

安全対策英訳

(8万GT、11万GT、13万GT)

(-1.2m岸壁、-1.4m岸壁)

Measures to Ensure Safe Navigation

1.1 Safety measures for vessel entrance and clearance in ports

1.1.1 Operating standards for incoming and outgoing ships

In Port of Yatsushiro, passenger ships of 80,000 GT, 110,000GT and 130,000GT shall comply with the operating standards as below.

- (1) Hours of arriving to the port : Not restricted.
- (2) Under keel allowance: At least 10% of their draft. (In channels, the allowance shall be at least 15% of their draft.) In this case, water depth shall follow a chart. Tidal effects shall not be added.
- (3) Wind velocity conditions: Mean velocity of wind shall be 9m/s or below
- (4) Tidal current conditions : Not restricted
- (5) Visibility: Over 2,000 meters (ECDIS should perform normally. If the shipmaster is entering the Port of Yatsushiro at nighttime for the first time, visibility of 3,000 m or more is required.)
- (6) Berthing side: Both port side and starboard side are possible
- (7) Tugboat: Not restricted
- (8) Guard boat: One guard boat is requested between Ootsukushima Island and berths.
- (9) Berthing velocity : Passenger ships of 80,000 GT...13cm/s or below
Passenger ships of 110,000 GT... 12cm/s or below
Passenger ships of 130,000 GT... 11cm/s or below

1.1.2 Safety precautions, including speed control, during berthing

During berthing, ships shall reduce speed as much as possible. It is preferable that ships contact many fenders through keeping their bodies parallel to quay walls.

1.1.3 Notification of port call

Regarding port call, give sufficient port call information to maritime concerned parties in advance.

ECDIS *1: Electronic Chart Display and Information System, ECDIS has some functions which indicate not only Electronic Navigational Chart's information but also other information (radar, scheduled traffic route etc.) and has functions that give to ship's navigator an alarm when a ship is approaching or entering into potentially dangerous areas.

1.1.4 Schedule coordination service, Development of voluntary standards and

Establishment of management system

To ensure safe navigation of large passenger ships, the port authority shall implement as follows:

(1) Schedule coordination service

To avoid passing each other on waterways, the port authority shall request necessary cooperation from Yatsushiro Port users and coordinate as follows:

- ① Request for cooperation for safe navigation of large vessels
- ② Mutual adjustment for large vessels by conducting a regular berth meeting
- ③ Coordination of the system to constantly maintain contact with incoming/outgoing vessels in Yatsushiro Port via International VHF Channel 16, etc.

(2) Development of voluntary standards

In addition to the above (1), the port authority shall develop voluntary standards including the characteristics of Yatsushiro Port, supporting system for emergency response (e.g. providing a tug boat for a guard boat) and discontinuance criteria.

(3) Establishment of management system

To ensure a steady implementation of the above (1) and (2), the port authority has to establish management system in consultation with Yatsushiro Port users and relevant public service agencies.

1.1.5 Precautions against water-depth

Regarding port call, vessels shall pay attention to information of water depth from the port authority, Notice to Mariners, Navigation Warnings etc. Both incoming and outgoing vessels shall keep their hulls in a proper draft condition which ensures under keel allowance of 10% or more.

1.1.6 Safety Measures for entering the port during night

Since vessels are allowed to enter from the port not only during the day, but also during night, the following points shall be ensured.

(1) Measures to be taken if no gantry crane is installed

- ① Use 5 balloon lights (as shown in Table-1) to illuminate ship's mooring location.
- ② Clearly indicate ship's mooring location (position of the bridge) with rotating warning lights and other lights.

(2) Measures to be taken when gantry cranes are installed

- ① Either turn on the lights in the container yard or use 5 balloon lights (as shown in Table-1) to light up the ship's mooring place.
- ② Clearly indicate the location of gantry cranes (by using spotlights, lamps, etc.)
- ③ Indicate the ship's mooring place (position of the bridge) by putting rotating warning lights or other lights on the quay.

Table-1 Balloon light specifications and lighting layout (example)

| | | | |
|--------------------------|-------------------|-------------------|-------|
| Overall size | When folded | Total length (mm) | 1,040 |
| | | Total width (mm) | 800 |
| | | Total height (mm) | 1,740 |
| | When in operation | Total length (mm) | 1,550 |
| | | Total width (mm) | 1,600 |
| | | Total height (mm) | 4,460 |
| Balloon diameter (mm) | | 1,200 | |
| Lamp used | | Metal halide lamp | |
| Total luminous flux (lm) | | 110,000 | |
| [Example layout] | | | |
| | | | |

(3) Measures to clearly indicate obstacles near Otsukushima and Kotsukushima

Since it is hard to see shorelines of the islands of Otsukushima and Kotsukushima at night, implementation of the measures shown in Table-2 is necessary to assist ships to visually confirm their positional relationships with these obstacles when altering ship's course at night.

The measures shown in Table-2 (installing lighting buoys to indicate obstacles) should be implemented based on suggested plan from the port authority.

Detailed plan to install lighting buoys should be decided only after sufficient discussions between related agencies and others. In the discussions, submarine topography of installation area, method of installation and collection, possibility of installing alternative facilities which have equivalent effect to lighting buoys and various other factors must be taken into consideration.

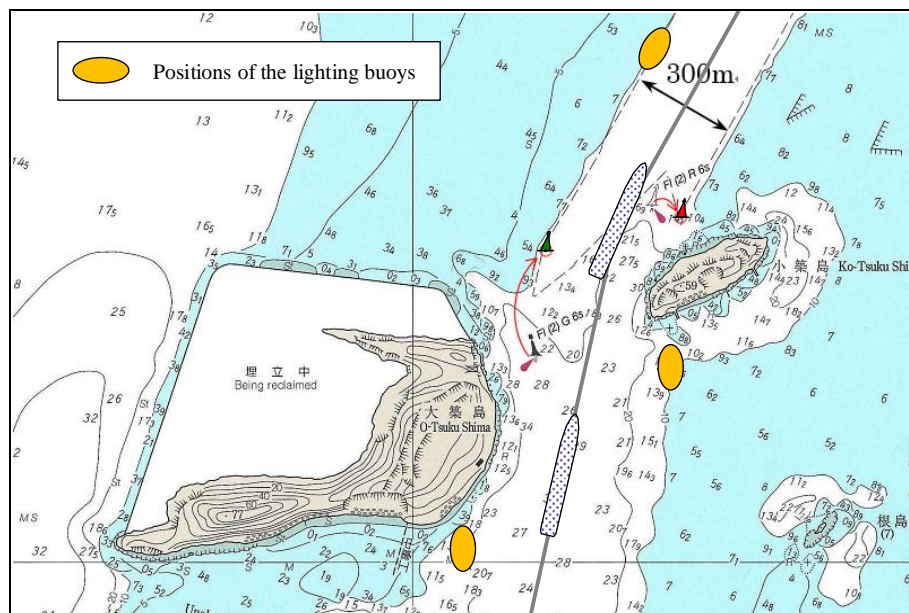
Information about installation of light buoys and alternative facilities must be known to ships and other users of this sea area in advance.

Table-2 Measures to clearly indicate obstacles near Otsukushima and Kotsukushima

- (1) Install lighting buoys (effective luminous intensity must be 4 cd or more) at Otsukushima side and Kotsukushima side one each, so that the navigable waters between Otsukushima and Kotsukushima can be understood.
- (2) Install one lighting buoy (effective luminous intensity must be 4 cd or more) near the intersection of the line extending from the ship's course for entering the Port of Yatsushiro (013 degrees) and the west edge line of the navigation channel so that the distance to the west edge line of the navigation channel can be understood when turning ship's course.

[Specifications of the lighting buoy that is to be stationed (example)]

| | |
|-----------------------------|---------------------------------|
| Character of light | One flashing every four seconds |
| Colour of light | Yellow |
| Luminous intensity of light | 4 cd |
| Visibility | About 2.7 km |



[A layout plan for the lighting buoy for the area near Otsukushima and Kotsukushima]

(example)

1.1.7 Safety Measures for departing during night

Since vessels are allowed to depart from the port not only during the day, but also during night, the following points shall be ensured.

- ① Adequate lighting on the quay
- ② Profile of the berth apron is clearly shown
- ③ ECDIS performs normally
- ④ Since it is hard to see shorelines of Kotsukushima Island and Ootsukushima Island, when altering course, measures to confirm positional relations with obstacles shall be ensured. (i.e. Searching light of guard board, illuminating lamp, etc...)

1.2 Safety measures for mooring at berth

1.2.1 Recommended mooring position and maximum mean velocity of wind for passenger vessel of 80,000GT

Table 1.2.1, Figure 1.2.1 and Figure 1.2.2 show the recommended mooring position and maximum mean velocity of wind for passenger vessel of 80,000GT.

Table 1.2.1 Recommended mooring position and maximum mean velocity of wind for the passenger vessel of 80,000GT

| Method of berthing | Recommended mooring position | Max mean velocity of wind |
|--|--|---------------------------|
| Head-in berthing (Starboard side alongside) | About 2m~5m forward (on the north side) from the planned position | 13m/s |
| Head-out berthing (Port side alongside) | About 1m backward (on the north side) from the planned position ~ about 5m forward (on the south side) from the planned position | 13m/s |

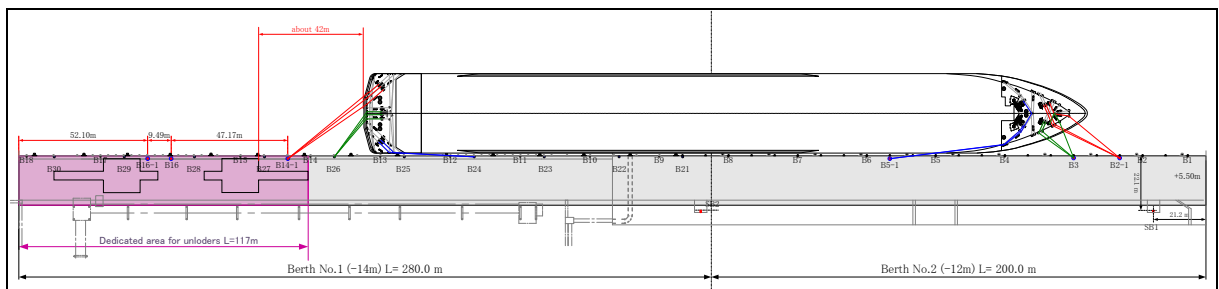


Figure 1.2.1 Recommended mooring position for passenger vessels of 80,000GT (Head-in berthing, starboard side alongside)

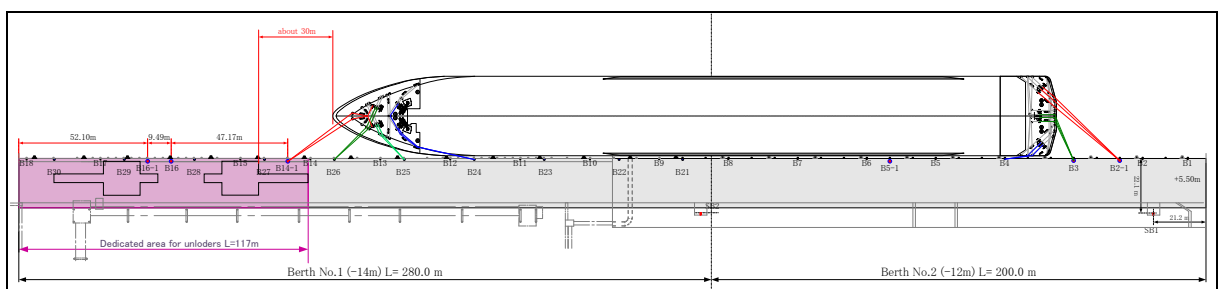


Figure 1.2.2 Recommended mooring position for passenger vessels of 80,000GT (Head-out berthing, port side alongside)

1.2.2 Recommended mooring position and maximum mean velocity of wind for passenger vessel of 110,000GT

Table 1.2.2, Figure 1.2.3 and Figure 1.2.4 show the recommended mooring position and maximum mean velocity of wind for passenger vessel of 110,000GT.

Table 1.2.2 Recommended mooring position and maximum mean velocity of wind for the passenger vessel of 110,000GT

| Method of berthing | Recommended mooring position | Max mean velocity of wind |
|--|---|---------------------------|
| Head-in berthing (Starboard side alongside) | About 3m forward ~ 3m backward from the planned position | 13m/s |
| Head-out berthing (Port side alongside) | About 2m~5m forward (on the south side) from the planned position | 13m/s |

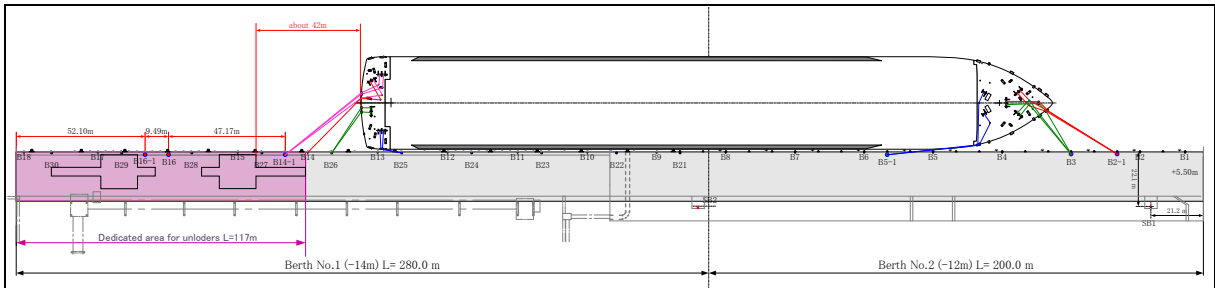


Figure 1.2.3 Recommended mooring position for passenger vessels of 110,000GT (Head-in berthing, starboard side alongside)

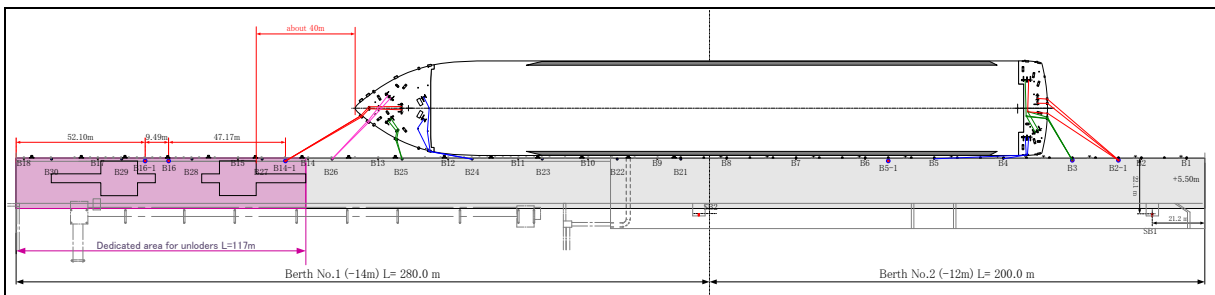


Figure 1.2.4 Recommended mooring position for passenger vessels of 110,000GT (Head-out berthing, port side alongside)

1.2.3 Recommended mooring position and maximum mean velocity of wind for passenger vessel of 130,000GT

Table 1.22.3, Figure 1.22.5 and Figure 1.6 show the recommended mooring position and maximum mean velocity of wind for passenger vessel of 130,000GT.

Table 1.22.3 Recommended mooring position and maximum mean velocity of wind for the passenger vessel of 130,000GT

| Method of berthing | Recommended mooring position | Max mean velocity of wind |
|--|--|---------------------------|
| Head-in berthing (Starboard side alongside) | About 1m forward ~ 1m backward from the planned position | 13m/s |
| Head-out berthing (Port side alongside) | About 5m forward (on the south side) from the planned position ~ about 3m backward (on the north side) from the planned position | 13m/s |

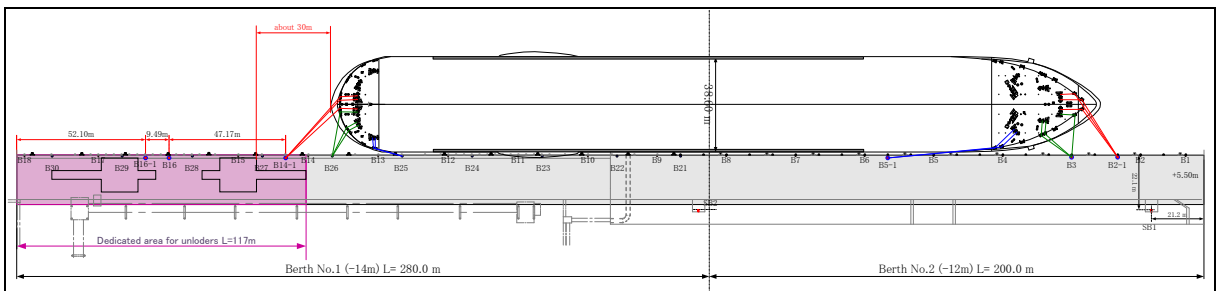


Figure 1.22.5 Recommended mooring position for passenger vessels of 130,000GT (Head-in berthing, starboard side alongside)

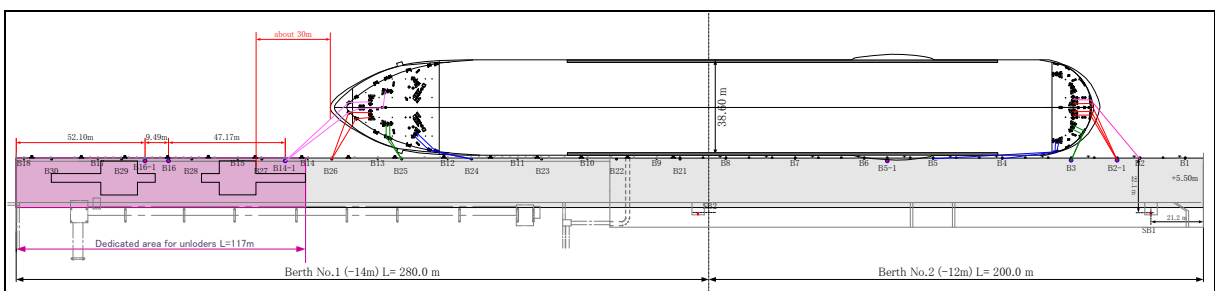


Figure 1.2.6 Recommended mooring position for passenger vessels of 130,000GT (Head-out berthing, port side alongside)

1.2.4 Precautions for safe mooring

It is necessary to pay attention the following for safe mooring.

(1) Tension of mooring rope

- ①The tension in each hawser shall become uniform as much as possible.
- ②Regarding the number of hawsers on a bitt, with the intensity of a bitt, the mooring force is not much difference between one and more than one hawsers.

1.3 Management of wind velocity

Port authorities need to take appropriate measures in case that mean wind velocity are expected to exceed the wind velocity stated under Article 1.1 and 1.3.1 during the following situation:

(1) Before entering port

Port authorities need to tell passenger vessels not to enter the port under the following conditions:

- ① When it is expected that mean wind velocity will exceed the wind velocity of safety measures for arriving and departing (Article 1.1) at the time of ship arrival.
- ② When it is expected that mean wind velocity will exceed the wind velocity of safety measures for mooring (Article 1.3.1) at the time of being at berth..
- ③ When it is expected that mean wind velocity will exceed the wind velocity of safety measures for arriving and departing (Article 1.1) at the time of ship departure.

(2) At berth

In case that mean wind velocity is expected to exceed the wind velocity of safety measures for mooring (Article 1.3.1) when passenger vessels are at berth, port authorities need to tell them to leave the port promptly within the range of the wind velocity condition of the safety measures for arriving and departing (Article 1.1).

(3) Before leaving port

In case that mean wind velocity is expected to exceed the wind velocity of safety measures for arriving and departing (Article 1.1) at the time of ship departure, port authorities need to tell passenger vessels to leave the port promptly within the range of the wind velocity condition of the safety measures for arriving and departing (Article 1.1).