highest secure part of the vessel; when the tail block is made fast let one of the crew, separated from the rest, make the signal required by article 1 above.

4. As soon as the signal is seen on shore a hawser will be bent to the whip line, and will be hauled off to the ship by those on shore.

5. When the hawser is got on board, the crew should at once make it fast to the same part of the ship as the tailed block is made fast to, only about eighteen inches higher, taking care that there are no turns of the whip line round the hawser.

6. When the hawser has been made fast on board, the signal directed to be made in article 1 above is to be repeated.

7. The men on shore will then pull the hawser taut, and by means of the whip line will haul off to the ship a sling, cot, or lifebuoy, into which the person to be hauled ashore is to get

and be made fast; when he is in and secure, one of the crew must be separated from the rest, and again signal to the shore as directed in article 1 above; the people on shore will then haul the person in the sling to the shore, and when he has landed will haul back the empty sling for others. This operation will be repeated until all persons are hauled ashore from the shipwrecked vessel.

"8. It may sometimes happen that the state of the weather and the condition of the ship will not admit of a hawser being set up, in such cases a sling or lifebuoy will be hauled off instead, and the shipwrecked persons will be hauled through the surf instead of along a hawser.

"Masters and crews of shipwrecked vessels should bear in mind that the success in landing them may in a great measure depend upon their coolness, and attention to the rules here laid down; and that by attending to them many lives are annually saved by the mortar and rocket apparatus on the coasts of the United Kingdom.

"The system of signalling must be strictly adhered to; and all women, children, passengers, and helpless persons should be landed before the crew of the ship."

**Provisions for shipwrecked persons.**—The Government of Victoria have placed supplies of provisions at all the coast light-houses, for the use of shipwrecked persons.

**Rockets and mortars for ships.**—It has been suggested that many valuable lives would be saved were all vessels provided either with a rocket tube and rockets, or a  $5\frac{1}{2}$  inch mortar, for the purpose of throwing a line to the shore in the case of shipwreck, as the wind on such occasions generally blows on to the shore, and in the case of rendering assistance to other vessels or boats in distress they would be of much service. A floating buoy, with some five hundred fathoms of line wound round it, called "Sibbald's Communicator," has recently been invented for the purpose of carrying a line ashore from a wreck; the line unwinds from the buoy as it drifts to the shore.

**Fires.**—Within the last two years six large valuable vessels have been destroyed by fire in Hobson's Bay, without any clue having been discovered to the origin of the fire. The regulation respecting the extinguishing of all fires and lights between the hours of 10 p.m. and 5 a.m. is strictly enforced, except in the case of steamers; special permission is given in writing upon certain conditions being complied with.

**Seamen.**—Commanders of vessels can only legally engage and discharge their crews before the Government Shipping Master of the port.

**Barometers.**—With the view of enabling commanders of vessels to test the accuracy of their barometers, the Government Astronomer issues daily in the newspapers a notice from the Williamstown Observatory showing the height of the standard barometer for the previous day, a comparison of which, with the height of the ship's barometer (the altitude being the same) will show the error, if any. The attention of masters of vessels is specially invited to this notice, as it is evident that the value of meteorological data, collected by different vessels, will be materially enhanced by the barometer readings agreeing with the standard.

**Ships' log-books.**—Professor Neumayer, of the Melbourne Magnetic Observatory, invites commanders of vessels to deposit their log-books for a few days with him, for the purpose of gleanings facts important to nautical science, to enable him to construct wind and current charts of these coasts. The Immigration Officer will take charge of any log-books for transmission to the Observatory, and return them within four days.

**Time-ball.**—A black time-ball signal is dropped daily, Sundays excepted, from a staff on the top of the old lighthouse tower, Gellibrand's Point, at 1 o'clock, mean solar time. The time is given from the same place at 8 p.m. by the obscuration of a powerful light two minutes before 8 p.m.; the instant of the re-appearance of the light is the true time.

The errors in both signals, if any, is published the following day in the daily papers.

Position of tower—latitude  $37^{\circ} 52' 8''$  S., longitude  $144^{\circ} 58' 30''$  E. Oh.  $39' 54''$ .

**Adjustment of compasses.**—Six buoys, moored with screw moorings, are laid down in Hobson's Bay for the convenience of vessels requiring to swing to ascertain the error of their compasses. It has been ascertained, by actual experiment, that the deviation of compasses from the real magnetic north is not confined to iron vessels, but that there is a greater amount of attraction in vessels built of wood than has hitherto been believed; and that many casualties, attributed to sets of current, &c., may, with greater justice, be traced to compass deviations. Vessels have the use of these buoys, free of charge, on application to the Chief Harbor Master.

There are several compass adjusters who, if required, swing the vessel and furnish tables of deviation, for which they make a small charge. Commanders desirous of swinging their own ships should take them to the buoys as nearly in their sea-going trim as possible, chains and anchors in their usual places, boats hoisted up, &c.; and in the case of steamers, have the steam up, make the vessel fast amidships to the centre buoy, then warp her gradually round the compass, steadying her head exactly on each point, when note, in each case, with an azimuth compass, the exact bearing of one of the undermentioned objects (weather permitting, the more distant one the better).

The difference between the real magnetic bearing of which, and the various bearings observed by the azimuth compass, will give the local deviation for each point.

The deviation to be named east when the north end of the needle is drawn to the eastward by the ship's attraction, and west when drawn to the westward.

Real magnetic bearings from centre buoy:—  
Lighthouse, Gellibrand's Point, S.  $10^{\circ} 58'$  W.  
Tall of Mount Macedon, N.  $30^{\circ} 43'$  W.  
Spire, Wesleyan Church, Melbourne, N.  $48^{\circ} 19'$  E.

**Gunpowder.**—All vessels arriving in the ports of Victoria having more than twenty pounds of gunpowder on board, shall hoist the Union Jack at the main, and remain at anchor as described below until such gunpowder be landed.

Twenty-four hours after anchoring is allowed for landing whatever gunpowder there may be on board, whether as cargo or stores, at the appointed magazine.

Gunpowder to be landed or removed only between sunrise and sunset, at the expense of the proprietor or importer, and under the supervision of the inspector of water police, who, upon application, sends an officer in charge of powder boat.

**Gunpowder anchorages.**—The anchorages for vessels having gunpowder on board are laid down in the following extract from a notice to mariners, dated 16th February, 1860:—

"No ship or vessel having more than twenty (20) pounds of gunpowder on board, arriving in or off any of the under-mentioned ports or harbors of Victoria, shall be permitted to anchor within the limits hereinafter specified, viz:—

"**Port of Melbourne.**—Within three-quarters ( $\frac{3}{4}$ ) of a mile of Gellibrand's Point, nor to the northward of a line bearing E. from the lightship.

"**Port of Geelong.**—**Inner harbor.**—Within three-quarters ( $\frac{3}{4}$ ) of a mile of Limeburners' Point, nor to the westward of a line bearing N.N.W. from the powder magazine.

"**Outer Harbor.**—Within two (2) miles of the shore, nor to the northward of a line bearing E. from Point Henry.

"**Port of Portland Bay.**—Within three-quarters ( $\frac{3}{4}$ ) of a mile of the shore, nor to the northward of a line bearing E. from the lighthouse.

"**Port of Port Fairy.**—Within three-quarters of a mile of the shore, nor to the westward of a line bearing N.N.E. from the lighthouse.

"**Port of Warrnambool.**—Within half a mile of the shore, nor to the westward of a line bearing S.S.W. from the beach lighthouse.

"**Port of Port Albert.**—Within two (2) miles of the wharves, nor to the northward of Sandy Island.

"The bearings are magnetic."

#### SIGNALS.

The following signals are in use at all the Ports of Victoria.

**Mails on board** ... White flag at the fore, to be kept flying until the mails are landed.

**Gunpowder on board** Union Jack at the main.

**Government immigrants** Ensign at the mizen head.

**on board**

**Wanting sea pilot** ... The Union Jack at the fore-topgallant-mast-head.

**Harbor pilot** ... The Ensign at the fore-topgallant-mast-head.

**Boarding officer** ... Blue flag at the main, to be kept up until cleared.

**Medical assistance** ... No. 5 at the peak.

**Water police** ... Day signal.—The Ensign at the main-topgallant-mast-head.

Night signal.—Two lights vertical at the mast-head or peak, having five feet between the two.

**Customs boat** ... Union Jack at the peak.

**Steam-tug** ... Rendezvous flag at the peak or mizen-mast.

**Clearing officer out-** White flag at the main.  
**wards**

#### SAILING DIRECTIONS FOR PORTLAND BAY.

BY JAMES FAWTHROPE, HARBOR MASTER.

1. Ships bound to Portland, and making the land from the westward, should endeavor to sight the high land of Cape Bridgewater, Cape Nelson, and Cape Grant. These capes, at a distance of four or five leagues, as seen from the south-westward, form a cluster of high bold land, the western part being covered with large white sand patches, the centre high table land (Cape Nelson) and the eastern part (Cape Grant) trending low. This eastern part of the cluster forms the southern extremity of Portland Bay, and it is fronted to the S.E. by a small group of high rocks named the Laurence Isles; these will not be visible until within five or six miles, being hid by the high land of Cape Grant. These rocks extend rather more than two miles to the eastward of Cape Grant, and about a mile to the S.E. of a low point named Point Danger; there is a passage between, but it is very narrow, and close to the western side of the Laurence Isles. This passage should never be attempted, for it is full of sunken rocks, on which the sea breaks in southerly and S.W. gales. Ships should therefore round the Laurence Isles, passing to the eastward at a convenient distance, and then hauling up to the north-westward should the wind prove scant. As they proceed to the northward, the houses of the town of Portland will begin to open up Observatory Point, which forms the southern point of an indent in this part of the bay, about a mile in extent. Fronting the town, the soundings will be eight or nine fathoms. Crossing the bay, if the wind is scant, as before stated, ships may pass to the northward of the town until it bears S.W., then tack; the soundings will gradually decrease as they approach the shore, and a heavy ship may anchor about a mile from the town in seven fathoms. They should bring the jetty to bear W. by S., and the Laurence Isles S.E. by S., magnetic.

2. The bay is very capacious, and by keeping the Laurence Isles on a S.E. by S. line of bearing, vessels will have three miles of clear anchorage ground to the northward of the town, and two miles to the southward of Blacknose Point, the limit of the Quarantine Ground. No hidden danger is known to exist in the bay but the sunken reef off Whalers' Bluff. The northern extremity of the town: this part is a range of high limestone cliffs, and from which the reef bears E. about a



quarter of a mile; on it there are eight feet of water, and it is of small extent, having a deep channel between, and the bluff from this point of the land trends to the north-westward, forming a second indent of about two miles in extent, with good anchorage and regular soundings. The land from that continues to trend to the north-eastward for about six miles, and then bends to the eastward. At this part it is distant from the Laurence Isles about twelve miles. This may be considered the extent of the bay in that direction; but there is ample space on the S.W. quadrant of the bay for any number of vessels to anchor in any depth of water suitable to size.

3. Ships bound to Portland, and coming from the eastward, should endeavor to sight the Julia Percy Island. It may be passed within half a mile; and from that position, in clear weather, will be seen the high land of Mount Clay, which forms the N.E. boundary of Portland Bay. The high land of Cape Nelson will also be visible, which forms the southern boundary of the bay. A clear passage may be found between the island and the main of three miles wide; but it is not advisable for large vessels to pass inside, for a heavy swell from the S.W. generally rolls in upon the coast, and frequent calms in summer make it unsafe, for the whole coast is fringed by a belt of dangerous rocks, with deep water close to the shore, on which a continual surf breaks. The latitude of this island may be assumed as 33° 26' S., southern extreme, and longitude 142° 3' E. The latitude of the anchorage at Portland, from a number of observations, may be stated 38° 21' 30" S., and the longitude from chronometers, regulated at Port Dalrymple, and several short runs, gives the anchorage 141° 38' 45" E.

Commanders of ships may, without danger, provided the land has been made out before dark, stand safely into the bay, keeping the lights of the town, which will be visible five or six miles, between the bearings of S.W. and W.N.W., which will give ample room and smooth water for working until daylight or till they are boarded—a boat will always be in readiness to afford assistance when required.

The various headlands, on approaching this part of coast, are very conspicuous, and cannot easily be mistaken. The time of tide is very uncertain, being much influenced by southerly winds; but in fine weather a regular tide runs along the whole coast from Cape Otway to Cape Bridgewater, the flood setting to the westward. Betwixt Cape Bridgewater and Cape Northumberland the tides meet, and, in stormy weather, create a very turbulent sea. The rise and fall of tides at Portland may be considered as four feet, and the time of high water at full and change days twelve hours.

#### SAILING DIRECTIONS FOR PORT FAIRY.

BY MR. J. B. MILLS, HARBOR MASTER.

LEADING MARKS FOR MAKING AND ENTERING PORT FAIRY, IN LATITUDE 38° 23' S., LONGITUDE 142° 20' E.

In making Port Fairy from the S. or S.E., the first remarkable land seen is a hill on Griffith's Island, which forms a saddle, standing S.W. and N.E., the highest part to the S.W. This hill lies S.S.W. of the anchorage, a short mile, and cannot be mistaken for any other land, and it is much higher and lies outside the line of coast.

West by S.  $\frac{1}{2}$  S. thirteen miles, is the Lady Julia Percy Island, lying five miles off shore. It has a table appearance, and is very steep.

Nine miles N.E.  $\frac{1}{2}$  E. from the saddle Hill is some moderately high land, which when seen from seaward has a table appearance, and may always be known by a round peaked hill, lying close to its westernmost extremity, and may be seen twenty miles at sea, the Saddle Hill twelve miles, and the Julia Percy sixteen miles, in clear weather. The coast for seven miles E. and W. of Belfast is low and grassy, and to the westward sloping down to the sea with a few clumps of trees, while that to the eastward, being bare of timber, cannot be seen more than nine or ten miles from a ship's deck, in the clearest weather.

Port Fairy Bay is open from S. to E., and is about three miles wide by one and a quarter deep. The anchorage is in the S.W. end of the bay.

#### DIRECTIONS FOR VESSELS ENTERING PORT FAIRY.

After making out the Saddle Hill, steer so as to pass half a mile to the eastward of a low rocky island bearing from Saddle Hill N.E. by E., distant about three-quarters of a mile, which has a reef extending from it about one-eighth of a mile N.E. by E., which is all covered at high tide, and always breaking when there is any swell. It may always be known in fine weather by the kelp on the surface of the water. In passing this island may be seen a windmill, on the south side of the town of Belfast; also a flagstaff on a high sand hummock, lying W.S.W. from the anchorage. As soon as the mill opens clear, steer N.W. into the bay, until the flagstaff and mill be brought in a line. The soundings then will be five and a half or six fathoms water with a bottom of very fine dark sand. The water shoals gradually from this towards the flagstaff, and the best berth is when the mill is within a quarter of a point open to the westward.

The above directions are for the outer anchorage, or for vessels drawing thirteen feet or upward: smaller vessels can, of course, lay further in towards the flagstaff.

N.B. It is dangerous for strangers to approach Port Fairy by night, the land being so very low and the water shoaling suddenly in shore. These bearings are all magnetic.

THE UNDERMENTIONED MOORINGS HAVE RECENTLY BEEN LAID DOWN IN PORT FAIRY, WITH THE FOLLOWING BEARINGS:—

1. An anchor weighing 25 $\frac{1}{2}$  cwt. with ninety fathoms of 15-Sin. chain: the flagstaff on Victoria Hummocks, and the windmill on the south end of the town of Belfast in a line, and bearing

W.S.W., also in a line with two direction staffs on the N.W. side of the bay, which bear N.W. and S.E. from each other. This mooring is in 6 $\frac{1}{2}$  fathoms, and about half a mile from the mouth of the River Moyne, the centre of which bears S.W.

2. Second mooring: an anchor weighing 20 cwt. with ninety fathoms 15-Sin. chain. This mooring lies S.W. by W. from the first described, and is in 5 $\frac{1}{2}$  fathoms water.

3. Third mooring: an anchor weighing 15 $\frac{1}{2}$  cwt. with ninety fathoms 14in. chain. This mooring is about two hundred fathoms S.S.W. from the first mentioned, and is in 4 $\frac{1}{2}$  fathoms water. To each of these moorings is attached a barrel buoy painted red.

#### SAILING DIRECTIONS FOR THE PORT OF WARRNAMBOOL.

BY J. B. MILLS, HARBOR MASTER, PORT FAIRY.

*Position of the port.*—Warrnambool or Lady Bay is distant about thirteen (13) miles east from Port Fairy, the flagstaff which stands to the south of the town being in lat. 33° 21' 50" S., and long. 142° 32' E. The anchorage is about a mile and a quarter nearly south of the flagstaff.

The bay is open from S. to E.S.E., the anchorage being to the N.E. of the three small islands which form the S.W. limit of the bay and shelter vessels lying at the proper anchorage from S.W. gales.

*Description of bay and anchorage.*—The anchorage is also in some degree protected from southerly winds by the detached reefs which extend between a quarter and half a mile to the S.E. of the larger islands.

*Description of neighboring land.*—The bay may be said to extend from the small islands to S.W. to the mouth of the River Hopkins, to the eastward a distance of about two and a half (2 $\frac{1}{2}$ ) miles by the beach; the land in the immediate vicinity of the bay being composed of sand hummocks without timber, very low on the N.W. and gradually rising to the eastward, where it terminates in a high bluff, which forms the west head of the River Hopkins, off the mouth of which is a sunken reef, extending nearly half a mile from the shore, the sea breaking on it when there is any swell setting in from the seaward.

*Coast to the eastward from Warrnambool.*—The land behind the bay is tolerably high and well wooded, while that to the east of the Hopkins is clear of timber, grassy, and rises gradually from the coast for some distance to the eastward of the mouth of the river, where it terminates in a high grassy down about one and a half miles from the coast. On the N.W. side of the clear land stand two bushy trees close together, and one solitary tree about three-quarters of a mile to S.E.; and some distance further in the same direction may be seen a heavy belt of timber skirting the coast to the eastward beyond the bold projection which is about fifteen (15) miles from Warrnambool, the trend of the coast being about S.E. by E. and N.W. by W., and bold and clear of reefs.

*Coast to the westward of Warrnambool.*—The coast for about seven (7) miles to the westward of Warrnambool is composed of moderately high sand hummocks, partly covered with brushwood, with few bare sand patches, which show very conspicuously when seen from seaward, forming a great contrast with the coast further to the westward, which is formed of low grass hummocks.

The trend of the coast from the islands at Warrnambool is about N.W. by W. to Armstrong's Bay, and from thence W.S.W. to Port Fairy. Off Armstrong's Bay there are several sunken rocks, some of which extend a long mile off shore. From this bay to Port Fairy the coast is skirted by a sunken reef running parallel with the shore at half a mile distance. Vessels working up this part of the coast should therefore not stand too far in shore.

*Warrnambool Hill.*—On making Warrnambool from seaward a look-out should be kept for Warrnambool Hill, which, if seen, may be recognised by its resemblance to a cock's comb, being elongated and covered on the top with large bushy trees. It bears from the anchorage N. 40° E. 17 miles, and may be seen from sixteen to eighteen miles off shore in moderately clear weather.

*Tower Hill.*—Tower Hill is conical, and stands to the westward of some high table-land eight miles N.E. of Saddle Hill. It bears from the anchorage N. 21° W., and may be seen the same distance from seaward as Warrnambool Hill.

The table-land round Tower Hill has lately been cleared of much of its timber, which makes some large trees that have been left standing on the summit very conspicuous. The hill itself has also been cleared of the bushy trees which made it so remarkable heretofore, and a beacon has been erected on the summit, which, with a good glass, may be observed some distance.

The two hills would guide a vessel sufficiently near so that the islands and clear land to the east of the Hopkins and the remarkable trees on its top might be seen.

Strangers bound for Warrnambool from the westward will have no difficulty in making the port if they sight Cape Nelson or Cape Bridgewater, the first-named cape being on the same parallel of latitude as the islands at Warrnambool; the distance is about fifty (50) miles, with the Lady Julia Percy Islands lying right in the track and about mid-distance. This island lies nearly five (5) miles off the coast, and it is so remarkable in appearance that if once seen it could not be mistaken for any other land. It is about one mile square, and about one hundred and fifty (150) feet in height, table top with perpendicular or over-hanging sides composed of dark looking rocks, without timber, and covered with grass. The island is only accessible by boat on the N.E. side, is steep too, and may be approached to within a short distance with safety with a commanding breeze.

As soon as this island is passed, the Saddle Hill on Griffith's Island, near Port Fairy, may be seen standing boldly out, it being the termination of the line of coast from Portland Bay to Port Fairy. After passing which, the island of Warrnambool may be distinctly seen, as also the high clear land to the eastward of the River Hopkins, with the remarkable trees before mentioned.

It is especially recommended that any person in charge of a vessel bound for Warrnambool, who may not be acquainted with this coast, should make the land if possible about Cape Bridgewater or Nelson, from whence a very few hours' run would take them to their destination.

**Portland Bay a place of refuge in case of bad weather.**—The remarkable character of the coast between these capes and Warrnambool renders the navigation most simple, and precludes the possibility of mistake. Another advantage is, that on the approach of a heavy S.W. gale, after making the land with night coming on, Portland Bay affords good shelter until the gale abates, it being easy of access to strangers.

I consider this of great importance, as it would be dangerous to take Warrnambool Bay in a gale from S. or S.W., and should on no account be attempted, as the sea breaks with great violence across the mouth of the bay and for more than two miles out to sea.

**South Channel.**—Strangers making Warrnambool from the eastward, if, when nearing the port, they should discover that the sea is breaking across the mouth of the bay, should haul off and stand to the westward until the coast to the westward be opened clear of the islands, and the flagstaff be brought to bear N.  $\frac{1}{2}$  W., when it may be steered for, and the bay entered by the south channel. By adopting this plan the five-fathom bank may be cleared, on which the sea breaks with great violence, and continues breaking from this into the Hopkins Reef, which renders the S.E. entrance very dangerous with a heavy swell.

**Five-fathom Bank.**—This bank is three-quarters ( $\frac{3}{4}$ ) of a mile S.E.  $\frac{1}{2}$  E. from the largest island, being of small extent, with a good channel of a quarter or half a mile wide between it and the detached reef, to S.E. of the islands, with from seven to eleven fathoms foul ground.

**Directions for vessels beating into the bay.**—In working into the bay with the wind at N.W., care must be taken not to stand too near the Hopkins Reef, to avoid which it is advisable to fetch as near the S.E. reef as consists with safety before standing in on the port tack. By so doing, vessels with moderate sailing qualities would fetch far to windward of this danger, and in a tack or two gain an anchorage.

**Eastern Channel.**—There is a good passage of one mile wide between the south-east reef and the Hopkins Reef, with not less than four fathoms for ships working in.

The soundings lessen gradually within the buoy as the shore is approached.

**Moorings.**—The following moorings are at present laid down, viz.:—An anchor weighing thirty-seven cwt., with ninety fathoms one inch and three-quarters chain: this anchor lies in four fathoms and a half water. Also, an anchor weighing twenty-five cwt., with seventy-five fathoms one inch and three-eighths chain, and lying in three fathoms water. To the end of each chain is attached a barrel buoy, painted white.

MAGNETIC BEARINGS AND DISTANCES OF THE VARIOUS HEADLANDS ON THE COAST OF VICTORIA, GIVEN TO THE NEAREST QUARTER OF A POINT; NAVIGATORS MUST, HOWEVER, MAKE DUE ALLOWANCE FOR SWELL OF SEA, SET OF CURRENTS, AND INFLUENCE OF TIDES.

BY C. FERGUSON.

	Bearings.	Distance.
		Miles.
Cape Northumberland to Cape Bridgewater (var. 7° 40' E.)	E.S.E.	37
Cape Bridgewater to Cape Nelson	E. by S.	7
Cape Nelson to Cape Otway	E. $\frac{1}{2}$ S.	101
Cape Nelson to Lawrence Rocks	N.E. by E. $\frac{1}{2}$ E.	9
Lawrence Rocks to Portland Bay	N.W. by N.	5
Portland Bay to Julia Percy Island	E. by S.	20
Julia Percy Island to Port Fairy	E. by N. $\frac{1}{2}$ N.	13
Port Fairy to Warrnambool	E. by S.	10
Warrnambool to Bold Projection	S.E. by E. $\frac{1}{2}$ E.	16
Bold Projection to Moonlight Head	E.S.E.	22
Moonlight Head to Cape Otway	E. by S.	18
Cape Otway to Point Lonsdale	N.E.	60
Point Lonsdale to Swan Spit (var. 8° 45' E.)	N.E. $\frac{1}{2}$ E.	4 $\frac{1}{2}$
Swan Spit to West Channel Lightship	{ N.E. by N. 1 $\frac{1}{2}$	1 $\frac{1}{2}$
	{ N.N.E. $\frac{1}{2}$ E. 4 $\frac{1}{2}$	4 $\frac{1}{2}$
West Channel Lightship to Hobson's Bay	N. by E. $\frac{1}{2}$ E.	21
Point Lonsdale to Cape Schank	S.E. $\frac{1}{2}$ E.	17
Cape Schank to Cleft Island	E.S.E.	70
Cape Schank to Point Grant	E. $\frac{1}{2}$ S.	10
Point Grant to Cape Wollomaia	E. $\frac{1}{2}$ S.	12
Cape Wollomaia to Cape Patterson	E.S.E.	11
Cape Patterson to Cape Liptrap	S.E. by E.	21
Cape Liptrap to Cleft Island	S.E. by E. $\frac{1}{2}$ E.	21
Cleft Island to Wilson's Promontory	N.E. by E. $\frac{1}{2}$ E.	8
Wilson's Promontory to Cape Wellington	N.N.E. $\frac{1}{2}$ E.	5
Cape Wellington to Corner Inlet Bar	N. by E.	14
Cape Wellington to Port Albert Bar	N.N.E.	19
Wilson's Promontory to Ram Head	N.E. $\frac{1}{2}$ E.	170
Ram Head to Gabo Island	N.E. $\frac{1}{2}$ E.	16
Gabo Island to Cape Howe (var. 11° 35' E.)	N.N.E. $\frac{1}{2}$ E.	6

## THE WINDS ON THE COAST OF VICTORIA.

BY PROFESSOR NEUMAYER.

Speaking only of that part of the Indian Ocean between 140° and 145° east longitude and 35° and 40° south latitude, the following rules may be given, as being deducible from the register of the Observatory, and extracts from ships' logs.

The wind shifts round the compass in the following direction: N., N.W., W., S.W., S., S.E., E., N.E., and N. The greatest dependence may be placed upon this law in the months of March, April, September, and October. Less such, but still great, in the months of January, June, July, November, and December; and in the months of February and August the law seems to be the least reliable.

In this course some sudden shifts occur, namely, between N. and W. or N.N.W., and W.S.W., chiefly when it is blowing hard from one of these points, and it appears that at some distance from the coast these shifts may be expected between 4 p.m. and 8 p.m. Less violent shifts, between the same points, take place later in the evening or quite early in the morning.

The following will give a pretty general description of the course of wind and weather on this coast.

With a falling barometer the wind passes through N.E. to N. increasing in force, the sky being covered with cirrus and cirrostratus. The pressure of air is a minimum when the wind blows from N.N.W., and the mercury is then stationary while the clouds become denser and assume more the character of a veil over the sky.

After a momentary lull, it commences to blow with great violence from W.S.W. or S.W., and the mercury begins to rise; the whole sky is now overcast, and rain falls in abundance.

Shifting further towards S., the wind decreases in force, and the mercury continues to rise, the sky clearing, which state of things will last until the wind in its course has arrived in S.E., when the barometer shows a maximum, and the weather is then fine and clear.

It next becomes calm, and the wind is lightest when blowing from east—sky clear; this, however, does not last for any length of time, for the vane moves towards N.E., the mercury falls, and cirri make their appearance in the upper regions of the atmosphere.

The prevailing winds throughout the year are as follows:—

**January.**—Strong winds from S.E., S.W., and E. Mean pressure of air 29.85 inches. Shifts from N. to N.W. less frequent, and take place about midnight.

**February.**—Wind between S. and E., occasionally blowing very hard, with a hazy atmosphere. Mean pressure of air, 29.95 inches.

**March.**—Very squally from S.W., which wind prevails throughout the month. In the western ports frequent S.E. and E. winds. Mean pressure of air, 30.02 inches.

**April.**—N.W. and S.W. winds prevail near the coast, while at some distance from thence the prevailing current seems to be more from S. It blows very hard from these quarters. The barometer still above 30—sudden shifts.

In the western ports frequent S.E. and E. winds.

Mean pressure of air, 30.10 inches.

**May.**—Near the coast N. and N.W. winds blow very hard and frequently, while the prevailing wind at some distance is S.W. Shifts less sudden and frequent.

Mean pressure of air, 30.00 inches.

**June.**—N.N.E. and N. within the ports near Bass's Straits. In the open ocean N.W. and S.W. prevail.

Mean pressure of air, 30.13 inches.

**July.**—The same as in June.

**August.**—Squally and boisterous. Northerly winds prevailing, N.E., N.W., and W.N.W.

Mean pressure of air, 29.94 inches.

**September.**—N.W. and N.E. with sudden shifts to S.W. or W.S.W. between 4 p.m. and 8 p.m.

Mean pressure of air, 29.96 inches.

**October.**—Wind frequently between E. and N., and also between S.W. and S., with sudden and violent shifts as above.

Mean pressure of air, 29.98 inches.

**November.**—Frequent strong winds from S.E. but more so from S.W.

Mean pressure of air, 29.97 inches.

**December.**—Between S.E. and S.W. Particularly hard gales may be expected from these quarters, as also from E. At some distance from the coast W. and N.W. winds are not uncommon.

Mean pressure of air, 29.88 inches.

**NOTE.**—In these remarks the pressure of air is given for the level of the sea.

How greatly these rules have to be altered for other parts of the southern coast of Australia, may be seen by the annexed Table, in which the figures represent the relative frequency of the wind throughout the year for the coast line from King George's Sound to Bass's Straits.



36° S.	120°				125°				130°				135°				140°				145°				150°											
	N	W	S	E	N	W	S	E	N	W	S	E	N	W	S	E	N	W	S	E	N	W	S	E	N	W	S	E	N	W	S	E				
January	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
March	214	143	214	143	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sums	214	143	214	143	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
April	111	200	466	133	44	0	0	44	0	0	421	168	53	316	53	0	133	333	67	267	133	67	0	0	77	154	0	230	0	432	0	0				
May	583	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
June	90	455	0	273	90	0	0	0	19	519	0	222	37	37	0	0	133	133	0	467	0	66	0	200	231	308	38	269	0	77	0	77				
Sums	794	655	466	406	134	90	0	461	19	1353	658	380	90	353	53	0	266	466	67	794	133	133	0	200	558	962	38	499	0	516	0	327				
July	0	750	250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
August	0	177	353	118	0	177	177	0	200	57	67	0	0	0	0	0	857	0	0	143	0	0	0	32	32	32	0	0	323	32	549	121	273			
September	86	257	240	236	57	86	0	0	60	242	91	391	121	91	0	0	214	71	89	393	89	18	0	125	109	312	109	265	0	3	150	183				
Sums	86	1184	852	404	57	233	177	0	260	531	602	724	121	91	0	667	1071	71	89	1536	89	18	0	125	141	63	141	312	109	659	32	552				
October	0	300	100	600	0	0	0	0	0	0	0	0	0	0	0	0	91	286	571	91	0	0	0	47	209	69	209	302	93	0	69	176				
November	0	0	333	666	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
December	257	91	319	227	0	0	0	136	25	125	150	250	50	0	0	0	306	250	84	56	0	0	0	0	0	0	0	0	0	0	0	0				
Sums	257	391	752	1493	0	0	0	136	125	425	270	1010	130	360	240	440	397	536	655	147	400	600	0	306	411	1027	251	754	393	93	0	69				
40° S.																																				

## INSTRUCTIONS FOR THE MANAGEMENT OF OPEN BOATS IN HEAVY SURFS AND BROKEN WATER;

WITH PRACTICAL HINTS FOR THE CONSIDERATION OF MERCHANT SEAMEN OR OTHERS HAVING CHARGE OF SHIPS' BOATS, TO WHICH ARE APPENDED, INSTRUCTIONS FOR RESCUING DROWNING PERSONS, AND FOR RESTORATION OF THE APPARENTLY DROWNED.

Issued by the Royal National Life-boat Institution.

### ON THE MANAGEMENT OF OPEN ROWING-BOATS IN A SURF; BEACHING THEM, ETC.

THE National Life-boat Institution some time since collected information from 123 different places on the coasts of the United Kingdom regarding the system of management of boats in a surf and broken water, pursued by fishermen and other coast boatmen.

It has appeared to the committee of the institution that the information obtained in this manner and in other ways may with advantage be published and circulated, for the guidance of those who may have insufficient experience in the management of boats under such circumstances.

Rules for the management of boats in a surf and broken water, naturally fall under two heads, viz.—1st. Their management when proceeding from the shore to seaward, against the direction of the surf. 2nd. Their management under the opposite circumstances of running for the shore before a broken sea.

Before stating the course to be pursued under each head, we may remark that it is an axiom almost universally acknowledged, that there is, as a general rule, far more danger when running for the shore before a broken sea, than when being propelled against it on going from the land; the danger consisting in the liability of a boat to broach-to and upset, either by running her bow under water, or by her being thrown on her beam-ends, and overturned broadside on.

### 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 up-end 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, and 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 seas 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 extend 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 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 a 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 mid-ships, 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 wave 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, being 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-storage, 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 some 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 by 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 amongst 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:—

1st. By turning a boat's head to the sea before entering 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 can be kept more under command when the full force of the oars can be used against a heavy surf than by backing them only.

2nd. 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-oarman, with their faces forward, and making them row back at each sea on its approach.

3rd. 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 many rowing life-boats are now provided with them.

A boat's sail bent to a yard and towed astern lashed, 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 beaten off 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.

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 of her.
2. If the sea be very heavy, or if the boat be 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, 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 boat 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 further 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 sail 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 in 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 weigh, 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 danger to be guarded against must be the 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 a solid body; and as 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 much greater when the vessel is aground and the sea breaking over her. The chief dangers 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 breakwater, and thus go off in comparatively smooth water, or at least shielded from the worst of the sea. This is, accordingly, the usual practice in the rowing life-boats around the United Kingdom. The larger sailing life-boats, chiefly on the Norfolk and Suffolk coasts, 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 seaway, 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 being prevented as far as possible, and the captain of the ship, if a wreck, should be called on to remain on board her to preserve order until every other person should have left the ship.

#### PRACTICAL HINTS FOR THE CONSIDERATION AND GUIDANCE OF MERCHANT SEAMEN AND OTHERS HAVING CHARGE OR COMMAND OF BOATS.

1. Acquire the habit of sitting down in a boat, and never stand up to perform any work which may be done sitting.

2. Never climb the mast of a boat, even in smooth water, to receive balliards or for any other purpose, but unstep and lower the mast in preference. Many boats have been upset, and very many lives lost from this cause. The smaller a boat the more necessary this and the foregoing precaution.

3. All spare gear, such as masts, sails, oars, &c., which are stored above the thwarts, should be lashed close to the sides of a boat; and any heavy articles on the boat's floor be secured, as well as possible, amidships, to prevent them all falling to leeward together on a heavy lurch of the sea.

4. On a merchant vessel getting stranded or otherwise disabled in a heavy sea, or on an open coast where there is a high surf on the beach, the crew should remain by their vessel as long as they can safely do so, in preference to taking to their boats. As a general rule, much more risk is incurred in a boat than in a ship, so long as the latter will hold together. Indeed in a moderate wind on a lee-shore in open situations, and even in a calm, there is frequently more surf than any ordinary ship's boat can with safety attempt, however well managed she may be.

5. After being compelled to desert a ship in an ordinary ship's boat, too great precaution cannot be taken before attempting to land. Viewed from seaward, a surf has never so formidable an appearance as when seen from the land; persons in a boat outside the broken water are therefore apt to be deceived by it. They should accordingly, if practicable, proceed along the land outside the surf, until abreast of a coastguard or life-boat station,

or fishing village; whence they might be seen by those on shore, who would then signalize to them where they might safest attempt to land, or warn them to keep off; or who might proceed in a life-boat or fishing-boat to their aid, the generality of coast fishing-boats being far better able to cope with a surf than a ship's boat, and the coast-boatmen being more skilful in managing boats in a surf than the crews of ships. If in the night, double precaution is necessary; and it will in general be much safer to anchor a boat outside the surf until daylight than to attempt to land through it in the dark. For this reason an anchor and cable should always be put into a boat before leaving the ship, and also two or three buckets, in addition to the baler or hand-pump, which should always be kept in her, so that she might be quickly relieved of any water she might ship.

6. Boats may ride out a heavy gale in the open sea, in safety if not in comfort, by lashing their spars, oars, &c., together, and riding to leeward of them, secured to them by a span. The raft thus formed will break the sea: it may either be anchored or drifting, according to circumstances.

If the boat has a sail, the yard should be attached to the spars with the sail loosed, it will break much sea ahead; also, a weight suspended to the clue of the sail will impede drift when requisite. In all cases of riding by spars, not less than two oars should be retained in the boat, to be ready for use in case of parting from the spars.

7. Where a surf breaks at only a short distance from the beach, a boat may be veered and backed through it, from another boat anchored outside the surf, when two or more boats are in company; or she may be anchored and veered, or backed in from her own anchor.

8. Ships' boats should, in addition to their oars, masts, and sails, have the following articles kept in them when at sea, or, if not in them, they should be placed in them if possible before deserting a ship at sea:—

. A baler or hand-pump, and buckets; the plug, and a spare one, both fastened by lanyards; spare thole-pins and grummets, if rowed in that manner; two or three spare oars; a small hatchet; an anchor and cable; a long small line, as a whale-line or deep-sea lead-line, and any life-buoys or life-belts which are on board. If in the night or at a distance from the land, a lantern and matches, and if available, blue lights or hand-rockets. If beyond sight of land, a compass\* and telescope, and of course fresh water and provisions. A log-line and sand-glass, a hand-lead and line, small arms and ammunition (with ball-cartridges and small shot). A red flag and a boat-hook for a flag-staff might often be useful to attract attention. A red flannel shirt is a good substitute for a flag.

9. In addition to the above, small empty casks or breakers, tightly bunged and lashed beneath the thwarts, would partially convert any boat into a life-boat, by making it impossible for her to founder; and by leaving less space to be occupied by water if filled by a sea, their use would much expedite the process of pumping or baling out.

10. No ship's boat should either be lowered into or hoisted from the water without first having a rope from the forepart of the ship made fast to her bows, by which means she will be much steadied, and will be prevented going adrift if the tackles should be prematurely unhooked or carried away. The rudder should be slung, to prevent its being lost if accidentally unshipped.

#### TO RESCUE DROWNING PERSONS.

(From the Journal of the Life-boat Institution.)

The following instructions are intended for the guidance of those who, being themselves able to swim, go to the aid of their drowning fellow-creatures. The writer of them, Mr. Joseph R. Hodgson, of Sunderland, known in that neighborhood by the appellation of the "Stormy Petrel," is perhaps more competent to pronounce a practical opinion on the subject than any other person in the United Kingdom, he having made it his study from boyhood, and having probably saved more persons from drowning by swimming to their aid than any other person in these islands.

#### INSTRUCTIONS FOR SAVING DROWNING PERSONS BY SWIMMING TO THEIR RELIEF.

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

2nd. 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 foot of your drawers if they are tied, as, if you do not do so, they will fill with water and drag you.

3rd. 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.

4th. 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 often, as an experiment, done it with four, and gone with them forty of 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 I find this vastly preferable to all other

\* An admirable boat's compass, in a portable binnacle, has been provided for the life-boats of the National Life-boat Institution. It may be seen at Mr. Dent's, Strand.

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

5th. I believe there is no such thing as a death-grasp, at least it must be unusual, for I have seen many persons drowned and have never witnessed 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.

6th. 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.

7th. 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 raising yourself and the drowning person to the surface.

8th. 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 having 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.

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

JOSEPH R. HODGSON.

Sunderland, December, 1853.

#### DIRECTIONS FOR RESTORING THE APPARENTLY DROWNED.

Send immediately for medical assistance, blankets, and dry clothing, but proceed to treat the patient *instantly* on the spot, in the open air, whether on shore or afloat.

The points to be aimed at are, *first* and *immediately*, the RESTORATION OF BREATHING and the PREVENTION of any further DIMINUTION of the WARMTH of the BODY; and, *secondly*, after *breathing* is restored, the PROMOTION OF WARMTH AND CIRCULATION.

The efforts to *restore Breathing*, and to *prevent* any further *diminution of the warmth of the body*, must be commenced immediately and energetically, and must be persevered in for several hours, or until a medical man has pronounced that life is extinct. Efforts to promote *Warmth* and *Circulation* must be deferred until natural breathing has been restored.

#### TO RESTORE BREATHING.

##### TO CLEAR THE THROAT—

1. Place the patient face downwards, with one of his arms under the forehead, in which position all fluids will escape by the mouth, and the tongue itself will fall forward, leaving the entrance into the windpipe free. Assist this operation by wiping and cleansing the mouth.
2. If satisfactory breathing commences, adopt the treatment described at page 17. If there be only slight breathing—or no breathing, or if it fail, then—

##### TO EXCITE BREATHING—

3. Turn the patient well and instantly on the side, and—
4. Excite the nostrils with snuff, hartshorn, smelling-salts, or the throat with a feather, &c., if they are at hand. Rub the chest and face warm, and dash cold water on it.
5. If there be no success, lose not a moment, but instantly—

#### TO PREVENT ANY FURTHER DIMINUTION OF WARMTH.

N.B. These efforts must be made very cautiously, and must not be such as to promote *Warmth* and *Circulation rapidly*; for if circulation is induced before breathing has been restored, the life of the patient will be endangered. No other effect, therefore, should be sought from them, than the prevention of Evaporation and its result, the diminution of the Warmth of the Body.

1. Expose the face, neck, and chest, except in severe weather (such as heavy rain, frost, or snow).

#### TO IMITATE BREATHING—

6. Replace the patient on the face, raising and supporting the chest well on a folded coat or other article of dress.

7. Turn the body very gently on the side and a little beyond, and then briskly on the face, back again; repeating these measures deliberately, efficiently, and perseveringly about fifteen times in the minute, or once every four seconds, occasionally varying the side:

[By placing the patient on the chest, the weight of the body forces the air out; when turned on the side, this pressure is removed, and air enters the chest.]

8. On each occasion that the body is replaced on the face, make uniform but efficient pressure with brisk movement, on the back between and below the shoulder-blades or bones on each side, removing the pressure immediately before turning the body on the side:

[The first measure increases the expiration, the second commences inspiration.]

\* \* \* The result is—*Respiration* or *Natural Breathing*;—and, if not too late,—*Life*.

#### CAUTIONS.

1. Be particularly careful to prevent persons crowding round the body.
2. Avoid all rough usage and turning the body on the back.
3. Under no circumstances hold the body up by the feet.

N.B. The Directions are printed in parallel columns to avoid confusion, and to ensure that the efforts to obtain both objects shall be carried on at the same time.

2. Dry the face, neck, and chest, as soon as possible with handkerchiefs or anything at hand; and then dry the hands and feet.

3. As soon as a blanket or other covering can be obtained, strip the body; but if no covering can be immediately procured, take dry clothing from the bystanders, dry and re-clothe the body, taking care not to interfere with the efforts to restore breathing.

#### CAUTIONS.

1. Do not roll the body on casks.
2. Do not rub the body with salt or spirits.
3. Do not inject tobacco-smoke or infusion of tobacco.
4. Do not place the patient in a warm bath.

#### TREATMENT AFTER NATURAL BREATHING HAS BEEN RESTORED.

##### —TO PROMOTE WARMTH AND CIRCULATION.

1. Commence rubbing the limbs upwards, with firm grasping pressure and energy, using handkerchiefs, flannels, &c.: [*By this measure the blood is propelled along the veins towards the heart.*] The friction must be continued under the blanket, or over the dry clothing.

2. Promote the warmth of the body by the application of hot flannels, bottles, or bladders of hot water, heated bricks, &c., to the pit of the stomach, the armpits, between the thighs, and to the soles of the feet.

3. If the patient has been carried to a house after respiration has been restored, be careful to let the air play freely about the room.

4. On the restoration of life, a teaspoonful of warm water should be given; and then, if the power of swallowing have returned, small quantities of wine, warm brandy and water, or coffee, should be administered. The patient should be kept in bed, and a disposition to sleep encouraged.

#### GENERAL OBSERVATIONS.

The above treatment should be persevered in for several hours, as it is an erroneous opinion that persons are irrecoverable because life does not soon make its appearance: cases have been successfully treated after persevering for many hours.

#### APPEARANCES WHICH GENERALLY ACCOMPANY DEATH.

Breathing and the heart's action cease entirely; the eyelids are generally half-closed; the pupils dilated; the jaws clenched; the fingers semi-contracted; the tongue approaches to the under edges of the lips, and these, as well as the nostrils, are covered with a frothy mucus. Coldness and pallor of surface increase.

The leading principles of the above instructions are those of the late Dr. MARSHALL HALL for the Restoration of the apparently Dead from Drowning, and are the results of the latest discoveries. The favorable opinion of the principal medical bodies, and of three hundred medical men in this country, as also those of the chief medical bodies on the Continent, have been obtained by the ROYAL NATIONAL LIFE-BOAT INSTITUTION on the subject.