NIDS 防衛研究所 National Institute for Defense Studies
Tokyo Japan
NIDS Commentary
No. 324 May 28, 2024

Ship Logistics During the Russo-Japanese War

——Rice Balls Were Served for a Post-Victory Dinner

Research Fellow, International Conflict Division, Center for Military History ISHIHARA Akinori

Introduction

May 27 was once observed in Japan as "Navy Day" to commemorate the country's victory against Russia in the Battle of Tsushima, which was fought from May 27 to 28, 1905 (Meiji 38). During the Russo-Japanese War, the Imperial Japanese Navy was the entity that secured the logistics of the Imperial Japanese Army forces deployed on continental Asia. The Battle of Tsushima was a decisive victory for Japan that splendidly demonstrated the significance of the Imperial Japanese Navy, which had been developed with a great deal of expense and effort. It proved to be the ultimate stage where the Combined Fleet led by TOGO Heihachiro performed its role with unprecedented perfection. This perfect victory by the Combined Fleet was secured through the logistic functions created by the Imperial Japanese Navy itself.

This paper introduces the logistics during the Russo-Japanese War of the Imperial Japanese Navy, which has been praised by some for its ability to prepare the ultimate stage for the decisive phase of the war. It should be noted that the term "logistics" lacks a universally agreed-upon definition. Therefore, I will first discuss the concept of military logistics related to the navy and then introduce the level of warship technologies as well as the Imperial Japanese Navy's logistics at the time of the Russo-Japanese War, with particular emphasis on the food supply functions.

Concept of military logistics related to the navy

In June 1953, retired Rear Admiral Henry E. Eccles, U.S. Navy, published a paper in the journal *Proceedings* entitled "Logistics: What Is It?"[1] In his paper, Eccles, who is considered the father of U.S. naval logistics, introduced *Pure Logistics: The Science of War Preparation*, a book that is still read today as a classic of military logistics theory.[2] Published in 1917 by Lieutenant Colonel George C. Thorpe, U.S. Marine Corps,

Pure Logistics is known as the first endeavor to systematically develop the concept of naval logistics. Thorpe likened war to theater, stating, "Logistics furnishes the stage management, accessories, and maintenance."[3] No matter how great the star actors may be, they can only perform on a suitable stage. Thus, military logistics plays the role of setting the means that can be taken in war. In a narrow sense, military logistics refers to the various functions that directly support the active forces, such as supplies, construction, repairs and maintenance, and transportation. But in a broader sense, military logistics encompass a wide range of functions, including force building and the military industry on a national scale. Therefore, the concept of military logistics has an extremely wide range due to factors such as differences in the positions of those who use the term and technological advances. The functions that comprise military logistics essentially keep changing from day to day in response to the needs of the times. In addition, it can be said that the functions to be focused on and their scale vary depending on the perspective of warfare, such as strategic or tactical perspectives, and also on the nature of the war, such as whether it is an expeditionary war or not. The U.S. military frequently revises its joint logistics doctrine, and it is believed that the doctrine is revised to reflect and follow the ever-changing status of various logistics functions in accordance with the situation.[4] Thus, it can be said that, when looking at individual functions, the concept of military logistics is very broad, vague, and constantly changing. That is why Thorpe's words from 100 years ago still have universal value today.

Generally speaking, the operation of an army unit requires not only securing an enormous number of personnel, but also the preparation of a vast array of supplies, including fuel, ammunition, and provisions, as well as securing constant transportation to the active units. It is said that Antoine-Henri Jomini was the first to posit the concept of logistics. In his *Précis de l'art de la guerre* (Summary of the art of war) written in 1838, Jomini described the concept of logistics derived from his military experience as a member of the staff of the Grande Armée under Napoleon. Even when considered in a narrow sense, army logistics are a huge undertaking, and especially in the case of a foreign expedition by a field army that mobilizes an enormous number of soldiers, there will be an extreme increase in their scale. It was natural that the Imperial Japanese Army, which had been oriented toward foreign expeditions since the Satsuma Rebellion (1877) and gained full-fledged experience in this area during the First Sino-Japanese War (1894-1895), naturally accepted the concept of logistics, referring to it as *heitan* in Japanese.

In contrast to "heavy" army logistics, naval logistics are generally said to be "light." Warships that make up naval forces are mobile vessels with their own supplies of fuel, ammunition, and provisions. Due to their characteristics, it is essential to establish a permanent base to serve as the hub for logistics functions. Among the various functions, the preservation of shipbuilding, repair, and maintenance functions requires the possession of industrial capabilities, as exemplified by shipyards. Navies, which are groups of mobile units that have a certain amount of supplies of their own, have high readiness, and do not require as high a level of preparation time or scale as armies from the time of the decision to operate a unit to the actual unit mobilization. In addition, by replenishing fuel, ammunition, provisions, and other necessities consumed by warships near operational maritime areas, it is relatively easy to extend the duration of operations, albeit for a limited time. Today, technological advances have made it possible for warships to receive supplies at sea during navigation. Even before these technologies were fully implemented, it was

easy to establish forward bases that served supply functions by loading various supplies onto ships and moving them near operational areas. In a narrower sense, naval logistics are relatively "light" as long as they operate within the range accessible from existing bases.

However, in the case of a transoceanic offensive that would make it impossible to rely on existing bases, naval logistics would expand in scale in one fell swoop. To support construction, repair, and maintenance functions, which are dependent on permanent land facilities like shipyards, during transoceanic offensive operations, a large number of floating docks and repair ships equipped with these functions are necessary. This alone requires a substantial budget and personnel investments.[5] In addition, transoceanic offensive operations require maintaining mobile onboard medical capabilities on hospital ships, preparation of vast quantities of fuel, ammunition, provisions, spare parts, and other supplies for replenishment functions, and the organization of transport functions involving many transport vessels to carry the vast quantities of supplies. Thus, a massive scale of logistics is required for transoceanic offensives, and the concept must be understood broadly to include force building and the military industry on a national scale.

Warfare is greatly influenced by the progress of technology over time, and the quality and quantity of materials required for military operations have increased significantly in line with technological advances. It can be said that technology even has a comparatively large impact on relatively "light" naval logistics, given that the warships that comprise naval forces are themselves sophisticated industrial products.

Warship technology levels during the Russo-Japanese War

From the 19th to the 20th century, warship technologies underwent rapid innovation, transitioning quickly from the age of wind-powered wooden sailing warships since the Age of Discovery to the age of steel warships equipped with steam engines. At the beginning of the 20th century, when the Russo-Japanese War was fought, aircraft and submarines were being developed but had not yet been deployed in battle. The Russo-Japanese War was thus the last conflict fought in two dimensions.

The hulls of the main navy warships, namely battleships and armored cruisers, increased in size to exceed a standard displacement of 10,000 tons. Although sailboats and motorized sailboats were still used for some civilian merchant vessels, naval warships were fully motorized. While fast warships like destroyers could reach speeds of 30 knots, the battleships which were the main navy warships could not exceed 20 knots, with fleet speeds limited to about 15 knots. Nearly all of these warships were powered by steam reciprocating engines, using solid fuels such as coal and lump charcoal as the heat source for their steam

Lump charcoal (Collection of the Japan Maritime Self-Defense Force (JMSDF) 2nd Service School)

generating boilers. Refueling at sea during navigation was impossible, so the heavy solid fuel had to be loaded onto warships manually from alongside coal ships, requiring calm seas for these operations. Consequently, refueling was carried out while stopped at anchorages or other places, forcing people to work long hours covered in dust.

Postcard showing coal loading (Collection of the Military Archives, Center for Military History, National Institute for Defense Studies (NIDS))

In terms of armaments, battleships were equipped with various forms of artillery, the largest being 12-inch (30 cm) cannons, and torpedoes and mines were already in use as underwater weapons. With the exception of some optical equipment, fire command equipment was rudimentary, and there was no radio equipment other than radio communication, which had only just been put to practical use. As a result, naval engagements were limited to visual range.

Both Russian and Japanese fleets used generally standardized shipboard artillery. Most of the artillery on Japanese warships was made in the United Kingdom, and the ammunition used was of the same standard as that of the British Royal Navy, the strongest navy in the world and Japan's partner under the Anglo-Japanese Alliance.

Although refrigeration and freezing equipment had been invented to preserve the daily provisions consumed by crews, the installation of such equipment on warships was only just beginning.[6] While preserved foods like canned goods were in use, preserving fresh foods was a major challenge. There were also no dedicated mess halls for crew members, so meals were distributed and eaten in living quarters.

The living space allotted to each crew member was extremely small, and crew members slept in hammocks that were set up daily in their quarters. Steam-powered ships had hot exhaust stacks, steam pipes, and other heat sources running throughout, and although ventilation equipment was in place, shipboard air conditioning was not yet available. As a result, long deployments, especially in tropical waters, caused extreme fatigue among crews.[7]

The Imperial Japanese Navy's logistics during the Russo-Japanese War

The naval battles of the Russo-Japanese War were essentially battles to secure logistics for the Imperial Japanese Army deployed on continental Asia. The main theater of operations extended from the waters around the Japanese mainland to the Yellow Sea, covering the maritime routes to the continent. Because this main area fell within the operational range of existing bases, the Imperial Japanese Navy was able to rely heavily on the logistical functions of various bases on the Japanese mainland, which had been

developed over 50 years since the country's opening to the world, with a large amount of personnel and budget.

During the Russo-Japanese War, the Imperial Japanese Navy made full use of the logistical functions, including for supplies, construction, repairs, and maintenance, of its bases at the Yokosuka, Kure, Sasebo, and Maizuru naval districts. Sasebo, the westernmost naval district, was used as the primary base of operations, and fuel, ammunition, provisions and other necessities were supplied to warships during operations at forward bases established near the operational maritime area with Sasebo as the base. At the start of the war, the Imperial Japanese Navy occupied Jinhae Bay on the southern coast of the Korean Peninsula, setting up a "temporary base defense corps" to secure its forward bases. The Imperial Japanese Navy established forward bases near operational maritime areas, following the progression of operations. By the end of the war, it had set up forward bases at nine occupied locations across Korea and the Liaodong Peninsula, including at Asan and the Changshan Islands, as well as forward bases set up based on existing naval facilities like the strategic ports on Tsushima and the Penghu Islands.[8]

Forward supply operations at forward bases were carried out by special-purpose warships, modified from requisitioned Japanese merchant vessels or other merchant vessels captured during the war. As special-purpose warships tasked with supply functions among the logistics functions, 13 coal ships for fuel resupply, four water supply ships for providing fresh water for steam engines and drinking, two supply ships for food resupply, and two ordnance supply ships for ammunition resupply were each modified and deployed for their respective missions.[9]

In addition, as special-purpose warships tasked with logistics functions at forward bases, three repair ships provided maintenance functions, two hospital ships handled medical functions, and three salvage ships managed salvage functions, while 16 transport ships were used for transportation functions. Moreover, five communications ships were tasked with communication functions, and two submarine cable-laying ships were used to establish communication lines to forward bases such as Jinhae Bay. During the Russo-Japanese War, the Imperial Japanese Navy also converted and deployed 13 auxiliary cruisers, five torpedo boat tenders, 21 auxiliary gunboats, five minelayers, and one fleet defense ship as special-purpose warships.[10]

On March 16, 1904, during the ongoing operations for the blockade of Lushun (Port Arthur), the Combined Fleet issued the "Regulations on the Distribution of Military Supplies and Communication Delivery at Forward Bases," delegating various supply and communication duties at the forward bases to the port operations head of the temporary base defense unit established at the forward base. These regulations established procedures for requisitioning and reporting supplies such as fuel (coal), fresh water, provisions, and clothing, as well as communications procedures for handling telegraphs and mail. This enabled the smooth forward supply operations adapted to the constantly changing conditions due to unit operational requirements.[11]

The Imperial Japanese Navy's food logistics during the Russo-Japanese War

Among the various logistics functions established at forward bases by the Imperial Japanese Navy, this section focuses on food supply functions as an example.

During the Russo-Japanese War, the staple foods of Imperial Japanese Navy warship crew members consisted of bread (dough) and a mixture of rice and barley in a 1:2 ratio, aimed at preventing beriberi (thiamine deficiency). The rice and barley mixture and other dishes including soup were cooked onboard, but bread was not baked on the warships. Instead, it was baked by the clothing and provisions sections of the naval districts' accounting departments and then supplied to the warships. Food supplies were categorized into non-perishable "storable provisions" like rice and barley, dried foods, and canned goods, and perishable "fresh provisions" like vegetables, fish, and meat, which were procured by the accounting departments and supplied to the warships.[12] As a substitute for bread as a main staple during voyages, warships were also supplied with *kanpan* (hardtack), either baked by the clothing and provisions sections of the accounting departments or procured from external suppliers.

During the Russo-Japanese War, the central organization for food supply functions was the Navy Ministry's Accounting Bureau. The Accounting Bureau allocated funds disbursed from extraordinary military expenses to the accounting departments of each naval district. It also frequently coordinated with the accounting departments, the Combined Fleet, and others to ensure the procurement of supply provisions, the management of inventory and supplementing of spoiled or damaged goods, and the response to requests from units for increased food supplies, thereby fully fulfilling its role as the logistics hub. To enable the accounting department of the Sasebo Naval District, a major base, to concentrate its efforts on supply operations to the warships, the Accounting Bureau directed other naval district accounting departments to procure various storable foods, such as canned fish and meat, as well as bake and procure *kanpan* hardtack within their own units. This enabled effective nationwide management.

The accounting department of the Sasebo Naval District was central to the implementation of food supply operations for warships. Fresh provisions for forward supply to the warships were procured in Sasebo. Along with the fresh provisions delivered by contractors, bread baked by units and storable provisions procured and transported from various locations were loaded onto supply ships in Sasebo and supplied to warships during operations. The Sasebo accounting department sought to optimize the food supply system in response to the progress of the war, such as by outsourcing bread baking to contractors at the bread-making facilities seized during the occupation of Dalian on May 30, 1904. It devoted its full efforts to meeting the supply demands of the units.

The armament and equipment diagram of the supply ship *Matsue Maru*, which was responsible for the forward supply of provisions, shows that a "slaughterhouse" for processing fresh meat was installed on the upper deck. At that time, when refrigeration and freezing facilities were underdeveloped, chickens and cattle were loaded onto the supply ships while still alive and processed for their meat onboard. However,

the supply volume was insufficient to meet the fleet's supply requirements.[13] Even during the few days of transport voyages from Sasebo to forward bases, it was difficult to preserve fresh provisions such as bread, fresh vegetables, meat, and fish on board. Imported and domestic canned goods like fish and beef were procured and supplied to warships as storable provisions, but there was a high risk of food poisoning from such provisions. Therefore, if possible, warships were allowed to make direct purchases of fresh provisions, such as fresh fish, at forward bases.

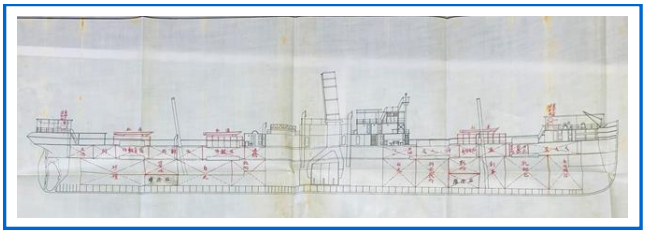

Diagram of the armaments and equipment of *Matsue Maru* (Collection of the Military Archives, Center for Military History, NIDS)

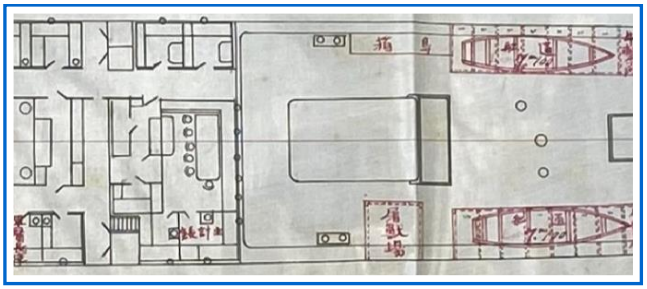

Diagram of the armaments and equipment of *Matsue Maru*, with enlarged view of relevant parts (Collection of the Military Archives, Center for Military History, NIDS)

As an example of the operations of supply ships responsible for forward supply, I would like to introduce an overview of the 36th transport operation of the supply ship *Fukuoka Maru* from August 11 to 13, 1904, based on a report by lieutenant supply corps officer HATANAKA Yasujiro. Hatanaka, who was an officer of the clothing and provisions section of the Sasebo accounting department, was appointed as the supply corps officer of the *Fukuoka Maru*, which was in port at Sasebo on August 9. After Hatanaka's appointment, the first transport operation was scheduled to depart for the forward base of Tsushima on August 12, but due to the Battle of the Yellow Sea on August 10, the departure was moved forward, and the ship left Sasebo at 6 p.m. on August 11 after completing an emergency loading of provisions. At that time, the fresh provisions loaded on the *Fukuoka Maru* were approximately 1.6 tons of bread (421,100 *monme* (a traditional Japanese unit of weight measuring 3.75 grams), 40 live cattle, 150 kilograms of eggs (40,000 *monme*), 5.4 tons of potatoes (1.4 million *monme*), 274 kilograms of onions (73,000 *monme*), and 326 kilograms of pumpkins (87,000 *monme*), in addition to 26.3 tons of white rice (seven million *monme*) and 11.3 tons of ground barley (three million *monme*) as storable provisions. *Fukuoka Maru* entered Osaki Bay, the forward base of Tsushima, at 7:20 a.m. on August 12 the following day, and supplied provisions to the ships in port. At 10 a.m., it moved to Takeshiki Naval Station Office in Tsushima and, after completing the supply of provisions to the ships in port, departed the port at 6:30 p.m. The *Fukuoka Maru* then returned to Sasebo at 6:40 a.m. on August 13 the following day. During this operation, the *Fukuoka Maru* supplied fresh provisions, including fresh meat from three cattle, to the armored cruisers *Izumo*, *Tokiwa*, and *Asama*, and the cruiser *Otowa*, which were anchored at Osaki Bay. At Takeshiki Naval Station Office, it supplied fresh provisions to the cruiser *Chitose*, which was anchored there. There was low consumption of fresh provisions during this operation, and no storable provisions were supplied, due to the fact that the departure times of the ships in port were approaching because of the Battle of Ulsan on August 14, two days later, and the number of ships in port was fewer than initially planned due to the operational needs

of the Combined Fleet. As a result, the *Fukuoka Maru* handed over the remaining 37 live cattle to the supply corps officer of Takeshiki Naval Station Office for supply purposes and, upon returning to Sasebo, transferred the remaining fresh provisions to the clothing and provisions section of the accounting department.

At the start of the Russo-Japanese War, the Imperial Japanese Navy prepared two special-purpose food supply ships, the *Matsuyama Maru* and *Fukuoka Maru*, and aimed to conduct forward supply operations approximately every six days. However, contrary to initial expectations, the fleet was often dispersed during operations, so the two supply ships were insufficient. Therefore, from August 1904 onwards, the special-purpose transport ship *Kotohira Maru* was also assigned to food supply duties, and other special-purpose ships were also occasionally used for food transport. However, due to inadequate facilities for preserving provisions, these ships were unable to carry sufficient supplies. In this way, the shortage of food supply ships was recognized as a significant issue in the Russo-Japanese War. However, the first fleet food supply ship, *Mamiya*, was not commissioned until 1924, and the second, *Irako*, was not commissioned until December 5, 1941, just before the outbreak of the Pacific War. This reflected the Imperial Japanese Navy's failure to address logistics shortcomings in its subsequent policies after its splendid victory at the Battle of Tsushima.

The food supply operations of the battleship *Mikasa* during the Russo-Japanese War

Using the example of the battleship *Mikasa*, the flagship of the Combined Fleet, I would like to introduce the food supply operations of individual ships which were at the forefront of the Imperial Japanese Navy's food logistics during the Russo-Japanese War.

After participating in the Port Arthur blockade operation in 1904, from May 10 the *Mikasa* anchored at the forward base of the Changshan Islands, established south of the Liaodong Peninsula, where maintenance work was conducted on various parts of the ship. During its stay at the Changshan Islands, the menu of the *Mikasa* on May 30 was as follows. For breakfast, the staple food was rice and barley, with miso soup with dried *daikon* radish as well as tea. For lunch, the staple food was rice and barley, with stewed canned salmon and *hijiki* seaweed, barley tea, and pickled vegetables. For dinner, the staple food was *kanpan* hardtack, with fresh roast meat (beef and potatoes), barley tea, and mustard. The menu of the day was considered standard for time while anchored at a forward base with scarce fresh food and can be said to represent food supply operations of a ship during a lull in battle.

The risk of food poisoning caused by nascent food preservation technology was high at the time. The *Mikasa* had 156 people suffer food poisoning due to canned salmon, which had spoiled as it was after its

expiration date, served for lunch on May 30. Additionally, between May and June 1904, 123 food poisoning cases arose on the armored cruiser *Asama*, 77 on the *Yakumo*, 17 on the auxiliary cruiser *Tainan Maru*, and 52 on the battleship *Asahi*. The cause on the *Asama* was canned salmon, the *Yakumo* was fried tofu, the *Tainan Maru* was moldy bread. The cause on the *Asahi* was unspecified but reported as either *somen* noodles or canned salmon. Subsequently, cases of food poisoning continued to occur one after the other on the battleship *Shikishima*, the armored cruiser *Nisshin*, the cruisers *Takasago*, *Itsukushima*, *Kasagi*, and *Akashi*, the gunboat *Akagi*, the special-purpose torpedo boat tender *Nikko Maru*, and others.

Thus, the food supply operations for warships during the Russo-Japanese War were conducted under conditions where the risk of food poisoning could not be eliminated via technology, and naval operations at the time had to be carried out under such difficult circumstances. Therefore, the *Mikasa* made every effort to serve heat-treated dishes such as boiled dishes, miso-based stews, cutlets, roast meat, stews, curry and rice, and grilled meat, to maintain the health and raise the morale of crews.

Large *kanpan* similar to the standard of the time (courtesy of the JMSDF's Repair and Supply Facility KURE)

As an example of food supply operations during combat, I would like to introduce the food delivery during combat of the *Mikasa* during the Battle of Tsushima. On May 27, 1905, at 5:05 a.m., the *Mikasa*, which was anchored at the forward base in Jinhae Bay, received a report of the sighting of the Russian navy's Baltic Fleet. The *Mikasa* immediately departed. After approaching the enemy fleet at 12:38 p.m., the crew members were ordered to assume battle stations while closing off sections of the ship, and meals were subsequently combat rations. During the battle on May 27, *kanpan* hardtack and kudzu soup were prepared at various locations on the upper, middle, and lower decks of the *Mikasa*. The crew was allowed to eat and drink as needed, and rice balls were served as combat rations for dinner at 5:00 p.m.[14] On this day, the *Mikasa* returned to regular food supply operations after the order to assume combat stations was downgraded to patrol stations due to a pause in combat during the night at 8:00 p.m. In addition, critically wounded personnel were provided with food tailored for patients such as eggs, condensed milk, and porridge.

Conclusion

It is said that the Imperial Japanese Navy during the early Showa period (from 1926) through World War II was constrained by its experience of victory in the Russo-Japanese War. One of the major factors that led to the neglect of logistics by the Imperial Japanese Navy during this period was that the major theaters of the Russo-Japanese War were within operational range from bases in mainland Japan.

Former JMSDF Chief of Staff NAKAMURA Teiji, who experienced defeat as a navy captain, stated that logistics education was not conducted at the naval academy which trained junior operations officers of the Imperial Japanese Navy.[15] When the JMSDF resumed senior executive education after the war, it included the U.S. Navy's logistics concept in the curriculum from the first term of the education course.[16] This fact suggests that the JMSDF leadership at the time, who had experienced defeat as former Imperial Japanese Navy personnel, shared a common understanding that one of the causes of defeat was the lack of a concept of logistics.

Although interest in logistics as a concept was low, having various functions to ensure logistics was essential for the Imperial Japanese Navy. In particular, ensuring maintenance functions and shipbuilding capabilities required industrial capabilities, and the Imperial Japanese Navy invested significant expenditures and personnel to acquire them, driving the progress of industrial technology in modern Japan. Moreover, the technological and human resources bequeathed by the Imperial Japanese Navy's logistics departments also played a significant role in Japan's post-war economic development.

The Russo-Japanese War was a battle for national survival. Although it arguably ultimately left a negative legacy, it is undeniable that the logistics departments of the Imperial Japanese Navy at the time supported the force operations with all their capabilities and thus created the conditions for victory in the Battle of Tsushima.

[1] Henry E. Eccles, "Logistics—What Is It?", *Proceedings* (June 1953), https://www.usni.org/magazines/proceedings/1953/june/logistics-what-it.

[2] The Japanese title (*Junri Rojisutikusu - Sensō Junbi no Gakumon*) is from a translation by the JMSDF Command and Staff College. *Pure Logistics* is still listed as a recommended book in the U.S. Naval War College Learning Commons.

[3] George C. Thorpe, *Pure Logistics: An NDU Press Edition, 1986* (Washington, D.C.: National Defense University Press), 2.

[4] The current U.S. joint doctrine (Joint Publication 4-0) was revised on July 23, 2023, and has been frequently updated since 1995, with revisions in 2000, 2008, 2013, and 2018.

[5] The logistics of the U.S. Navy during World War II against Japan serve as a representative example. However, it is impossible to have all maintenance and repair functions onboard ships, so the maintenance functions at sea are limited to emergency repairs.

[6] Nihon Hakuyō Kikan-shi Henshū Iinkai Hoki Senmon Iinkai [Auxiliary Machinery Experts Committee of the Japanese Marine Engine History Editorial Committee], "Senzen no Hakuyō Hokikai Hattatsu-shi (Sono 1 Kanpan Kikai Sonota)" [The development history of pre-war marine auxiliary machinery (Part 1: Deck machinery and more)], *Nihon Hakuyō Kikai* Gakkaishi [Journal of the Japan Society of Marine Mechanics], vol. 21, no. 6 (June 1986): 39-40.

[7] The Russian navy's Baltic Fleet was forced to undertake an extended voyage under such challenging conditions.

[8] During the Russo-Japanese War, the Imperial Japanese Navy established forward bases in occupied territories in Jinhae Bay, Hatsuko Inlet, Asan, Haeju, the Changshan Islands, the Taedong River, Dalian, Wonsan, and Lushun (Port Arthur). "Gokuhi Meiji 37.8 Nen Kaisen-shi Dai 4 Bu Bōbi Oyobi Un'yu Tsūshin Kan 1" [Top secret sea battle history 1904 & 1905; Part 4: Defense, transportation, and communication; Volume 1], archived in the Collection of the Military Archives, Center for Military History, NIDS, material number: (9) Other: Chiyoda-492.

[9] "Gokuhi Meiji 37.8 Nen Kaisen-shi Dai 6 Bu Kansentei Kan 14" [Top secret sea battle history 1904 & 1905; Part 6: Warships; Volume 14], archived in the Collection of the Military Archives, Center for Military History, NIDS, material number: (9) Other: Chiyoda-528; "Gokuhi Meiji 37.8 Nen Kaisen-shi Dai 6 Bu Kansentei Kan 15" [Top secret sea battle history 1904 & 1905; Part 6: Warships; Volume 15], archived in the Collection of the Military Archives, Center for Military History, NIDS, material number: (9) Other: Chiyoda-529.

[10] Because these special-purpose warships were originally merchant ships with adequate transport capacity, they were assigned to missions as appropriate, and not limited to classification as special-purpose warships.

[11] "Gokuhi Meiji 37.8 Nen Kaisen-shi Dai 8 Bu Kaikei Keiri Kan 3" [Top secret sea battle history 1904 & 1905; Part 8: Accounting and bookkeeping; Volume 3], archived in the Collection of the Military Archives, Center for Military History, NIDS, material number: (9) Other: Chiyoda-552.

[12] "Meiji 31 Nen Tatsukan" [1898 tatsu (navy announcement) completion]" archived in the Collection of the Military Archives, Center for Military History, NIDS, material number: (0) Laws: Tatsu-22.
[13] "Gokuhi Meiji 37.8 Nen Kaisen-shi Dai 7 Bu Imu Eisei Kan 7" [Top secret sea battle history 1904 & 1905; Part 7: Medical affairs; Volume 7], archived in the Collection of the Military Archives, Center for Military History, NIDS, material number: (9) Other: Chiyoda-536.
[14] "Gokuhi Meiji 37.8 Nen Kaisen-shi Dai 7 Bu Imu Eisei Kan 3" [Top secret sea battle history 1904 & 1905; Part 7: Medical affairs, Volume 3], archived in the Collection of the Military Archives, Center for Military History, NIDS, material number: (9) Other: Chiyoda-532.
Combat rations are meals provided when combat stations are activated. The meals are distributed to each combat station position, allowing the crew to eat while remaining at their battle stations. As a result, there is provision of foods that can be distributed to each position, such as bento boxes, rice balls, canned food, and *kanpan* hardtack. Because the meals are distributed while the warship is in a combat deployment with sections of the ship closed off, the establishment of food distribution routes to each position, and the opening and closing of these distribution routes, are carried out under strict control.
[15] TAKAMORI Naofumi, *Nihon Kaigun Rojisutikusu no Tatakai: Kyūryōkan 'Mamiya' kara Mita Hokyūsen no Subete* [The battle of logistics of the Imperial Japanese Navy: All about the supply battle from the perspective of the supply ship *Mamiya*] (Ushioshobokojinshinsha, 2019): 157-161.
[16] Logistics (written with the spelling *rojisuchikku* in Japanese) was written in the detailed course outline for the first-term student curriculum of the JMSDF Command and Staff College, which began in 1955. This indicates that logistics education has been conducted since the establishment of the College. SUZUKI Sobee, *Kikigaki - Kaijō Jieitai Shiwa Kaigun no Kaitai kara Kaijō Jieitai Sōsōki made* [Stories and oral histories of the Japan Maritime Self-Defense Force: From the disbandment of the navy to the early days of the Japan Maritime Self-Defense Force] (Suikokai, 1989): 279-285.

PROFILE

ISHIHARA Akinori

Research Fellow, International Conflict Division, Center for Military History

Field of expertise: History of defense equipment transfers, military logistics history

Planning and Coordination Office

National Institute for Defense Studies
Telephone (direct) : 03-3260-3011
Telephone (general) : 03-3268-3111 (ext. 29177)
National Institute for Defense Studies website: www.nids.mod.go.jp