

heaviest and most confused seas are found, unless other circumstances, such as proximity to the land, prevent.

If unable to escape from the storm, and this can be done only in low latitudes when the storm covers a comparatively limited area, the principal object of a steamer is to avoid the center of the storm.

Referring to figure 128, it is obvious that in the Northern Hemisphere if a steamer finding herself in the left-hand (**navigable**) semicircle at *a* or *a-1* should obey the rule for sailing vessels and heave to on the port tack, her head will lie *toward* the storm track and the greatest danger. On the other hand, under the same circumstances, if the steamer heaves to on the starboard tack, her head will lie *away* from the storm track and such headway as is made will all be in the direction of safety.

Following the same reasoning, a steamer in the Northern Hemisphere caught in the right-hand (**dangerous**) semicircle at *b*, *b-1* (fig. 128) and obliged to heave to should do so head to sea, because in this case both the wind and sea are constantly beating her toward the storm track, and then lying to, head to sea, less leeway will be made than in any other position.

Many steamers behave better when hove to with the sea astern, or on the quarter, but the adoption of this method must depend upon the position of the vessel within the storm area. Referring again to figure 128, it will be clearly seen that, in the Northern Hemisphere, if in the forward quadrant of the left-hand semicircle at positions *a*, *a-1*, a steamer may safely heave to with the sea astern or on the starboard quarter. This course, however, should never be attempted when in the forward quadrant of the right-hand semicircle (positions *b*, *b-1*) for the reason that any headway made would be, in all probability, toward the storm center where the high and confused seas would be likely to inflict damage.

If, in spite of all endeavors, the storm center should pass directly over a vessel she will experience a short period of calm, but the seas will be high, confused, and dangerous, being swept in from all directions. After a short interval the wind will burst with hurricane force from a point directly opposite to that from which it was blowing before, and the vessel must be prepared to meet it and to avoid being caught aback.

Maneuvering rules.—The rules for maneuvering, so far as they may be generalized, are:

NORTHERN HEMISPHERE

Right or dangerous semicircle.—Steamers: Bring the wind on the starboard bow, make as much way as possible, and if obliged to heave to, do so head to sea. Sailing vessels: Keep close-hauled on the starboard tack, make as much way as possible, and if obliged to heave to, do so on the starboard tack.

Left or navigable semicircle.—Steam and sailing vessels: Bring the wind on the starboard quarter, note the course and hold it. If obliged to heave to, steamers may do so stern to sea; sailing vessels on the port tack.

On the storm track, in front of center.—Steam and sailing vessels: Bring the wind two points (22°) on the starboard quarter, note the course and hold it, and run for the left semicircle, and when in that semicircle maneuver as above.

On the storm track, in rear of center.—Avoid the center by the best practicable route, having due regard to the tendency of cyclones to recurve to the northward and eastward.

SOUTHERN HEMISPHERE

Left or dangerous semicircle.—Steamers: Bring the wind on the port bow, make as much way as possible, and if obliged to heave to do so head to sea. Sailing vessels: Keep close-hauled on the port tack, make as much way as possible, and if obliged to heave to do so on the port tack.

Right or navigable semicircle.—Steam and sailing vessels: Bring the wind on the port quarter, note the course and hold it. If obliged to heave to, steamers may do so stern to sea; sailing vessels on the starboard tack.

On the storm track, in front of center.—Steam and sailing vessels: Bring the wind two points (22°) on the port quarter, note the course and hold it and run for the right semicircle, and when in that semicircle maneuver as above.