

Safe Navigation in the Kanmon Kaikyo



The Maritime Human Resource Institute, Japan

<http://mhrij.or.jp/>

Safe Navigation in the Kanmon Kaikyo

This document provides navigation information, safe navigation guidance, and associated relevant information for navigation in the Kanmon Kaikyo. The navigation regulations noted in this document are current as of July 2012. Visit the Kanmon-Kaikyo Vessel Traffic Service Center (Kanmon MARTIS) website. (<http://www6.kaiho.mlit.go.jp/kanmon/>) for the most recent updates.

1. Navigation in the Kanmon Kaikyo

The Kanmon Kaikyo is bordered north and south by Kanmon Port and vessels passing through the port are subject to the Act on Port Regulations established to ensure the safety of marine traffic, and good order, within the port. Since the Act on Port Regulations is a special set of regulations under the Act on Preventing Collision at Sea, which determines general requirements for marine traffic, this general law of Act on Preventing Collision at Sea applies unless otherwise provided for by special navigational regulations in the Act on Port Regulations.

1.1 Passage Navigation Obligations

Vessels other than miscellaneous vessels* entering or leaving, or passing through, Kanmon Port are required to follow the specified passage. However, this restriction does not apply if deviation from the passage is unavoidable (e.g. to avoid an accident).

* Miscellaneous vessels are defined as steam launches (small, steam-powered vessels), barges, small boats, and any craft propelled wholly or primarily by oars and paddles.

1.2 Prohibition on Anchoring in the Passage

Vessels shall not anchor, or release towed vessels, in the passage except under the following circumstances.

- ① To avoid an accident.
- ② When operation is no longer controlled.
- ③ To assist vessels in an emergency or when life is in danger.
- ④ When a vessel engages construction or work with a permission of the Harber Master.

1.3 Navigating on the right side in the Kanmon Passage and No.2 Kanmon Passage

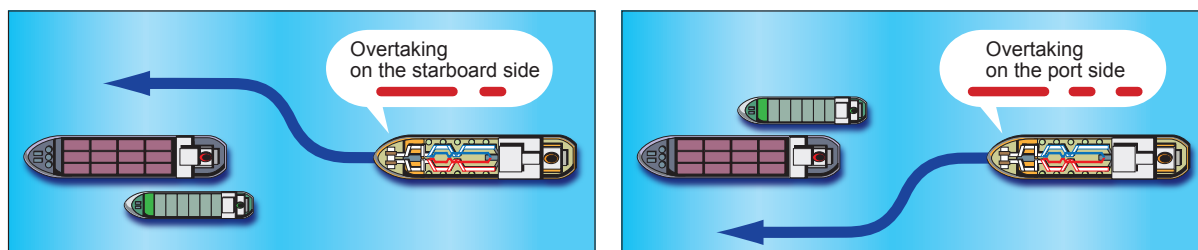
Vessels navigating in the Kanmon Passage or No.2 Kanmon Passage are required to keep as near to the outer limit of the passage which lies on their starboard side as is safe and practicable. (This requirement does not apply to vessels with a gross tonnage of less than 100 tonnes proceeding westward through Hayatomo Seto Waterway.)

1.4 Overtaking in the Kanmon Passage

A vessel may overtake another vessel in the Kanmon Passage, after considering surrounding situation and only all conditions described below are met.(Except Hayatomo Seto Waterway)

- ① When a vessel being overtaken does not need to take any cooperation movement in order for an overtaking vessel to pass safely.
- ② When an overtaking vessel can keep out of the way of any other vessels safely.

When overtaking on the starboard side, a single long whistle or siren is sounded, followed by a single short whistle or siren. When overtaking on the port side, a single long whistle or siren is sounded, followed by two short whistles or sirens.



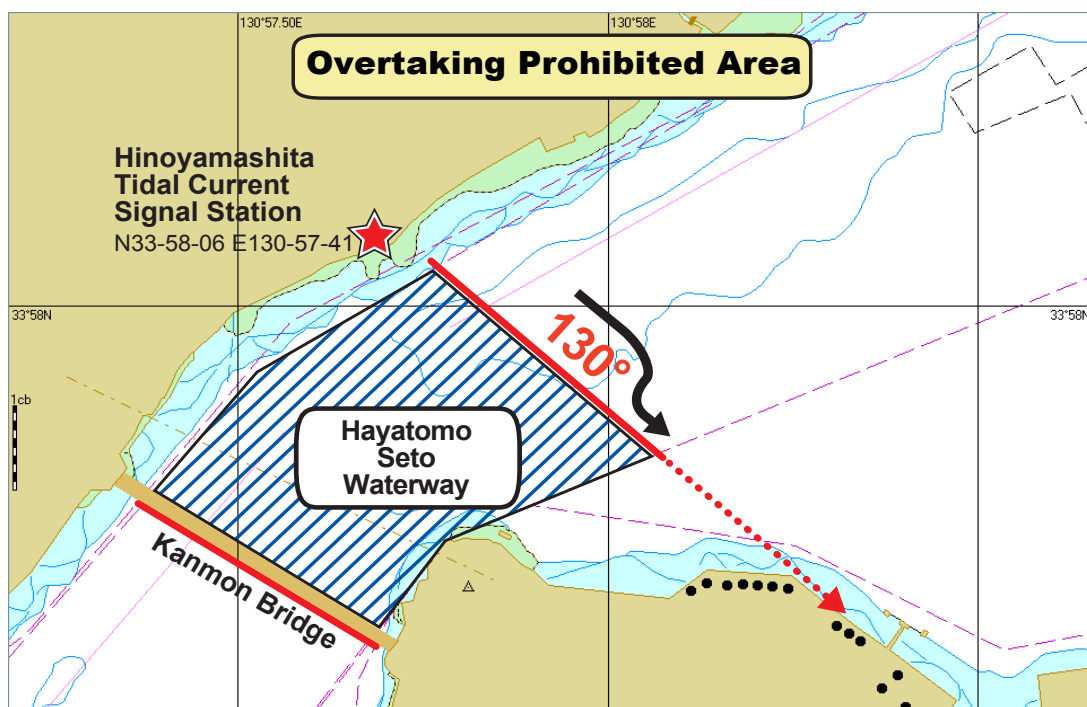
1.5 Specific Rules for Navigation in Hayatomo Seto

1.5.1 Maintaining Speed

Vessels proceeding against the tide in Hayatomo Seto are required to maintain a speed of at least 4 knots over the ground above the speed of the tidal flow. It is essential to be aware of one's speed, and to pass through the waterway as quickly as possible. Furthermore, if it is anticipated that it will be difficult to maintain speed due to a strong tidal flow, the vessels may be required by Kanmon MARTIS to wait outside the passage.

1.5.2 Prohibition on Overtaking

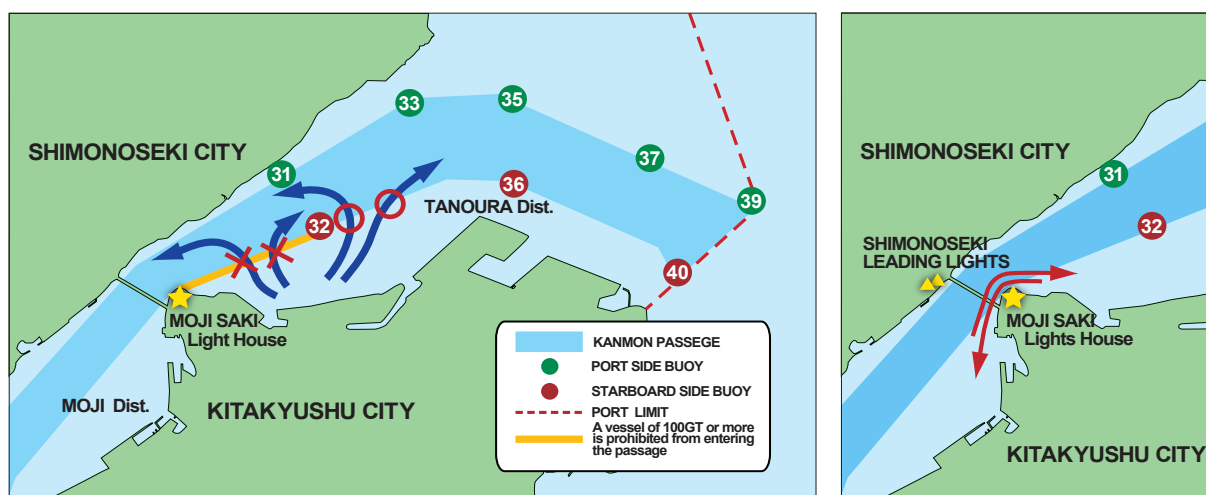
Overtaking is prohibited in the Hayatomo Seto Waterway.



1.5.3 Areas of Prohibited Entry

The line between Mojisaki lighthouse and Kanmon Passage No.32 light buoy must not be crossed to enter the passage. This requirement does not apply to vessels of less than 100 G/T navigating westward through Hayatomo Seto Waterway.

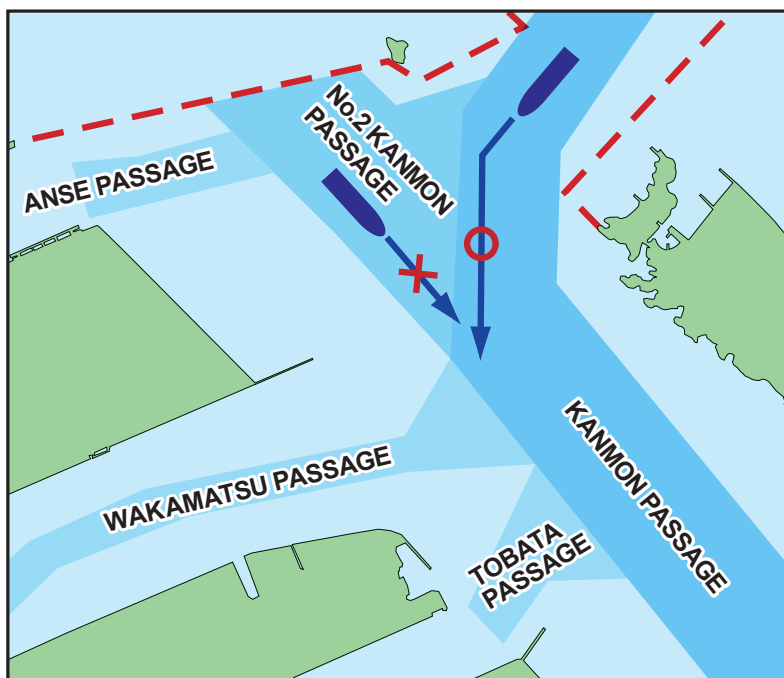
Vessels of less than 100 G/T may approach Moji Saki. When doing so, these vessels are required to keep other vessels on their starboard side.



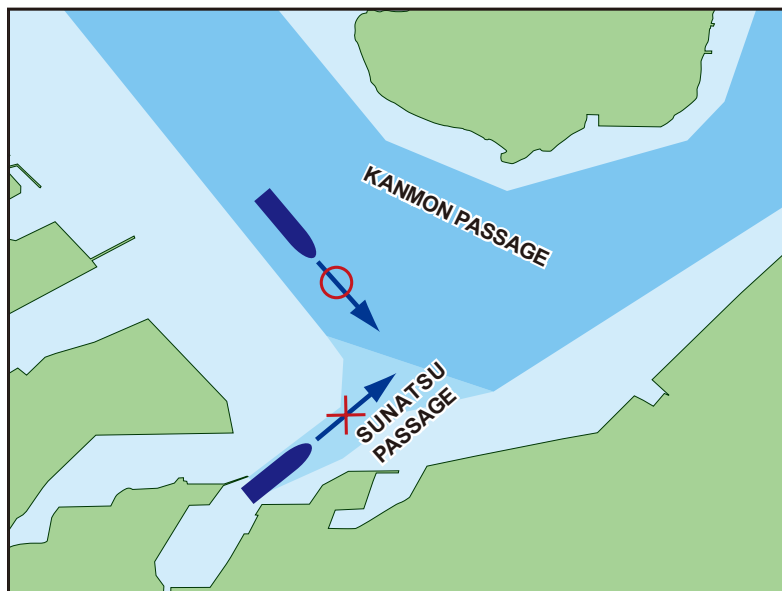
1.6 Specific Rules for Navigation at Junctions of Passages

1.6.1 Right of Way at Junctions of Kanmon Passage and Other Passages (Sunatsu Passage, Tobata Passage, Wakamatsu Passage, No.2 Kanmon Passage)

When there is a possibility of vessels passing through the Kanmon Passage and other passages meeting, vessels in the Kanmon Passage have right of way over vessels in all other passages.



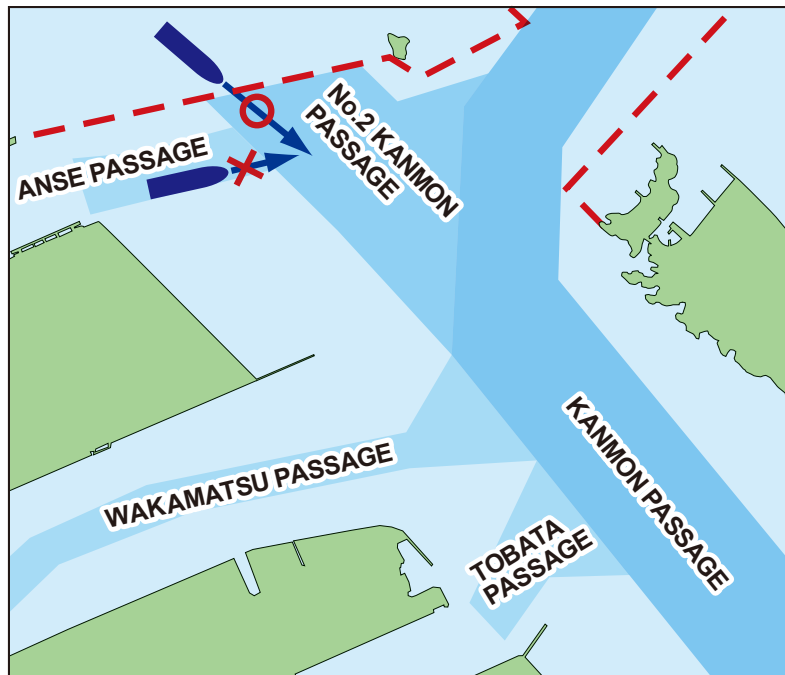
Kanmon Passage and No.2 Kanmon Passage



Kanmon Passage and Sunatsu Passage

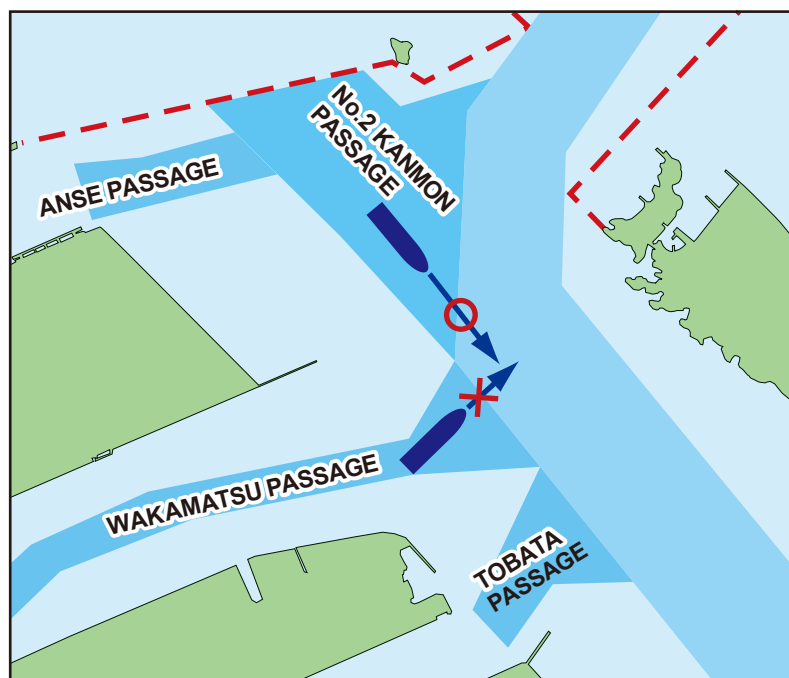
1.6.2 Right of Way for Vessels Underway in No.2 Kanmon Passage and Anse Passage

When there is a possibility of vessels passing through the No.2 Kanmon Passage meeting vessels passing through the Anse Passage, vessels in the No.2 Kanmon Passage have right of way.



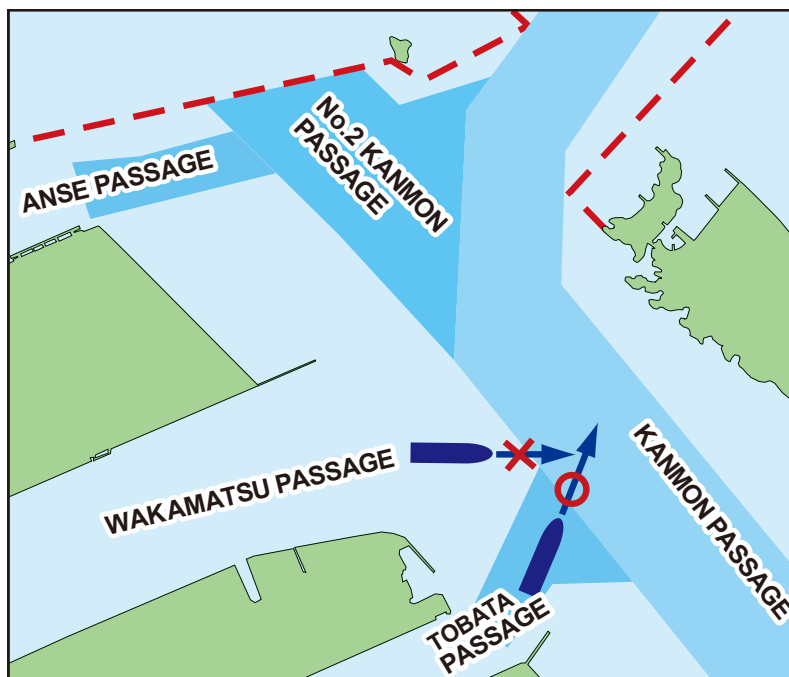
1.6.3 Right of Way for Vessels Underway in No.2 Kanmon Passage and Wakamatsu Passage Meeting in Kanmon Passage

When there is a possibility of vessels passing through the No.2 Kanmon Passage meeting vessels passing through the Wakamatsu Passage in the Kanmon Passage, vessels in the No.2 Kanmon Passage have right of way.



1.6.4 Right of Way for Vessels Underway in Tobata Passage and Wakamatsu Passage Meeting in Kanmon Passage

When there is a possibility of vessels passing through the Tobata Passage meeting vessels passing through the Wakamatsu Passage in the Kanmon Passage, vessels in the Tobata Passage have right of way.



1.7 Other Rules for Navigation

- (1) Vessels in a port, or near the boundaries of a port, are required to proceed at a speed which does not pose danger to other vessels.
- (2) Within Kanmon Port (except Hibiki Shinko District) , vessels of more than 300 G/T have right of way over vessels of 300 G/T or less. (Vessels of over 300 G/T underway within Kanmon Port are required to fly the numeral pennant '1' (one) specified in the International Code of Signals on the mast where it can best be seen.)

2. Advance Reporting

The Hayatomo Seto Waterway is a particularly narrow location within the Kanmon Kaikyo. Furthermore, it is curved and subject to the effects of tidal currents. Meeting of large vessels, and vessels carrying dangerous goods, in the waterway is therefore problematic, with high risk. For this reason, the following advance reports are obligatory.

2.1 Vessels Subject to Reporting Requirements

Vessels of 10,000 G/T or more (3,000 G/T or more in the case of oil tankers) intending to enter the Hayatomo Seto Waterway.

2.2 Timing of Reports

Kanmon Kaikyo Vessel Traffic Service Center must be notified of scheduled passage through the Hayatomo Seto Waterway by noon on the day prior to the intended passage. The format for advance report may be downloaded from <http://www6.kaiho.mlit.go.jp/kanmon/toukei/jizen/jizen.pdf>, and faxed to Kanmon Kaikyo Vessel Traffic Service Center(093 381 4499) once all relevant details are entered.

2.3 Report Format

- (1) Name of vessel
- (2) Gross tonnage and length
- (3) Estimated time of arrival at entrance to Hayatomo Seto Waterway
- (4) Method of communication
- (5) Place of anchorage in Kanmon Port (required only if anchorage used)
- (6) Call sign
- (7) MMS I
- (8) Vessel type
- (9) Name of berth prior to departure, or the name of the reporting line through which the vessel will pass, and estimated time of passing the line.
- (10) Maximum draft during passage
- (11) Type and quantity of dangerous goods carried
- (12) Pilot on board (Y/N)

3. Position Reporting to Kanmon Kaikyo Vessel Traffic Service Center and Maintaining Communication

Kanmon Kaikyo Vessel Traffic Service Center employs radar to identify each vessel to assist in the provision of the appropriate information, and therefore requires the reporting of position to Kanmon Kaikyo Vessel Traffic Service Center by each vessel as follows. Furthermore, it is a strict requirement that VHF (channel 16) be monitored from prior to passing the initial position reporting line (from the commencement of passage for vessels leaving Kanmon Port) until leaving the radar service area. Vessels fitted with AIS are required to use AIS in the correct manner.

Under the Act on Port Regulations, vessels in the Kanmon Passage, No.2 Kanmon Passage, or in the vicinity of the passages are obliged to monitor information provided by Kanmon Kaikyo Vessel Traffic Service Center (refer to 6. Specific Vessels Obligated to Monitor Information Provided).

3.1 Position Reporting

3.1.1 Reporting Vessels and Report Format

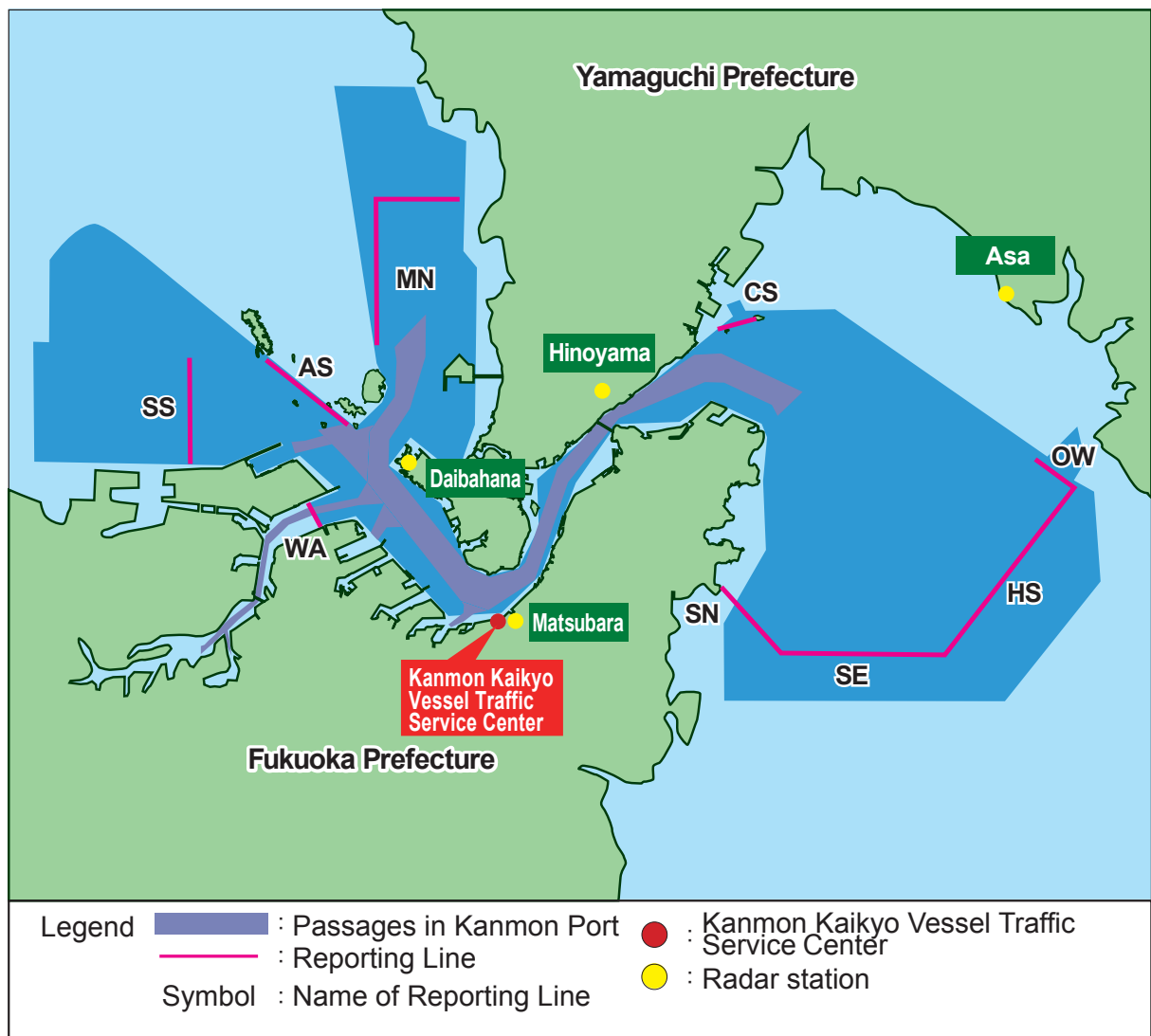
- (1) Vessels of 10,000 G/T (3,000 G/T in the case of oil tankers) or more intending to enter the Kanmon Passage or No.2 Kanmon Passage from the area outside Kanmon Port are required to report the following information when the initial position reporting line is passed (refer to the diagram showing position of reporting lines and areas in which information is provided).
 - a. Name of vessel
 - b. Call sign
 - c. Name of position reporting line passed
- (2) Vessels other than controlled vessels (excluding vessels fitted with AIS and operated appropriately) of 300 G/T or more entering the Kanmon Passage and the No.2 Kanmon Passage from the area outside the Kanmon Port are required to report the following information in a position report at the time of passing the initial position reporting line.
 - a. Name of vessel
 - b. Call sign
 - c. Position reporting line passed
 - d. Gross tonnage
 - e. Draft
 - f. Destination
- (3) Vessels of 300 G/T or more leaving the Kanmon Port (excluding Hibiki Shin Ko District and Shin Moji District) are required to report the following information in a position report at the time of departure. Vessels leaving port from the area west of the WA line for the Wakamatsu Passage are required to report the following information in a position report at the time of passing the WA line. Vessels leaving port at Chofu District are required to report the following information in a position report at the time of passing the CS line.
 - a. Name of vessel
 - b. Call sign
 - c. Position reporting line passed
 - d. Gross tonnage
 - e. Draft
 - f. Destination

(4) Vessels (excluding vessels fitted with AIS and operated appropriately) towing other vessels (including pushing, and towage in parallel) entering the Kanmon Passage and the No.2 Kanmon Passage are required to report the following information in a position report at the time of passing the position reporting line. Vessels leaving port from the area west of the WA line for the Wakamatsu Passage are required to report the following information in a position report at the time of passing the WA line. Vessels leaving port at Chofu District are required to report the following information in a position report at the time of passing the CS line.

- a. Name of vessel
- b. Call sign
- c. Position reporting line passed
- d. Gross tonnage
- e. Draft
- f. Destination
- g. Total combined length of tug and tow

3.1.2 Reporting Methods

- (1) By VHF radiotelephone, call sign: Kanmon MARTIS
Channel: Channel 16 or channel 13
- (2) By telephone, telephone number 093 372 0099 or 093 372 0090



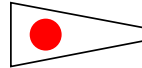
4. Signal Flags

Vessels underway within Kanmon Port are required to fly signal flags, where they can best be seen, indicating their course.












1. A vessel transiting or leaving Kanmon Port must fly, where it can best be seen, International Maritime Signal Flag First substitute over the direction flag.
2. A vessel entering Kanmon Port must fly, where it can best be seen, International Maritime Signal Flag Second substitute over the district code over berth designation code.

Within Kanmon Port, vessels over 300 GT (except miscellaneous vessels), shall exhibit the numeral pennant "1".

Numeral Pennant "1"



Destination Indicating Signal at the time of passing through and leaving Kanmon Port Number

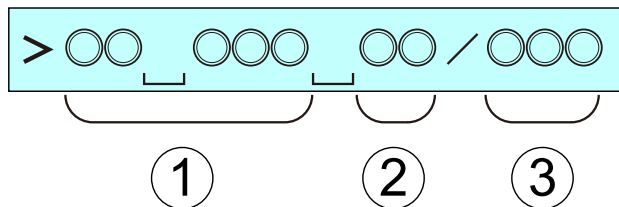
Number	Flags	Meaning of Signal
1	1st Substitute • W • M   	Vessels leaving/passing for the western entrance of Kanmon Passage (except Hibiki Shinko Dsit. & Shin Moji Dsit.), and proceeding to the east of Mutsure Shima.
2	1st Substitute • W • S   	Vessels transiting the western entrance of Kanmon Port (except Hibiki Shinko Dsit. & Shin Moji Dsit.), and westward Uma Shima to the south of Shira su / Shira Shima.
3	1st Substitute • W • A   	Vessels transiting the western entrance of Kanmon Port (except Hibiki Shinko Dsit. & Shin Moji Dsit.), and westward Uma Shima to the east of Aino Shima.
4	1st Substitute • E  	Vessels leaving/passing for the eastern entrance of Kanmon Passage (except Hibiki)



5. AIS Destination Ports and Course Entry, and Navigational Support

5.1 AIS Destination Information

Vessels fitted with AIS are required to enter the following destination information into the AIS as follows.
Refer to the AIS Entry Code Table for entry codes.
The following shows the AIS destination information fields.



- ① Port of destination (a combination of codes indicating country and port).
- ② Course within the port (indicates anchorage etc.)
- ③ Other required information (indicates transit route etc.)

5.2 Navigational Support

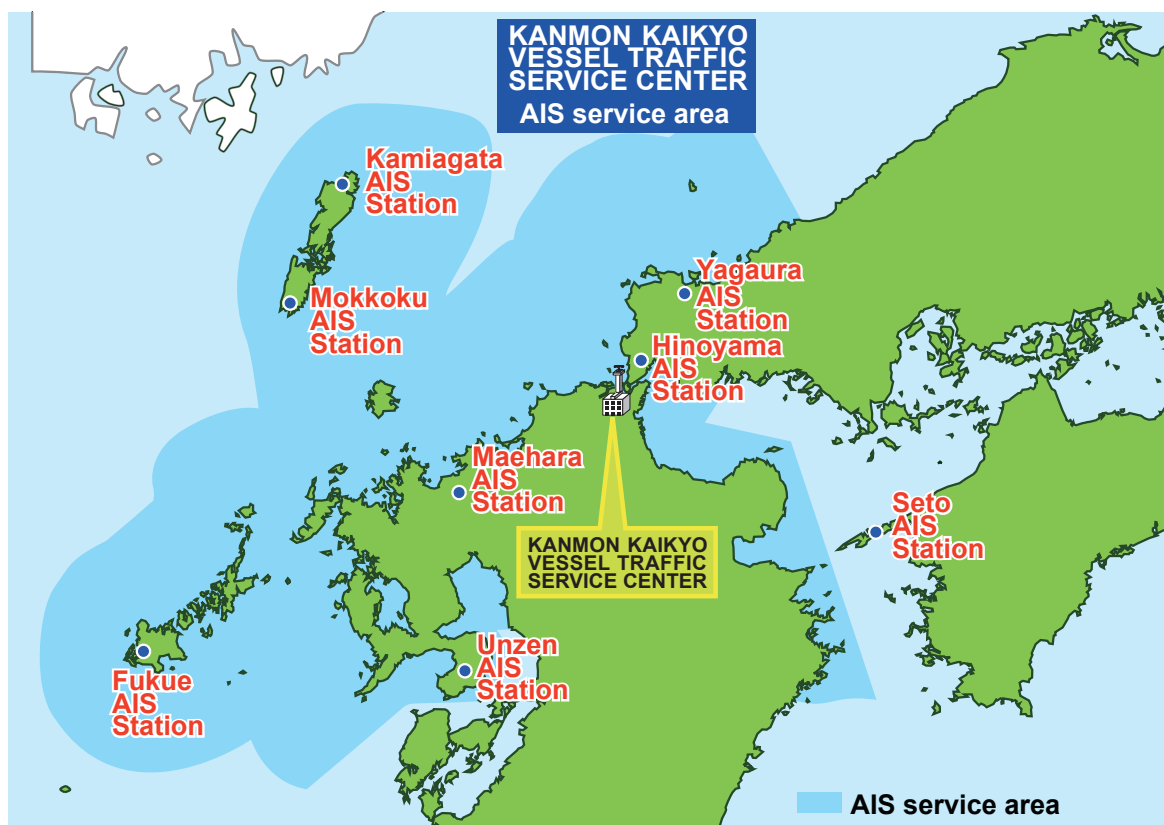
Kanmon Kaikyo Vessel Traffic Service Center provides the following navigational support through AIS.

(1) Provision of Information

Provision of the necessary information for safe navigation in the Kanmon Kaikyo (information on marine accidents, status of restrictions on navigation, movement of transiting vessels, weather information, malfunctioning navigation aids, status of fishing vessels etc.) to vessels in the AIS service area.

(2) Warnings

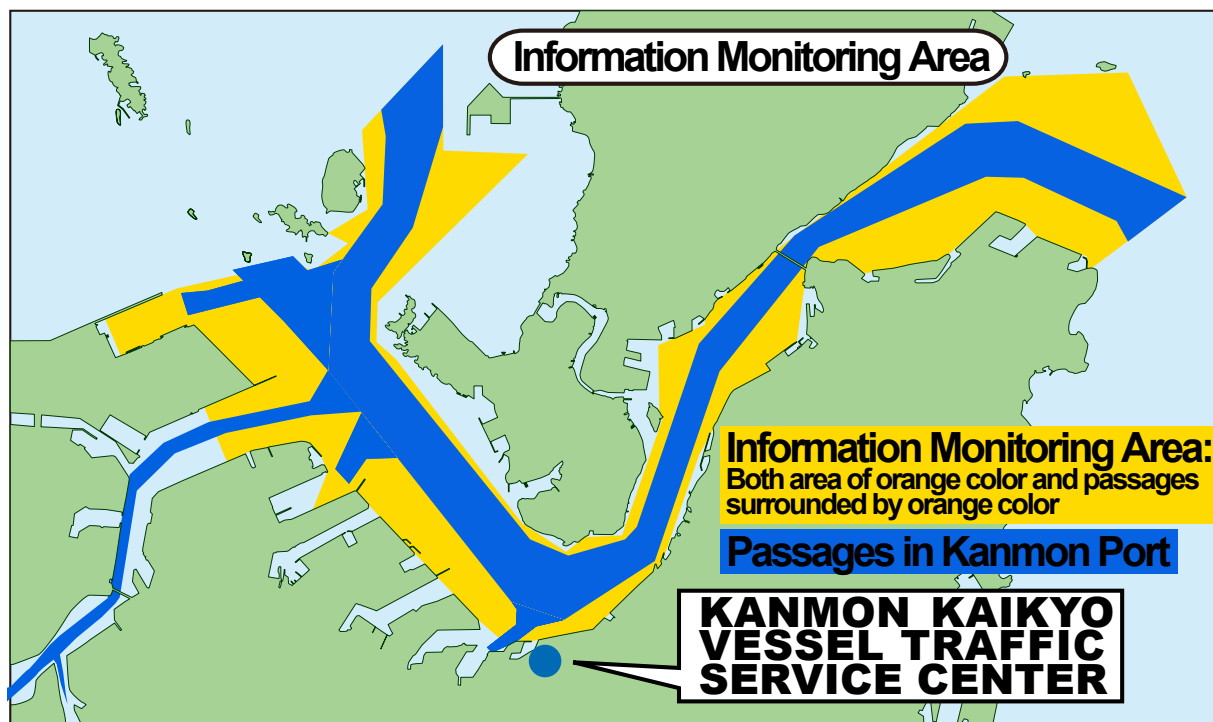
Provision of information for emergency avoidance when a vessel is determined to be in danger (e.g. proceeding towards shallows) within the AIS service area.



6. Obligations to Monitor Information Provided

6.1 Specific Vessels Obligated to Monitor Information Provided

Vessels of more than 300 G/T underway in Kanmon Port within the Information Monitoring Area shown below are required to use international VHF to monitor information provided by Kanmon Kaikyo Vessel Traffic Service Center.



6.2 Provision of Information, Warnings, Advice and Instructions Via VHF Radiotelephone

Information, warnings, advice, and instructions issued by Kanmon Kaikyo Vessel Traffic Service Center via VHF radiotelephone is, as much as is possible, preceded by, or includes, communications codes (INFORMATION, WARNING, ADVICE, INSTRUCTION) to indicate the nature of the information. The codes used are in accordance with IMO Standard Marine Communication Phrases. These terms are explained below.

(1) INFORMATION

Information from radar observations, and on conditions within the area, for use in navigation. The manner in which the information is used is at the discretion of the operator of the vessel.

(2) WARNING

A warning of circumstances which may affect safe navigation of the vessel. The operator is required to pay immediate attention to such circumstances, however measures taken are at the discretion of the operator of the vessel.

(3) ADVICE

Advice to take measures in accordance with the Act on Port Regulations (e.g. a change in course) in order to observe strictly modes of navigation in passages, or to avoid hazardous circumstances which may hinder safe navigation of vessels. The operator of the vessel is required to take such warnings with all caution and to operate the vessel accordingly, however the final decision as to measures taken is at the discretion of the operator of the vessel.

(4) INSTRUCTIONS

Instructions which restrict navigation of vessels based on the Act on Port Regulations. Provided there are no problems with safety, the operator of the vessel is required to follow such instructions.

6.3 Advice from Kanmon Kaikyo Vessel Traffic Service Center

① Issue of Advice

If there is a possibility that a specific vessel may not follow modes of navigation applicable in Kanmon Port, if there is a possibility that the vessel is extremely close to other vessels or obstructions, or if navigation of the specific vessel is likely to result in danger to navigation, in accordance with the Act on Port Regulations, Kanmon Kaikyo Vessel Traffic Service Center may issue advice to follow strictly the modes of navigation, or to take measures (e.g. a change in course) within the necessary restrictions, when risk is apparent. In addition to the use of VHF radiotelephone, such advice may also be issued by telephone.

② Response by Vessels Receiving Advice

Vessels are required to consider such advice, and after understanding the circumstances of one's own vessel, and determining that there are no circumstances contrary to the advice, are required to take measures to follow strictly the modes of navigation or to avoid danger.

③ Monitoring of Reports of Measures Based on Advice

When recognized as necessary, Kanmon Kaikyo Vessel Traffic Service Center may require a vessel receiving advice to submit a report on measures taken in accordance with the advice.

7. Restrictions on Navigation

When visibility in the Kanmon Passage is 500m or less, and it becomes necessary to prevent risks to shipping, the Captain of the Kanmon Port implements the following restrictions on navigation in the form of instructions to wait outside the Kanmon Passage.

① Area subject to restrictions on navigation

The entire area of the Kanmon Passage (see diagram below). However, this restriction is lifted partially in areas verified as not being affected by restricted visibility.

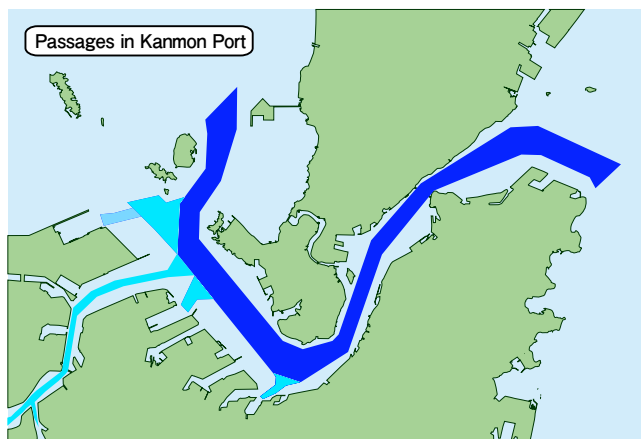
② Vessels subject to restrictions on navigation

All vessels intending to pass through the Kanmon Passage.

③ Details of restrictions on navigation

Vessels intending to enter the Kanmon Passage in order to pass through the relevant area are required to cease entry and move to the nearest safe area as rapidly as possible, and wait.

Vessels underway in the Kanmon Passage are required to proceed with due care, or to wait in a safe area outside the passage and report the vessel name and the position where it is waiting, to Kanmon Kaikyo Vessel Traffic Service Center.



④ Notification

1) Notification from Kanmon Kaikyo Vessel Traffic Service Center (Kanmon MARTIS)

- VHF radiotelephone (International VHF)
- AIS
- Radio broadcasts (Japanese: 1,651kHz / English: 2,019 kHz)
- Website
- Telephone service
- Electronic signboards

2) Notifications from 7th Regional Coast Guard Headquarters Command Operation Centre

(Moji Coast Guard Radio/JNR)

Navigation warnings issued by VHF radiotelephone (International VHF) as safety communications

3) Notifications from patrol vessels

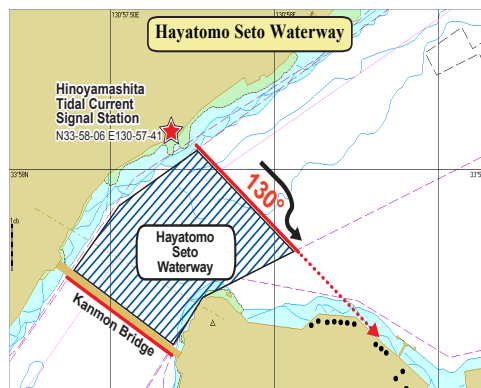
Notifications by patrol vessels stationed in the vicinity of the passage.

8. Guidance for Safety in Navigation

8.1 Coordinating Head-on Situations in the Hayatomo Seto Waterway

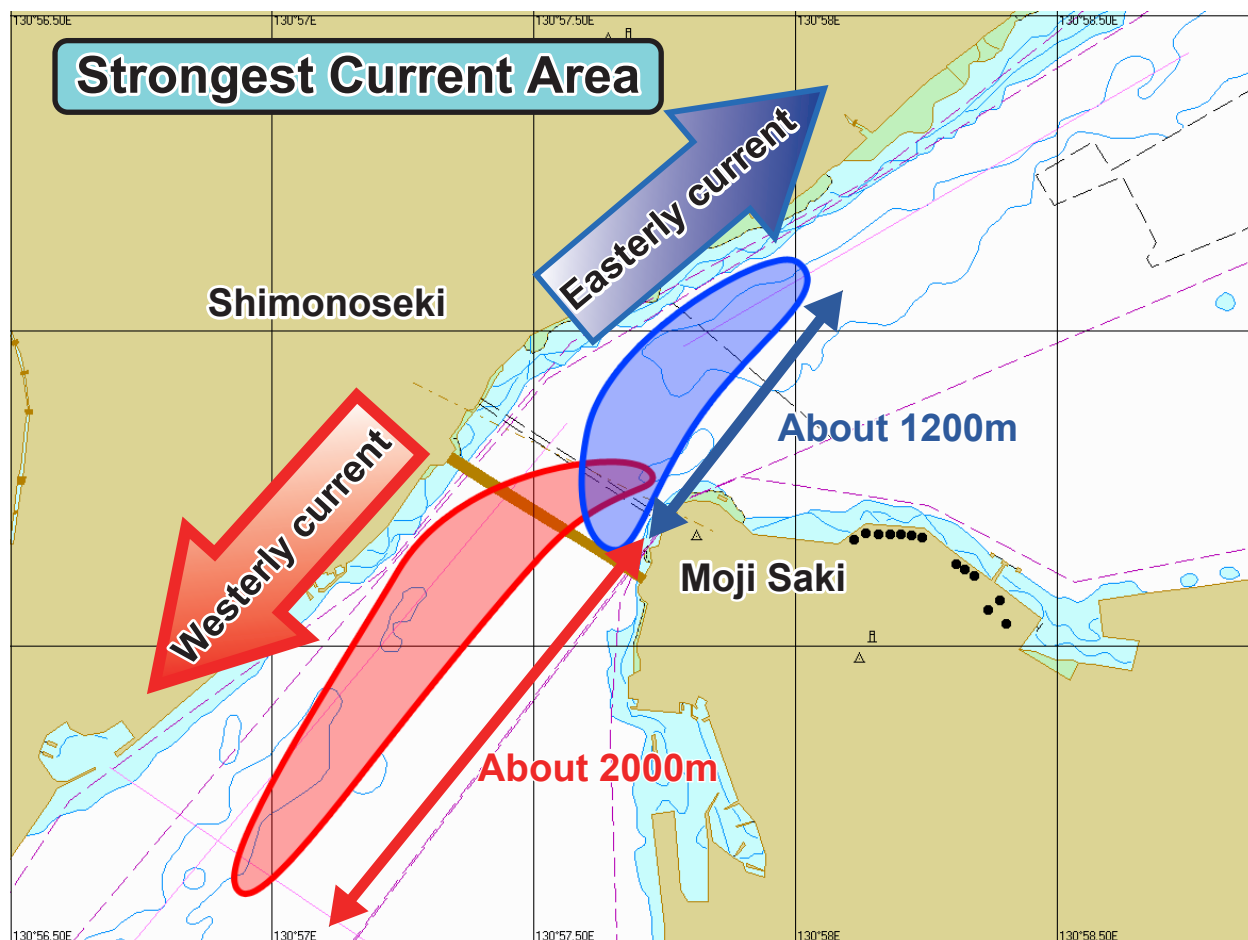
Vessels which shall not meet head-on in the Hayatomo Seto Waterway (the Kanmon Passage between a line to the west of the Kanmon Bridge and a line at 130° from the Hinoyamashita Tidal Current Signal Station):

- ① **Neither vessel is an oil tanker**
Each vessels of 10,000 G/T or more
- ② **Both vessels are oil tankers**
Both vessels of 3,000 G/T or more.
- ③ **Oil tanker and non-oil tanker**
Non-oil tanker of 10,000 G/T or more and oil tanker of 3,000 G/T or more.

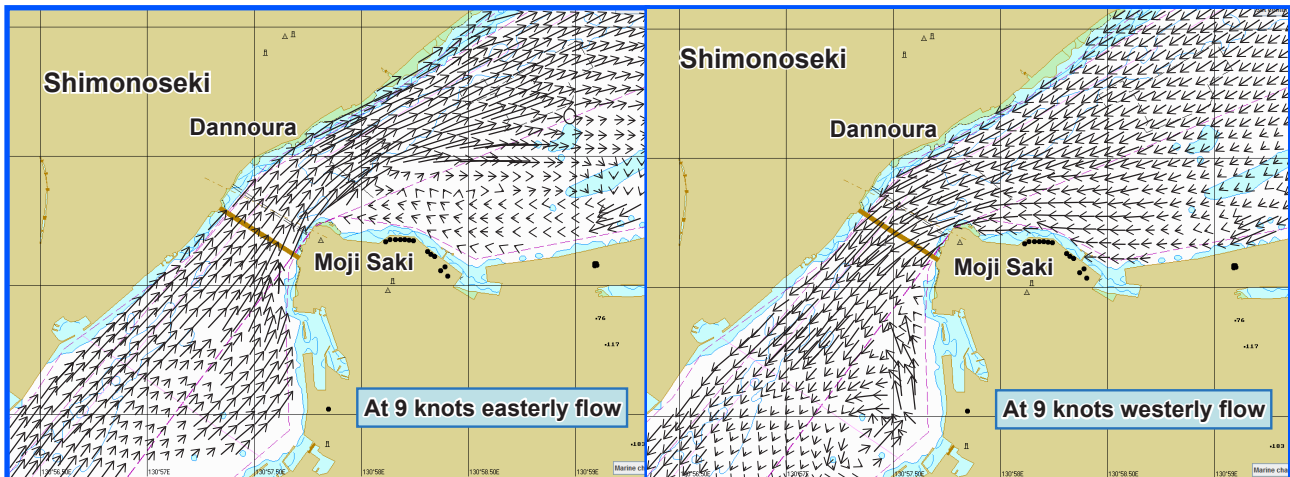


8.2 Tidal Characteristics in the Hayatomo Seto Waterway

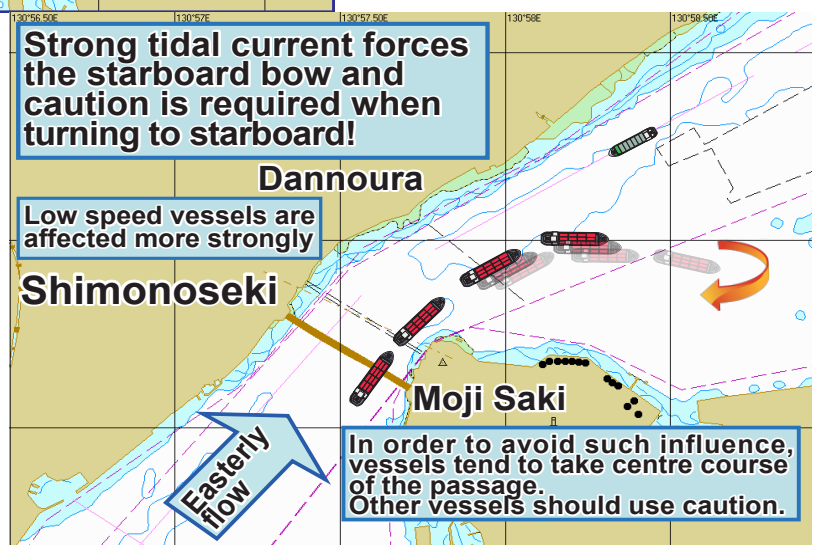
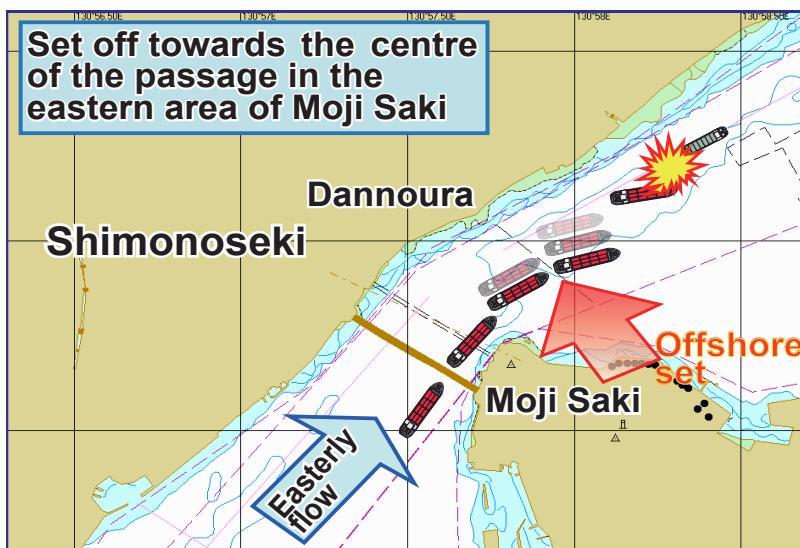
As shown below, the effects on the Shimonoseki side in the Hayatomo Seto Waterway are considerable during strong tidal flows, and it is generally considered that vessels are easily set off towards Shimonoseki by the tide. On the other hand, the flow becomes very complex depending on the weather conditions, and the affected areas cannot be predicted. It is therefore necessary to check the signboards at the tidal stations (at Hesaki, Daibahana), maintain sufficient distance between vessels, and avoid the need for overtaking in the Hayatomo Seto Waterway.



Examples of the tidal flow chart at Hayatomo Seto

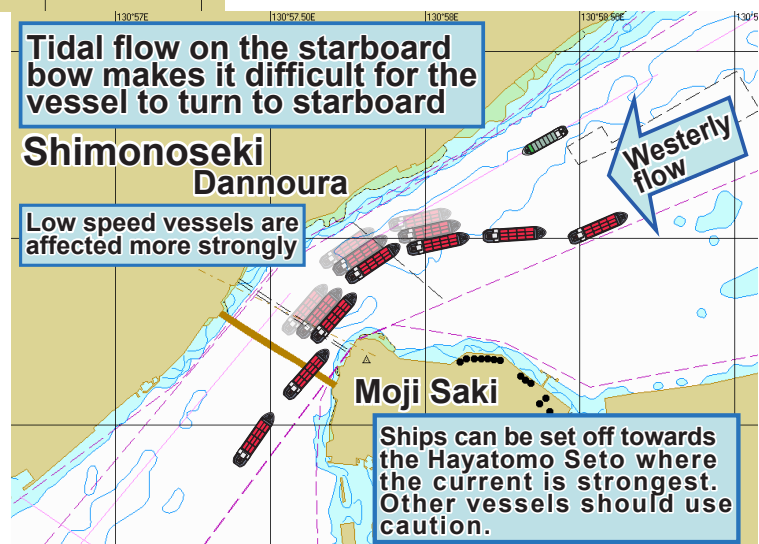
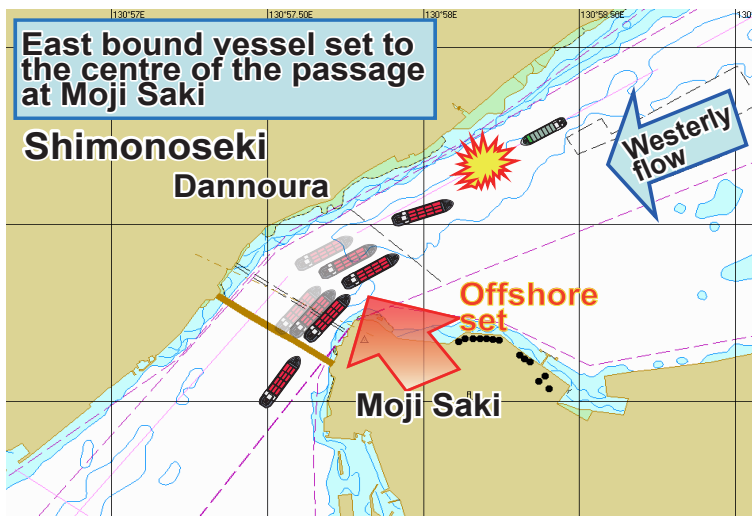


Easterly flow(favourable current) ⇒ Ships can be set off towards the centre of the passage in the eastern area of Moji Saki



- ① Tidal flow influence: Regardless of a vessel's course or type, the effect will be stronger at low speed.
- ② Pattern: When a vessel goes through this area close to Moji Saki at low speed, it can easily lose its course and uncontrollably be set towards the centre of the passage in which tidal streams are the strongest.








Westerly flow(adverse current) ⇒ Ships can be set off towards the centre of the passage in the eastern area of Moji Saki



- ① Tidal flow influence: Low speed vessels passing close to Moji Saki will feel greater offshore current influence.
- ② Pattern: When a vessel goes through this area close to Moji Saki at low speed, she can be set off towards the centre of the passage where the current is strongest.

8.3 Control Signals in the Hayatomo Seto Waterway

Electronic signboards in the Hayatomo Seto Waterway display signals for vessels of 10,000 G/T (3,000 G/T in the case of oil tankers) or more (hereafter referred to as 'large vessels') between a point 3 nautical miles before entry to the Hayatomo Seto Waterway to the point of leaving the area. When H and T are flashed alternately at the Hayatomo signal station, large vessels may reduce speed to avoid head-on situations in the Hayatomo Seto Waterway. Maneuverability of large vessels is much reduced at low-speed, and cooperation of all vessels underway in this area is required for safe navigation.

TRAFFIC CONTROL SIGNALS IN HAYATOMO SETO WATERWAY		
Signal		Meaning
Blinking H		
		As there is an eastbound vessel of 10,000 GT (Oil tanker of 3,000 GT) or more, westbound vessels should navigate with caution.
Blinking T		
		As there is a westbound vessel of 10,000 GT (Oil tanker of 3,000 GT) or more, eastbound vessels should navigate with caution.
Alternately Blinking T&H		
 		As there are both an eastbound vessel and a westbound vessel of 10,000 GT (Oil tanker of 3,000 GT) or more, westbound vessels and eastbound vessels should navigate with caution.

8.4 Temporary Berths in the Vicinity of Mutsure Shima Island

The following temporary berths are available in the vicinity of Mutsure Shima Island for vessels having a draft of 10m or more, or of 30,000 G/T or more, while awaiting the tide or a pilot before entering or transiting Kanmon Port.

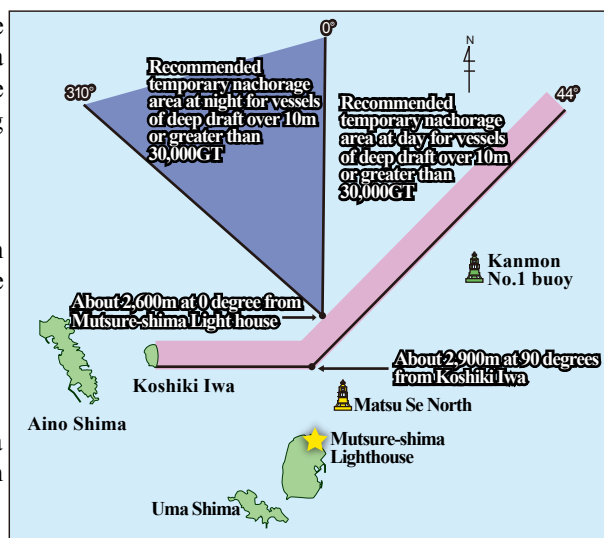
(1) Between sunrise and sunset

The area north of a line extending to a point 2,900m at 90° from Koshiki Iwa (latitude 33° 59' 17", longitude 130° 50' 7"), and a line at 44° from the same point.

(2) Between sunset and sunrise

(In case of continuing anchoring after sunset)

The area west of a line at 0° from the Mutsure Shima lighthouse and north of a line extending for 2,600m from 0° to 310° from the same point.



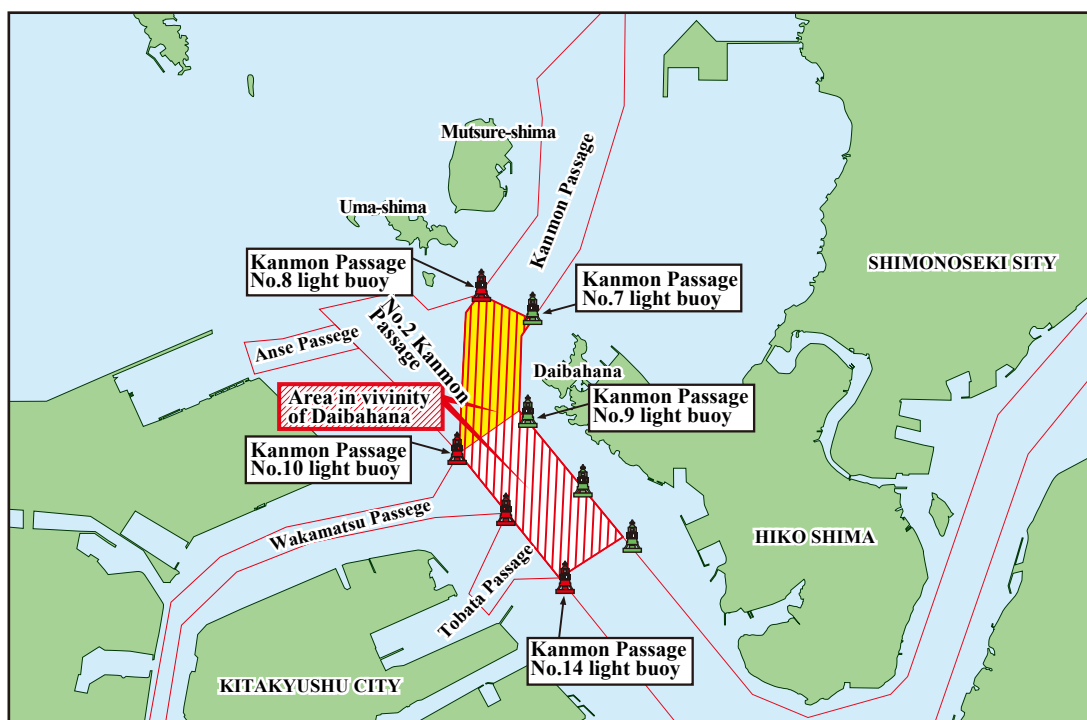
8.5 Prevention of Accidents in the Vicinity of Daibahana in Kanmon Port

(1) Vessels entering Kanmon Passage from No.2 Kanmon Passage, or vice versa, are required to take appropriate measures (e.g. reducing speed) ahead of time to ensure that vessels in the Kanmon Passage can be avoided.

(2) Overtaking is prohibited in the vicinity of Daibahana, particularly in the area between the Kanmon Passage light buoys No.7 and No.10 .

(3) Vessels approaching the vicinity of Daibahana are required to obtain prior information from Kanmon Vessel Traffic Service Center on vessels underway in the passage, and to take particular care not to meet special vessels. If this cannot be avoided, information is to be obtained from Kanmon Vessel Traffic Service Center, and movement undertaken only after movement of special vessels has been determined.

(4) Special vessels are required to provide Kanmon Vessel Traffic Service Center with information on their movement, to maintain close communication, and to pay due attention to movement of other vessels. Additionally, sufficient attention is required with measures such as dispatch of patrol boats etc. Special vessels are large vessels with a draft such that they are unable to move temporarily to starboard in the passage due to water depth, and tugboats with reduced maneuverability and a total combined length of tug and tow in excess of 200m.



9. Navigation Control in Wakamatsu District

9.1 Wakamatsu Waterway and Okudoukai Passage

Navigation control employs time zones for entry and exit.
The method of control is as shown in ‘Operation of Control Signals in Wakamatsu Waterway and Okudoukai Passage’ below. Navigation control employs time zones for entry and exit. The standard morning switchover time differs by 30 minutes between summer (April 1st – September 30th) and winter (October 1st – March 31st). Since the standard time may be brought forward by up to 30 minutes as necessary depending on entry and exit conditions, care is required.

9.2 Advance Reporting

Vessels of 300 G/T or more transiting the Wakamatsu Waterway (to the west of Wakamatsu Passage on a line extending from 1,335m at 184° 30' from the Wakamatsu Port entrance signal station to 349°), or the Okudoukai Passage, are required to submit an advance report to the Wakamatsu Port Traffic Control Office.

9.3 Report Details

- * The estimated time of arrival at which the vessel will enter the Wakamatsu Waterway.
- * The estimated time of commencing operations for the vessel to transit and exit the Wakamatsu Waterway or Okudoukai Passage, or to move in Wakamatsu.

9.4 Timing of Report Release

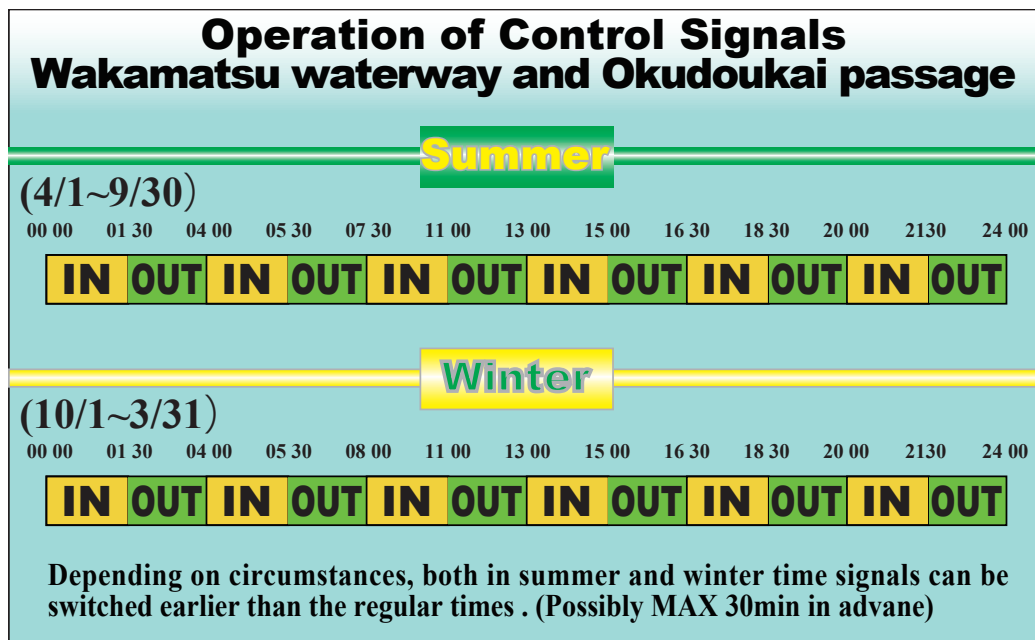
- * Please report the anticipated entry date or start date before noon on the previous day.
- * Please report the new time immediately if the reported time changes.

9.5 Destination for Reports

Wakamatsu Port Traffic Control Office: Tel 093 871 2482, Fax 093 881 6094
VHF call sign: ‘Wakamatsu Port Security’
Electronic submission: <http://www.naccs.jp/aboutnaccs/reference.html>
* Submission to Sea-NACCS Centre requires an ID and password.

9.6 Cautions

- * Please notify the Wakamatsu Port Traffic Control Office when entering Wakamatsu Waterway, and immediately prior to commencing operations.
- * Vessels are required to monitor international VHF channel 16 at all times while underway or at anchor.



10. References for Kanmon Strait Navigation

Japanese	http://www.kaiho.mlit.go.jp/07kanku/moji/link%20menu/anzen/koukouzu1.pdf
English	http://www.kaiho.mlit.go.jp/07kanku/moji/link%20menu/anzen/koukouzu1-eng.pdf
Chinese	http://www.kaiho.mlit.go.jp/07kanku/moji/link%20menu/anzen/koukouzu1-chn.pdf
Korean	http://www.kaiho.mlit.go.jp/07kanku/moji/link%20menu/anzen/koukouzu1-kor.pdf

Bibliography

The following sources were employed in preparation of this document.

- (1) Kanmon Kaikyo Marine Guide, 2012. 7th Regional Coast Guard Headquarters
- (2) “Kanmon MARTIS” User Manual, Kanmon MARTIS
http://www6.kaiho.mlit.go.jp/kanmon/user_guide/ja.pdf
- (3) New Rules for Maritime Traffic Safety, Japan Coast Guard, 2011
- (4) Recommendation of the Road in Tokyo Bay and Other Bays and Straits in Japanese Waters, 30th Revised Edition, Japan Coast Guard, October 2010
- (5) Seto Inland Sea Waterway Pilot