

安全対策英訳

(16万GT、22万GT)

1 Safety measures for navigation

1.1 Checkpoint and recommendation on safe entry

1.1.1 Points to be considered prior to port entry

Following conditions have been considered to ensure safe port entry and departure of large passenger vessels with the assumption that vessels berth in close proximity of cargo handling equipment (i.e. gantry cranes, unloaders).

When berthing to the planned position at an angle, vessel's hull (bow or stern side) will project over the quay due to their body structures. Therefore, assuming that the area projecting over the quay becomes maximum, the positional relations between vessels and the cargo handling equipment were examined, and as a result, it was shown that the distances will be quite short, even in the cases of very small berthing angles (For reference, Figures ①-⑤ shown at the end).

Since there is no safety guideline or standard about the distance from cargo handling equipment, the port authority shall confirm a berthing plan including its feasibility, in advance, with a representative of a company (shipmaster) in accordance with the following:

- ① Distance between vessels and the cargo handling equipment (i.e. clearance to bow or stern)
- ② Lateral distance between a vessel and the cargo handling equipment
- ③ Accuracy in berthing of a vessel to the planned position
- ④ Accuracy in control of vessel's berthing angle
- ⑤ Effects of wind and current on control accuracy of berthing angle

1.1.2 Mooring Position and berthing side

Recommended berthing side and mooring position differ depending on a quay condition. The recommended plans below were selected from the plans in which it is possible that vessels berth in close proximity to the cargo handling equipment. As a safety recommendation, the plans below are adapted on a situational basis wherein the berthing angle is 4 degrees or below, and the distance from the equipment is 25m or more.

(1) In the case without gantry cranes

① Passenger vessel of 160,000 GT

- Mooring side : Not restricted
- Mooring Position :
 - In the case of starboard side alongside (head-in berthing), the distance between the end of the bow and the northern end of the quay shall be 33 meters or below.
 - In the case of port side alongside (head-out berthing), the distance between the end of the stern and the northern end of the quay shall be 33 meters or below.

② Passenger vessel of 220,000GT

- Mooring side : Starbord side (head-in berthing)
- Mooring Position : The end of the bow shall be near the northern end of the quay.

(2) In the case with one gantry crane

① Passenger ship of 160,000GT

- Mooring side : Not restricted
- Mooring Position :
 - In the case of starboard side alongside (head-in berthing), the distance between the end of the bow and the northern end of the quay shall be about 33 meters.
 - In the case of port side alongside (head-out berthing), the distance between the end of the stern and the northern end of the quay shall be about 33 meters.

② Passenger ship of 220,000GT

- Not allowed to berth under this condition

1.1.3 Precautions regarding berthing and un-berthing

Since there are few allowances of both longitudinal and lateral distances from the cargo handling equipment at the planned mooring position, vessels shall move laterally as parallel as possible and pay full attention in order to avoid collisions between the bow/stern and the cargo handling equipment.

1.2 Publicity and request for cooperation

1.2.1 Notification of port entry

Before entering to the port, adequate information shall be provided to concerned parties accordingly.

1.2.2 Schedule coordination service

To avoid ship encounters in the channel and ensure safe passage, the port authority shall request the necessary cooperation to port users and coordinate the schedule of vessels as follows:

- ① Request for cooperation for safe navigation of large passenger vessels
- ② Mutual adjustment for large vessels by conducting regular berth meetings
- ③ Coordination of a system to maintain continuous contact with arriving/departing vessels in Yatsushiro Port via international VHF channel 16, etc

1.2.3 Safety Management System to receive large passenger vessels

To receive large passenger vessels safely, concerned parties shall coordinate necessary operation rules in advance on the occasions of the council for arriving and departing of large passenger vessels to Yatsushiro Port.

1.3 Safety measures for arriving and departing

The criteria of arriving and departing of passenger vessels of 160,000GT and 220,000GT are as follows.

1.3.1 Port arriving and departing time

Port arriving and departing time are not restricted.

1.3.2 Conditions of external force

① Wind Velocity :

Passenger vessel of 160,000GT . . . Mean wind velocity shall be 11m/s or below

Passenger vessel of 220,000GT . . . Mean wind velocity shall be 12m/s or below

② Current : Not restricted

1.3.3 Other operational conditions

① Under keel allowance (UKC) : 10% of vessel draft or more (In the channels, it shall be 15% of vessel draft or more.) Water depth on a chart shall be referred and tidal effect shall not be added.

② Visibility : 2,000 meters or more (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.

③ Berthing/un-berthing angle : as parallel as possible

④ Berthing velocity :

Passenger vessel of 160,000GT . . . 10cm/s or below

Passenger vessel of 220,000GT . . . 9cm/s or below

⑤ Tug boat : Not restricted

⑥ Escort boat : One escort boat shall be deployed between harbour limited line and the berth.

1.3.4 Passing each other in the waterway

So as to avoid ship encounter between large passenger vessels and other ships on the waterway of Yatsushiro Port, requests for cooperation shall be made in advance to allow sufficient distance for large passenger vessels from other ship. When a large passenger vessel passes the waterway, she shall make an escort boat lead her and request cooperation to other ships to avoid collision.

1.3.5 Precautions for safe berthing including control of berthing speed

During berthing, the vessels shall keep berthing speed as low as possible. It is preferable to make a body of a ship parallel to the quay so that vessels have more contact with fenders.

1.3.6 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.

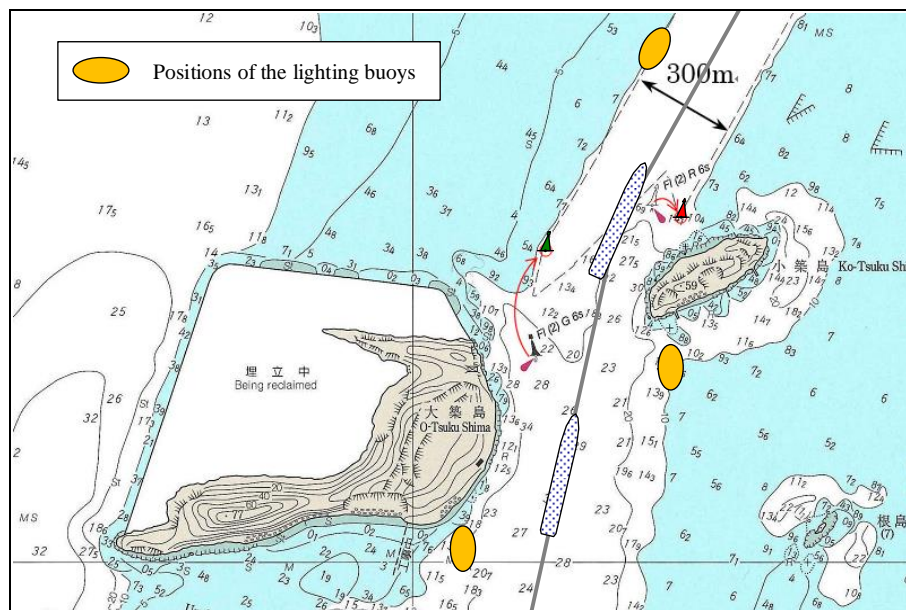
Information about installation of light buoys and alternative facilities must be known to ships and other users of this sea area in advance.

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)

1.3.7 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...)

1.4 Precautions regarding water-depth

When arriving to the port, vessels shall pay attention to information of water depth, including information provided by the port authority, Notice to Mariners, Navigation Warnings. Both arriving and departing vessels shall keep their hulls in a proper draft condition which ensures under keel allowance of 10% or more.

1.5 Safety measures for mooring at berth

1.5.1 Mooring position and wind velocity

(1) In the case without gantry crane on the quay

- ① Recommended mooring position and maximum mean velocity of wind for passenger vessel of 160,000GT

Table 1.5.1, Figure 1.5.1 and Figure 1.5.2 show the recommended mooring position and maximum mean velocity of wind for passenger vessel of 160,000GT in the case that there is no gantry crane on the quay.

Table 1.5.1 Recommended mooring position and maximum mean velocity of wind for the passenger vessel of 160,000GT

Method of berthing	Recommended mooring position	Max mean velocity of wind
Head-in berthing (Starboard side alongside)	About 3m ~ 5m forward (on the north side) from the planned position	16m/s
Head-out berthing (Port side alongside)	About 2m backward (on the north side) from the planned position	13m/s

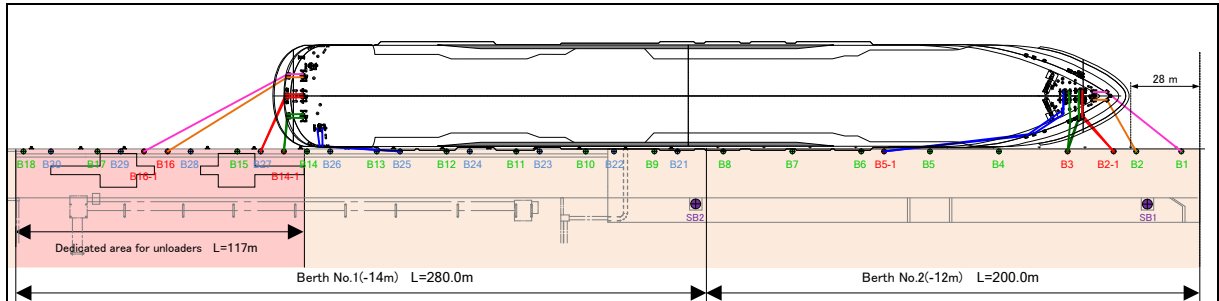


Figure 1.5.1 Recommended mooring position for passenger vessels of 160,000GT (Head-in berthing, starboard side alongside)

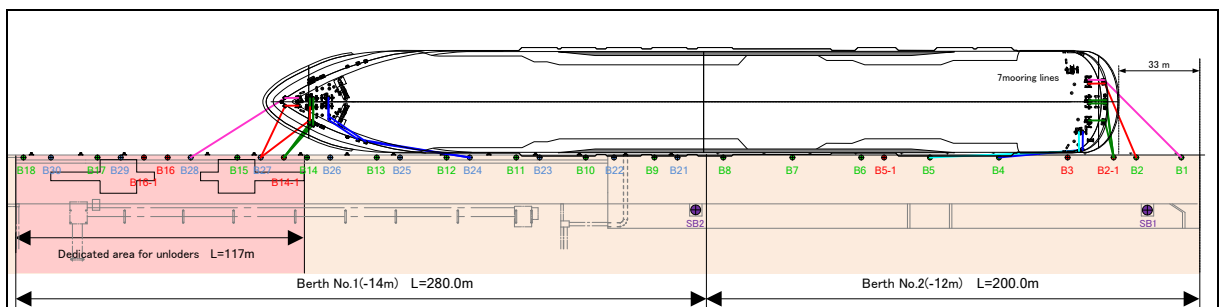


Figure 1.5.2 Recommended mooring position for passenger vessels of 160,000GT (Head-out berthing, port side alongside)

② Recommended mooring position and maximum mean velocity of wind for passenger vessel of 220,000GT

Table 1.5.2 and Figure 1.5.3 show the recommended mooring position and maximum mean velocity of wind for passenger vessel of 220,000GT in the case that there is no gantry crane on the quay.

Table 1.5.2 Recommended mooring position and maximum mean velocity of wind for the passenger vessel of 220,000GT

Method of berthing	Recommended mooring position	Max mean wind velocity
Head-in berthing (Starboard side alongside)	About 2m forward (on the north side) from the planned position ~ about 2m backward (on the south side) from the planned position	15m/s
Head-out berthing (Port side alongside)	Head-out berthing not recommended	—

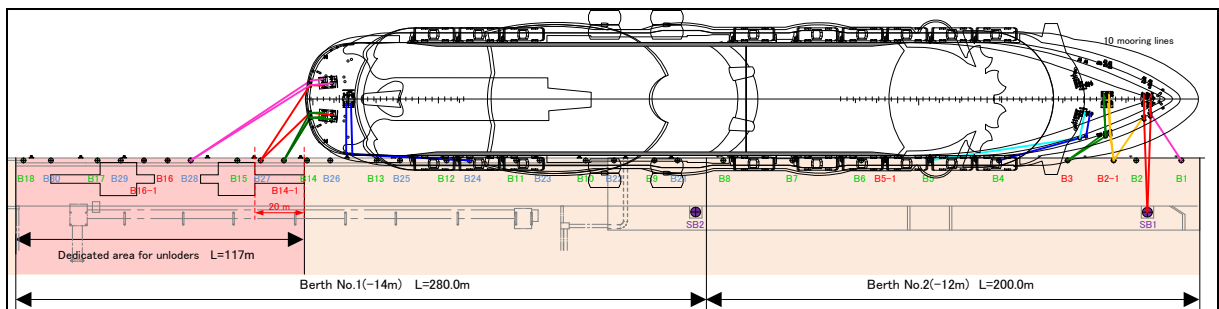


Figure 1.5.3 Recommended mooring position for passenger vessels of 220,000GT (Head-in berthing, starboard side alongside)

(2) In the case with one gantry crane on the quay

① Recommended mooring position and maximum mean velocity of wind for passenger vessel of 160,000GT

Table 1.5.3, Figure 1.5.4 and Figure 1.5.5 show the recommended mooring position and maximum mean velocity of wind for passenger vessels of 160,000GT in the case that there is one gantry crane on the quay.

Table 1.5.3 Recommended mooring position and maximum mean velocity of wind for passenger vessels of 160,000GT

Method of berthing	Recommended mooring position	Max mean velocity of wind
Head-in berthing (Starboard side alongside)	Around the planned position	15m/s
Head-out berthing (Port side alongside)	Around the planned position	13m/s

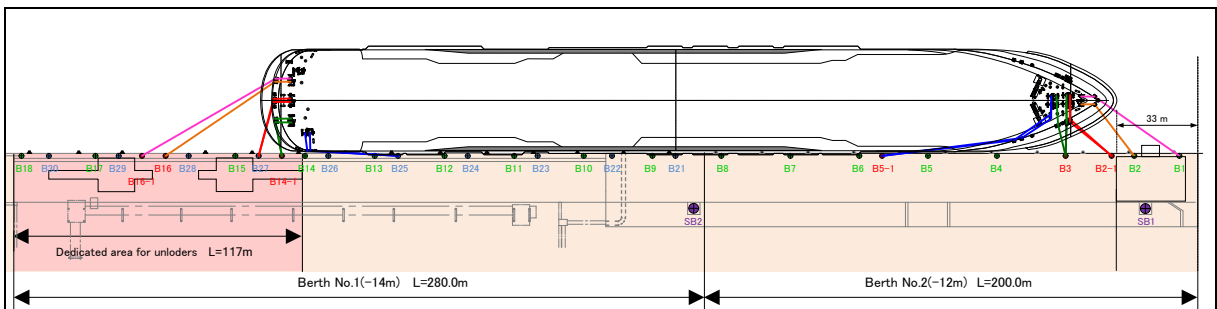


Figure 1.5.4 Recommended mooring position for passenger vessels of 160,000GT (Head-in berthing, starboard side alongside)

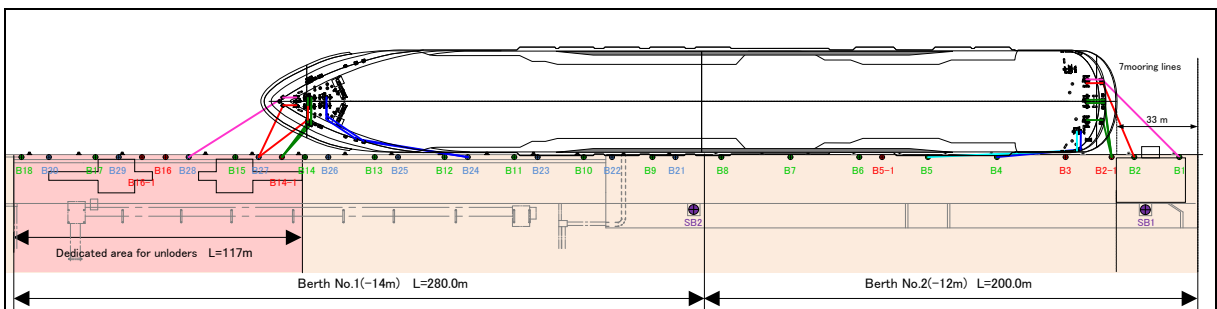


Figure 1.5.5 Recommended mooring position for passenger vessels of 160,000GT (Head-out berthing, port side alongside)

② Passenger vessel of 220,000GT is not allowed to berth under this condition

1.5.2 Precautions for safe mooring

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

(1) Tension of mooring rope

Tension of all ropes shall be kept as even as possible.

(2) Precaution for use of 70 tons mooring bollard

In light of the minimum breaking tension of a mooring rope, mooring winch's winding power of passenger vessels of 220,000GT is assumed about 70 tons. Therefore, when using a 70 tons mooring bollard, it is necessary to assume that only one rope is hanged on it at the same time. It is required to inform vessels to refrain from winding with excessive power.

1.6 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 (Article1.1) 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 (Article1.3.1) 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 (Article1.1) 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 (Article1.3.1) 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 (Article1.1).

(3) Before leaving port

In case that mean wind velocity is expected to exceed the wind velocity of safety measures for arriving and departing (Article1.1) 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 (Article1.1).