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The Importance of Maritime Transportation for Japan: Considering the Hormuz Strait Crisis and the Supply of Goods in a Potential Taiwan Contingency

Yuki Kobayashi, Senior Research Fellow, National Security and Japan-U.S. Program, Sasakawa Peace Foundation

1. Introduction

The repercussions of the Hormuz Strait crisis, triggered by the armed attack launched by the United States and Israel against Iran on February 28, 2026, are continuing to expand. Japan relies on the Middle East for more than 90 percent of its crude oil imports, and the de facto closure of the Strait has disrupted supply chains.[1] Although the role of crude oil as a fuel for thermal power generation has declined, it remains indispensable as an energy source for transportation and as a raw material for plastic products. Consequently, soaring gasoline prices, the rising costs of daily necessities, and concerns over supply instability have intensified.

The National Security and Japan-U.S. Program of the Sasakawa Peace Foundation has established the "Study Group of the Carbon Neutrality Policy Compatible with National Security" to reassess the transition from fossil fuels to decarbonized energy sources from the perspectives of energy security and economic security. In response to the present crisis, the Study Group organized a special session and invited a research team from Nippon Yusen Kabushiki Kaisha (NYK Line) to deliver a lecture, while also obtaining a range of materials related to maritime shipping. Through analysis of the lecture and the provided materials, the critical importance of maritime transportation for Japan—an island nation surrounded by the sea—has been reaffirmed.

This paper first outlines the fundamental aspects of maritime transportation. It then analyzes the state of the transport of critical resources such as crude oil and liquefied natural gas (LNG), as well as the challenges that maritime shipping would face in the event of a potential Taiwan contingency. Finally, it considers how Japan should work toward establishing a stable supply of essential goods.

2. The Enduring Importance of Maritime Transportation

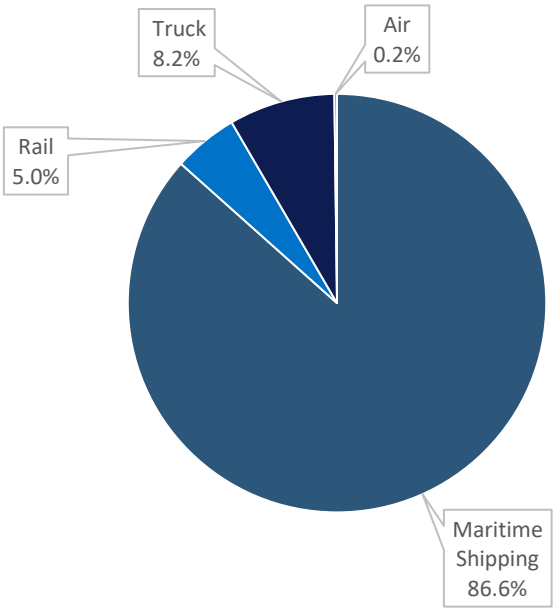
Securing maritime transportation has been a constant challenge for Japan, both historically and to the present day. In September 1940, on the eve of the Pacific War, the Konoe

Fumimaro Cabinet established the Total War Research Institute, composed of elite young officials from government ministries and agencies, the Army and Navy, as well as the private sector, including Nippon Yusen. Its objective was to organize a mock cabinet and simulate the extent to which Japan could wage a total war against the United States and the United Kingdom, taking into account not only military strength but also economic capacity and logistical capabilities such as the transport of materials.

The conclusion reached in August 1941 was unequivocal: "Japan would inevitably be defeated." Even if Japan were to seize resource-rich areas such as the oil fields of Southeast Asia by force, it was projected that the United States and the United Kingdom would sink approximately 1.2 million tons of merchant shipping annually—equivalent to twice Japan's shipbuilding capacity—thereby preventing sufficient transport of resources to Japan. As a result, within three years of the outbreak of war, Japan was expected to effectively lose its capacity to procure materials from overseas.[2] Despite these findings, Japan proceeded to wage war against the United States and the United Kingdom in December 1941, without adequately taking the simulation results into account; the mock cabinet's conclusions subsequently became reality.

Although aviation developed significantly in the postwar period, the central role of maritime transportation has remained unchallenged. The superiority of shipping lies in its ability to transport large quantities of goods at once, and even today nearly 90 percent of global trade is carried by sea (see Figure 1).

Figure 1: Modes of International Logistics: Based on Transport Volume (Weight × Distance = Ton-Kilometers)
(ITF Transport Outlook 2017)



Source: Prepared by the author based on Nippon Yusen Kabushiki Kaisha (NYK Line), "The Underlying Strength of Shipping in Figures: Its Overwhelming Presence in Global Trade," (in Japanese) available on its website.

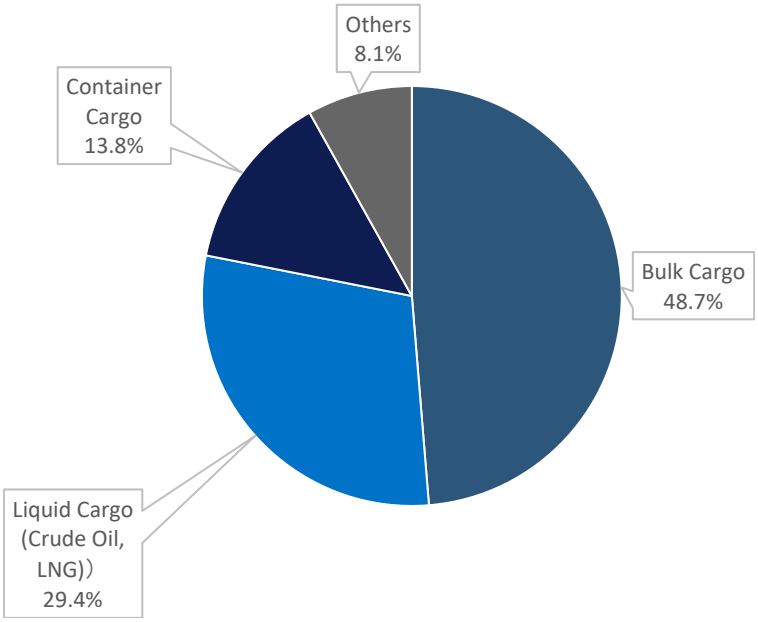
The main types of cargo vessels in maritime transportation and the shares of cargo transported by category are as shown in Table 1 and Figure 2.

Table 1: Main Types of Cargo Vessels

Type of Vessel	Main Cargo	Size (Tonnage)
Bulk Carrier	Iron ore, coal, or bulk commodities such as grain and fertilizer	20,000–300,000
Tanker	Crude oil	100,000–300,000
LNG Carrier	LNG	Up to 170,000
Container Ship	Food products, daily necessities, electrical appliances, etc.	Up to 235,000

Source: Same as Figure 1.

Figure 2: Shares of Maritime Transport by Cargo Type



Source: Same as Figure 1.

Even without referring to Table 1 and Figure 2, it is obvious that imported commodities cover a wide range of categories, and their sources are distributed across the globe. In addition, cargo vessels have been increasing in size; in particular, container ships have seen remarkable expansion in overall length, beam, and tonnage, with the largest vessels exceeding 24,000 TEUs (twenty-foot equivalent units, where one TEU corresponds to a 20-foot, or approximately 6-meter, container).[3] Consequently, as will be discussed later, the number of ports capable of accommodating such vessels is limited.

Taking these factors into consideration, when conflicts or other disruptions arise in certain maritime regions, it becomes necessary to examine:

1. Alternative shipping routes
2. Alternative sources of procurement
3. Alternative ports of call

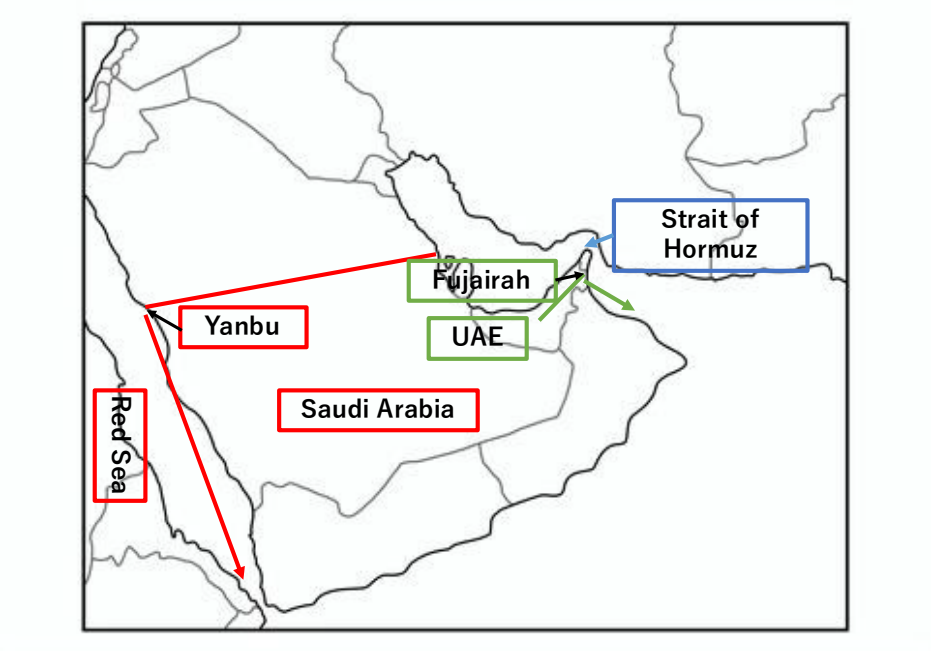
Based on these considerations, the following sections examine how to ensure maritime transportation and the procurement of goods in the current Hormuz Strait crisis and in the event of a potential Taiwan contingency.

3. The Transportation of Crude Oil and LNG as Seen in the Hormuz Strait Crisis

In 2025, the U.S. Energy Information Administration (EIA) published a report indicating that approximately 20 million barrels of crude oil (one-barrel equals about 159 liters) passed

through the Strait of Hormuz per day in 2024, accounting for 20 percent of global oil consumption. The report identifies the Strait as the most critical chokepoint for crude oil transportation. It also notes that, in the event of a closure of the Strait, alternative routes would include transporting crude oil via pipeline to Saudi Arabia's Yanbu port and shipping it through the Red Sea, as well as pipeline transport to Fujairah in the United Arab Emirates (UAE), followed by shipment along the Gulf of Oman. However, it concludes that these alternatives have limited capacity and would be insufficient to fully compensate for the disruption (see Figure 3).[4]

Figure 3: Alternative Shipping Routes Considered in the Event of a Closure of the Strait of Hormuz



Source: Prepared by the author.

Japan has likewise come to recognize that the aforementioned alternative routes cannot provide a complete solution. Consequently, alternative procurement sources, such as the United States, have been considered. However, Japan faces the challenge that its refining facilities cannot readily accommodate differences in crude oil quality compared to that produced in the Middle East.[5] As a result, concerns have arisen over the supply of a wide range of products derived from naphtha produced from crude oil, including everyday items such as garbage bags and food packaging, as well as housing materials like tiles, and even medical products such as intravenous (IV) tubing.[6]

That said, Japan has not simply neglected its heavy dependence on the Middle East. In the aftermath of the two oil crises of the 1970s, Japan promoted diversification of procurement sources by initiating imports from countries such as China and Indonesia, reducing its dependence on the Middle East to 67.9 percent by fiscal year 1987.[7] However, as Asian countries experienced economic growth and began prioritizing domestic supply, Japan was ultimately compelled to revert to reliance on the Middle East.

In contrast, liquefied natural gas (LNG) procurement has seen significant diversification of supply sources (see Table 2). In addition to Australia, Japan imports substantial volumes from the United States and Africa, with dependence on the Middle East remaining at just over 10 percent.

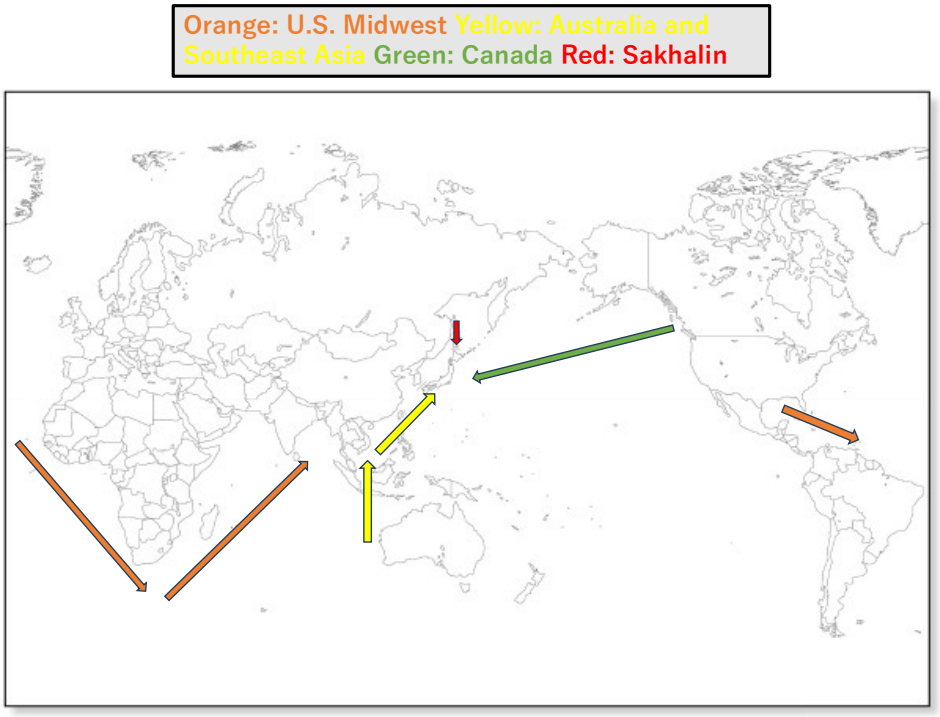
Table 2: Major Sources of Japan's LNG Imports in 2024

Country	Import Volume (tons)	Price per Ton (JPY)
Australia	25,139,832	116,084
Malaysia	10,245,365	92,016
United States	6,336,383	85,635
Russia	5,683,603	96,447
Papua New Guinea	3,662,589	100,203
Oman	3,388,738	85,810
Indonesia	3,127,017	100,326

Source: Prepared by the author based on Ministry of Finance trade statistics.

However, LNG shipments to Japan have already been forced to adopt alternative routes for reasons unrelated to developments in the Strait of Hormuz. Traditionally, LNG imports from the United States have largely followed a route transiting the Panama Canal and crossing the Pacific Ocean. In recent years, however, navigation through the Canal has been restricted due to declining water levels associated with climate change and other factors. As a result, routes passing through the Atlantic Ocean and onward via the Suez Canal and the Red Sea have been adopted. Yet even this route has been disrupted, as vessels have been compelled to divert due to attacks by Houthi forces based in Yemen. Consequently, LNG shipments are now being transported to Japan via a much longer route around the Cape of Good Hope in South Africa, taking more than one month to complete the journey (see Figure 4).[8]

Figure 4: LNG Transportation Routes from Major Import Sources



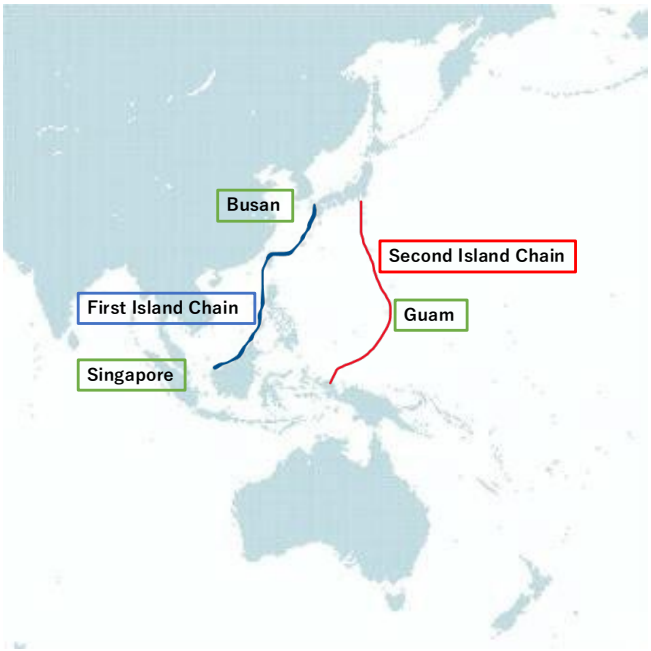
Source: Prepared by the author.

Procurement from Australia and Southeast Asian countries passes through the South China Sea and the Bashi Channel. Since LNG imports from the United States also ultimately transit these same waters, a Taiwan contingency would necessitate further rerouting. Among the available routes, the only one that is relatively short and expected to remain largely unaffected by potential conflicts in the foreseeable future is that for Canadian LNG, imports of which commenced in June 2025 (see the green line in Figure 4).

4. Ensuring Maritime Transportation in the Event of a Taiwan Contingency

Considerations of rerouting in the event of a Taiwan contingency depend on the extent to which China's First and Second Island Chains—established to secure maritime interests and prevent U.S. military access—would be affected (see Figure 5). If the situation were limited to a maritime blockade of Taiwan, it is assumed that navigation would remain possible in the waters between the First and Second Island Chains. On the other hand, if China were to pursue the unification of Taiwan through military force and expand its operations significantly beyond the First Island Chain, vessels would be required to detour as far as the vicinity of Guam.

Figure 5: China's First Island Chain and Second Island Chain



Source: Prepared by the author.

However, the increase in transportation costs resulting from detours and extended voyage times is not particularly significant. For example, the average price of LNG imports to Japan (as of December 2024) is USD 11.97 per MMBtu[9] (approximately 0.20–0.25 tons).[10] By contrast, even for LNG transported from the United States—which currently requires the longest shipping time—the transportation cost is estimated at around USD 0.9 per MMBtu, amounting to less than 10 percent of the LNG commodity price.[11] Thus, even if a contingency were to arise around Taiwan, as long as the Strait of Hormuz remains operational, it would not be impossible to achieve energy security—defined by the International Energy Agency (IEA) as "the uninterrupted availability of energy sources at an affordable price"[12]—for both crude oil and LNG.

In contrast, impacts on container shipping would be unavoidable. As noted earlier, almost none of the largest class of container ships (approximately 24,000 TEUs and around 400 meters in length) can call at Japanese ports due to constraints such as water depth and crane height limitations.[13] As a result, a system has become established in which cargo is transshipped via nearby international hub ports: imports are transferred to smaller container vessels for shipment to Japan, while exports are first transported on smaller vessels and then loaded onto larger ships.[14] As shown in Table 3, these hub ports are concentrated in regions where China serves as the center of global logistics, with Singapore and Busan in South Korea also occupying leading positions worldwide. At present, Japan's highest-ranked port, the Port of Tokyo, is only ranked 46th. In the event of a Taiwan contingency, Japanese trade would

obviously be unable to transit through Chinese ports, and if Chinese naval vessels were to operate beyond the First Island Chain, calls at Busan could also become difficult. Moreover, there is no guarantee that the Port of Singapore would be able to maintain normal operations. Consequently, not only Japan but global logistics as a whole would likely fall into disruption.

Table 3: Container Throughput by Port Worldwide

Rank	Port (Country)	Throughput (10,000 TEUs)
1	Shanghai (China)	4,915
2	Singapore	3,901
3	Ningbo-Zhoushan (China)	3,530
4	Shenzhen (China)	2,988
5	Qingdao (China)	2,877
6	Guangzhou (China)	2,541
7	Busan (South Korea)	2,303

Source: Prepared by the author based on the Ministry of Land, Infrastructure, Transport and Tourism, "Global Container Port Throughput Rankings." (in Japanese).

Furthermore, it is highly likely that the supply of goods from China would be completely disrupted. A wide range of resources and components—such as rare earth elements—remain heavily dependent on China, and it is virtually certain that maintaining Japan's socio-economic activities would become exceedingly difficult under such circumstances.

5. Conclusion

In light of the current state of Japan's maritime transportation and the crises that may arise in the future, there is a clear need—much like the Total War Research Institute introduced earlier—to conduct repeated simulations on securing maritime transportation and the supply of goods through coordinated public–private efforts, incorporating the expertise of private-sector actors directly engaged in operations, and to translate these into concrete policy measures.

While diversification of shipping routes and sources of procurement is essential, it cannot be achieved overnight. Container shipping remains highly susceptible to developments at neighboring hub ports, making the situation structurally vulnerable. Innovative solutions will therefore be indispensable to overcome these challenges. At the same time, for critical resources necessary to sustain socio-economic activities, such as rare earth elements, steady efforts must be made to diversify procurement so as to avoid excessive dependence on any single country or region, thereby enhancing resilience against potential disruptions. Drawing lessons from the present Hormuz Strait crisis, Japan must address these challenges with a strong determination.

[1] Agency for Natural Resources and Energy, "Measures Concerning Oil and Related Products in Light of the Situation in the Middle East." (in Japanese)
https://www.enecho.meti.go.jp/category/others/energysecurity/index.html

[2] Naoki Inose, Showa 16-nen Natsu no Haisen (The Defeat of the Summer of 1941, New Edition), Chuko Bunko, June 2010, pp. 153–154.

[3] Imabari Shipbuilding Co., Ltd., "The 24,000 TEU-Class Container Ship 'ONE INFINITY' Receives the Ship of the Year 2023 Award," (in Japanese) May 22, 2024.
https://www.imazo.co.jp/news/240522/

[4] U.S. Energy Information Administration (EIA), "Amid regional conflict, the Strait of Hormuz remains critical oil chokepoint," June 16, 2025.
https://www.eia.gov/todayinenergy/detail.php?id=65504

[5] Takahide Kiuchi, "Takahide Kiuchi's Global Economy & Policy Insight: Will Bottlenecks in Petroleum Products Persist Despite Progress in Alternative Procurement?" (in Japanese) Nomura Research Institute, April 13, 2026.。
https://www.nri.com/jp/media/column/kiuchi/20260413_2.html

[6] For example, amid concerns over a shortage of naphtha, TOTO Ltd., a major housing equipment manufacturer, temporarily announced a suspension of new orders for prefabricated bathroom units. See The Asahi Shimbun, "TOTO to Suspend Orders for Unit Bathrooms: Naphtha Shortage Following the Closure of the Strait of Hormuz," (in Japanese) April 13, 2026.
https://www.asahi.com/articles/ASV4F2FS7V4FULFA01MM.html

[7] Agency for Natural Resources and Energy, Energy White Paper 2025: Section 3, Trends in Primary Energy (in Japanese)
https://www.enecho.meti.go.jp/about/whitepaper/2023/html/2-1-3.html

[8] Author, "The importance of shipping routes thrown up by the Panama Canal," OPRI Perspectives, April 11, 2025.
https://www.spf.org/opri/en/global-data/report/perspectives/prsp_032_2025_kobayashi_en.pdf

[9] MMBtu is a unit of heat (energy) used in international LNG transactions, representing one million British thermal units (Btu). It is equivalent to approximately 0.20–0.25 tons.

[10] Japan Organization for Metals and Energy Security (JOGMEC), "Trends in Natural Gas and LNG Prices," (in Japanese) January 2025.

https://oilgas-info.jogmec.go.jp/nglng/1007905/1010385.html#:~:text=%E8%B2%A1%E5%8B%99%E7%9C%81%E8%B2%BF%E6%98%93%E7%B5%B1%E8%A8%88%E9%80%9F%E5%A0%B1,94%2C607%E5%86%86%E3%81%A8%E3%81%AA%E3%81%A3%E3%81%9F%E3%80%82

[11] Author, "Alaska Gas Field Development and Japan: Does It Contribute to Strengthening Energy Security?" (in Japanese) International Information Network Analysis (IINA), September 4, 2025. In the preparation of this paper, estimates were requested from Hiroshi Hashimoto, Senior Specialist at the Institute of Energy Economics, Japan.
https://www.spf.org/iina/articles/yuki_kobayashi_21.html

[12] IEA "Glossary: Energy Security,".
https://www.iea.org/glossary

[13] Calls by the largest class of container ships (approximately 24,000 TEUs) require port facilities with deeper water depths of around 18 meters than usual, and such calls in Japan have been limited to only a few ports, such as the Port of Yokohama. See, for example, The Japan Maritime Daily Online, "Arrival at Yokohama: The Largest Container Ship Ever to Call at a Japanese Port, the 24,000 TEU-Class 'MSC Isabella,'" March 16, 2021 (subscriber-only content).

[14] Yuji Takeuchi, Eung-jin Lee, et al., "An Analysis of Japan's Maritime Logistics and Port Policy: Focusing on Maritime Logistics in Japan and South Korea," (in Japanese) Journal of Intelligence Science in Local Research, Vol. 1, 2024.
https://www.jstage.jst.go.jp/article/jislr/1/2/1_7/_pdf/-char/en