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The Japanese merchant marine in World War II

Parillo, Mark Philip, Ph.D.

The Ohio State University, 1987

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THE JAPANESE MERCHANT MARINE
IN WORLD WAR II

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of the Ohio State University

By

Mark Philip Parillo, B.A., M.A.

* * * * *

The Ohio State University

1987

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To Marcella,
who made it all possible

1

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TABLE OF CONTENTS

VITA	iii
CHAPTER	PAGE
1. INTRODUCTION	1
2. JAPAN AND TOTAL WAR	21
3. THE JAPANESE MERCHANT MARINE BEFORE WORLD WAR II	56
4. JAPANESE SHIPBUILDING DURING WORLD WAR II	83
5. EMPLOYMENT AND PROTECTION OF THE MERCHANT MARINE IN WARTIME	109
6. ADMINISTRATION AND FATE OF THE MERCHANT MARINE IN WARTIME	151
7. THE JAPANESE NEGLECT OF ANTI- SUBMARINE WARFARE	181
8. SUMMATION	229
BIBLIOGRAPHY	234

CHAPTER 1

INTRODUCTION

As delegates of the Imperial Japanese government signed the surrender documents ending World War II aboard the USS Missouri on September 2, 1945, their nation lay prostrate from as total a defeat as any belligerent has suffered in modern times. Serious scholars, popular writers, and participants have written innumerable books probing the reasons for that catastrophic outcome. Yet few have more than cursorily probed one of the critical elements in the whole Japanese war effort: the merchant marine. The failure of Japan's maritime transport is well known, but the nature and causes of that failure still beg exploration.

Though in explaining Japan's defeat in World War II historians list a wide variety of causes, time and again they point to certain of them as prime factors. Numerical and material inferiority is the most common of all the reasons given. Many also lay the blame on technological deficiencies, inadequacies in intelligence and

counterintelligence, overconfidence, missed tactical and strategic opportunities, geographic overextension because of "victory disease," and the failure to adapt quickly enough to the fast-paced air power and carrier campaigns of the Pacific war. Most at least mention the sad fate of Japan's merchant marine, but none examine the reasons for and full implications of the maritime transport disaster.

Considerations of the material situation are the beginning or eventual focal point of nearly all discussions of World War II in the Pacific. The consensus is that the Allied advantage in production and manpower was decisive once mobilization was fully underway. "Once America's strength developed," wrote Sir Basil H. Liddell Hart, "and Russia survived to develop hers, the defeat of the Axis powers -- Germany, Italy, and Japan -- became certain, as their combined military potential was so much smaller."¹ Some historians drop all qualifications and claim unequivocally that Japan's relatively weak economic strength assured defeat: "Japan had no chance of winning a war against the combined strength of the United States and Great Britain,"² and the United States "defeated the Japanese by superior

¹B.H. Liddell Hart, History of the Second World War, (New York: G.P. Putnam's Sons, 1970), p.711.

²Ito Masanori with Roger Pineau, The End of the Imperial Japanese Navy, (New York: W.W. Norton & Company, Inc., 1956), p.201.

numbers, superior equipment, and superior firepower."³ One writer even described Japan's war potential as "pitifully insignificant."⁴ This is an extreme view, but few histories fail to list Allied material superiority as a major cause of Japan's defeat.⁵

Technological inferiority also unquestionably undermined the Japanese war effort. Though the Imperial Navy in 1941 was unexpectedly more advanced than the Allies in some technical fields, including optics, pyrotechnics, torpedoes, and some aircraft and warship types,⁶ they were behind in most

³Charles Bateson, The War with Japan: A Concise History, (East Lansing: Michigan State University Press, 1968), p.394.

⁴Masuo Kato, The Lost War, (New York: Alfred A. Knopf, 1946), p.157.

⁵C.L. Sulzberger, World War II, (New York: American Heritage Press, 1970), p.116; Martha Bird Hoyle, A World in Flames, (New York: Atheneum, 1970), p.xiii; T. Dodson Stamps and Vincent J. Esposito, Editors, A Military History of World War II, (West Point: United States Military Academy, 1953), pp.188-189; Quincy Howe, Ashes of Victory, (New York: Simon and Schuster, 1972), p.274; Samuel Eliot Morison, Strategy and Compromise, (Boston: Little, Brown and Company, 1958), p.118; and Ronald Spector, Eagle Against the Sun: The American War with Japan, (New York: Macmillan, Inc., 1985), pp.177-178, 560.

⁶Samuel Eliot Morison, The Rising Sun in the Pacific, 1931 - April 1942, Volume III of History of United States Naval Operations in World War II, (Boston: Little, Brown and Company, 1948), pp.23-24; Arthur J. Marder, Old Friends, New Enemies: The Royal Navy and the Imperial Japanese Navy, Strategic Illusions, 1936-1941, (Oxford: Clarendon Press, 1981), p.303; and Stephen E. Pelz, Race to Pearl Harbor: The Failure of the Second London Naval Conference and the Onset of World War II, (Cambridge: Harvard University Press, 1971), pp.30-32.

scientific research. The technological gap only widened as the war progressed. Radar, minesweeping gear, communications equipment, synthetic fuel, and aviation gasoline were just some of the crucial items that were technically deficient.⁷ This contributed significantly to the outcome of some major fleet engagements, such as Leyte Gulf, the Philippine Sea, and others.⁸ Masanori Ito points out that backwardness in radar alone served to negate the excellent night combat capability which the Imperial Navy had obtained only after years of rigorous and dangerous training.⁹ Admiral Nagano

⁷Interrogation of Lieutenant-Colonel Masuda, No.49, United States Strategic Bombing Survey, Record Group 243, United States National Archives; Kyuzo Tamura, History of Japanese Minesweeping, 1937-1947, Minesweeping Division, Sasebo, Second Demobilization Bureau, 1948, p.3; Interrogation of Vice-Admiral Ozawa Jisaburo, No.227, United States Strategic Bombing Survey, Naval Analysis, Interrogations of Japanese Officials, No.72, Volume I, (Washington: United States Government Printing Office, n.d.), p.222; Major-General Okada Kikasaburo, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," War in Asia and the Pacific, 1937-1949, Donald S. Detwiler and Charles B. Burdick, Editors, (New York: Garland Publishing Inc., 1980), p.5; Interrogation of Mr. Hoshino Naoki, No.505, USSBS, RG 243; Interrogation of Major Takahashi T., No.529, USSBS, RG 243; Interrogation of Mr. Takashima, No.128, USSBS, RG 243; and Yomiosa Yoshihiko, Nihon Koku Nenryo Shi, (Tokyo: Yokendo Hakko, 1956), p.22.

⁸Interrogation of Vice-Admiral Ozawa Jisaburo, No.227, USSBS, Interrogations, Vol. I, p.222; Interrogation of Commander Yamaguchi Moriyoshi, No.193, USSBS, Interrogations, Vol. I, p.180; and Hayashi Saburo, in collaboration with Alvin D. Coox, Kogun: The Japanese Army in the Pacific War, (Quantico: The Marine Corps Association, 1959), pp.109-110.

⁹Ito, The End of the Imperial Japanese Navy, p.113.

Asami, the Navy's Chief of Staff for most of the war, listed scientific inadequacy, including civil engineering technology, as the second most substantial reason for defeat.¹⁰ Several Japanese wartime leaders subsequently remarked that the military's failure to properly mobilize the nation's scientific expertise compounded this already serious shortcoming.¹¹

As the full extent of Allied intelligence successes became public in the late 1960's and early 1970's, historians found another major cause of Japan's defeat. Intelligence work never did carry much prestige within the Imperial Navy, and normally communications officers handled it on all but the highest levels. The Combined Fleet, for instance, had just one intelligence officer, and even the Navy's Intelligence Division had less than thirty fulltime members.¹² Nevertheless, Japanese intelligence and counterintelligence activities before the war and in its initial stages had been first rate and helped pave the way for the early

¹⁰Interrogation of Admiral Nagano Asami, No.392, USSBS, Interrogations, Vol. II, p.356.

¹¹Hayashi, Kogun, pp.118-119; Interrogation of Captain Kyuzo Tamura, No.34, USSBS, Interrogations, Vol. I, p.18; and Togo Shigenori, The Cause of Japan, (New York: Simon and Schuster, 1956), p.127.

¹²Marder, Old Friends and New Enemies, p.334.

victories.¹³ Some intelligence, such as radio traffic analysis and information on American submarine locations, remained reliable,¹⁴ but most estimates of Allied capabilities and intentions became "worse than weather forecasts."¹⁵ The Southern Army even reduced its intelligence unit to an appendage of the operations branch because its staff believed there was no need for it after the early conquests. Reactivation of the intelligence unit in 1944 could not compensate for the loss of nearly two years of information about coming Allied offensives.¹⁶ The failure of Japanese counterintelligence was even more significant. Security measures were satisfactory in the initial operations but subsequently proved inadequate. There was much more carelessness before the Midway operation than before Pearl Harbor, for instance, and one seaplane squadron even requested that its mail be

¹³See, for instance, Yokoi Toshiyuki, "The Japanese Version of the Black Chamber (The Story of the Naval Secret Chamber)," in Burdick and Detwiler, War in Asia and the Pacific, 1937-1949, Volume IV; and Takeo Yoshikawa with Lieutenant-Colonel Norman Stanford, "Top Secret Assignment," United States Naval Institute Proceedings, Volume 86, No.12, (December, 1960), pp.26-39.

¹⁴Interrogation of Commander Okumiya Masatake, No.75, USSBS, Interrogations, Vol. I, p.82; and Interrogation of Lieutenant-Commander Yatsui Noriteru, No.159, USSBS, Interrogations, Vol. I, p.161.

¹⁵Interrogation of Vice-Admiral Fukudome Shigeru, No.503, USSBS, Interrogations, Vol. II, p.514.

¹⁶Hayashi, Kogun, p.45.

forwarded to Midway after mid-June.¹⁷ American radio traffic analysts and codebreakers provided a torrent of information on Japanese fleet and merchant ship movements as well as unit strengths and dispositions. The compromise of Japanese plans was a crucial element in the Battle of Midway, the aerial assassination of Admiral Yamamoto, and many other operations.¹⁸

Many writers also point to Japanese overconfidence as a cause of defeat.¹⁹ Hayashi Saburo has claimed that military hubris began with Japan's victory over Russia in 1905, which caused an overreliance on mental or "spiritual" factors in modern warfare.²⁰ Most Japanese military men accepted the

¹⁷Fuchida Mitsuo and Okumiya Masatake, Midway: The Battle That Doomed Japan, Edited by Clarke H. Kawakami and Roger Pineau, (Annapolis: United States Naval Institute Press, 1955), p.8; and Agawa Hiroyuki, The Reluctant Admiral: Yamamoto and the Imperial Navy, (Tokyo: Kodansha International, Ltd., 1969, 1982), p.303.

¹⁸Several fine works document the intelligence war, including W.J. Holmes, Double-Edged Secrets, (Annapolis: United States Naval Institute Press, 1979), and Ronald Lewin, The American Magic, (New York: Farrar Straus Giroux, 1982).

¹⁹Lisle A. Rose, The Long Shadow, (Westport: Greenwood Press, 1978), p.65; Hayashi, Kogun, p.23; Basil Collier, The War in the Far East, 1941-1945: A Military History, (New York: William Morrow & Company, Inc., 1969), p.xii; and Ito, The End of the Imperial Japanese Navy, pp.46,61.

²⁰Hayashi, Kogun, pp.2-3,16.

notion of Japanese moral superiority without question.²¹ One naval officer codified the value of intangible factors in the following equation:

$$\text{Force} = \text{Material Strength} \times (\text{Efficiency})^2$$

"Efficiency" in this instance meant better use of weapons due to superior talent, training, and spirit, qualities which the Japanese fighting man, this officer maintained, naturally possessed.²² One result of this kind of thinking was the belief, still widespread among the Imperial Navy in 1943, that a single Zero fighter plane was worth five to ten American fighters, even U.S. Navy Hellcats.²³ This attitude was at least partially a result of a very low opinion of the American fighting man's ability. Americans were by reputation pleasure-seeking and soft, prone to run away at the first sign of trouble.²⁴ Young pilots clamored for action in

²¹See, for instance, Tanaka Shizuichi, "The Way to Sure Victory," Army Officer's Journal, December, 1944, and General Umezu, "Facing the General Decisive Battle," Army Officer's Journal, May, 1945.

²²Chihaya Masatake, "The One Big Battle Idea of the Japanese Navy ('Chihaya's History')," 1947, unpublished manuscript, Naval Operational Archives, pp.14-15.

²³Interrogation of Admiral Fukudome Shigeru, No.524, USSBS, RG 243; Agawa, The Reluctant Admiral, p.342; Okumiya Masatake and Horikoshi Jiro, Zero!, (New York: Ballantine Books, 1956, 1973), p.39; and "Chihaya's History," pp.14-15.

²⁴"Chihaya's History," p.22; Allied Translator and Interpreter Section, Southwest Pacific Area, Enemy Publication No.288, Document No.15807, "Characteristics of Submarines and Anti-Submarine Operations," August, 1942, Naval Operational Archives, p.10; Kato, The Lost War, p.56;

early 1942, for they were desperately afraid that the war would end before they could participate.²⁶ One cabinet member recalls that some government leaders believed in 1942 that Japanese forces might capture Washington, D.C.²⁶ The military in particular refused to believe official American production figures or reports about Allied potential from Japanese personnel in Great Britain or the United States.²⁷ This overconfidence led to many mistakes, from lax communications security to neglect of defenses to logistical inadequacies and offensives conducted with insufficient force.

Errors in strategy, particularly opportunities which the Japanese failed to exploit, are another commonly mentioned cause of defeat.²⁸ One writer summed it up this way: "The

Hayashi, Kogun, p.23.

²⁶Okumiya and Horikoshi, Zero!, p.43.

²⁶Togo, The Cause of Japan, p.230.

²⁷Hayashi, Kogun, p.23; and Agawa, The Reluctant Admiral, pp.325-326.

²⁸Fuchida and Okumiya, Midway, pp.45-46; David A. Thomas, Japan's War at Sea, (London: Andre Deutsch Limited, 1978), p.132; Arthur Bryant, The Turn of the Tide, 1939-1943, (London: Collins, 1957), pp.352,393; Bateson, The War with Japan, p.33; Howe, Ashes of Victory; Rose, The Long Shadow, p.63; Dodson and Esposito, A Military History of World War II, pp.514-516; Ito, The End of the Imperial Japanese Navy, pp.82-83,87,171-173,183; Agawa, The Reluctant Admiral, pp.196,263-264; Okumiya and Horikoshi, Zero!, pp.3-4,171; Rear Admiral Yokoi Toshiyuki, "Thoughts on Japan's Naval Defeat," United States Naval Institute Proceedings, Volume 86, No.10, (October, 1960), p.75; Peter Calvocoressi and Guy Wint, Total War: The Story of World War II, (New York: Pantheon Books, 1972), pp.703-706; John B. Lundstrom, The

history of the war is the chronicle of Japan's lost opportunities..."²⁰ Samuel Eliot Morison went so far as to claim that "stupidity characterized the strategy by which the Japanese Navy was directed,"²¹ and he described this as the single most important factor in the war's outcome.²² The most prominent examples of Japan's missed opportunities are the failure to exploit the successful Indian Ocean raid, the dispersal of forces for the Midway operation when the U.S. carriers were quite vulnerable, the disjointed offensives against the First Marine Division's tenuous foothold on Guadalcanal, and the use of Nagumo's powerful carrier force on secondary tasks when the U.S. Pacific Fleet was at its weakest. Ronald Spector has astutely observed that by its very nature the Allied strategy of a two-pronged offensive in fact created excellent opportunities for Japanese victories through concentrated opposition against one line of advance or the other, notably at Bougainville in November,

First South Pacific Campaign: Pacific Fleet Strategy, December 1941 - June 1942, (Annapolis: United States Naval Institute Press, 1976), p.204; and Paul S. Dull, A Battle History of the Imperial Japanese Navy (1941-1945), (Annapolis: United States Naval Institute Press, 1978), pp.352,354.

²⁰Calvocoressi and Wint, Total War, p.708.

²¹Morison, The Rising Sun in the Pacific, p.27.

²²Morison, Strategy and Compromise, p.118.

1943, and at Biak six months later.³² That the Japanese did not turn these promising situations into victories was due more to their own strategic blundering than to the skill of their opponents.

Not a few historians have pointed out that the Japanese penchant for missing splendid opportunities extended to many favorable tactical situations as well. For instance, if the Japanese had destroyed the repair and oil storage facilities at Pearl Harbor, installations which were utterly defenseless after the first Japanese attacks, they would have knocked out Pearl Harbor as a major fleet base for months and delayed the American operations proportionately. But the carriers withdrew, and the U.S. Navy began its recovery 2,000 miles closer to the front. Also, at Savo Island and then later at Leyte Gulf, powerful Imperial Navy surface units successfully defeated American covering forces and then retreated, allowing vital concentrations of American transports and supply vessels to escape certain destruction. Some Japanese have attributed this tendency to qualities inherent in the national character. Agawa Hiroyuki said the repeated failures to follow through were "a question not so much of individual commanders as of an unwillingness in the Japanese as a nation ...to see anything through to its

³²Spector, Eagle Against the Sun, pp.246,293.

logical conclusion."³³ Another former Imperial Navy officer agrees that the Japanese people as a whole lacked a "spirit of thoroughness," and he compared their approach to war with strategy in sumo, where one lightning move usually wins the match.³⁴

World War II historians have also pointed out that the Japanese strategic errors went beyond missed opportunities to some very faulty decisions, most notably geographical overextension of forces. They usually attribute this to "victory disease," a reckless adventurousness brought on by the early months of easy conquests.³⁵ Many former Imperial Japanese Navy officers agree with this conclusion.³⁶ The German naval attache in Tokyo later recalled that the

³³Agawa, The Reluctant Admiral, p.306.

³⁴"Chihaya's History," pp.70-71.

³⁵Dull, A Battle History of the Imperial Japanese Navy, pp.123,183; Ito, The End of the Imperial Japanese Navy, pp.52-53,69; Rose, The Long Shadow, p.70; Liddell Hart, History of the Second World War, p.345; Stamps and Esposito, A Military History of World War II, pp.514-516; Thomas, Japan's War at Sea, p.132; and Okumiya and Horikoshi, Zero!, p.169.

³⁶Interrogation of Rear Admiral Takata Toshitane, No.258, USSBS, Interrogations, Vol. I, p.266; Interrogations of Admiral Toyoda Soemu, No.378, of Fleet Admiral Nagano Asami, No.392, of Captain Fujita Masamichi, No.395, and of Admiral Nomura Kichisaburo, No.429, USSBS, Interrogations, Vol. II, pp.325,352,358,385; and Interrogation of Vice-Admiral Hara, Rear Admiral Sumikawa, and Rear Admiral Kojima, No.25, "Supplemental Report of Certain Phases of the War Against Japan," by Naval and Naval Air Field Team No.3, USSBS, RG 243.

"victory disease" was so pervasive that the Japanese became too arrogant to work with.³⁷ It was this malady and its lethal manifestation, strategic overextension, that led to defeat in the southern Solomons, disaster at Midway, and utter collapse at Kohima-Imphal.

Others have found still another reason for Japan's defeat in her inability to adapt to the novel conditions that emerged during the war.³⁸ "You moved too quickly for us to replace our losses," complained one naval officer after the war.³⁹ Others among his colleagues agreed: "...your force always came earlier than expected, and so always training was insufficient,"⁴⁰ and "Everywhere, I think, you attacked before the defense was ready. You came far more quickly than

³⁷Harder, Old Friends and New Enemies, p.520.

³⁸Hayashi, Kogun, p.42; Interrogations of Captain Minami Rokuemon, No.256, and of Rear Admiral Matsuda Chiaki, No. 345, USSBS, Interrogations, Vol. I, pp.257,282; Interrogations of Admiral Yonai Mitsumasa, No.379, of Fleet Admiral Nagano Asami, No.392, of Admiral Nomura Kichisaburo, No.429, of Captain Ohmae Toshikazu, No.467, and of Commander Nomura Ryosuke, No.601, USSBS, Interrogations, Vol. II, pp.331,356, 387,474,531-532; Interrogations of Lieutenant-General Endo, No.279, and of Lieutenant-Colonel Iwakoshi Shinroku, No.416, USSBS, RG 243; "Chihaya's History," pp.30,56,86; and Kyuzo, History of Japanese Minesweeping, 1937-1947, p.8.

³⁹Interrogation of Captain Ohmae Toshikazu, No.467, USSBS, Interrogations, Vol. II, p.474.

⁴⁰Interrogation of Rear Admiral Matsuda Chiaki, No.345, USSBS, Interrogations, Vol. I, p.282.

we expected."⁴¹ Combatants must continually adapt to the new weapons and tactics that always emerge in wartime, but the Japanese, by their own admission, were particularly lackluster in doing so. The Imperial Navy "could not shake off the fetters of traditions, remained a slave to fatal inertia."⁴² In logistics, anti-submarine warfare, minesweeping, and several other significant fields, the Japanese Navy never kept pace with its opponents.

No one can question the validity of all these factors as causes of Japan's defeat in World War II. But historians have not fully explored Japanese mismanagement of the merchant fleet, another important reason for the way the Pacific war ended. In fact, popular accounts often entirely neglect this aspect. The majority of writers do note the tremendous success of American submarines against Japan's maritime transport,⁴³ but very few attribute this to more

⁴¹Interrogation of Admiral Nomura Kichisaburo, No.429, USSBS, Interrogations, Vol. II, p.387.

⁴²"Chihaya's History," p.86.

⁴³Hoyle, A World in Flames, p.313; Roskill, The Strategy of Sea Power, pp.232-234; Bateson, The War with Japan, pp.241,376; Spector, Eagle Against the Sun, pp.487,491; Stamps and Esposito, A Military History of World War II, pp.311,421,467; Dull, A Battle History of the Imperial Japanese Navy, pp.354-355; Liddell Hart, History of the Second World War, pp.682-683; Basil Collier, The War in the Far East, 1941-1945: A Military History, (New York: William Morrow & Company, Inc., 1969), p.460; and J.F.C. Fuller, The Conduct of War, 1789-1961, (Rutgers University Press, 1968), pp.297-298.

than American superiority in submarine warfare.⁴⁴ None at all focus on overall Japanese merchant marine policy and its critical importance to the Pacific war.

The nature of twentieth century warfare coupled with the peculiarities of geography made merchant shipping vital to the conduct of the Pacific war. In total warfare of the World War II era, especially among major powers, the armed forces were but the cutting edge of national strength; economic and industrial production was the true weapon. The economy rested on elements such as population, industrial capacity, raw materials and other resources, and the transportation system. Fuels, especially petroleum products, were a particularly important resource, not only to drive vehicles for the armed forces, but also to power national production.

The first ingredient for successfully waging this type of warfare was a substantial population. Military forces in this period numbered in the hundreds of thousands or millions. Furthermore, military personnel were almost exclusively consumers and added little to national wealth. Consequently, a huge labor force was necessary to support the

⁴⁴Arthur Marder, Old Friends, New Enemies, and H.P. Willmott, Empires in the Balance: Japanese and Allied Pacific Strategies to April 1942, (Annapolis: United States Naval Institute Press, 1982) are two noteworthy exceptions to the general pattern of neglect.

armed forces and simultaneously maintain the civilian standard of living at an acceptable level. Sometimes subject peoples were able to perform the military or productive role or both, as in the case of the British Empire in both world wars. The Nazi regime and others resorted to slave labor to supply this fundamental need. But, whatever the source, a large population was indispensable for early twentieth century total warfare.

A considerable industrial production capacity was another national prerequisite for this type of war. Obviously the plant capacity for steel production and product assembly had to be sufficient for the military's needs, but even more essential was the nation's capability for furnishing a wide range of basic capital goods. Spare parts production and maintenance of frontline fighting strength required at least twenty percent of the belligerent's manufacturing capacity. No country with a second rate industrial economy at that time could wage total war successfully for more than a few weeks or months.

Raw materials comprised another vital link in the process of fighting a total war. The variety of resources necessary for World War II weaponry was staggering, and just one scarce item, such as rubber, copper, or silk, could create a bottleneck in many industries. A nation had to resort to foreign purchases for materials not domestically obtainable, and this caused vulnerability to a neutral's embargo or an

enemy's blockade. Peacetime stockpiling of scarce items could alleviate the problem, but political, financial, or technical obstacles could prevent this course of action.

Another requirement was an efficient transportation system, or, more correctly, two transportation systems. The first was necessary for moving raw materials to the production sites. This type of transportation was particularly vital to a country poor in resources, since materials had to travel long distances. Second, finished goods had to find their way to the markets. The domestic market rarely presented a problem, because populations historically tend to cluster around the production sites. Foreign markets were another matter, however, and wartime military consumption presented still more difficult challenges. The battle zones were sometimes hundreds or thousands of miles from the industrial centers, yet operational success depended on the prompt and plentiful arrival of munitions and supplies. This second transportation system required adaptability, too, because the war's progress dictated changes in the theaters of operations. In the happy coincidence that the fronts overlapped with the sources of materials, a single transportation system could suffice, but otherwise a nation had to have two separate networks for the movement of cargo.

Fuel ranked as the most fundamental of all resources for waging war in that day. It was essential to the uninterrupted functioning of military operations, the civilian economy,

and the vital transportation systems tying them all together. Trucks in the World War II era consumed a gallon of gasoline every six to eight miles, while armored fighting vehicles seldom traveled more than two miles on one gallon. An eighty-three foot cutter used 4,000 gallons of fuel for every three operational days.⁴⁰ A destroyer could use 7,000 barrels of fuel oil in one day, and capital ships naturally consumed more, up to 8,000 barrels per day.⁴¹ Perhaps armies do march on their stomachs, but back then they drove, sailed, and flew on their fuel tanks.

Geography was a critical factor in determining a nation's ability to wage total war in the first half of the twentieth century. The capacity of the land for supporting population, the materials in the earth or growing out of it, and the physical aids or barriers to the movement of people and goods were just some of the factors which had great bearing on a nation's economic, and hence military, strength. It is the particular geography of East Asia and the western Pacific that made merchant shipping a key element in Japan's defeat in World War II.

⁴⁰Samuel Eliot Morison, The Battle of the Atlantic, September 1939 - May 1943, Volume I of History of United States Naval Operations in World War II, (Boston: Little, Brown and Company, 1947), p.267.

⁴¹Commander-in-Chief, U.S. Pacific Fleet, "History of Service Force," 1946, pp.85-86.

From its humble beginnings amidst the modernization programs of the nineteenth century, Japan's steel merchant fleet rose to become the third largest in the world by 1941. Economic recovery and judicious government subsidies in the 1930s had placed both the shippers and shipbuilders of Japan among the most efficient on the globe. Furthermore, the escalating conflict in China had prompted a centralization of the maritime industries under firm government control by the time of Pearl Harbor, thus assuring their full cooperation in the Pacific war.

However, despite these advantages and the admirable performance of the nation's shipyards, within a few years the Allies swept Japan's merchant marine from the seas. The fault lay in the Navy's poor preparation for anti-submarine warfare and shipping administration. The weapons, organization, and tactics available for maritime transport security were far too primitive for the task. When the war ended, Japan's transportation system was in ruins, and further serious resistance against either atomic or conventional attacks was impossible.

The Imperial Navy had neglected shipping protection doctrine and material for decades before paying dearly for it in World War II. There were two principal reasons for this. First, Japan's rapid modernization sometimes led to indiscriminate absorption of Western ideas and models. In the case of the Navy, this resulted in the acceptance of a

peculiar version of the Mahanian theory of sea power that stressed the "decisive battle" as the ultimate goal of all naval strategy. This concept was outmoded by the early twentieth century, but, without any contradictory experiences of its own before World War II, the Imperial Navy clung to it tenaciously.

The other reason for the Navy's longstanding neglect of maritime security was also a product of the nation's particular path to industrialization. The new leaders of Japan sprang from the samurai, or medieval warrior, class, and they spread their feudal military philosophy to the whole nation. While praising many desirable qualities, the samurai code unfortunately also favored traits detrimental to the conduct of total warfare in the mid-twentieth century. Characteristics such as intense loyalty, military chauvinism, faith in spiritual rather than mental strength, and devotion to honor before survival all played roles in Japan's apparently irrational neglect of the vital merchant marine.

CHAPTER 2

JAPAN AND TOTAL WAR

The Japan that entered into conflict with the British, Dutch, and Americans in late 1941 did so with few advantages and several serious problems. When one considers the critical elements of population, industrial capacity, physical resources, and transportation systems, the inescapable conclusion is that Imperial Japan could not effectively wage the total warfare of that era on the Allied powers for long. The weakest element of all was the transportation system, especially the merchant fleet that linked the island nation with the numerous sources of raw materials throughout East Asia. Barely large enough to keep the economy functioning, Japan's merchant marine quickly became the most serious bottleneck in production. This was nowhere more evident than in the transportation of vital fuel oil, but the shipping problem affected every area of civilian and military life.

The wartime Japanese military leaders were fond of boasting of their nation as "the hundred million," but in fact

there were but seventy-five million Japanese citizens in 1941. Aggression in the modern era had brought seventy-seven million Manchurians, Koreans, Formosans, and others into the population pool,¹ and that amounted to a substantial collection of humanity. However, population statistics are relative, and in comparison to their adversaries the Japanese were unquestionably inferior. There were two Americans for every Japanese, and in addition the Allies could call upon the tremendous human resources of the British Empire. Though the Allies had to divert considerable resources to the defeat of the European Axis powers, the war with China proved an equally draining experience for Japan.

Traditionally overcrowding has plagued Japan in modern times, and few ever thought of the nation's population as insufficient. Many organizations, including the Imperial Navy, in fact encouraged emigration.² But the manpower shortage became apparent soon after the outbreak of the China Incident in July, 1937. The military services quickly grabbed up the able-bodied men, so it was in production where the problems first appeared. A government study done in 1939 showed production short of goals in coal, steel,

¹Enemy Japan, Prepared by the Office of War Information, (U.S. Public Affairs Press, 1945), p.12.

²Report of the Iriguchi Shokuryo Mondai Chosa-e, December 24, 1927, Navy Ministry S2-5, 7, Boei Kenshusho Archives.

copper, and several other materials due to a paucity of workers. The report concluded that for "...all industries, domestic and foreign, the shortage of labor is causing problems."³ But soon the armed forces also felt the consequences of the disparity in sizes between the antagonists' populations. One Navy study in 1943 anticipated a shortage of nearly three million men over the next three years.⁴

Manpower in wartime Japan was lacking in quality as well as quantity. In the Army, for example, the number of volunteers, who naturally were the most motivated and made the best soldiers, fell from the 60% level of prewar days to 15% by 1945. By the war's end, not even one officer in eight had graduated from the military academies. And in 1944 the government began drafting all those classed as 3B, the lowest possible grade.⁵ In industry, too, the dearth of skilled personnel seriously hurt efficiency. As the war dragged on, all the healthy men went off to fight (700,000 men were

³Cabinet Planning Board, "Circumstances of the Execution of Production Capacity Expansion Plans and Subsequent Countermeasures," October, 1939, Genkoshi Shiryo, Volume 43, Kokka Sodojin, (Tokyo: Misuzu Shobo, 1970), pp.219-230.

⁴"Kaigun no Gumbi Narabi ni Sembi no Zembo," Zempan 3, Boei Kenshusho.

⁵Hayashi Saburo, in collaboration with Alvin D. Coox, Kogun: The Japanese Army in the Pacific War, (Quantico: The Marine Corps Association, 1959), pp.153-154.

conscripted from non-essential industries in 1943 alone⁶) and left the factories to the aged, the students, the women, and the infirm. Further declines in productivity were incapable.

The leaders of Imperial Japan tried a myriad of measures to overcome the manpower shortage. In the very first year of the China Incident, the government launched programs for student labor on farms in the summer months. By early 1941, farm labor demands began cutting into class time. Two years later, factories also started using students, though there were legal limits on the number of days a student could work. Gradually the government eliminated all restrictions and even began conscripting school age workers in April, 1944. All told, three million students served as laborers, making up over half the work force in some plants.⁷ The Army began accepting fifteen-year-olds as aviation cadets barely fifteen months after Pearl Harbor.⁸ Allied prisoners of war provided another labor source for the Japanese, one they

⁶"Annual Conscriptions," 42a(16)(a), Section 2, United States Strategic Bombing Survey, Record Group 243, United States National Archives.

⁷Interrogation of Omura Seichi and Nakane Hideo, Interrogation No.14, October 8, 1945, USSBS, RG 243.

⁸"School Newly Established in Otsu," Osaka Asahi, March 29, 1943, Combat Intelligence Center, South Pacific Forces, (S-3774a), Item #1042, U.S. Navy Operational Archives, Washington Navy Yard.

ruthlessly exploited. The Japanese also tapped the native populations from the conquered regions as much as possible for additional manpower. One hundred thousand Koreans worked in Japan, and many other peoples provided labor throughout East Asia, many against their will. The Japanese forced over a quarter million fellow Asians to assist on the infamous "Death Railway," for instance, and perhaps as many as one third of them died.⁹ One authority remembers that by the war's end there were few able-bodied men working in Japan who were not Chinese, Koreans, POWs, soldiers, or convicts¹⁰. Women were another obvious potential labor pool. They had always formed a sizable portion of the factory work force anyway, and by 1945 nearly half of all industrial workers in Japan were women.¹¹

The Japanese also struggled fruitlessly throughout the war to maintain the necessary numbers of people in positions that required specialized education or training. Technicians, military officers, and skilled workers were always in short supply, and administration of the overrun areas put a

⁹Clifford Kinvig, Death Railway, (New York: Ballantine Books Inc., 1973), pp.151-152.

¹⁰"The Principal Problems and Obstacles Which Confronted the Japanese Shipping During Wartime," Prepared by Okada S., Chief of Planning Department, General Affairs Department, General Maritime Bureau, Ministry of Transportation, November 5, 1945, USSBS, RG 243.

¹¹Hayashi, Kogun, p.153.

further strain on this limited resource. Once, for instance, the Army dispatched 500 engineering, mining, oil, and agricultural experts to the southern region, only to see them lost to American submarine attack.¹² A nation faced with this dilemma invariably expands its training facilities while reducing the length of the instruction period, and Imperial Japan was no exception. The military continually shortened the flight training courses, for example, so that finally pilots flew in combat with up to eight months training (and scores of invaluable hours of flight time) less than those that began the war.¹³ The merchant seaman training program tells a similar story. During the war, the number of schools for ordinary seamen grew from seven to twenty-three, and the school year shrank from one year to three months.¹⁴ Virtually every specialized profession in wartime Japan revealed the same pattern of increased numbers, reduced training, and, ultimately, a decrease in quality.

¹²Kato Masuo, The Lost War, (New York: Alfred A. Knopf, 1946), p.92.

¹³CINCPAC-CINCPOA Bulletin No.75-45, Translations and Interrogations Number 22, March 20, 1945, USSBS, RG 243.

¹⁴Interrogation of Shiraishi Kazutaka, Yamazaki Kogor, Asai Y., and Shikuya H., Interrogation No.44, USSBS, RG 243.

As with population, the Japanese had an industrial base of significant dimensions but inferior to that of their opponents. In the spring of 1937, shortly before full scale war with China broke out, the War Ministry drafted a five year plan for the munitions and supporting industries.¹⁶ By the following year, two-thirds of all investments in Japan were going into the war industries.¹⁶ The program was very ambitious, yet essential if Japan were going to compete militarily as a first rate power. A good example of the planners' intentions is their statement on the future of the steel industry:

...we will concentrate our main strength on making our factories and workshops excellent in operational efficiency, so that large and rapid increases in productivity will be possible. By striving with all our might to try to finish integration of iron and steel facilities, we will emerge from our state of reliance on foreign nations. We must plan an independent iron and steel industry which will be totally within our sphere of influence.¹⁷

The plan's goals included increases of 74% in rolled steel production, 96% in steel ingot, 329% in aluminum, 450% in automobiles, 267% in machine tools, and 462% in railroad

¹⁶Hayashi, Kogun, p.25.

¹⁶Marc T. Greene, "Can Japan Stand the Strain?," The Spectator, December 30, 1938, British Foreign Office -- Japan Correspondence, 1939, Volume 23557, p.37.

¹⁷"Circumstances of the Execution of Production Capacity Expansion Plans and Subsequent Countermeasures," Kokka Sodoin, p.220.

engines.¹⁹ However, the China Incident jeopardized these plans before they were even fully formulated. The very first year of the plan, in which production goals were rather modest, witnessed shortfalls in rolled steel (12%), aluminum (6%), synthetic oil (50%), and several other areas. A government analysis of the failures pointed to shortages of labor, materials, electricity, and machine tools as the chief culprits.²⁰

The machine tool situation is illustrative of the problems industrial expansion presented to Japan. Through much sacrifice and effort, the Japanese multiplied production fourfold within a few years and hence substantially curtailed imports.²⁰ But the reliance on foreign technology remained unbroken. Despite actually surpassing production quotas for machine tools (as measured by yen value), officials complained: "In spite of seeing the strange phenomenon of a surplus in low-grade goods, it is apparent that we must

¹⁹"Chart Summarizing Capacity Expansion Plans," Cabinet Planning Board, April 20, 1938, Kokka Sodojin, p.204.

¹⁹"Circumstances of the Execution of Production Capacity Expansion Plans and Subsequent Countermeasures," Kokka Sodojin, pp.219-230.

²⁰"Demand and Supply Conditions of Machine Tools in Japan Proper," 39jj(1), Section 2, USSBS, RG 243.

continue to import high-grade goods."²¹ When Europe erupted into war in September, 1939, Japan lost ready access to high quality German machine tools, on which they had relied heavily. Aluminum, synthetic oil, and ammonia sulphate production all suffered considerably from the interruption of German trade.²² The government explored several alternatives, such as launching intensive research efforts in the affected fields, purchasing the technology from Germany, and buying the needed goods from American companies. In most cases financial constraints dictated that the government choose the last course of action, since it was the cheapest.²³ One visitor to an aircraft plant late in the war expressed astonishment at the number of American-made machine tools there.²⁴ Such a dependence on other nations was a problem in itself, but it also made mass production more difficult because machine tools from different countries frequently had different guages and fittings.²⁵

²¹"Circumstances of the Execution of Production Capacity Expansion Plans and Subsequent Countermeasures," Kokka Sodoin, p.227.

²²Ibid, pp.219-230.

²³Ibid.

²⁴Kato, The Lost War, p.166.

²⁵Ibid, p.167.

The industrial capacity problem, like most of Japan's other economic woes, only worsened as the war progressed. Steadily increasing interruptions of the supply of basic materials and eventually heavy attacks on the industrial plant served to lessen Japanese production after mid-1944. By 1945 the motor vehicle industry was receiving only one-third the steel it had gotten before the war.²⁶ The Navy reported in 1943 that steel was already 64% short of the amount needed for current armaments plans and would be further behind 1944 requirements.²⁷ The aluminum shortage forced a steady decrease in the amount used per plane, from 6.5 tons in 1942 to 5.3 tons the following year to a paltry 3.8 tons in 1944. The Japanese naturally resorted to inferior substitutes, resulting in many more stress failures in critical engine parts.²⁸ The government revised the 1945 production quotas downward, but still actual results were well short of even these lowered goals. Steel was once again one of the scarcest commodities, forcing the military services to employ substitutes, redesign some items, use

²⁶United States Strategic Bombing Survey (Pacific), Japanese Motor Vehicle Industry, (U.S.: United States Government Printing Office, 1946), p.1.

²⁷"Kaigun no Gumbi Narabi ni Sembu no Zembo," op.cit.

²⁸Okumiya Masatake and Horikoshi Jiro, with Martin Caidin, Zero!, (New York: Ballantine Books, 1973), p.264.

captured equipment, etc.²⁰ The aircraft industry reflects the trend toward rapid collapse later in the war. Monthly production shortly before Japan's surrender was only 40% of what it had been just one year earlier.²⁰

If Imperial Japan was at least competitive with the Allies in population and industrial capacity, in material resources the island nation was positively impoverished. Then, as now, there were sizable deposits of coal along with some copper and sulphur, but practically nothing else in appreciable quantities. And even the nearly forty million tons of coal produced annually before the war were not enough to supply domestic consumption. The Japanese had to import two-thirds or more of their requirements in iron ore, lead, zinc, petroleum, tin, and manganese, and all of the nickel, gum, wool, and raw cotton they needed.²¹ The General Affairs Bureau of the Cabinet Planning Board described oil, rubber, bauxite, iron, copper, zinc, and sugar as critically deficient,²² while others added rice to the top of the

²⁰Hayashi, Kogun, p.154.

²⁰Okumiya and Horikoshi, Zero!, p.260.

²¹Senshishitsu Cho, Volume 46, Kaijo Goei Sen, (Tokyo: Asagumo Shimbunsha, 1976), p.2.

²²"General Summary of Interviews on Army-Navy Oil Operations and of Overall Oil Allocations Between the Army, Navy, and Civilians," October 27, 1945, 15g, Section 2, USSBS, RG 243.

list.³³ It is thus not surprising to find a 1938 expansion program aiming at huge production increases within the Japanese Empire in iron ore (392%), soda (56%), industrial salts (123%), magnesium (488%), pulp for paper (66%), synthetic ammonia (14%), sulphuric acid (185%), copper (81%), lead (233%), zinc (155%), and tin (46%). The plan even called for a whopping thirty-one million ton jump in coal mining output.³⁴

Coal was in a sense the most important material of all for the Japanese, for it fueled most of their industrial plant. Shortages thus affected many dependent industries, such as synthetic gasoline production.³⁵ To make matters worse, coal mined in Japan was too light for heavy manufacturing processes such as steelmaking, so it was necessary to import suitable grade coal from Manchuria and China.³⁶ Despite the presence of some copper deposits, there was never

³³"Estimate of Japanese National Strength at the Outbreak of the Greater East Asia War as of December 1941," WDC Document No.240337, Washington Document Center Translation No.7, June 26, 1946, Japanese Estimates and Comparisons of Resources as of the Beginning and End of the War, Washington Navy Yard.

³⁴"Chart Summarizing Production Capacity Expansion Plans," Kokka Sodojin, p.204.

³⁵Interrogation of Major Takahashi T., No.529, 15g, Section 2, USSBS, RG 243.

³⁶Interrogation of Admiral Toyoda Teijiro, No.10, 1a(14)(f), Section 2, USSBS, RG 243.

enough. The United States had supplied nearly one third of Japanese requirements in prewar days, and even the capture of the Philippine copper mines could not compensate for the loss of those American imports.³⁷ Rubber and tin were other key resources which Japan could not produce domestically. The need for them was no small part of the motivation for the conquests of Indochina and the Netherlands East Indies.³⁸ Food was another vital material, albeit a non-industrial one, but it, too, became scarce not long after Pearl Harbor. Despite growing 94% of their rice in the home islands, by 1945 the Japanese were on rationed diets that amounted to slow starvation.³⁹ Innumerable other items became difficult or impossible to obtain. Ordinary steel and steel products first ran short in April, 1942, lumber and iron products the following summer, and oxygen and carbide

³⁷Japan Surveys the European War, (Tokyo: The Tokyo Press Club, 1940), p.30; and Japan's Decision for War: Records of the 1941 Policy Conferences, Translated, Edited, and with an Introduction by Nobutake Ike, (Stanford: Stanford University Press, 1967), pp.6-7.

³⁸Japan's Decision for War, pp.54,72,218; and Major-General Okada Kikasaburo, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," War in Asia and the Pacific, 1937-1949, Donald S. Detwiler and Charles B. Burdick, Editors, (New York: Garland Publishing Inc., 1980), p.27.

³⁹Enemy Japan, pp.14,20; and Hayashi, Kogun, pp.154-155.

soon after that.⁴⁰ Textile production also lagged, causing the Imperial Navy to be 853,000 uniforms short by 1944.⁴¹ Materials shortages retarded production in virtually every field of secondary production. "Everyone knows," read a Navy report in 1943, "that the shortage of raw materials is the biggest bottleneck in aircraft production," and the same could be said for most other manufacturing fields.⁴²

The leaders of Imperial Japan fully appreciated the precariousness of the material situation. The Minister of Commerce and Industry frankly confessed in a Liaison Meeting: "I do not think we have sufficient strength, so far as resources are concerned, to support a war. Both the Army and Navy can resort to force, but we do not have materials for war on both land and sea."⁴³ Other Cabinet members, including the military representatives, concurred.⁴⁴ All recognized Japan's grave dependence on raw materials imports, and consequently the debates in the imperial high councils

⁴⁰"Materials Shortages," 51b(30)(g), Section 2, USSBS, RG 243.

⁴¹Kaigunsho Gummuryoku, "Daitoa Senso ni Okeru Wagamonoteki Kokuryoku to Kaigun Sembi Sui-i ni Kansuru Setsumei Shiryo," October, 1945, Document No.47, Zempan 1, Boei Kenshusho.

⁴²"Kaigun no Gumbi Narabi ni Sembi no Zembo," op.cit.

⁴³Japan's Decision for War, p.76.

⁴⁴Hayashi, Kogun, p.23; and Japan's Decision for War, pp.139-140, 147, 189, 191, 197, 221.

centered not on the need for those resources but on how to obtain them.

The reliance on overseas sources of materials highlights the critical role of the fourth major element, transportation systems, in keeping the Japanese economy running. The industries of the home islands needed iron ore from Manchuria, tin from Indochina, timber from Borneo, bauxite from Malaya, and scores of other vital items from the lands of the western Pacific. Finished goods flowed out to China and elsewhere in East Asia. The United States, Germany, Great Britain, and many other countries from around the globe were also business partners. In short, the Japanese home islands were the hub of a web of trade that centered in East Asia but spanned the entire globe. The merchant marine was the cement holding the whole system together.

In times of war the transportation network takes on the added task of supporting military campaigns. Offensive operations are particularly burdensome, but simply maintaining troops overseas in reasonable condition is a strain on the merchant fleet. One authority estimated, for example, that it would take at least a 7,000-ton transport to carry 3,000 men and their equipment to the front.⁴⁰ But in practice even more room than that was necessary to ship troops. For

⁴⁰Interrogation of Captain Ishito Denichi, 54bbb(17), Section 2, USSBS, RG 243.

instance, the 3,000-ton Aso could fit only 304 men and some assorted supplies and vehicles, while it took a ship nearly twice as large to move a thousand men.⁴⁶ A Special Naval Landing Party required over three hundred large barges for transportation.⁴⁷ The Imperial Army employed a total of 650,000 tons of shipping in the assault on the Philippines and 710,000 tons for the Malayan operation.⁴⁸ Once the campaigns ended, supplying basic needs for the troops overseas demanded further tonnage. American planners calculated that each soldier required four tons of shipping, so that the more than half million Japanese in the southern regions needed upwards of two million tons of merchantmen.⁴⁹ A single division on Guadalcanal had to have fifty large barges operating along a three hundred mile route to the nearest base solely for its food supplies.⁵⁰ Shipping requirements for a war in the Pacific were certainly nothing less than

⁴⁶Shipping Group Transportation "GA" Order #3, Revised, January 12, 1943, Item No.764, Navy Operational Archives.

⁴⁷"Table of Large Barges Necessary for Transfer of Eighth Combined SNLP," Item No.770 (S-2641), Combat Intelligence Center, South Pacific Force, Navy Operational Archives.

⁴⁸"Information Concerning Allotment of Army Levied Ships," 54qq(2), Section 2, USSBS, RG 243.

⁴⁹OSS Report No.13269, March 6, 1942, RG 226.

⁵⁰EF37/QA/(25), Serial 01327, August 10, 1943, "Study of Japanese Shipping Activities Prepared by Statistical Sub-Section," C-2, Headquarters, 1st Marine Amphibious Corps.

massive.

The Cabinet Planning Board calculated before the war that the civilian economy demanded three million tons of merchant shipping to keep functioning.⁵¹ Out of this allotment, coal transportation required 1,800,000 tons, iron ore and other materials for steel manufacturing needed 300,000 tons, and 450,000 tons were to be for food.⁵² Other studies showed that if only 2,500,000 tons were available, steel and rice production would remain constant, but there would be a fifth less secondary resources (coal, salt, fertilizers, soybeans, bricks, cotton, and various ores) and less than half of most other items. A further half million ton drop would still not affect steel and rice but would reduce the secondary items by another ten percent, and all other commodities would fall to a paltry 8%. Should the civilian sector have only 1,500,000 tons at its disposal, even steel and rice production would drop by 20%, the secondary items would fall to 40% of their prewar availability, and the miscellaneous materials would be practically unobtainable.⁵³ No one in the Japanese government ever questioned these figures, but the Americans

⁵¹Japan's Decision for War, p.191.

⁵²Interrogation of Takamine Meitatsu, November 23, 1945, 54tt(7), Section 2, USSBS, Rg 243.

⁵³Okada, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," p.18.

estimated in 1942 that Japan's needs were 50% higher than that, or perhaps even larger if inefficiency, a stevedore shortage, and other problems surfaced.⁶⁴ The military also requisitioned its share, nearly four million tons, for their operations, though they planned to return at least a quarter of that tonnage within six months.⁶⁵

At the time of Pearl Harbor, Japan had just enough shipping to meet all the demands on it. Depending on how one counts,⁶⁶ the merchant fleet consisted of about 6,400,000 tons in December, 1941.⁶⁷ In addition there were approximately 1,200,000 tons of wooden vessels, though naturally only some of these were suited for carrying freight.⁶⁸ The maritime transport system was already straining by 1937 because of the eruption of open war in China, and soon the government passed a series of laws to bring the entire

⁶⁴OSS Report No.23420, November 2, 1942, RG 226.

⁶⁵Kaijo Goei Sen, p.65.

⁶⁶Some sources count only ships over 100 tons, some do not include tugboats, dredgers, whalers, and other vessels not used strictly for moving cargo, while others count foreign ships registered in Japan. Hence, figures vary, sometimes significantly, from one source to another. I have tried to use official Japanese sources wherever possible.

⁶⁷"Daitoa Senso ni Okeru Wagamonoteki Kokuryoku to Kaigun Sembi Sui-i ni Kansuru Setsumeishiryō," op.cit.

⁶⁸"List of Wooden Ships Available at the Beginning of the War," 54mm(1), Section 2, USSBS, RG 243.

shipping industry under its control.⁸⁰ Despite such measures, the merchant fleet was hard pressed in wartime to service the needs of both civilians and the military. Not infrequently the latter conducted operations only by appropriating the transport of the former.⁸¹

The merchantmen's indispensability was apparent to the Japanese and their enemies alike. One Army study concluded:

...geographic relationships (i.e., the relationships between resource areas and industrial locations) made shipping a crucial element in the industrial picture as well as a lifeline without which Japanese industry was doomed to extinction....the problem of guaranteeing the supply was one which required the most careful attention from the standpoint of maintenance of the nation's war potential.⁸²

Another prewar forecast stated simply that "success will depend on firm retention of the vital areas and the Navy's ability to secure maritime traffic."⁸³ "As one glance at the geography of our defense system will show," the Navy Ministry wrote in a wartime communication, "the problems of surface transportation and shipping space must first be met in order that the desired rate of production and reinforcement

⁸⁰Nihon Tankaa no Ayumi, Document No.22, Sempaku 4, Boei Kenshusho. See Chapter 4 below.

⁸¹See Chapter 5 below.

⁸²Okada, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," p.2.

⁸³Senshishitsu Cho, Daitoa Senso Kaisen Keii, Volume V, (Tokyo: Asagumo Shimbunsha, 1972), p.198.

may be achieved."⁸³ Successful prosecution of the war rested on the proper use and protection of the merchant fleet, and this was no secret.

Of all the materials the merchant marine brought to Japan, none was more critical than oil, "a commodity so vital that any kind of national defense whatever was virtually impossible without it."⁸⁴ Admiral Nagano later remembered the petroleum question as one of the major causes of the war, and few have disagreed.⁸⁵ Fuchida Mitsuo and Okumiya Masatake concurred: "Above all, Japan would have to gain quick access to oil, the most vital sinew of modern warfare. Oil, therefore, was the paramount factor in shaping Japanese strategy for the initial phase of hostilities, just as it was to become later the final precipitant of Japan's decision to fight."⁸⁶

⁸³"Navy Ministry Secret #1235: Navy Ministry Proposal for Meeting the Shortages of Shipping Space for Operational Purposes," October 11, 1943, JICPOA Item No.5972, OSS Report No.77729, February 7, 1944, RG 226.

⁸⁴Okada, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," op.cit.

⁸⁵Interrogation of Fleet Admiral Nagano, No.392, United States Strategic Bombing Survey, Naval Analysis, Interrogations of Japanese Officials, No.72, Volume II, (Washington: United States Government Printing Office, n.d.), p.353; E.B. Potter, Nimitz, (Annapolis: U.S. Naval Institute Press, 1976), p.48; Hayashi, Kogun, p.24; Interrogation of Mr. Aichi, No.155, October 28, 1945, 51b(22)(a), Section 2, USSBS, RG 243; and Interrogation of Admiral Toyoda Teijiro, November 27, 1945, 54bbb(32), Section 2, USSBS, RG 243.

With the Meiji Restoration of 1868 industrialization came to the Japanese, and so did the need for oil.⁸⁷ Chinese merchants were the first to import petroleum into Japan, but by the turn of the century the expanding market had attracted the British and Americans.⁸⁸ In 1906 Asano Soichiro built the first Japanese refinery, and the domestic oil market continued to grow.⁸⁹ Soon the military added its own demands for liquid fuel imports.

The Imperial Navy started experimenting with fuel oil boilers for its vessels in 1904. Four years later Japanese shipyards launched their first oil-burning warships, and by 1909 the Navy had already stockpiled 3,700 tons of petroleum. When World War I broke out in Europe, the Navy General Staff planned to store 190,000 tons as an emergency reserve. By the the war's end, the Navy was building or had completed steel and concrete tanks with a capacity of 357,500 tons. The war was pivotal to the Navy's fuel program in other

⁸⁸Fuchida Mitsuo, and Okumiya Masatake, Midway: The Battle That Doomed Japan, Edited by Clarke H. Kawakami and Roger Pineau, (Annapolis: U.S. Naval Institute Press, 1955), p.19.

⁸⁷Except as otherwise noted, all details of the story of Japan's growing reliance on oil are from Senshishitsu Cho, Volume 31, Kaigun Gunsempi, Part I: Showa Jurokunen Juichigatsu Made, (Tokyo: Asagumo Shimbunsha, 1969), pp.48-49,686-704.

⁸⁹Nihon Tankaa no Ayumi, op.cit.

⁸⁸Ibid.

ways, too, for the tremendous POL requirements of fleet actions and the unreliability of overseas imports in wartime impressed the Japanese. The Navy initiated a vigorous program of research into synthetic fuels, increases in stockpiles, and direct participation in the petroleum industry. In 1921, the Navy set up a Fuel Office and opened its own refinery. By 1923, 500,000 tons of warships (out of a total of 900,000 tons) were oil-burning.⁷⁰

In the disarmament atmosphere of the early 1920s, The Imperial Navy found it difficult to obtain the funds needed to pursue an expanded oil program. But by the end of the decade the domestic political climate had changed, and once more the armed forces turned their full attention to the fuel oil situation. In 1928 the Navy started converting the last of the ships with coal-fired boilers, and soon the Combined Fleet was completely oil-burning. At about that time the General Staff calculated wartime petroleum needs as 3,600,000 tons in the first twelve months and one million tons less for every year thereafter. Therefore the Navy once more expanded storage facilities and embarked upon new research. The world oil glut in the late 1920s lowered prices, so even when the depression struck the Japanese military

⁷⁰Captain Ohmae, T., "Stockpiling of Liquid Fuel in Japan: A Navy Report," War in Asia and the Pacific, 1937-1949, Donald S. Detwiler and Charles B. Burdick, Editors, (New York: Garland Publishing, Inc., 1980), Volume 5.

managed to increase their petroleum purchases. Civilian consumption rose as well, leaping 75% from 1926 to 1931.⁷¹

The Imperial Army and Navy had been clamoring for a national fuel policy since the early 1920s, but without success. Finally the Ministry of Commerce and Industry set up a Fuel Investigating Committee in July, 1926. After two years of study, it recommended a comprehensive program for developing domestic fuel sources, rationalizing the nation's coal and oil industries, securing additional foreign fuel sources, and accelerating research of synthetic fuels. However, the government did not act on this, and the next few years saw only continued discussions of the problem. But the Manchurian Incident brought the Japanese a new awareness of the indispensability and the vulnerability of the oil supply. The Army, Navy, Commerce and Industry, Foreign, Finance, and Colonial Ministries set up a joint committee to develop legislation for a national fuel policy. The result was the 1934 Oil Industry Act, which set production quotas, instituted a licensing system, and in general stabilized the domestic market through government intervention.⁷² As the international horizon darkened over the next several years, the Japanese radically increased oil imports in an attempt

⁷¹Nihon Tankaa no Ayumi, op.cit.

⁷²Ibid.

to build up stockpiled reserves. By the time the nation faced the prospect of war with the West in 1941, oil was naturally its most worrisome aspect.⁷³

The wartime petroleum consumption of a military machine in the World War II era was staggeringly huge. A single Japanese tank regiment, for example, needed 6.2 tons of gasoline and diesel oil for every operational day, and even a cavalry brigade consumed seven tons per day.⁷⁴ An infantry division required 800 tons of petroleum products, while an air division needed four times that amount just for its ground complement.⁷⁵ Army units in the Bismarcks-Solomons area requested 90,000 tons of fuel in 1942, and other theaters demanded nearly as much.⁷⁶ The Navy's needs were more enormous. Under normal wartime conditions the fleet burned over 400 tons per hour.⁷⁷ The Imperial Navy used 150,000 tons of fuel oil at the Battle of Leyte Gulf and

⁷³Japan's Decision for War, pp.7-11,148.

⁷⁴Document 46, Japanese Logistics Tables, Special Translation No.56, CINCPAC-CINCPOA Bulletin No.86-45, April 7, 1945, Section 6, USSBS, RG 243.

⁷⁵"Military Analysis...Ground Logistics," Preliminary POL Report, December 15, 1945, 64b(9), Section 2, USSBS, RG 243.

⁷⁶Ibid.

⁷⁷Agawa Hiroyuki, The Reluctant Admiral: Yamamoto and the Imperial Navy, (Tokyo: Kodansha International Ltd., 1982), pp.328-329; and Japan's Decision for War, p.186.

200,000 tons during the Battle of the Philippine Sea,⁷⁰ though neither engagement lasted more than a few days. Aviation gasoline consumption was also high, averaging 40,000 to 50,000 kiloliters per month.⁷¹

All the Japanese prewar studies on liquid fuel requirements predicted that for every year of war the nation would use from four to four and a half million tons and the Navy would account for about half of this total.⁸⁰ And the reality of war soon dwarfed these apparently generous estimates. The Imperial Navy, for instance, swallowed 50% more fuel oil than predicted.⁸¹ Probably six or seven million tons of

⁷⁰"General Summary of Interviews on Army-Navy Oil Operations and of Overall Oil Allocations Between the Army, Navy, and Civilians," October 27, 1945, 15g, Section 2, USSBS, RG 243.

⁷¹Ibid.

⁸⁰Okada, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," p.29; WDC Document No.240337: "Estimate of Japanese National Strength at the Outbreak of the Greater East Asia War as of December 1941," Japanese Estimates and Comparisons of Resources as of the Beginning and End of the War, June 26, 1946, Washington Document Center Translation No.7, Navy Operational Archives; Lieutenant-General Hoshina to Lieutenant-Commander Williams, November 15, 1945, 51b(36)(1), Section 2, USSBS, RG 243; and Japan's Decision for War, p.219.

⁸¹"Navy Oil Production and Consumption," 51b(38)(c), Section 2, USSBS, RG 243; "Data of Demand and Supply of Oil," Bureau of Stores, Imperial Japanese Navy, October 3, 1945, 51b(37)(d), Section 2, USSBS, RG 243; Lieutenant-General Hoshina to Lieutenant-Commander Williams, November 15, 1945, 51b(36)(1), Section 2, USSBS, RG 243; and "Daitoa Senso ni Okeru Wagamonoteki Kokuryoku to Kaigun Sembi Sui-i ni Kansuru Setsumei Shiryo," op.cit.

petroleum per year would be a more realistic estimate of Imperial Japan's needs for waging total warfare in that day and age.

The home islands of Japan were then and remain today nearly devoid of oil deposits. Annual production in the final years before Pearl Harbor was about 250,000 tons, less than ten percent of the nation's peacetime needs.⁸² Despite plans to increase this by a third, the government never obtained more than marginal results.⁸³ In the critical area of aviation gasoline, for example, the home islands produced only 211,000 kiloliters during the entire war, which was less than six months' supply.⁸⁴

In light of such meager domestic oil production, Japan's subsequent fuel problems come as no surprise. When the shortages first appeared, the military leaders naturally reduced gasoline allotments for training units rather than for combat commands. The result was a significant decrease in pilot proficiency, leading to higher losses and even more

⁸²Arthur J. Marder, Old Friends, New Enemies: The Royal Navy and the Imperial Japanese Navy, Strategic Illusions, 1936-1941, (Oxford: Clarendon Press, 1981), p.166.

⁸³Lieutenant-General Hoshina to Lieutenant-Commander Williams, November 15, 1945, 51b(36)(1), Section 2, USSBS, RG 243.

⁸⁴"Stock, Production, and Consumption of Petroleum Products," 51b(38)(c), Section 2, USSBS, RG 243.

desperate circumstances.⁶⁶ Lack of oil also restricted the navy's movements. As the war wore on the Combined Fleet could not even use the home islands as its base, and the fuel shortage also contributed to the defeat at Leyte Gulf and elsewhere by limiting the Imperial Navy's options.⁶⁶ Opinions differ among the Japanese as to when the fuel shortage first became critical, but certainly by 1944 it was already a vexing problem. By January of that year the lack of gasoline along with engine damage from using low grade or substitute fuels had idled many vehicles.⁶⁷ By the following spring the Army's fuel supply was "very meager," and there was no motor gasoline or heavy oil at all by the summer.⁶⁸ By then the Navy, too, was struggling with terrible deficiencies in liquid propellants. Two-thirds of the wooden vessels of less than 50 tons rode at anchor in 1945 because

⁶⁶Interrogations of Major Toga Hiroshi, No.112, Interrogations, Vol.I, p.119; Interrogation of Commander Terao Y., No.291, November 10, 1945, 15g, Section 2, USSBS, RG 243; Interrogation of Lieutenant-Commander Shigeki Takeda, No.354, November 4, 1945, 15g, Section 2, USSBS, RG 243; and Interrogation of Lieutenant-Colonel Nakano Matsura, No.528, December 14, 1945, Section 2, USSBS, RG 243.

⁶⁸Interrogations of Vice-Admiral Kurita Takeo, No.47, Vice-Admiral Ozawa Jisaburo, No.227, and Commander Mori Kokichi, No.233, Interrogations, Volume I, pp.33,36,220,244.

⁶⁷"Summary of Strategic Information on Japan's Motor Truck Position," R&A Report No.1743, January 18, 1944, Research and Analysis Branch, Office of Strategic Services, Record Group 59.

⁶⁶Hayashi, Kogun, p.154.

of it,⁸⁰ and it was only with the utmost difficulty that the Yamato obtained the 2,500 tons of oil necessary for its one-way suicide mission to Okinawa that April.⁸⁰

One possible escape from the petroleum straitjacket lay in the development of synthetic fuels. In 1920, with the Manchurian shale deposits in mind, the Imperial Navy and South Manchurian Railroad Company started experimenting with shale oil extraction.⁸¹ Within a decade they had discovered a workable method, and the government had already appropriated eleven and a half million yen for the project.⁸² By 1930 the plant produced 30,000 tons, and yearly output reached 65,000 tons within the next five years.⁸³ The South Manchurian Railroad Company doubled the capacity of the installations in 1935 and expanded it again four years

⁸⁰"The Principle Problems and the Obstacles Which Confronted the Japanese Shipping During Wartime," Prepared by Okada S., General Maritime Bureau, Ministry of Transportation, November 5, 1945, 46j, Section 2, USSBS, RG 243.

⁸⁰Interrogation of Admiral Toyoda Soemu, No.378, Interrogations, Volume II, p.316.

⁸¹"Report on Fushun," by Kenzie K. Kirkham and Robert A. Nitschke, June 11, 1943, 19b(44), Section 2, USSBS, RG 243; and Kaigun Gunsempi, pp.697-698.

⁸²"Memorandum from His Majesty's Consul at Dairen to the Comptroller General of the Department of Overseas Trade," January 6, 1930, Volume 1752, p.152, British Foreign Office - Japan Correspondence.

⁸³"Report on Manchukuo," by A.F. Macmanus, September 16, 1942, 19b(3), Section 6, USSBS, RG 243.

later.⁸⁴ As valuable as these production increases were, there was only so much shale in Manchuria, so the Japanese investigated other ways to manufacture synthetic oil. In 1937 the government founded the Imperial Fuel Development Company to control and support the synthetic fuel industry. The company proposed a seven year program to make the nation completely self-sufficient in petroleum. Largely by employing German synthetic fuel technology, they hoped to be producing 3,200,000 tons of oil annually by 1943.⁸⁵ The government supported this with subsidies and generous tax exemptions,⁸⁶ but the program also required scarce materials and labor. President of the Cabinet Planning Board Suzuki reported that completion of the plan would take 1,000 tons of cobalt, 2,250,000 tons of steel, 30,000,000 tons of coal, a further 3.8 billion yen, and 380,000 workers.⁸⁷ Allocations of these materials to the synthetic fuel program would considerably retard armaments production, but the Cabinet formally approved the plan anyway. The president of the

⁸⁴"Report on Fushun," op.cit.

⁸⁵Interrogation of Mr. Takashima, No.128, October 25, 1945, 51b(22)(pp), Section 2, USSBS, RG 243.

⁸⁶"Synthetic Fuel Program," 51b(2)(b), Section 2, USSBS, RG 243.

⁸⁷Japan's Decision for War, p.222; and Okada, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," p.23.

Imperial Fuel Development Company later confessed that no one took this decision seriously,¹⁰⁰ and the necessary materials as well as critical high pressure chambers and piping went into weapons.¹⁰¹ As the war brought ever more serious shortages, however, the Japanese pursued other methods for producing synthetic fuels. For instance, charcoal, coal, coalite, wood, acetylene, natural gas, and compressed gas all served as substitute automobile fuels.¹⁰² By 1943 they had built nineteen plants capable of annually extracting 100,000 kiloliters of alcohol fuel from potatoes and sugar.¹⁰³ But this method cut into food supplies, so there were obvious limits to its usefulness. There were also attempts to derive kerosene from coal, fuel from turpentine, and a massive effort in 1945 to distill aviation gasoline from pine roots.¹⁰⁴ The Cabinet Planning Board had been

¹⁰⁰Interrogation of Mr. Takashima, op. cit.

¹⁰¹Okada, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," op. cit.

¹⁰²"General Summary of Interviews on Army-Navy Oil Operations and of Overall Oil Allocations Between the Army, Navy, and Civilians," October 27, 1945, 15g, Section 2, USSBS, RG 243.

¹⁰³"Expansion of Alcohol Fuel Industry," 51b(2)(b), Section 2, USSBS, RG 243.

¹⁰⁴OSS Report No.35259, April 21, 1943, RG 226; Yomioso Yoshihiko, Nihon Koku Nenryo Shi, (Tokyo: Yokendo Hakko, 1956), pp.93,96; and Interrogation of Mori S. and Hiroye K., No.136, October 27, 1945, 51b(22)(q), Section 2, USSBS, RG 243.

quite right in their prewar claim that the synthetic fuel industry could never solve the petroleum problem.¹⁰³

The peacetime stockpiling of oil was another potential means of loosening the POL stranglehold. The Navy opted for this course after World War I, using steel from German reparations payments to erect storage areas. By 1926, over one and a half million tons of oil were in Imperial Navy tanks.¹⁰⁴ The Army, with considerably smaller needs, could normally purchase what it required on the world market and consequently never considered stockpiling until 1934.¹⁰⁵ In 1936 the Navy General Staff set ten million tons, or two years' supply, as the stockpiling goal, and the government provided five million yen in assistance.¹⁰⁶ By the time war with the United States broke out, the Japanese had put aside nearly eight million tons of petroleum products.¹⁰⁷ Of this

¹⁰³Japan's Decision for War, p.196.

¹⁰⁴Kaigun Gunsempi, pp.689-690.

¹⁰⁵"General Summary of Interviews on Army-Navy Oil Operations and of Overall Oil Allocations Between the Army, Navy, and Civilians," op. cit.

¹⁰⁶Lieutenant-General Hoshina to Lieutenant-Commander Williams, November 15, 1945, 51b(36)(1), Section 2, USSBS, RG 243; Japan's Decision for War, p.256; Kaigun Gunsempi, p.698; and "Homo Yusosen Hattatsu Keika no Gaiyo," Navy Ministry Munitions Bureau, May, 1942, Document No.23, Sempaku 4, Boei Kenshusho.

¹⁰⁷"Juyo Kokusaku Kettei Tetsu," July 1940 - December 1941, Document No.50, Zempun 1, Boei Kenshusho.

total, the Navy, which had by far the greatest POL needs, had collected 16,800 tons of lubricants, 500,000 kiloliters of aviation gasoline, 3,624,000 tons of heavy fuel oil, and 1,435,000 tons of crude petroleum, for a grand total of nearly five and a half million tons.¹⁰⁸ Even this massive effort, achieved only by enormous sacrifice and heavy costs, was only about a two years' supply.¹⁰⁹ The Navy, for instance, consumed nearly 300,000 tons of heavy oil per month for much of the war. The precious stockpiles dwindled rapidly, so that after twenty-eight months of war aviation fuel and heavy oil reserves were down 69% and 78% respectively. When the war ended there were only 4,000 tons of heavy oil left in all Japan.¹¹⁰ Stockpiling eased Imperial Japan's oil problem, but it was no solution.

With little domestic production and no hope for a successful synthetic oil or stockpiling program, Japan had no choice but to rely on petroleum imports for survival. The Navy negotiated long term contracts with foreign oil

¹⁰⁸"Daitoa Senso ni Okeru Wagamonoteki Kokuryoku to Kaigun Gumbi Sui-i ni Kansuru Setsumei Shiryo," op.cit.

¹⁰⁹Japan's Decision for War, pp.154,192; Harder, Old Friends, New Enemies, p.167; and Interrogation of Lieutenant-Colonel Nakano Matsura, No.528, December 14, 1945, Section 2, USSBS, RG 243.

¹¹⁰"Daitoa Senso ni Okeru Wagamonoteki Kokuryoku to Kaigun Gumbi Sui-i ni Kansuru Setsumei Shiryo," op. cit.; and "Stock, Production, and Consumption of Petroleum Products," 51b(38)(c), Section 2, USSBS, RG 243.

companies as early as 1917 and quickly became dependent on Borneo's wells.¹¹¹ Soon, however, the United States assumed the role of Japan's largest petroleum supplier. By the time of the China Incident, the U.S. was providing about two-thirds of Japan's liquid fuel imports.¹¹² The Japanese bought over two and a half million tons of oil from America in 1938, for example, and they imported even more in the following years as they tried to amass significant reserves.¹¹³ But knowing that in case of war this source would probably dry up, the Japanese gazed with envious eyes on the Netherlands East Indies, an island nation almost literally floating on a sea of oil. In 1940 this Dutch colony extracted from the earth just under eight million tons of petroleum, and the British possessions on Borneo added another million tons.¹¹⁴ Japanese planners believed that the military could occupy these areas and have the wells producing at

¹¹¹Kaigun Gunseibi, p.695.

¹¹²"Japan's Vulnerability to American Sanctions," Memorandum for Discussion of the Economic and Financial Group, Council on Foreign Relations, by William Diebold, Jr., Studies of American Interests in the War and the Peace, November 23, 1940, No.E-B24.

¹¹³Nihon Tankaa no Ayumi.

¹¹⁴Nihon Koku Nenryo Shi, p.71.

half the prewar rate within three years.¹¹⁶ These estimates actually erred on the side of caution, for the Japanese managed to restore production to 78% of the 1940 levels, and they did it in two years, not three.¹¹⁶ This was easily enough oil for both the Japanese economy and the emperor's forces in the field.

Obviously then it was not a failure in production but rather in transportation that spawned Japan's wartime oil nightmare. Because of petroleum's central role in Japan's defeat in World War II, the segment of the merchant marine responsible for moving liquid fuel, i.e., the tanker fleet, is of special interest in understanding the maritime transport failure. When interrogated after the surrender about Japan's management of the war, Munitions Minister Toyoda Teijiro replied that "the shipping shortage and the scarcity of oil were the two main factors that assumed utmost importance in Japan's war efforts."¹¹⁷ But as the paragraphs above demonstrate, the scarcity of oil was just another facet of the shipping shortage.

¹¹⁶Okada, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," op.cit.; and Japan's Decision for War, p.219.

¹¹⁶"Summary of Crude Production and Refinery Yields, Southern Area," 51b(38)(d), Section 2, USSBS, RG 243.

¹¹⁷Interrogation of Admiral Toyoda Teijiro, November 27, 1945, 54bbb(32), Section 2, USSBS, RG 243.

World War II was a form of total warfare which put Japan at a distinct disadvantage. The Empire lacked the population, industrial capacity, and materials to square off evenly against the Western powers. Yet in every category the Japanese had substantial resources, and their early string of conquests expanded their war-making potential to near parity with their opponents. But Japan survived less than four years, and the defeat was overwhelmingly total. Military and political errors account for much of this but cannot explain the utter collapse of the economy and war effort. It was the disruption of the transportation systems that intensified Japan's desperate circumstances and, in the end, proved unbearable. And, because of the geography of East Asia and the western Pacific, the merchant marine was the central component of the transportation systems. Seaborne transport thus had an enormous impact on the war. Chihaya Masatake put it succinctly, albeit awkwardly, when he said: "The Pacific War was a war of transportations."¹¹⁰

¹¹⁰Chihaya Masatake, "The One Big Battle Idea of the Japanese Navy," ("Chihaya's History"), unpublished manuscript, 1947, Navy Operational Archives.

CHAPTER 3
THE JAPANESE MERCHANT MARINE
BEFORE WORLD WAR II

For two and a half centuries before Commodore Perry opened Japan to significant foreign contact in 1853, the Tokugawa shoguns kept the island nation so isolated that the country's maritime traditions all but died out. It became illegal to travel abroad or even to build a ship capable of sailing the open seas. Japan entered the modern age with a merchant fleet comprised of little more than fishing boats and small coastal vessels.

To better resist the growing foreign pressure for trade concessions, the shogunate attempted in its dying days to rectify this glaring defect. In 1854 the Tokugawas constructed a western-style shipyard at Uraga, the site of Perry's fateful visit the preceding spring. Before the shoguns finally fell from power fourteen years later, they had built another five modern yards. The government insisted the yards concentrate on warship construction, and so the merchant

fleet grew only slowly, largely through purchases of foreign-built vessels.¹

When it assumed power in 1868, the Meiji government gained possession of all the new yards. As part of its plan to foster industrialization, the government retained control of the shipbuilding companies and all other modern enterprises that required substantial capital outlays and high technology. It at last began selling off these businesses in the 1880s to the private sector. So were born the great shipbuilding corporations that came to dominate the industry for the next sixty years.

The merchant marine itself remained miniscule during this period. In 1871 the entire fleet consisted of forty-six vessels aggregating 17,948 tons.² In the next two decades, Japanese yards launched on average less than 5,000 tons annually. As in the late Tokugawa era, the unimpressive rate of domestic construction led Japanese shipping firms to acquire new merchantmen abroad, over 150,000 tons' worth in these same twenty years.³ All told, about ninety percent of the

¹Japan-Manchukuo Yearbook Company, The Japan-Manchukuo Yearbook, 1938, (Tokyo: The Japan-Manchukuo Yearbook Company, 1937), p.268.

²"Japan's Miraculous Commercial Rise," Literary Digest, Volume 72 (January 7, 1922), p.30.

³Nihon no Zosengyo, Seiji Keizai Kenkyusho Hen, (Tokyo: Toyo Keizai Shimpō Sha, 1959), p.8.

merchant marine's expansion before 1894 came from foreign-built ships.⁴

It took extensive government intervention and a major war to shake the Japanese shipping and shipbuilding industries from their chronic lethargy. The Meiji government had from its inception fostered the spread of Western technology in naval architecture, as in most other fields, by inviting foreign experts to Japan and sending native engineers and craftsmen to study overseas.⁵ In 1885 the government prohibited construction of Japanese-style ships over 500 tons in size, thereby forcing the yards to adopt western engineering.⁶ But the Sino-Japanese War of 1894-95 proved the critical stimulus, for it made Japan's maritime inadequacy abundantly clear. In response, the Diet enacted the Shipbuilding Encouragement Law and Navigation Encouragement Law in 1896. There had been some subsidies before, but this was the first comprehensive program for the promotion of the maritime industries in the history of Japan. Lasting eighteen years, it subsidized shipping firms on specified routes and shipyards producing steel merchantmen over 700 tons.⁷

⁴The Japan-Manchukuo Yearbook, 1938, p.269.

⁵Ibid, p.268.

⁶Kyoiku Iho (Koun) Daijunigo, "Waga Koku Kaiun ni Kansuru Sankosho," Kaigunsho Kyoikukyoku, March 10, 1944, Sempaku 4, Boei Kenshusho.

⁷"Shipbuilding in Japan," Engineering Magazine, Volume 36

The Shipbuilding and Navigation Encouragement Laws were an unqualified success that provided the foundation for Japan's entry into the ranks of the world's modern seafaring nations. The merchant fleet doubled over the next decade, from 709,000 tons of steel vessels in 1896 to 1,527,000 tons in 1905. Significantly, in this period a far larger proportion of the new tonnage came from domestic construction than ever before. Seventy ships entered Japanese service from 1893 to 1896, but only one of those was the product of a Japanese shipyard; in contrast, the nation's yards launched fifty-one of the 195 ships that joined the merchant fleet from 1896 to 1905.⁹ Since Japanese shippers were buying more brand new ships from the domestic yards and less overage vessels from foreign sources, the merchant fleet became younger and more efficient. By 1905, nearly a quarter of the merchantmen were five years old or less, and only 20% were over twenty years old.¹⁰ By 1901 Japan's annual shipbuilding output had reached 31,771 tons, and production held steady for the next few years.¹¹ The Russo-Japanese War of 1904-05

(November, 1908), p.269.

⁹G. Charles Hodges, "A Little Brown War Baby," Sunset, Volume 39 (September, 1917), p.92.

¹⁰"The Development of Japanese Shipbuilding," Scientific American Supplement, No.1652 (August 31, 1907), p.130.

¹¹"Shipbuilding in Japan," p.268.

ignited another period of steady growth that lasted for several more years, followed by a slight recession that plagued the shipyards shortly before World War I erupted in Europe.

This era saw Japanese shipbuilding make substantive progress technologically as well as quantitatively. The 6,000-ton Hitachi Maru, for example, which was one of the first of the new large steamships built in Japan, presented grave difficulties when constructed in 1898, but within a few years Japanese yards were tackling similar projects with ease.¹¹ Late in 1904 they produced their first fuel oil burning ship, and by 1910 they had built several others, including the 20,000-ton Satsuma, the largest battleship in the world at that time.¹² One Western observer reported with some surprise in 1906 that the battlecruisers Kurama and Ibuki, then under construction, were "the first cruisers designed for any navy in the world carrying the same primary weapon as battleships. In fact, in gun power they will be superior to any battleship now afloat."¹³ Foreigners were no less impressed with Japan's expanding shipbuilding

¹¹Ibid.

¹²Senshishitsu Cho, Volume 31, Kaigun Gunsenbi, Part I: Showa Jurokunen Juichigatsu Made, (Tokyo: Asagumo Shimbunsha, 1969), p.686.

¹³"Japanese Shipbuilding," Cassier's Magazine, Volume 29 (January, 1906), p.260.

facilities. The Mitsubishi yard in Nagasaki, for instance, stretched over 114 acres and employed 10,000. It had three graving docks, including one 728 feet long, plus a floating drydock capable of servicing a 7,000-ton vessel. Between 1900 and 1908 this yard alone floated off forty-seven ships from its ways. The Kawasaki yard at Kobe, the Osaka Iron Works, and the Uraga and Ishikawajima yards on Tokyo Bay were other shipyards of comparable size and equipment.¹⁴

World War I touched off a phenomenal boom in Japan's shipyards because German U-boat successes created a gaping deficit of shipping worldwide. In 1912 Japanese companies built just 48,000 tons of steamships,¹⁵ and as late as May, 1915, there were only four ships totaling 24,400 tons on the ways.¹⁶ But already by the end of 1915 there were eighty merchantmen of 481,000 tons under construction, and the orders kept pouring in.¹⁷ As one Japanese historian described it: "...a situation developed wherein no matter how much shipping was built, it was not enough."¹⁸ Japanese yards

¹⁴"The Development of Japanese Shipbuilding," p.130; and "Shipbuilding in Japan," p.268.

¹⁵Japan-Manchukuo Yearbook, 1938, p.269.

¹⁶Hodges, "A Little Brown War Baby," p.92.

¹⁷Ibid.

¹⁸Nakagata Kohachi, Zosengyo Kai, Volume 127, Kyoikusha Shimpan Sangyokai Shirizu, 1979, p.108.

launched 251,484 tons in 1916, but the market seemed endless as the expansion continued. In 1917 Japanese shipbuilders received orders for 370 ships of 1,330,000 tons.¹⁰ Construction peaked at 610,000 tons in 1919,²⁰ a figure not equaled for another quarter of a century. The limiting factor turned out to be not facilities or labor or capital or even technical skill, but steel. Given an adequate supply of steel plates, angles, and other shapes, Japan's shipbuilding industry might have produced a million tons annually.²¹ In 1918 the shipbuilders sold forty-five ships of 370,000 tons to the United States in return for 250,000 tons of steel, but the lobbying of American shipbuilders scotched further deals of this sort.²²

Nevertheless, Japan had become an exporter of merchant shipping and, in fact, one of the world's leading producers of cargo vessels. And, once again, technological development kept pace with increases in the volume of construction. For instance, in this period the Japanese for the first time overcame the complicated engineering problems involved in

¹⁰M. Togo, "Japan and Ships," North American Review, Volume 207 (March, 1918), p.373.

²⁰Nakagata, p.108.

²¹Togo, "Japan and Ships," p.371; and "Japan Makes a Shipbuilding Record," Literary Digest, Volume 61 (April 26, 1919), p.22.

²²Ibid, p.372; and Nakagata, p.108.

tanker construction and built several for the navy.²³ They also completed the Raifuku Maru, a 5,800-ton, 14-knot steamship, in twenty-nine days, a world's record.²⁴

Japanese shipping as well as shipbuilding profited enormously from World War I. With the great European powers fully embroiled in total warfare, the Japanese merchant fleet managed to expand into several heretofore closed shipping markets. The OSK Line (Osaka Shosen Kaisha), for example, serviced only the west coast U.S.A. and East China Sea ports before the war, but by 1919 it had broken into the lucrative routes to Bombay, Calcutta, Australia, and Europe itself. Furthermore, by the war's end it had virtually replaced European shipping to and from South America.²⁵ The merchant marine grew to nearly three million tons and carried 80% of the nation's trade, the highest proportion ever transported in Japanese bottoms during the entire Imperial period.²⁶

²³Kaigun Gunseibi, pp.690-692.

²⁴"Japan Makes a Shipbuilding Record," p.22.

²⁵Nakagawa Keiichiro, "Japanese Shipping in the Interwar Period," address delivered at The Ohio State University, 1979.

²⁶Japanese Merchant Shipbuilding, Military Supply Division, United States Strategic Bombing Survey (Pacific), No.54, (Washington: United States Government Printing Office, 1947), p.4.

The very success that the world war visited upon Japan's maritime industries soon created fresh difficulties. Mostly because of the frenetic wartime construction, the total tonnage of the world's merchant fleet grew 48% from 1913 to 1932. But the volume of trade expanded just 1% in the same period.²⁷ In Japan and in the United States, which had also experienced a shipbuilding boom, the merchantmen mass produced in wartime proved too costly to buy and operate under these conditions. The pattern generally held true worldwide, and a persistent depression settled in among the world's shipping industries.

Shipbuilding in Japan dwindled to almost nothing in the next decade. In 1922, the shipyards, which had turned out a record 610,000 tons just three years earlier, managed to launch only 80,000 tons. The market remained sluggish for years, and by 1927 Japanese shipbuilding had leveled out at a paltry 40,000 tons annually.²⁸ The Washington and subsequent naval arms limitation conferences radically reduced military construction as well, so the Japanese shipyards had no government contracts to alleviate this extended depression.

²⁷Nakagawa Keiichiro, op.cit.

²⁸Nakagata Kohachi, Zosengyo Kai, p.109.

The shipping lines, on the other hand, fared somewhat better due to an innovative management approach. By forming large shipping pools, Japanese firms gained a flexibility in scheduling that other trading companies could not match. With more centralized control, Japanese shipping could usually combine two or more standard routes to ensure that cargo carriers were seldom empty. Non-Japanese shipping firms were invariably more specialized and hesitated to experiment with their traditionally profitable runs. So while other nations were taking advantage of depressed shipbuilding prices to replace aging freighters with new models, the Japanese were buying up much of the old tonnage and actually expanding the size, though not the quality, of their merchant marine.²⁰

Despite the adaptability of Japan's seaborne transport companies, by the late 1920's a depression settled upon the merchant fleet as it had on the shipyards, and shippers were mooring their vessels in record numbers. Several shipowners formed the Nippon Sempaku Tosei Kaisha (Japan Shipping Control Association) to examine the berthed shipping problem. The Association eventually selected 800,000 tons of the oldest, most uneconomical merchantmen and dismantled them for

²⁰Nakagawa Keiichiro, op.cit.

scrap.³⁰ There was concern within the government, too, over the poor state of the maritime industries. The Navy Ministry was already clamoring by mid-1927 for protectionism for Japanese shipping.³¹ In July, 1932, the Ministry of Communications established the Assembly on Maritime Matters (Kaiji Shingikai), a body with members from the Ministries of Communications, Industry and Commerce, Navy, Colonial Affairs, and Finance as well as private citizens from all concerned industries. The Assembly was to investigate current problems and recommend countermeasures.³² In addition, the government increased warship orders, provided loans for moored ships, and pressured the Japan Industrial Bank into cutting interest rates on shipbuilding loans to 1.5%.³³

And still the depression lingered, so in 1932 the Ministry of Communications initiated its most ambitious subsidy program yet. By providing assistance for scrapping older ships and building more efficient freighters, the government hoped to lower cargo rates and give the shipbuilders a boost at the same time. The plan offered subsidies for new

³⁰Nihon Tankaa no Ayumi, Document No.22, Sempaku 4, Boei Kenshusho.

³¹"Jikoku Sen Riyo ni Kansuru Kengi no Kudan," Report of the Naval Affairs Research Group, Ministry of the Navy, June 7, 1927, Item No.3, S2-9, Boei Kenshusho.

³²Nihon Tankaa no Ayumi.

³³Ibid; and Nakagata Kohachi, p.109.

construction under two conditions. First, any company desiring aid had to scrap two tons of "old" (defined as over twenty-five years of age) shipping for every ton of new shipping launched. Second, the program only subsidized the construction of merchantmen over 4,000 tons and 13.5 knots. Shipping firms that ordered cargo carriers that had diesel engines or that were faster than 13.5 knots received additional incentives. The Diet appropriated eleven million yen for the "scrap and build" program over the next three years.³⁴

The freight companies jumped at these generous terms. By 1935 the shipyards had launched thirty-one ships of 199,310 tons under this program, and the shipbrokers had scrapped ninety-four vessels aggregating 399,122 dilapidated tons.³⁵ The monthly rate of scrapping soared impressively, from under 15,000 tons in 1932 to nearly 48,000 tons soon after the plan began.³⁶ By the following year it was averaging almost one million tons annually.³⁷ Because of the program's notable success, the government extended it for another

³⁴Nihon Tankaa no Ayumi.

³⁵Ibid.

³⁶G.H. Phipps, H.M. Consul, Kobe, to Secretary of State for Foreign Affairs, April 21, 1933, Volume 17149, p.242, British Foreign Office - Japan Correspondence.

³⁷Department of Overseas Trade to British Foreign Office, January 8, 1934, Volume 18174, p.209, BFOJC.

50,000 tons of freighters on April 11, 1935. On this occasion, however, a 1:1 ratio of tonnage scrapped to tonnage built superseded the original 2:1 ratio, since the once vexing problem of berthed shipping had disappeared. So many shipping firms applied that within a few days they had accounted for all the allowable tonnage. Altogether the government spent one and a half million yen, and when the funds ran out in 1936, the Diet voted to renew the program once more. This latest extension, the most voluminous of all, featured a sixfold increase in tonnage and a tenfold jump in appropriations. The conditions were the same, but now many more merchant types, including passenger liners and tankers, became eligible. After 1936, the government began offering subsidies for new construction without concomitant scrapping. Other programs also continued throughout the 1930's, some expanding as rapidly as the "scrap and build" drive. The government's ceiling for shipbuilding loans, for instance, went from fifty million yen in 1931 to seventy million and then to one hundred fifty million yen by 1938.³⁰

It was primarily economic motives that shaped these programs, but the leaders of Imperial Japan were not blind to the military benefits of an improved merchant marine. "In a Pacific conflict involving two large fleets, both remote

³⁰Nihon Tankaa no Ayumi.

from bases," remarked one American observer in Japan, "the possession of a fleet train capable of keeping up with the combatant units might mark the difference between victory and defeat." He went on to describe the newest Japanese merchantmen as "without peer" and their two latest tankers as "astounding because of their combination of size and speed." He concluded: "There is no unit of the fleet train in the United States Navy which they could not leave far astern."³⁹ Bearing in mind that the original "scrap and build" plan handsomely rewarded extra speed (ships of 18 knots received 20% larger subsidies than 13.5-knot vessels⁴⁰), it is easy to see the military's hand in this intense rebuilding effort. And, as one historian described it, when the government extended the program three years later, "stress was put on improvement of quality and strengthening of national defense, because the problem of berthed ships no longer existed."⁴¹

As the decade wore on, military factors gained more and more influence on the maritime subsidy programs. The 1936 "scrap and build" extension, for example, stipulated that

³⁹State Department File No.894.8591/5, "The Strategical Value of Japan's New Merchant Fleet," by Vice Consul Robert Mills McClintock, August 14, 1934, Record Group 59.

⁴⁰Nihon Tankaa no Ayumi.

⁴¹Ibid.

funds would go only to ships of at least 6,000 tons and 19 knots. Two years later the government subsidized construction of two 24-knot, 26,000-ton liners. Aid to tankers depended even more on their military adaptability. Conditions for subsidies to these craft included not only high speeds and large cargo capacity but also room for mounting eleven-inch naval guns, total blackout capability, and the potential for adding special equipment for at-sea refueling, high speed pumping, and other useful military functions.⁴² In some cases the Imperial Navy directly intervened in the maritime industries by demanding cost accounting methods and offering its own freight rate subsidies.⁴³

What emerged from all of this government involvement was a merchant marine substantially younger and faster than it had been when it entered the economic doldrums of the late 1920s. By 1939, 60% of Japan's cargo carriers were under twenty years old, while the average age of American merchantmen, in comparison, was twenty-one. Forty percent of Japanese freighters and fully 70% of Japanese tankers were 12 knots or faster, as compared to 25% and 20% for those two

⁴²Ibid.

⁴³"Hompo Yusosen Hattatsu Keika no Gaiyo," Munitions Bureau of the Navy Ministry, May, 1942, Document No.23, Sempaku 4, Boei Kenshusho.

groups, respectively, in the U.S. merchant fleet.⁴⁴ Japan already had fifty of these large, fast vessels, all under five years old, plying the silk routes by 1935. Several of them were 9,000-ton ships capable of crossing the Pacific in just eleven days, about half the time usually needed.⁴⁵ The military value of such a merchant navy is self-evident.

The 1930's witnessed marked economic as well as military improvement in Japan's marine industries. Annual shipbuilding tonnage surpassed the 100,000-ton level in 1934 and reached 442,382 tons three years later.⁴⁶ In fact, by 1937 the shipyards were employing 3.1% of the Japanese labor force and supplying over 5% of the nation's privately produced capital goods.⁴⁷ Japan had by then over one hundred ways, a third of them longer than 500 feet, with a yearly construction capacity of 900,000 tons.⁴⁸ These facilities accounted for ten percent of shipbuilding worldwide in 1937,

⁴⁴"Bottoms Down," Business Week, May 23, 1942, pp.36-38.

⁴⁵Andrew R. Boone, "Motorships of the Silk Fleet Sail World's Greatest Sea Race," Popular Science Monthly, Volume 126 (April, 1935), p.14.

⁴⁶USSBS, Japanese Merchant Shipbuilding, p.44.

⁴⁷Ibid, p.5.

⁴⁸Attache Report No.29-37, File No.409-600, February 15, 1937, Record Group 38.

twice that of the United States.⁴⁰ Shipbuilding in Japan had developed so favorably by the decade's end that the Cabinet Planning Board judged its capacity "generally sufficient," one of the few industries so described.⁴¹

In this period Japanese shipping also awoke from dormancy to enter a new era of expansion and prosperity. Amounting to just over four million tons in the early 1930s, Japan's merchant marine easily topped six million tons by the time of Pearl Harbor.⁴² Since merchantmen of excellent quality comprised most of this new fifty percent gain in shipping, the tonnage figures alone do not adequately convey the dramatic strides Japan's seaborne transport took in the 1930's. By the end of the decade, Japan possessed a merchant fleet ranked third in the world by size and perhaps second to none in efficiency. The British, for centuries the globe's leading mercantile seamen, had to start subsidy programs to compete with the newly built Japanese liners.⁴³

⁴⁰"World Builds Ships," Business Week, January 30, 1937, p.40.

⁴¹Cabinet Planning Board, "Circumstances of the Execution of Production Capacity Expansion Plans and Subsequent Countermeasures," October, 1939, Genkoshi Shiryo, Volume 43, Kokka Sodoin, (Tokyo: Misuzu Shobo, 1970), p.227.

⁴²"Japanese Merchant Shipping Position, 1931-1941," 54vv(10), Section 2, United States Strategic Bombing Survey, RG 243.

⁴³"Australia Needs Airplanes," Business Week, January 30, 1937, p.44.

The challenge Japanese shipbuilders were presenting to the world's maritime powers was more than economic or military, however, for the nation was advancing remarkably in naval architecture as well. In 1937, for instance, a Japanese yard repaired a tanker with a badly corroded center section by cutting out the damaged segment, constructing a whole new section ashore, and then welding the original bow and stern to the new center. The resulting vessel differed little from a brand new tanker.⁵³ The Imperial Navy in particular benefited from the design improvements of the country's naval engineers. Cruisers armed with forty torpedoes, plane-carrying submarines, and 27-knot battleships toting 18.1-inch guns are a few of the superior combatant types that outfitted the emperor's fleet. But probably the most eloquent testimonial to Japan's technical progress is the willingness of the Soviets, the British, and others to place orders, including some for warships, at Japanese shipyards.⁵⁴

⁵³Stuart Lillico, "Japan at Sea," Current History, Volume 45, (February, 1937), p.53.

⁵⁴Director of Naval Intelligence, Admiralty, to Secretary of State for Foreign Affairs, December 29, 1936, Volume 20285, p.86; Director of Naval Intelligence, Admiralty, to Under Secretary of State for Foreign Affairs, November 15, 1937, Volume 21044, p.25; and Sir Roger Craigie to British Foreign Office, February 27, 1940, Volume 24736, p.27, BFOJC.

The ascent of Japan's maritime industries from near oblivion in the early 1930's to healthy prosperity within a few years aroused no little attention. Students of the phenomenon attributed it to a host of factors, including Chinese Eastern Railway purchase agreements, foreign warship orders, expanded overseas trade, and international agreements for ship improvements.⁶⁶ But most recognized the extensive subsidy and other government programs as the heart of Japan's merchant marine recovery.⁶⁶ Said one writer: "...principally the responsibility must go to intelligent, consistent, and well thought-out Government encouragement and control."⁶⁷

"Control" is the key word here, for by the late 1930's Japan's shipping and shipbuilding industries were coming under increasingly stricter government supervision. Three months after the outbreak of the China Incident in July, 1937, the Diet promulgated the Temporary Shipping Control and Manchurian Shipping Control Acts. While the government

⁶⁶Marc T. Greene, "Can Japan Stand the Strain?," The Spectator, December 30, 1938, quoted in Volume 23557, p.37, BFOJC; "Japan is Building Foreign Warships," The Japan Advertiser, January 11, 1936, quoted in Volume 20285, p.83, BFOJC; and Comptroller-General, Department of Oversea Trade, to the Under Secretary of State for Foreign Affairs, January 15, 1936, Volume 20285, p.80, BFOJC.

⁶⁶Nihon no Zosengyo, p.8; Comptroller-General, Department of Overseas Trade, to the Under Secretary of State for Foreign Affairs, January 15, 1936, Volume 20285, p.80, BFOJC; Stuart Lillico, p.48; and Nihon Tankaa no Ayumi.

⁶⁷Stuart Lillico, p.48.

had previously often tendered advice and other assistance, this was the first direct intervention in the management of the merchant marine. These laws established within the Ministry of Communications a Shipping Control Committee with the authority to limit ship rentals or transfers, regulate the importation of foreign-built vessels, fix freight rates, adjust sale prices for new and used craft, and close specified ports or routes to foreign competition. In practice, the Shipping Control Committee worked more by persuasion than command, and many of its members were private businessmen from the very industries they were supposed to oversee. So the private sector ended up regulating itself, much as it had been doing for several years through voluntary associations. Therefore government control at this time was simply an "unused threat."⁸⁸

However, the trend toward public management of the maritime industries was unmistakable. Despite Japan's many victories in the field, the China Incident eluded quick resolution and exposed, among other things, a need for closer direction of the merchant fleet. In 1940 the cabinet formulated a "maritime transport system policy" that created an agency, composed entirely of shipping firm executives, to implement government transportation plans. The Ministry of

⁸⁸Nihon Tankaa no Ayumi.

Communications and Cabinet Planning Board cooperated in producing these plans, which encompassed everything from shipping allotments to rate adjustments for freight, labor, and materials. The idea was to mobilize private expertise for the execution of government policy.⁸⁸

By early 1941 this system had proven unworkable, evidently because the central civilian agency was too large and unwieldy for the pace of wartime decisionmaking. The government appointed a committee to investigate the problem. Not surprisingly, the committee recommended a streamlined Sea Affairs Office (Kaimu Insetchi) to coordinate all seaborne transport activities, but bureaucratic wrangling delayed its formation until after Pearl Harbor. Meanwhile, after determined lobbying by the Navy in and out of the legislature, the Diet had passed the Merchant Ship Protection Law in March. This in effect placed the Japanese merchant marine under martial law. The nation's maritime transport was thus firmly in the military's hands when conflict erupted in the Pacific.⁸⁹

Because of the vital part petroleum played in the nation's war effort, the tanker contingent of the Japanese

⁸⁸Senshishitsu Cho, Volume 46, Kaijo Goei Sen, (Tokyo: Asagumo Shimbunsha, 1976), pp.46-48.

⁸⁹Ibid, pp.49-54.

merchant marine is worthy of special consideration.⁸¹ From the beginning of its modernization in the 1870's down to the early twentieth century, Imperial Japan had to rely completely on foreigners to transport its oil imports. Chinese merchants employing sailing ships laden with oil in drums were the first to dominate Japan's liquid fuel imports. But soon the British and Americans used the inherently more efficient tanker to undersell the Chinese and chase them from this expanding market. Only in 1906 did a Japanese company dare to challenge the foreign stranglehold on oil imports. An oil refiner named Asano Soichiro purchased three tankers in an attempt to grab a share of the market, but his western competitors bankrupted him in a few years by "dumping" oil in Japan at prices Asano could never match. Foreign control of oil imports lasted another decade.

World War I eventually regenerated the Japanese tanker industry because both the military and the private sector came to appreciate the indispensability of petroleum for their future survival. The Imperial Navy launched a tanker construction program in late 1915 that bore fruit several years later. Soon a number of corporations also bought or built tankers. By 1926, nearly 75% of the nation's oil

⁸¹Except as otherwise noted, all details from the story of the development of Japan's tanker industry are from Nihon Tankaa no Ayumi, Document No.22, Sempaku 4, Boei Kenshusho.

imports were arriving in Japanese bottoms, some from as far away as the California. Tariffs and a sales agreement with the United States and Great Britain were responsible for the resurgence of the Japanese tankers, but perhaps the backbone of the recovery was the steady and always growing market provided by the Navy. The Navy possessed enough tankers to supply its own needs but always withheld some from transport duties to serve on maneuvers and other missions. The profits private companies earned for making up this deficit, normally amounting to hundreds of thousands of tons annually, were often their only margin of survival. Naturally a tradition of cooperation with the Navy developed among Japan's tanker operators.

Consequently, when the Imperial Navy began installing oil-burning engines on all its ships from 1928 on, it turned to the oil companies to provide fleet tankers. And private business responded by building 10,000-ton tankers to import petroleum for the Navy in peacetime and serve with the fleet in case of war.⁸² There was, in fact, a glut of oil on the world market at that time (caused by the recent development of the Russian, Rumanian, and Venezuelan oilfields) which dramatically raised sales and sparked a tanker building frenzy around the globe. Gross tanker tonnage increased

⁸²Kaigun Gunsempi, p.700.

about 35% from 1928 to 1933.⁸³ This was excessive, however, and a predictable depression settled on the tanker business. By October, 1932, 3,916,000 of the world's 8,700,000 tanker tons were idle, paying inflated berthing costs. Four years earlier Japanese tanker operators had banded together as the Japan Tanker Association (Nihon Tankaa Kyokai) to "greatly assist the nation" by "constantly communicating with the oil industry and researching the supply and demand markets for oil and researching tanker development." But compliance with the group's decisions was voluntary, and so its feasible plan for sharing the market quickly collapsed under the strain of depression. At that point only government intervention could save the industry.

The Imperial Navy was once more the touchstone of the tankers' revival. By offering fares up to 38% higher than civilian rates, the Navy poured sorely needed capital into the tanker industry. This indirect subsidy allowed Japanese tankers to operate in the international arena at competitive rates, sometimes 50% lower than those of other nations. The tanker industry also profited from the plethora of government aid programs for the merchant marine. The 1932 "scrap and build" plan resulted in only two new tankers, but the second extension five years later furnished funding for

⁸³ "Hompo Yusosen Hattatsu Keika no Gaiyo," op.cit.

eight new tankers totalling 75,000 tons. In 1941 the Navy instigated another construction subsidy program devoted exclusively to tankers, though the opening of hostilities in the Pacific curtailed this somewhat. Altogether 43% of the tankers built in Japan in the decade before Pearl Harbor received government aid. Such assistance carried a price, however. As with the merchant marine as a whole, the tanker industry surrendered to government control. Indeed, with its history of dependence on the Navy, the tanker operators submitted rather willingly. The Navy opted to implement its policies through the Japan Tanker Association, still technically a voluntary organization.

Despite the tanker industry's loss of autonomy, its growth in the prewar years was impressive. Carrying capacity reached four million tons per year by 1940, very nearly four times what it had been six years before. Tanker tonnage catapulted from 119,987 to 364,344 in the same period.⁸⁴ And as with the merchant fleet in general, the majority of the new vessels were among the best in the world.⁸⁵ However, the tanker fleet was still inadequate for the country's needs. Oil demands skyrocketed in the late 1930s due to the

⁸⁴Gerhard M. Williams to Director, Oil and Chemical Division, United States Strategic Bombing Survey, January 23, 1946, 51b(36)(1), Section 2, USSBS, RG 243.

⁸⁵See "Bottoms Down," Business Week, op.cit.

accelerated stockpiling effort⁶⁶ and the outbreak of war in China. Though their quality raised their value beyond what the numbers suggest, tankers comprised only 8% of Japan's merchant fleet in 1939. By way of contrast, Great Britain, a nation with economic and geographical conditions not unlike Japan's, possessed proportionately twice as much tanker tonnage.⁶⁷ "Japan's tanker position before the recent war," reported one 1947 study, "was in sharp contrast to the degree of over-all maritime self-sufficiency indicated above. Up to the outbreak of hostilities, she relied heavily on foreign tankers for oil imports."⁶⁸

Japan's maritime transport, that vital component in the nation's war capability, was satisfactory, though only marginally so, for the country's needs. Merchant ship quality was generally high due to the government's building programs of the 1930's. The tankers were too few but at least included a large percentage of "superior" ships, thanks to the Navy's generous assistance. Furthermore, by 1940 the maritime industries had succumbed completely to government control and were poised to perform as directed. On the eve of Pearl Harbor, then, Japan's merchant marine was a

⁶⁶See Chapter 2 above.

⁶⁷"Hompo Yusosen Hattatsu Keika no Gaiyo," op.cit.

⁶⁸USSBS, Japanese Merchant Shipbuilding, p.4.

substantial, efficient, and compliant force, a valuable asset for the kind of war about to descend upon the vast Pacific.

CHAPTER 4

JAPANESE SHIPBUILDING DURING WORLD WAR II

The China Incident had already exerted four years of wartime pressure on Japan's maritime industries before the Combined Fleet ravaged Pearl Harbor, yet that epic event initiated new strains on the empire's shipping and shipbuilding resources. Military operations, especially the six months of offensive campaigns the Japanese were about to launch in the western Pacific, necessitated extensive commandeering of merchantmen. Furthermore, every military success generated additional logistical responsibilities for the merchant marine. The shipyards, for their part, had to maintain a rate of construction equal to the rate of ships sunk while still reserving enough capacity to repair the anticipated sizable increase in vessels damaged by enemy action.

A healthy, growing shipbuilding industry had emerged from Japan's well-conceived subsidy programs of the 1930s.¹ But

¹See Chapter 3 above.

because of the diversion of shipyard capacity to military vessels, merchant ship production actually declined in the last few years of the decade, from a prewar peak of 441,032 tons in 1937 to 237,617 tons in 1941.² The same problem continued to limit merchant ship construction throughout the war years. Despite possessing its own yards, the Imperial Navy had historically relied heavily on commercial shipbuilders for much of its new ship construction. In the last four years before the war, for instance, private shipyards had begun work on six aircraft carriers, three cruisers, and the mammoth battleship Musashi. Naval construction absorbed fully 44% of private shipbuilding capacity in this period. The Navy did not curtail its heavy ship orders until eighteen months after the outbreak of war. Even so, production of light units occupied private ways until the war's end. For instance, commercial yards built over 90% of the Navy's coast defense vessels, as well as destroyers and submarines totalling tens of thousands of tons.³ At no time in the war did naval construction occupy less than 30% of the nation's private shipbuilding capacity. All told, commercial yards

²"Summary of Merchant Ship Construction," 48c(1), Section 2, United States Strategic Bombing Survey, Record Group 243, United States National Archives.

³Japanese Merchant Shipbuilding, Military Supply Division, United States Strategic Bombing Survey (Pacific), No.48, Washington: United States Government Printing Office, 1947), pp.5,19,20.

launched 728,747 tons of warships during the war years, which was 50% more than the Navy's yards produced.⁴

To calculate the damage this extensive warship construction did to merchant ship production, one must tabulate more than the diverted shipyard capacity, for the Navy utilized only the country's most productive shipyards. For example, the Kawasaki yard at Kobe and the Mitsubishi yards at Nagasaki and Yokohama were three of the five largest in Japan. But they were also three of the most efficient, accomplishing nearly one third of the nation's shipbuilding effort (computed by yen value added) during the war with only one seventh of the country's way length and one fourth of the total floorspace and employees.⁵ Between 1937 and 1943, the Imperial Navy assigned to these three shipyards three cruisers, one battleship, and nine carriers. By 1941, these yards were launching merchantmen at just 29% of their 1937 rate. Even though most of these heavy naval units had left the ways by 1943, the yards were producing merchant ships at less than half the national average.⁶ One authority claimed that building warships was "five to six times as much trou-

⁴Japanese Naval Shipbuilding, Military Supplies Division, United States Strategic Bombing Survey (Pacific), No.46, (Washington: United States Government Printing Office, 1946), p.7.

⁵USSBS, Japanese Merchant Shipbuilding, p.43.

⁶Ibid, p.19.

ble."⁷

Another problem that plagued Japanese shipyards during the war was the chronic shortage of labor, especially skilled workers. As in all other Japanese industries, the shipbuilders resorted to several palliatives that ultimately proved ineffective. The Uraga yard, for example, suffered irreparable employee losses to the draft in late 1944 and thereafter relied "to a significant extent" on conscripted Koreans, who lacked skills, loyalty, and morale.⁸ One group of eight large shipyards reported in 1944 that only one in five workers was a regular employee. Conscripted labor accounted for over half of all employees in these yards. Though Chinese and Koreans formed only a small part of this group, the rest were largely unskilled, disabled farm workers called in from the Japanese countryside. Students, criminals on leave from jails, women, and prisoners of war comprised the balance of the work force.⁹ The intensive bombing of Japan's cities in 1945 left the labor situation hopeless, because despite the relatively light damage to the shipyards themselves, widespread destruction of housing, transporta-

⁷Nakagata Kohachi, Zosengyo Kai, Volume 127, Kyoikusha Shimpan Sangyokai Shirizu, 1979, p.110.

⁸Interrogation of Mr. Sunagawa, Superintendent Business Manager and Chief Engineer of Uraga Dockyard, Interrogation No.96, October 23, 1945, 46j, Section 2, USSBS, RG 243.

⁹USSBS, Japanese Merchant Shipbuilding, p.35.

tion, and food supplies forced much of the population away from the nation's industrial plant. The scarcity of labor thus presented a host of difficulties, yet it was not the decisive limitation on Japan's merchant ship production in World War II. Records show that the number of employees and man-hours worked in the shipbuilding industry peaked in early 1945.¹⁰ Yet productivity had begun its downward spiral well before then, suggesting that other, more influential factors were at work.

The need for repairs on merchantmen quickly outstripped the prewar estimates and diverted much production capacity from new construction. This was not strictly due to unexpectedly high battle damage, however, for the Japanese continually postponed normal maintenance and repairs, thereby increasing the ultimate need for repairs. On December 7, 1941, a reasonable 12% of the merchant marine was laid up for routine maintenance. By withholding repairs on all but the most needy vessels, the Japanese kept this figure below 20% for two years, but then the wear and tear on the fleet began to show. At no time in the final year of the war was less than a quarter of the nation's maritime transport awaiting refurbishment in drydock. Over nine and a half million tons of merchantmen underwent repairs just in 1944. Since this was

¹⁰Ibid, p.34.

more than double the total tonnage of the entire merchant fleet still afloat that year, it is clear that the constant procession of freighters and tankers through the shipyards for repair seriously impeded new construction. By the time of the surrender, well over half the merchant marine was awaiting service.¹¹ In fact, in 1945 the Navy prohibited the use of shipyard steel stockpiles for anything but repair work.¹²

The steel shortage placed an even more significant limitation on Japanese merchant ship construction during World War II. In the war's early stages, the government assigned a low priority to merchant shipbuilding, and consequently steel allocations were less than 10% of national production. But as the full extent of Japan's shipping inadequacies became apparent in 1943 and later, steel became more readily available to the shipyards. Indeed, steel production fell by nearly a quarter in 1944, yet the government assigned nearly 50% more steel to the nation's shipbuilders than in the preceding year. When the war ended, 46% of all the steel rolled in Japan was going into merchant ships. Despite such gener-

¹¹Ibid, pp.20-21.

¹²"The Principal Problems and the Obstacles Which Confronted the Japanese Shipping During Wartime," Prepared by Okada S., Chief of Planning Department, General Affairs Department, General Maritime Bureau, Ministry of Transportation, November 5, 1945, 46j, Section 2, USSBS, RG 243.

ous allocations, however, steel inventories at the yards continued to dwindle throughout 1944. In that year, the average shipyard's stockpile was insufficient to complete one round of ships on the ways.¹³ As in the United States,¹⁴ the steel shortage proved more intractable than any other single obstacle to mass production. Japan could only turn out a finite quantity of steel; there were too many consumers waiting for a piece of the pie for everyone to receive a fair portion.

Many of these shipbuilding limitations were inherent in the nation's circumstances, however. Given the total size of the Navy's own construction facilities, for example, it was only reasonable that commercial yards must shoulder some of the onus of warship production. Similarly, ship repair is an unavoidable accessory to maritime transport operation, though the Japanese did exacerbate the situation by following a short-sighted policy of neglecting routine maintenance as long as possible. And while one might argue with the steel allocation priorities, undeniably Japan's limited

¹³USSBS, Japanese Merchant Shipbuilding, p.32.

¹⁴Frederic C. Lane, with the collaboration of Blanche D. Coll, Gerald J. Fischer, and David B. Tyler, Ships for Victory: A History of Shipbuilding Under the U.S. Maritime Commission in World War II, Historical Reports on War Administration, United States Maritime Commission, No.1, (Baltimore: The Johns Hopkins Press, 1951), pp.63-64, 149-150, 178-183, 199, 302, 310, 311-317.

steel output formed an ultimate boundary for the nation's shipbuilding capacity. But the industry also suffered unnecessarily from operational inefficiency and poor management.

The process of constructing a merchant ship is a complicated one involving many materials, processes, and skills. In times of peace, contracts are relatively scarce, and so shipyards generally retain a small but highly versatile work force to ensure that all labor is fully employed. Each worker may possess anywhere from forty to seventy separate skills, gained from years of apprenticeship, and can successfully participate in any part of the ship construction process.¹⁰ But rapid expansion of the industry to meet wartime demands cannot include such painstaking training of the labor force. Hence, the construction engineers must simplify the building operations to maximize the available workers, who are naturally semi- or unskilled. American shipbuilders responded brilliantly to the dilemma by vastly increasing prefabrication, thus allowing more workers to contribute simultaneously to every ship, and by specializing the labor supply, something the much larger wartime contracts had made economical. In addition, American shipbuilders applied the principle of specialization to entire yards, so that some became quite proficient at tankers, others at refrigerated

¹⁰Ibid, p.237.

freighters, and still others at ore carriers or other specific merchant types. Whatever the specialty, management arranged logical work flow layouts for optimum efficiency within each yard, even if it involved costly redesign of existing facilities.

From the start, certain technological deficiencies imposed some restrictions on the Japanese. Cranes, for example, never matched their American counterparts in size. U.S. shipyards sometimes prefabricated blocks of nearly fifty tons in wayside shops, thereby saving much time, but Japanese yards never had that option because they had no comparable cranes. The Japanese were also much more hesitant about welding. Despite a few frightening accidents,¹⁶ American shipbuilders soon accepted the all-welded hull as safe and economical, but the Japanese doggedly retained riveting for the majority of connections. A few of the new wartime designs called for up to seventy percent welding, but on average the Japanese welded thirty percent of their seams and always riveted large sections to prevent locked-in stresses.¹⁷ Lagging technology thus closed potentially

¹⁶Notably the tanker Schenectady, which split cleanly in two while riding calmly at anchor at an outfitting dock early in 1943. Five other spectacular hull fractures followed within the next two months. See Frederic C. Lane, Ships for Victory, pp.544-555, for the full extent of the panic that ensued.

¹⁷USSBS, Japanese Merchant Shipbuilding, pp.13-15.

valuable design alternatives to the Japanese.

In addition, the majority of Japan's wartime merchant shipbuilding effort took place in the oldest and largest yards. The twelve most productive shipyards launched fully two thirds of the entire nation's output for the war.¹⁰ These yards had evolved gradually over the decades without any overall plan or any eye to ultimate efficiency. Postwar observers reported:

These older yards were almost invariably congested and not well organized for a smooth flow of production. Their growth had been piecemeal, hence, did not conform well to any systematic layout plan. The old yards, furthermore, were almost invariably seriously overcrowded. Good sites for shipyards, expanses of low flat land alongside deep water, are comparatively limited in Japan because of the preponderance of rugged terrain along the coasts. The few places in Japan where considerable flat area is adjacent to protected deep water are occupied by cities. Such expansion as was managed in the older yards, therefore, entailed either the creation of filled land in shallow sections of water front or the encroachment on adjacent industrial properties for the yards on the large city water fronts, whereas for other yards excavation and tunneling of hills was involved. These means of expanding acreage for the yards were too expensive for peacetime purposes and too slow for wartime demands, hence most of the expansion undertaken in the old yards either increased the congestion in the old area or was still incomplete when the war ended.¹⁰

¹⁰Ibid, p.43.

¹⁰Ibid, p.12.

The Japanese could be imaginative and efficient planners when the situation arose. For instance, yards newly built or remodeled during the war utilized many of the same time- and cost-saving techniques that became the hallmark of the American shipbuilding industry in World War II. As one example, three yards operating under these concepts cut construction time on identical ship types by up to 62% compared to yards using the traditional methods.²⁰ But such shipyards were too rare and too small to effect major changes in Japan's shipbuilding patterns.

Specialized yards were also quite uncommon in Japan. The great Mitsubishi yard in Nagasaki, for instance, consisted of 452 buildings comprising fourteen distinct plants, including a midget submarine factory, a diesel engine plant, ship repair docks, an oxygen plant, ship finishing facilities, and several other installations in addition to the heavy construction yard itself.²¹ The Nagasaki yard was not in the least atypical, either, for two thirds of all commercial shipyards, including every single major yard, undertook construction of both merchant and military vessels as well as conversion and repair of both types. Even seven of the

²⁰Ibid.

²¹Target Report of Civilian Defense Division Team No.2, Covering Air Raid Protection Facilities and Allied Subjects in the City of Nagasaki, Japan, 5a, Section 2, USSBS, RG 243.

eight yards which before the war had concentrated primarily on ship repair devoted the bulk of their wartime efforts to new construction, even though there was plenty of repair work to keep them occupied. In fact, ten percent of the total activity in the private yards was unconnected to shipbuilding. Since all of the eighteen yards erected or completely reorganized just before and during the war were highly specialized, it is fair to assume that at least to some degree the Japanese grasped the inherent advantages of shipyard specialization.²² But two factors precluded large-scale implementation of this concept. First, the piecemeal evolution of the nation's shipyards, especially the large, older ones, had produced an industry built around several major yards of notable versatility but poor adaptability to maximum wartime efficiency. Second, the Imperial Navy, which early in the war assumed management of the shipbuilding effort, normally allocated the most productive and readily available yards to its own projects, regardless of the function for which those yards might be optimally suited. American experts decreed in a postwar investigation:

"...together, the congestion and the lack of specialization in the old yards made a systematic, smooth, controlled flow

²²USSBS, Japanese Merchant Shipbuilding, pp.9-10.

of work practically impossible."²³ So unimaginative administration and poor planning further handicapped an industry already hamstrung by labor and steel shortages, some key technological deficiencies, and heavy diversions for repairs and naval construction.

In light of these many shortcomings, the Japanese shipbuilding industry in World War II fared somewhat better than one would expect. Indeed, even the Japanese did not anticipate the heroic wartime efforts of the shipyards. Five weeks before Pearl Harbor, the Cabinet Planning Board estimated that annual construction of 600,00 tons was mandatory to maintain minimum shipping levels.²⁴ The following week this agency calculated that Japan could launch 500,000 tons of steel merchantmen in 1942, 700,000 tons the next year, and 900,000 tons in 1944, so that the nation's maritime transport would comfortably suffice for wartime needs.²⁵ Another prewar study put production one third lower: 1,400,000 tons for the first three years of war, which would mean a slight

²³Ibid, p.13.

²⁴Japan's Decision for War: Records of the 1941 Policy Conferences, Translated, Edited, and with an Introduction by Ike Nobutake, (Stanford: Stanford University Press, 1967), p.197; and "Juyo Kokusaku Kettei Tetsu," July, 1940 - December, 1941, published August, 1954, Document No.50, Zempoan 1, Boei Kenshusho.

²⁵Japan's Decision for War, p.220.

shipping shortage (150,000 tons) by 1944.²⁶ A separate Imperial Army prediction was for 420,000 tons in the first year, plus 100,000 tons of shipping gained by capture and 120,000 tons of newly launched vessels too small for consideration.²⁷ American businessmen differed little with these predictions. They tagged Japan for 600,000 tons in 1942 and an eventual yearly ceiling of 800,000 tons.²⁸ In 1942 Japanese yards actually launched 393,118 tons, which fit into the lower range of prewar estimates. But the next year production skyrocketed to 1,097,103 tons and subsequently peaked at an impressive 1,603,430 tons in 1944. With 1941 as the base year, the shipbuilding index reached 674.8 in the third year of the war, dwarfing even the most optimistic predictions.²⁹

²⁶Washington Document Center Document No.240337: Estimate of Japanese National Strength at the Outbreak of the Greater East Asia War as of December 1941, WDC Translation Center No.7, June 26, 1946, Japanese Estimates and Comparisons of Resources as of the Beginning and End of the War, U.S. Navy Operational Archives, Washington Navy Yard.

²⁷Major-General Okada Kikasaburo, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," Document No.51021, War in Asia and the Pacific, 1937-1949, Donald S. Detwiler and Charles B. Burdick, Editors, (New York: Garland Publishing Inc., 1980), p.14.

²⁸"Bottoms Down," Business Week, January 30, May 23, 1942, p.36.

²⁹"Summary of Merchant Ship Construction," 48c(1), Section 2, USSBS, RG 243.

There were several reasons for the shipbuilding industry's surprisingly strong showing, but it was the restructuring of industrial mobilization priorities that proved most significant. The American postwar study of merchant construction sums it up well: "Not until the war had been in progress a full year did the Japanese bring themselves to concentrate on merchant shipping as if their whole economic and military position depended, as it did, on the adequacy of the merchant marine."³⁰ Not only had naval construction been absorbing substantial shipyard capacity, as noted above, but the Army and Navy in general had first claim on all materials, labor, industrial plant, and transportation. Unlike in the United States or Great Britain, armaments and other related production programs always took precedence over shipbuilding and other "civilian" industries.

But the struggle for Guadalcanal taught the leaders of Imperial Japan some valuable lessons about both the vulnerability and indispensability of seaborne transport. Not only were shipping losses heavy, but the resultant logistic breakdown was no minor contributor to the campaign's unhappy outcome. In late 1942, therefore, the Navy General Staff ordered a major reorganization of the industry. The authorities first implemented an upgrading of the shipbuilding

³⁰USSBS, Japanese Merchant Shipbuilding, p.1.

facilities' inspection system. Coal, steel and other related industries also received more careful quality control and study. In addition, the government reduced the number of "standard" cargo ship designs³¹ and further simplified the ones retained.³² The foremost change, however, was the Navy's assumption of jurisdiction over all shipbuilding plans and schedules (except for wooden hull construction) from the Communications Ministry. This authority passed to the Navy Technical Office of the Navy Ministry, which accordingly opened a special section for merchant ship management and expanded its powers to include materials allocations among shipyards. As in the past, the government held the real authority and left the execution to a private agency, the Industrial Equipment Corporation (Sangyo Setsubi Eidan).³³ But with the Navy now directly involved, "the confused and ineffectual character of the administration and supervision of the shipbuilding program" under a ministry lacking "the staff, the imagination or the prestige to promote a large scale expansion in merchant shipbuilding"³⁴

³¹See below, pp.100-102.

³²Interrogation of Hoshino Naoki, No.505, November 19, 22, and 28, 1945, 15g, Section 2, USSBS, Rg 243.

³³USSBS, Ibid; Japanese Merchant Shipbuilding, pp.15-16; and "The Principal Problems and Obstacles Which Confronted the Japanese Shipping During Wartime," op.cit.

³⁴USSBS, Japanese Merchant Shipbuilding, p.30.

gave way to direction that was more streamlined, organized, and forceful.

The impact was immediate and dramatic. Most private industries began to endure decreased allocations as the Navy invested more resources into merchant shipbuilding.³⁶ A glance at the monthly yen input figures will easily confirm this. For instance, in the fifteen months up to and including October, 1942, the average monthly input was just under twenty-five million yen. But for the next fifteen months, the average was 82,385,000 yen, including the wartime pinnacle of 162,278,000 yen reached in January, 1944. Monthly input did not drop below the one hundred fifty million yen mark until very late in the year.³⁷ With some of this money and material, the Navy expanded facilities in old yards and built several new and efficient specialized shipyards, but the majority of resources went into merchant ship construction. This accounts in large measure for the fine performance of the shipbuilding industry in 1943 and 1944, when it grew from the tenth to the third largest employer among all manufacturing types, behind only aircraft and ordnance production.³⁷ Power consumption within the industry had nearly

³⁶Interrogation of Hoshino Naoki, op.cit.

³⁶USSBS, Japanese Merchant Shipbuilding, p.45.

³⁷Ibid, p.5.

doubled by then, too.³⁰

There were, however, some other factors worthy of partial credit for the unexpectedly high wartime productivity of Japan's shipyards. One of these was certainly ship design standardization, which one study describes as "of major importance" in raising production.³⁰ With the obvious advantages of component interchangeability, simpler construction, and increased efficiency through repetition in mind, several yards had already developed their own standard specifications for various ship types before the war. Early in 1942 the Ministry of Communications studied some of these designs, made minor modifications, and accepted a dozen of them, including six freighter and three tanker types, as national standards. When the Navy Ministry's Technical Bureau assumed authority for the industry soon after, it eliminated five of the standard types and substantially reworked the remaining designs to simplify construction. Unfortunately, "significant sacrifice in speed and durability was made," American investigators later found, "in the interest of increased production."⁴⁰

³⁰USSBS (Pacific), The Electric Power Industry of Japan, (Washington: United States Government Printing Office, n.d.), p.25.

³⁰Ibid, p.10.

⁴⁰Ibid, p.11.

There can be no question that standardization generated tonnage figures beyond what would have otherwise been achieved. One standard 6,600-ton cargo vessel, for example, averaged ninety days from keel laying to outfitting. But during the course of the war, Japanese yards turned out 121 of these, and so the delivery times dropped impressively. One yard even managed to finish one in a mere thirty-six days.⁴¹ It is impossible to calculate how many extra merchantmen that standardization allowed the Japanese to turn out, but since standard ship types accounted for three out of every four wartime tons launched and all new tonnage after 1943,⁴² undoubtedly the idea resulted in a gain of considerable tonnage.

However, the increase in quantity came only at the sad price of a decline in ship performance. To boost production the naval engineers had weakened the standard types by lengthening the distances between supporting beams, reducing horsepower to conserve weight, and abandoning double bottoms. These changes lowered the speed and structural integrity of the new standard types, thereby making them easier and more vulnerable targets for American torpedoes. By late

⁴¹Ibid, p.44; and Interrogation of Koga S. and Akimoto M., Superintendents of Mitsubishi-Nagasaki Shipyard, October 29, 1945, 54vv(20), Section 2, USSBS, Rg 243.

⁴²USSBS, Japanese Merchant Shipbuilding, pp.23,43,44.

1944, heavy losses of the new types prompted revisions in hull design and engine size even at the cost of retarding production.⁴³ One maritime management official called the drop in quality quite significant, and claimed that it was never corrected.⁴⁴ Again, no one can tabulate the ultimate impact reduced performance had on the value of the merchant fleet, but unquestionably it somewhat offset the tonnage thereby gained.

The excellent American wartime standard ship designs, especially the well known Liberty and Victory ships, indicate that sacrifices in performance did not necessarily have to accompany mass production. By late 1943, the national average for Liberty ship deliveries was about six weeks. One yard sustained an average of under thirty days, and another delivered one Liberty ship in exactly seven days, an astounding achievement even for such a staged publicity stunt.⁴⁵ Yet these speed records cost little loss of quality. Dubbed "The Ugly Duckling" for its ungainly appearance, the Liberty ship was nevertheless a sturdy and dependable freighter with capacious cargo holds and deck space, and the Victory ship was essentially a faster version of the same

⁴³Ibid, p.11.

⁴⁴"The Principal Problems and the Obstacles Which Confronted the Japanese Shipping During Wartime," op.cit.

⁴⁵Ships for Victory, pp.174,207-210.

model. The Japanese standardization program, profitable as it was, fell far short of these achievements.

Another boon to Japanese shipbuilding after 1942 was the acceleration of wooden ship construction. The inherent structural limits of the material kept the maximum size of wooden ships to a few hundred tons. Yards building wooden vessels, unlike those producing steel hulls, had therefore seldom found it profitable to expand beyond the optimum size of one to nine relatively small ways. So as the industry developed, the number rather than the size of the yards grew. Wartime Japan had over five hundred wooden shipyards, almost half of which had three or less ways. Methods were simple but well suited to the skill level of the labor force and the size of the ships built.⁴⁰ Besides, given the wide geographical and corporate dispersion within the industry, updating technology would have been troublesome and perhaps not cost effective.

When the full impact of the Empire's failure in the lower Solomons became apparent in late 1942, the wooden shipbuilding program underwent many alterations similar to those revitalizing the steel shipyards. Chief among these was the introduction of nine standard ship designs, with more added

⁴⁰USSBS, Japanese Merchant Shipbuilding, pp.15-16.

later on.⁴⁷ Transfer of ordering procedures to the Industrial Facilities Corporation, which performed the same function for steel ships, was another improvement. However, the Ministry of Communications retained jurisdiction over scheduling and materials procurement coordination. This delayed results of the industry's shakeup for several months, because engine production, still operating under a "haphazard system"⁴⁸ evolved over many years, lagged behind hull completions. Consequently, the Ministry reorganized its outmoded methods and appealed to the Navy for higher steel priorities for engines. Eventually the Navy Technical Bureau assumed full responsibility for engines, but 'wooden ship finishings had picked up noticeably before then. Whereas in 1943 the Japanese launched 54,710 tons of wooden ships, the following year 254,420 tons slid down the ways.⁴⁹

The wooden shipbuilding industry suffered, however, from inevitable limitations. To begin with, lumber shortages were unavoidable. There were plenty of trees, to be sure, but not enough workers to chop them down or transport facilities to drag them to the yards. The wooden shipyards themselves also faced a constant labor shortage, because they, unlike their

⁴⁷Ibid, p.16.

⁴⁸Ibid, p.36.

⁴⁹"Construction of Wooden Ships During the War," 54mm(4), Section 2, USSBS, RG 243.

steel shipbuilding brethren, were ineligible for conscripted labor. The lack of steel for engines was never entirely overcome, either, even with the higher priorities obtained from the Navy after 1943. As the war wore on, the Navy had to emphasize non-powered craft, such as sailing vessels, barges, and lighters, more than ever.⁸⁰ Even so, by the war's end thousands of tons of wooden hulls rode uselessly at anchor, waiting for engines.⁸¹ In fact, wooden ship construction fell much more consistently below planned deliveries than steel ships. In 1944, its best year, the industry still missed its goals by 39%, even after a midyear adjustment had lowered quotas by one fourth.⁸²

There is no doubt that, by 1943 or so, the Japanese would have welcomed any sort of shipping, but one can question whether the entire wooden ship program was worth the effort expended. For one thing, craft of 150 tons or less can hardly carry enough cargo to justify their existence, but they accounted for sixty percent of the wooden vessel tonnage produced during the conflict.⁸³ This flotilla naturally had some value for fishing, patrolling, and coastal liaison, but

⁸⁰USSBS, Japanese Merchant Shipbuilding, pp.26,36-37.

⁸¹Kato Masuo, The Lost War, (New York: Alfred A. Knopf, 1946), pp.164-165.

⁸²USSBS, Japanese Merchant Shipbuilding, pp.25-26.

⁸³"Construction of Wooden Ships During the War," op.cit.

the empire's most pressing need was for high seas transport to maintain the vital lifelines to the south. And though as individuals they may have been less tempting to Allied pilots and submariners than ocean-going freighters, wooden vessels were also highly vulnerable to strafing and incendiary bombing,⁸⁴ since most were confined to the harbors and coastal shallows, often near attractive urban targets. A definitive analysis of the wooden shipbuilding effort would require more data than now exists, but the extant evidence suggests that the skilled workers and heavy metals expended in this venture would have paid far more handsome dividends if applied to the steel shipbuilding industry.

In light of the liquid fuel situation in Japan during World War II,⁸⁵ the tanker construction story holds few surprises. Already scarce in 1941,⁸⁶ tankers became more precious than ever with the increased oil demands of wartime. By late 1942, the Navy had raised tanker production to the head of the priority list. This meant first claim not only on materials but also on the shipyards the Navy deemed most reliable. New construction climbed from 55,000 tons in 1942 to 930,000 tons over the next two years. Furthermore, the

⁸⁴USSBS, Japanese Merchant Shipbuilding, p.27.

⁸⁵See Chapter 2 above.

⁸⁶See above, Chapter 3.

yards converted over four hundred thousand tons of cargo vessels to carry petroleum, so desperate was the need. While the Navy reduced production plans for other types by as much as half when materials ran short, tanker schedules remained virtually unaffected. And still tanker delivery rates outpaced all other types. It was only when the fall of the Philippines in late 1944 irreparably severed Japan's vital oil pipeline to the south that the tanker fleet lost its critical status and the Navy halted all new construction. In fact, the shipbuilders subsequently converted 50,000 tons of tankers to freighters. By 1945, then, the demand for tankers had come full circle.⁵⁷

Considering the state of facilities, labor, and materials in the shipyards during World War II, the Japanese shipbuilding industry performed fairly well, certainly better than anyone had anticipated. Mismanagement and inefficiency undeniably plagued the shipbuilding effort at a time when there was no room for waste or error, yet such mistakes were relatively minor factors in the merchant marine's ultimate collapse. Indeed, it was not the shipbuilding effort at all that was responsible for that catastrophe. As American post-war studies summed it up:

⁵⁷Interrogation of Rear Admiral Yamamoto Yoshiyo, No.242, November 5, 1945, 51b(22)(yy), Section 2, USSBS, RG 243; and USSBS, Japanese Merchant Shipbuilding, pp.1,2,18-19,23-25.

...the gap between production and sinking, even when narrowest, was so large that the failure to maintain tonnage afloat lies principally with the failure of the Jap navy and air forces to prevent sinkings. Even though merchant ship production could have been somewhat greater, it was not within the production potential of Japan to produce at the rate required to offset the rate of sinkings.⁼⁼

It was thus not the rate of construction but the rate of attrition that doomed the empire's shipping in World War II. The basic problem lay in the treatment accorded maritime transport by the government. The wartime management of the merchant fleet was therefore the key element in its failure.

⁼⁼USSBS, Japanese Merchant Shipbuilding, p.18.

CHAPTER 5

EMPLOYMENT AND PROTECTION OF THE MERCHANT MARINE IN WARTIME

The merchant fleet was one of the more dependable economic assets of the Japanese Empire in 1941. It was relatively modern and efficient and, though only marginally large enough for the demands of total warfare, it was nevertheless satisfactorily compliant with the government's wishes. The shipbuilding industry performed beyond all prewar expectations in the replenishment of losses. But by 1945 Japan's shipping had disappeared from the high seas. That minor portion which had not slipped beneath the waves was awaiting repairs or cowering in port. Japanese management and protection of this indispensable element, maritime transport, was a crucial part of its disastrous fate.

Ever since the Meiji era, the Japanese military services had eased their deficits of transports and auxiliary vessels in times of armed conflict by drafting merchantmen. Often the Navy commandeered private vessels for conversion to

warships, but most often both the Army and Navy simply needed additional transport capacity to support operations. In times of international tension the government customarily placed restrictions on the use of certain passenger and cargo types so that they would be available for requisitioning if the situation deteriorated.¹ In the 1930s, foreign officials began to view Japanese preparations for commandeering vessels as a warning signal.²

The military had already drafted about a million and a half tons from the merchant fleet by 1941 for operations in China, but the majority of commandeered vessels were small, shallow draft craft for conversion to auxiliary gunboats. The many riverine campaigns thus absorbed little besides merchantmen of negligible value as freighters.³ All that changed, however, when the theater of action switched to the broad, deep water expanses of the Pacific Ocean.

¹G.H. Phipps. H.M. Consul, Kobe, to Secretary of State for Foreign Affairs, April 21, 1933, British Foreign Office Japan Correspondence, Volume 17149, pp.243-244.

²H.L. Roosevelt, Acting Secretary of the Navy, to Office of the Secretary of State, April 27, 1934, State Department File No. 894.8591/1, Record Group 59, United States National Archives; and Sir F.O. Lindley to British Foreign Office, February 24, 1933, British Foreign Office Japan Correspondence, Volume 17165, p.127.

³Senshishitsu Cho, Volume 46, Kaijo Goei Sen, (Tokyo: Asagumo Shimbunsha, 1976), p.64.

Japan's strategic plans for the opening phase of the war featured a multitude of amphibious operations scattered across the western and central Pacific. This resulted in a high demand for merchant shipping from the Army. Altogether, they drafted 519 private cargo and passenger vessels of 2,160,500 tons at the war's outset.⁴ Almost 70% of this tonnage was for landing operations, including 650,000 tons for the invasion of the Philippines and 710,000 tons for assaults on Malaya. Supplying units on the Asian mainland, convoys to the South China Sea, and sundry other missions occupied the remaining tonnage.⁵ Army planners calculated that they would retain this shipping for four months and then begin to release over half of it for civilian use once again during the next four months. After July, 1942, the Army should require no more than a million tons, a figure believed sufficient for the rest of the war.⁶ The Navy's

⁴Atsushi Oi, "Why Japan's Anti-Submarine Warfare Failed," United States Naval Institute Proceedings, Volume 78, No.6, (June, 1952), p.590.

⁵"Information Concerning Allotment of Army Levied Ships," 54qq(2), Section 2, USSBS, RG 243; and Interrogation of Major Ureshino, Vice-Chief of Third Section, Bureau of Military Affairs, Army Ministry, No.166, October 30, 1945, Section 2, USSBS, RG 243.

⁶Oi, "Why Japan's Anti-Submarine Warfare Failed," p.590; Japan's Decision for War: Records of the 1941 Policy Conferences, Translated, Edited, and with an Introduction by Nobutake Ike, (Stanford: Stanford University Press, 1967), p.216; Kaijo Goei Sen, p.65; and Major-General Okada Kikasaburo, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," War in Asia and

shipping requirements were nearly as onerous. It commandeered 482 merchantmen aggregating 1,740,200 tons for the initiation of hostilities.⁷ Over three quarters of this total were freighters or combined passenger-cargo ships, with tankers (270,000 tons), whalers (94,000 tons), and small craft (15,000 tons) comprising the remainder. In contrast to the Army's plans, the Navy envisioned permanent retention of what it had drafted.⁸

"All this will greatly affect the expansion of our productive capacity and the replenishment of armaments," complained the Minister of Commerce and Industry before the war,⁹ and no one within the Cabinet denied this. Prewar estimates all agreed that three million tons of shipping were the minimum required for maintaining the economy, but the military's requisitioning dropped the amount available for civilian use well below even that somewhat questionable figure.¹⁰ The drafting of nearly four million tons of mer-

the Pacific, 1937-1949, Donald S. Detwiler and Charles B. Burdick, Editors, (New York: Garland Publishing Company, 1980), p.25.

⁷Oi, "Why Japan's Anti-Submarine Warfare Failed," p.590.

⁸Kaijo Goei Sen, p.65; Okada. "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," p.25; and Japan's Decision for War, p.216.

⁹Japan's Decision for War, p.76.

¹⁰See above, Chapter 2.

chantmen left under two and a half million tons, only one third of all Japan's transport capacity, to support private industry.¹¹ Even this dismal picture is worse than it first appears, because 840,000 tons of the shipping left in civilian hands were passenger vessels ill suited for cargo transport. Some studies rated the merchant fleet left to support industry as the equivalent of 1,600,000 tons or even lower, an entirely insufficient amount by anyone's reckoning.¹² One Army report prepared in early 1940 warned that moderate commandeering of two and a half million tons, i.e., nearly one and a half million tons less than the Army actually drafted eighteen months later, would cost major commodity losses, such as six million tons of coal, 235,000 tons of iron ore, 900,000 tons of lumber, two million koku (equal to ten million bushels) of rice, and similarly huge amounts of industrial salts, fertilizer, cement, and other goods. Later studies predicted that planned requisitioning would mean a steel production drop of 25% and about a 15% falloff for

¹¹"Daitoa Senso ni Okeru Wagamonoteki Kokuryoku to Kaigun Sembi Sui-i ni Kansuru Setsumei Shiryo," Report of the Military Affairs Bureau, Ministry of the Navy, October 1, 1945, Document No.47, Zempoan 1, Boei Kenshusho.

¹²Okada, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," pp.21,25; Japan's Decision for War, p.217; and Kaijo Goei Sen, p.65.

other materials.¹³ A month before Pearl Harbor the Cabinet Planning Board confirmed these figures, but believed employment of sailing ships with auxiliary engines, greater utilization of iron foundries serviced by railroads, consumption of stockpiles, and collection of more scrap iron could compensate for the lost shipping.¹⁴

Civilians in the government approved this debilitating commandeering scheme only because it was supposedly temporary. After eight months, according to the plan, shipping available for commercial use would once again top the target of three million tons. The armed forces did discharge some vessels throughout the war years, but they generally released only those ships whose military value had dropped through damage or aging. Instead of wholesale decommissionings, the Army and Navy released merchant bottoms for civilian use only a few at a time. The Navy returned more than 25,000 tons of shipping to private hands in just four of the war's forty-five months, and only twice before the summer of 1945 did released tonnage exceed fresh drafts. In eighteen of the wartime months the Navy decommissioned one thousand tons or less, often not one solitary ship.¹⁵

¹³Okada, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," pp.13-14,24.

¹⁴Japan's Decision for War, p.217.

¹⁵The 2nd Demobilization Department, "Classified Chart of Ships Requisitioned by the Navy," December 24, 1945,

On the other hand, commandeering never ceased. Nine times during the course of the war the military authorized major supplemental drafts of 80,000 or more tons, including three of at least one quarter of a million tons.¹⁶ Operational demands always far oustripped tonnage available. For instance, preparations for the envisioned assaults on the Aleutians, Midway, Fiji, and Samoa, plus delays in the Burma offensive, prompted the Army to delay scheduled returns of 200,000 tons of shipping in early 1942. When the Fiji and Samoa operations failed to materialize, the Army did not release these merchantmen, but rather assigned them to the New Guinea-Solomons area. Then the tremendous losses in that theater necessitated more drafts, so that when 1943 arrived the Solomons alone were tying down 710,000 tons of the shrinking merchant fleet.¹⁷

The Japanese never succeeded in breaking the shipping stranglehold that constantly placed military and civilian needs in direct competition with each other. In one case, a request from the High Command for 360,000 more tons of merchantmen in September, 1943, instigated a broad review of

54rr(3), Section 2, USSBS, RG 243.

¹⁶"General Shipping Summary," Prepared by Commander Ojiro, Third Section of the Military Affairs Bureau, Ministry of the Navy, 54ff(8), Section 2, USSBS, RG 243.

¹⁷Interrogation of Major Ureshino, op.cit.

maritime transport policy. Members of the Army, Cabinet Planning Board, Ministry of Commerce and Industry, and all branches of the Navy conducted a ten-day research project which concluded that, despite pressing military needs, "immediate steps must be taken to restore national munitions production capacity and reverse the decrease in national strength." So Imperial Headquarters actually commandeered only 250,000 tons for the moment, which was still enough to further cripple the civilian economy. Yet that figure did not include the estimated 35,000 tons needed monthly to offset losses, and soon the military was asking for more.¹⁰ In 1944 the losses mounted alarmingly. Besides the growing attrition from submarines, the military lost hundreds of thousands of tons in the devastating carrier raids on Truk and Palau and the tumultuous campaigns in the Marianas and Philippines. Before 1945, when the Army and Navy returned shipping isolated in the southern areas to the private sector, the armed forces never possessed less than 57% of the merchant fleet.¹¹ The economy had to make do with what remained.

¹⁰"Kaigun no Gumbi Narabi ni Sembi no Zembo," Document No.52, Zempan 3, Boei Kenshusho.

¹¹"Daitoa Senso ni Okeru Wagamonoteki Kokuryoku to Kaigun Sembi Sui-i ni Kansuru Stesumei Shiryo," op.cit.

Of all the essential maritime transport, the tankers were certainly the most vital. The Navy-sponsored construction programs of the interwar period²⁰ left little doubt that the military's demands for tankers would be heavy once hostilities began. But in general requisitioning was not as damaging for tankers as for other cargo types. For one thing, the Army never used more than 14,000 tons of tankers. To be sure, the Navy retained well over 100,000 tons of tankers as fleet oilers to support Combined Fleet operations until the devastating warship losses in 1944 rendered this unnecessary. And, the Navy employed tens of thousands of other tankers in supplying overseas bases and for local transfer of petroleum in the home islands. But the major preoccupation of the Navy's liquid fuel carriers was the same as for tankers operating for the civilian economy, namely importing oil to Japan. This duty absorbed at times up to 338,000 tons of the precious tankers commandeered by the Navy, far more than actual military operations ever required.²¹ Early in the war the Army and Navy did in fact possess as much as 78% of all tanker tonnage, but by late 1943 over half of the tankers were in civilian hands again, and from mid-1944 on

²⁰See Chapter 3 above; and Senshishitsu Cho, Volume 31, Kaigun Gunsempi, Part I: Showa Jurokonen Juichigatsu Made, (Tokyo: Asagumo Shimbunsha, 1969), p.700.

²¹"Distribution of 'B' Class Ships," 54rr(1), Section 2, USSBS, RG 243.

the military's share never exceeded 31%.²² Actual percentages of tankers engaged in oil importation are somewhat higher, since, as suggested above, most of the armed forces' tankers performed this service rather than strictly supporting military operations.

In addition to increasing its maritime transport capacity with drafted merchantmen, the Navy commandeered other vessels for duty as warships. The shipyards transformed merchant ships into countless varieties of combatant craft, from 19-ton patrol craft to 27,000-ton fleet carriers. A number of these auxiliary warships played major roles, such as the Junyo, Hiyo, Taiyo, Unyo, and Chuyo.²³ For some ship types, converted merchantmen represented the only potential reinforcements for the fleet. For example, the Imperial Navy started the war with ten submarine tenders, and though the number dwindled rapidly, the only new ones to join the fleet during the war were four merchant ships converted into

²²Gerhard M. Williams to Director of Oil Chemical Division, USSBS, January 23, 1946, 51b(36)(1); and "Distribution of Tankers Between A, B, and C," by Yokoe, Shipping Control Association, 54ss(7), Section 2, USSBS, RG 243.

²³After Midway the Junyo and Hiyo became the principal units in the Combined Fleet's Second Carrier Division and participated extensively in the Solomons campaigns. The Taiyo, Unyo, and Chuyo were escort carriers that freed frontline carriers for combat duty by performing valuable plane-ferrying missions.

auxiliary tenders.²⁴ At one time or another between 1941 and 1945 converted freighters supplied twenty-five squadrons of minesweepers, eleven squadrons of gunboats, and tens of thousands of tons of netlayers, seaplane tenders, subchasers, minelayers, picket boats, auxiliary cruisers, hospital ships, and harbor duty vessels.²⁵ Altogether, in addition to those ships serving the Navy as transports, 825,516 tons of merchantmen became auxiliary combatant craft of some kind.²⁶

Some commandeering was undoubtedly necessary and valuable to the war effort. The extensive rebuilding of the 1930s had produced a merchant marine well suited for combat duty, and that after all had been part of the reason funding for these programs was forthcoming. The United States had embarked upon a similar program and for the same reasons, and to some extent in wartime all nations incorporate their merchant fleet into military operations. But the Imperial Navy and Army put their own needs ahead of the nation's and seriously impaired the economy and overall war effort in so doing. The government accepted the necessity of reducing the civilian

²⁴"Taiheiyo Senso Naka ni Okeru Nihon Kaigun Sensui Butai Hensei Hyo," Document No.83, Hensei 1, Boei Kenshusho.

²⁵"Taiheiyo Senso Naka ni Okeru Nihon Kaigun Kokantei Kankei Hensei Sui-i Ichiran Hyo," Daini Fukuin Kyoku Zammu Shori Bu, September, 1949, Hensei 1; and "Tokusetsu Kansan Sokan," Boei Shusho Senshi Shitsu, Document No.77, Zempo 4, Boei Kenshusho.

²⁶"Tokusetsu Senkan Sokan," op.cit.

share of seaborne transport below three million tons, a minimum which is itself debatable, because prewar studies predicted this situation would persist only for several months. But in practice the tonnage available to the private sector never attained that magic number. The expected consequences, and worse, appeared. After the war one department chief in the Transportation Ministry described cargo ship requisitioning as the most troublesome problem the merchant marine faced during the war, ahead of the catastrophic losses from enemy action.²⁷

Sadly, the Navy did not restrict its drafts to merchant ships. The mobilization laws enacted after the outbreak of the China Incident established a reserve officer and seamen register comprised almost wholly of merchant marine veterans. The Navy wasted no time in activating the reservists after Pearl Harbor. The loss of that valuable reservoir of experience further lowered the efficiency of a merchant fleet already depleted by the military's commandeering. Inexperienced replacements panicked when under attack, headed for safe anchorages at the first sign of trouble, and kept proper speed, communication, and convoy discipline only

²⁷"The Principal Problems and the Obstacles Which Confronted the Japanese Shipping During Wartime," Prepared by Okada S., Chief of Planning Department, General Affairs Office, General Maritime Bureau, Ministry of Transportation, November 5, 1945, 46j, Section 2, USSBS, RG 243.

with difficulty.²⁰ In a time of manpower shortages, inexperienced crews had to be 20% larger to compensate for their inefficiency. And the Navy had to furnish gun crews and other personnel to operate defensive weapons, because the replacement seamen were usually totally untrained for these duties.²⁰ The quantity of trained nautical men, like the number of merchant bottoms, was finite, so the strains of war were bound to cause some stretching of manpower between the combatant and merchant fleets. But the Imperial Navy thoughtlessly drained the merchant marine of its finest seamen and thereby "caused reduction in the usefulness of shipping."²⁰ A happier compromise was no doubt possible.

When Japan's military forces raided the merchant marine's ranks so extensively for ships and men, protection of the maritime transport fleet's remnants became doubly essential for sustaining the war effort. Yet the maritime escort

²⁰Interrogation of Captain Oi Atsushi, No.460, November 19, 1945, USSBS, Naval Analysis Division, No.72, Interrogations of Japanese Officials, Vol.II, (Washington: United States Government Printing Office, n.d.), p.441; and Ariyoshi Y., Shipping Control Association, Brief Survey of Japanese Shipping During the Pacific War, 1941-1945, November, 1945, 54ff(4), Section 2, USSBS, RG 243, p.3.

²⁰Interrogation of Shiraishi Kazutaka, Yamazaki Kogor, Asai Y., and Shikuya H., officials of Bureau of Crews, Ministry of Transportation, No.44, October 13, 1945, Section 8, USSBS, RG 243; Interrogation of Ships' Officers, 54tt(14), Section 2, USSBS, RG 243.

³⁰Interrogation of Captain Oi Atsushi, No.460, op.cit., p.441.

forces of the Imperial Navy were woefully few when hostilities opened in the Pacific. In the early 1930s the Navy General Staff and the Military Affairs Bureau of the Navy Ministry conducted joint research on "the standard of regular, permanent forces we need allotted to defensive units," that is, for commerce protection. They recommended:

...20 destroyers of 1,200 tons, which ought to be stationed along the coasts, 12 coastal defense ships of 500-1,500 tons, 15 gunboats of 600 tons, 24 torpedo boats, 16 subchasers, 54 coastal air units (108 in wartime), and one dirigible unit. All these should be permanent units, and then as wartime backups there should be 56 torpedo boats, and 96 coastal defense ships (a simple design of 900 tons and 20 knots) and gunboats (to be assigned as direct escort to important merchant vessels). We should also seriously consider 24 coastal defense ships (1,200 tons each) and 160 subchasers as the nucleus of commerce protection.³¹

In later years, those few officers assigned to maritime escort duties before the war drafted annual plans for escort operations and construction, and they calculated that 360 large escorts (destroyers and destroyer escorts) were the minimum necessary for the task.³² Professional estimates thus agreed that the security of shipping, even before military successes significantly lengthened trade routes, required hundreds of specialized craft.

³¹Kaijo Goei Sen, p.9.

³²Interrogation of Commander Sogawa Kiyoshi, No.460, November 19, 1945, Interrogations, Vol.II, p.441.

However, the financial stringency of the 1930s constantly forced the Navy into difficult budget choices, and seldom did escort vessels head the priority list. In the 1931 armaments plan, the General Staff requested four coastal defense ships and twelve subchasers, an encouraging beginning. But the Navy cancelled even this modest program after further budget negotiations within the Cabinet. In 1937 the Navy finally secured appropriations for four coastal defense vessels, the only escorts built before the war. One staff officer later recalled that the General Staff believed the Navy could compensate for the lack of escort vessels with wide use of converted merchantmen as escorts and increased research.³³

Whatever the Navy's intentions, the quantity of escorts did not begin to meet needs once the shooting started. Even the meager forces available were not exclusively for escort missions, and they often took part in other operations. Altogether, the Navy had twelve destroyers, 210 poorly armed and marginally useful converted merchantmen, and about one hundred torpedo boats, subchasers and other small craft for the empire's maritime protection at the outbreak of war.³⁴ Within months these inadequate forces were attempting to

³³Kaijo Geoi Sen, pp.9-11.

³⁴USSBS (Pacific), The Campaigns of the Pacific War, (New York: Greenwood Press, 1969), p.378.

secure seaborne traffic across a third of the globe. The Second Base Force based at Balikpapan, for example, had all of three subchasers for convoy protection within the Netherlands East Indies until the middle of 1943.³⁶ Escort forces in the seas off of North China consisted of several auxiliary patrol boats, two converted merchantmen of over 2,000 tons each, and a modified Chinese customs cruiser.³⁸ Submarines in this area forced shipping to sail roundabout routes along the Korean coast and west shores of the Yellow Sea.³⁷

If possible, the situation was worse in waters near the home islands. The naval districts were responsible for merchant ship protection but had never trained or even planned for this possibility. Beyond arming some of the commandeered merchantmen, they were totally unprepared to protect shipping.³⁸ The Navy allotted the majority of defenses to the freshly occupied regions near the battle fronts, even at the cost of denuding regions closer to home of their mines,

³⁶Interrogation of Captain Abe Tokuma, No.468, Interrogations, Vol.II, p.485.

³⁸Office of Strategic Services, OSS Report No.68882, March 24, 1944, RG 226.

³⁷Interrogation of Lieutenant-Commander Yasumoto Shisei, No.194, October 28, 1945, USSBS, Interrogations, Vol.I, p.190.

³⁸Japanese Monograph No.125 (851-116), Surface Escorting Operations, December 1941 - August 1945, Prepared in June, 1949, by the Liquidation Division, Second Demobilization Bureau, p.3.

ships, and other weaponry.³⁹ But whatever the proximity to the main combat theaters, Japanese shipping was barely protected when the war began. A postwar assessment stated simply: "Merchant ships ...did not have the necessary protection ...it can be said that the Japanese merchant ships were practically without any protection at all."⁴⁰ "No regular convoy routines were possible," explained a former Imperial Navy officer, "owing to the scarcity of escort vessels and their slowness."⁴¹ It was only mild hyperbole when one official later claimed: "All Japanese merchant vessels were absolutely unprotected from the enemy's attacks."⁴²

The first year of war brought no relief for the hard pressed anti-submarine forces. In April, 1942, the Imperial Navy officially activated its first two escort units. The First Escort Group, consisting of ten overage destroyers, two torpedo boats, and five merchantmen converted to gunboats, was responsible for safeguarding shipping along the entire two and a half thousand miles of the

³⁹Oi, "Why Japan's Anti-Submarine Warfare Failed," 592.

⁴⁰Okada, "The Principal Problems and Obstacles Which Confronted the Japanese Shipping During Wartime," op.cit.

⁴¹Interrogation of Commander Chihaya Masatake, op.cit., p.201.

⁴²Brief Survey of Japanese Shipping During the Pacific War, 1941-1945, p.2.

Japan-to-Singapore route.⁴³ In practice this meant the First Escort Unit only protected convoys between Moji, Takao, Manila, and Singapore. Each convoy consisted of ten to twenty merchant ships, for which a single warship had to suffice. This arrangement afforded the convoys scant protection, but it was worse for merchantmen sailing without convoys, who received no escorts at all.⁴⁴ The Second Escort Group had to protect the Yokosuka-Truk line with four old destroyers, two torpedo boats, and one converted gunboat, a force "far from adequate" for the assignment.⁴⁵

In November, 1943, the Imperial Navy at last established a major escort command, the Grand Escort Fleet, to oversee all commerce protection activities among the naval districts and First and Second Escort Groups. But among Navy officers its miniscule escort strength "just aroused sympathy or laughter."⁴⁶ It possessed less than fifty vessels larger than 800 tons, including four auxiliary gunboats and several

⁴³Oi, "Why Japan's Anti-Submarine Warfare Failed," p.592; and Surface Escorting Operations, December 1941 - August 1945, p.4.

⁴⁴Surface Escorting Operations, December 1941 - August 1945, p.5.

⁴⁵Ibid, p.4; and Oi, "Why Japan's Anti-Submarine Warfare Failed," p.592.

⁴⁶Chihaya Masatake, "The One Big Battle Idea of the Japanese Navy ('Chihaya's History')," 1947, unpublished manuscript, Naval Operational Archives, Washington Navy Yard, p.86.

ancient destroyers unable to navigate the open seas. The Grand Escort Fleet was so undermanned that its commander suggested sealing off critical sea lanes with mines and radar stations, but since radar stations took too long to erect and he had only four minelayers, nothing ever came of this scheme.⁴⁷ The General Staff finally endorsed accelerated escort construction schedules in mid-1943; prior to then, Japan's shipyards had completed just two maritime defense vessels since Pearl Harbor.⁴⁸

The quantity of escorts did grow throughout the war years, but there were never enough. The Second Escort Group, for instance, could claim sixty vessels by November, 1944, way up from the niggardly seven it had at its inception nineteen months earlier.⁴⁹ The coastal defense ships in particular multiplied rapidly due to their small size and simple design. Only a handful existed at the war's outset, but by 1943 there were about sixty, and the following year the number easily topped one hundred.⁵⁰ Yet the number of

⁴⁷Oi, "Why Japan's Anti-Submarine Warfare Failed," pp.595,597.

⁴⁸USSBS, The Campaigns of the Pacific War, p.378.

⁴⁹Interrogation of Rear Admiral Horuichi Shigetada, No.199, October 30, 1945, Interrogations, Vol.I, p.194.

⁵⁰Special Research History 262, "Japanese Minor Combatant Vessels Used for Deep-Sea Escort," June 1, 1945, PSIS 135-11; and Lieutenant-Commander G.M. Williams to Captain Steadman, January 10, 1946, 51b(36)(1), Section 2, USSBS, RG 243.

American submarines preying on Japanese shipping outpaced this growth. In the fifteen months after February, 1943, for example, U.S. submarines prowling the Pacific more than doubled, from 47 to 104.⁵¹ Not only did the number of merchant bottoms decline, but in addition "there was a great loss in the usefulness of shipping".⁵² Convoys began to equate unescorted voyages with suicide and so often lost time waiting in port for their paltry escort allotment to appear or took circuitous detours of reported submarine sightings.⁵³

Besides surface escorts, aircraft proved highly effective in protecting shipping from the menace of submarines in World War II. The Allies valued air escort so highly in the Battle of the Atlantic that, until completion of the crash program to build and convert escort carriers bore fruit, they employed catapulted aircraft, which could not be recovered, to gain a few precious hours of mid-ocean air cover. The Japanese had four poorly organized air groups available for escort duty in December, 1941.⁵⁴ The Army sometimes

⁵¹Samuel Eliot Morison, Breaking the Bismarcks Barrier, 22 July 1942 - 1 May 1944, Vol.VI of History of United States Naval Operations In World War II, (Boston: Little, Brown and Company, 1950, 1984), p.66.

⁵²Interrogation of Rear Admiral Matsuzaki Akira, No.463, November 1, 1945, USSBS, Interrogations, Vol.II, p.455.

⁵³Interrogation of Rear Admiral Horuichi Shigetada, Interrogations, Vol.I, p.195.

⁵⁴USSBS, The Campaigns of the Pacific War, p.378.

provided air cover for its own convoys,⁶⁶ but defects in interservice communications and the Army pilots' faulty overwater navigational skills reduced their usefulness. Formation of the Grand Escort Fleet in late 1943 marked an improvement in air escort, for this unit received four auxiliary carriers, each with a complement of a dozen or so aircraft, and 80 Mitsubishi G4M2 "Bettys" and Kawanishi H8K2 "Emilys," both ideal anti-submarine types.⁶⁷ Eventually air strength for merchant shipping protection included hundreds of aircraft of uneven quality.⁶⁷ But none of this came close to meeting needs. Lack of planes, for instance, prevented forward sweeps of convoy routes, normally a highly successful anti-submarine tactic.⁶⁸ And as the war continued into 1945, air cover became even more scarce. Bitterness is evident in one staff officer's recollection that: "When we were near a base where we could request air cover, the only planes which showed up were American."⁶⁹

⁶⁶Interrogation of Colonel Rinsuka Kaneko, No.440, November 21, 1945, USSBS, Interrogations, Vol.II, p.407.

⁶⁸Interrogation of Captain Kamide S., No.371, November 12, 1945, USSBS, Interrogations, Vol.II, p.309.

⁶⁷Ibid; Interrogation of Lieutenant-Commander Okamoto T., No.200, October 31, 1945, USSBS, Interrogations, Vol.I, p.200; and Interrogation of Commander Sugita Binzo, No.34, October 10, 12, and 16, 1945, USSBS, Interrogations, Vol.I, P.22.

⁶⁹Interrogation of Lieutenant-Commander Okamoto T., No.200, op.cit., p.197.

It was not only the lack of forces but their inferior quality that hampered the Imperial Navy's escort services throughout the war. A Navy Ministry postwar report called its anti-submarine weaponry and equipment "crude" (yochi),⁸⁰ and the evidence suggests the description is only too accurate. This was especially true for the first two years or so of the war. Because the Navy had repeatedly postponed escort construction programs in the decade before Pearl Harbor, maritime protection authorities naturally had to press auxiliaries into service. Beyond their availability, these converted merchantmen had little to recommend them for the job. They lacked the equipment and speed for anti-submarine duty, yet there were few alternatives to their use. In 1941 these former merchant vessels outnumbered all other escort types. The Fourth Advanced Southern Fleet, for instance, had sixteen ships to patrol the waters off western New Guinea, and fifteen of them were impotent converted trawlers of under 500 tons and incapable of making ten knots.⁸¹ The merchant vessels escorting surface traffic along the North China coast had deck guns and torpedo tubes but no anti-submarine

⁸⁰Interrogation of Abe Tokuma, op.cit., p.488.

⁸⁰"Daitoa Senso ni Okeru Wagamonoteki Kokuryoku to Kaigun Sembi Sui-i ni Kansuru Setsumei Shiryo," op.cit.

⁸¹Interrogation of Commander Chihaya Masatake, No.201, October 29, 1945, USSBS, Interrogations, Vol.I, p.201.

detection gear or weapons.⁸² Such primitive armaments meant that the successful submarine contact and attack rates for merchant ships serving as escorts were substantially lower than for true anti-submarine types, such as subchasers and torpedo boats, though statistics are incomplete.⁸³ Almost any warship, even the salvaged World War I-era destroyer Stewart, outperformed converted merchant ships in shipping protection.⁸⁴

Matters improved when Japan's shipyards finally started the much delayed escort construction programs, because the proportion of merchantmen in the escort service declined. Still, escort performance never rose appreciably because many of the new anti-submarine vessels were themselves of indifferent quality. Submarine chasers built during the war are a case in point. They suffered from a 65% attrition rate as compared to American losses of scarcely a dozen out of over 800 built.⁸⁵ Coast defense vessels (kaikoban) were

⁸²OSS Report No.68882, March 24, 1944, RG 226.

⁸³Figures for 1943 nevertheless strongly support this contention. See "Sakusen Kenkyu Shiryo, Hokyū Yuso Sakusen," Document No.29, Sempan 3, Boei Kenshusho.

⁸⁴Interrogation of Captain Abe Tokuma, op.cit., p.485.

⁸⁵"Furukaigun Onkyū Nen Kasan Chosho," (3), by Koseisho Engokyoku, Revised Edition, October, 1971, Document No.33, Sempan 4, Boei Kenshusho; and Samuel Eliot Morison, Supplement and General Index, Vol.XV, History of United States Naval Operations in World War II, (Boston: Little, Brown and Company, 1984), pp.72-73.

another anti-submarine type on which the Japanese banked heavily to cut losses from submarines. They built more of them, 169, than any other escort type, but as American investigators found after the war: "No available evaluation of their effectiveness is sufficiently specific to permit an estimate of the tonnage of merchant shipping saved by these ships. As an anti-submarine weapon their speed (16.5 to 19 knots) was low and their durability had its limitation."⁶⁶ This meant convoys had to make harbor more often, and port entrances were favorite hunting grounds of U.S. submarines.⁶⁷

Even fleet destroyers, the best equipped and trained of Japanese escort vessels, often proved incapable of screening the most easily guarded targets of all, fast warship task forces. Altogether American submarines sank one battleship, seven carriers, and nine cruisers, besides heavily damaging another carrier and four cruisers. In fact, about thirty Japanese destroyers were themselves torpedo victims, including four sunk by the U.S.S. Harder.⁶⁸ Similar inept

⁶⁶Military Supply Division, USSBS (Pacific), Japanese Merchant Shipbuilding, No.54, (Washington: United States Government Printing Office, 1947), p.20.

⁶⁷Ariyoshi, Brief Survey of Japanese Shipping During the Pacific War, 1941-1945, pp.7-8.

⁶⁸Clay Blair, Jr., Silent Victory: The U.S. Submarine War Against Japan, (Philadelphia: J.B. Lippincott Company, 1975), pp.694,792.

performances marred the destroyers' history of escorting merchantmen.⁶⁹ And the Navy seldom assigned destroyers as commercial shipping escorts. That burden rested primarily on the myriad small craft and converted merchantmen that formed the bulk of the escort units, ill-suited though they were for the task.

The history of aerial protection for shipping tells a similar story. While many aircraft that flew anti-submarine missions were well suited to that role, availability rather than capability was the fundamental criterion for their assignment.⁷⁰ Furthermore, about a third of all escort planes had neither radar nor metal detectors (for spotting submerged submarines), and most of the remainder had only one of the two.⁷¹ Radios for air-surface communication among

⁶⁹On one occasion, two Combined Fleet destroyers, including one of the most modern design, lost two tankers from a three ship convoy carrying desperately needed petroleum for the defense of the Marianas. Besides steaming in a formation that invited penetration by enemy submarines, the destroyers conducted their depth charge attacks with many of the merchant seamen adrift in the water, thus killing many of them, though not damaging the submarine. When the escorts finally fished the shaken survivors from the sea, they packed them into torpedo tubes and under the main batteries, virtually depriving themselves of all firepower. The full details are in Yamashita Kisen Shasen, Sonan Sempaku Ichiran Oyobi Hyo Shashin, "Yusosen Nippon Maru no Saigo," by Fukutomi Chuo, Document No.17, Sempaku 4, Boei Kenshusho.

⁷⁰Interrogation of Captain Kamide S., op.cit., p.310.

⁷¹Interrogation of Lieutenant-Commander Okamoto T., No.200, op.cit., p.200.

convoy units frequently malfunctioned, further undercutting the planes' effectiveness.⁷² Escort carriers, priceless to the Allies in their battle with Nazi U-boats, proved next to worthless in protecting Japanese shipping due to carrier-trained pilot shortages. As soon as an airman completed one trip aboard these "baby flattops," the Navy transferred him to the Combined Fleet.⁷³

The inferior quality of Japanese escorts thus compounded the problems imposed by their scarcity. The disappointingly low state of anti-submarine technology within the Imperial Navy in World War II resulted from a tradition of neglect. Navy Ministry and General Staff officers habitually dismissed anti-submarine warfare study and research with the comment that such knowledge was simply "common sense to a navy officer."⁷⁴ This was more rationalization than heartfelt conviction, however, for World War I had demonstrated the submarine's potential to the world. It set off a flurry of underwater weapons research among the maritime powers, including Japan.

⁷²Interrogation of Lieutenant-Commander Yasumoto Shisei, op.cit., p.190; and Interrogation of Captain Oi Atsushi, No.61, USSBS, Interrogations, Vol.I, p.59.

⁷³Oi, "Why Japan's Anti-Submarine Warfare Failed," p.595.

⁷⁴Ibid, p.599.

Yet the Japanese interwar effort in these areas was far from productive. Immediately after the war, the Imperial Navy purchased some equipment abroad and also studied the British anti-submarine campaign from the recent conflict. But enthusiasm soon waned and anti-submarine investigation slowed to a snail's pace. The progress of sound detectors is illustrative. The Navy experimented with foreign models in 1920, but failed to produce a workable copy.⁷⁵ When an inspector for the Bureau of Ships in Paris reported an improved French model a few years later and recommended buying a few, the Bureau at first balked at the idea. Only when the Navigation Department expressed an interest in the device as a surveying tool did the Bureau offer its belated approval. The experiments and foreign purchases continued for several more years, until in 1930 the first Japanese designs went into limited production. After studying German models, the Navy revised its original circuits and recorders to produce the Type 93 Underwater Sound Detector. The Japanese began issuing it to the fleet in 1933, and, though eight years old when the war started, it remained the standard submarine detection apparatus until the surrender.⁷⁶

⁷⁵The Navy researchers apparently broke the foreign sound detectors. According to the official history: "...because they were not accompanied by directions on their use and because of their capabilities in such areas as weak tensile strength, these weapons never reached the stage of practical use." Kaijo Goei Sen, p.23.

The Imperial Navy neglected maritime escort doctrine as well as weaponry. Explained an escort staff officer after the war:

Great Britain's hard experiences at the hands of German submarines during World War I were remembered, but not heeded. Submarines' roles and activities in the war that was to come had not been envisioned clearly enough... our anti-submarine tactics were shiftless beyond description. No efforts had been made in the study of the counter-submarine measures except those visualized in the fleet engagements, and even in this limited field they had not succeeded in hitting upon one single method that was sure and reliable.⁷⁷

As this officer suggests, the Imperial Navy was aware of the British experiences and attempted to glean the appropriate lessons. Some historians at the Naval War College researched and lectured on the topic, and shipping protection was sometimes the subject of student papers, "...but this failed to arouse the interest of the pupils,"⁷⁸ and attention to maritime escort problems remained "very low."⁷⁹

When the memories of Britain's near disaster faded, the Naval War College further reduced its anti-submarine warfare studies, and the Navy Torpedo School became the only Japanese institution still undertaking research and instruction

⁷⁶Ibid, pp.23-24.

⁷⁷"Chihaya's History," pp.21,22.

⁷⁸Oi, "Why Japan's Anti-Submarine Warfare Failed," p.587.

⁷⁹Kaijo Goei Sen, pp.30-31.

in this vital field. But even there, as one teacher recalled, the emphasis was on the offensive employment of torpedoes, not on defending against them. Anti-submarine research at the school became the parttime domain of one officer. Just months before hostilities commenced, the Torpedo School relinquished supervision over anti-submarine matters to the Navy Mine School, an institution younger and less prestigious than the gunnery and torpedo schools. One former instructor there poetically described this school as "an undernourished child of a recluse who always stays out of the limelight" who, "when suddenly called to center stage, naturally cannot be expected to suddenly show efficiency or skill." So, "whereas things like gunnery, torpedoes, and aircraft were the flowers of fame placed in the very front of the garden, undersea warfare was the flower whose bud was placed in the shade in the back of the garden, where no one can see it. Undersea warfare was not expected to accomplish healthy growth rapidly."²⁰

The same disinterest in anti-submarine activities prevailed in the line commands as well. In the Yokosuka Naval District, for example, the education officer doubled as merchant security specialist. The General Staff also could spare but a single officer for shipping protection study,

²⁰Ibid, pp.31,34.

while it had ten planners preparing Combined Fleet operations. Not surprisingly, no unified system of tactics, training, or communications for escort services ever emerged from this arrangement, even after war broke out.⁸¹ After the war, Rear Admiral Yokoi could not remember one exercise devoted to attacking or defending sea lanes.⁸² Well might a postwar analyst remark that despite apparent appreciation of the nation's dependence on maritime transport, "...the problem of sea-communications between the southern resources area and Japan was treated rather carelessly."⁸³

Japan's anti-submarine equipment in 1941 was therefore rather rudimentary. Intensive research into radar to detect surface units (as opposed to aircraft) had only begun that spring,⁸⁴ so this valuable tool was not yet available. While the Allies often spotted U-boats through radio direction

⁸¹Interrogation of Vice-Admiral Hara, Rear Admiral Sumikawa, and Rear Admiral Kojima, No.25, November 18, 1945, "Supplemental Report of Certain Phases of the War Against Japan," Naval and Naval Air Field Team No.3, 1945, 77m, Section 2, USSBS, RG 243; and Oi, "Why Japan's Anti-Submarine Warfare Failed," pp.589,596.

⁸²Rear Admiral Yokoi Toshiyuki, "Thoughts on Japan's Naval Defeat," United States Naval Institute Proceedings, Vol.86, No.10, (October, 1960), p.73.

⁸³Oi, "Why Japan's Anti-Submarine Warfare Failed," pp.588.

⁸⁴The first successful test was actually in 1939, but there was no followup for eighteen months. Kaijo Goei Sen, pp.29-30.

finding (RDF), a method of locating naval units by cross indexing directional bearings from ships' radio transmissions, the Japanese RDF system suffered from communications difficulties among stations which consistently delayed this crucial information until it was no longer useful.⁶⁶ The standard allotment of depth charges for escorts was 36, which the Navy Ministry actually tried to reduce once sonar became available. Eventually the Navy raised the allotment to 50, as compared to American and British escort allowances of up to 120.⁶⁸ Merchantmen were usually unarmed in the first months of the war, but by late 1942 the Navy started equipping their commandeered vessels with guns. The Army supplied wheeled field artillery to their own drafted merchant ships. Those freighters remaining in private hands often received no weapons at all, and some tried to deceive submarines by installing mock wooden guns on their decks.⁶⁷

Aerial anti-submarine weaponry was comparably obsolete. Not until late 1944 did most planes carry radar, and during daylight hours most pilots preferred their own eyesight,

⁶⁶Interrogation of Captain Kamide S. op.cit., p.310.

⁶⁸Interrogation of Captain Abe Tokuma, op.cit., p.485.

⁶⁷"Use of Artillery Aboard Cargo Ships Against Submarine and Air Attack," April 18, 1944, Item No.13,025, CINCPAC-CINCPOA Translations and Interrogations No.14, January 10, 1945, 3e(2), Section 6, USSBS, RG 243; and Ariyoshi, Brief Summary of Japanese Shipping During the Pacific War, 1941-1945, pp.4-5.

which had a greater range. Early in 1944 MAD, an airborne magnetic detector, became available, but fewer planes had MAD than radar. It took three months' extra pilot training and a stripped down aircraft to operate it. The improved models produced in 1945 still had an effective radius of action of less than three hundred yards. Airplane voice radio had a range of only six miles, and air-surface communications routinely suffered from malfunctions throughout the war. Aerial depth bombs were simple adaptations of general purpose ordnance. The depth bombs came in two sizes: 250-kilogram bombs, which had to land within forty feet of the target to inflict damage, and 60-kilogram bombs, which were harmless for anything short of a direct hit.⁸⁸ There is little wonder that Japanese wartime handbooks on aerial anti-submarine operations downplayed weapons technology and instead emphasized alertness, thoroughness, mental quickness, and perserverance.⁸⁹

⁸⁸Interrogation of Lieutenant (j.g.) Okuno Y., No.228, November 1, 1945, Interrogations, Vol.I, pp.228-229; Interrogation of Lieutenant-Commander Okamoto T., No.257, November 5, 1947, Interrogations, Vol.I, pp.259-260; Interrogation of Lieutenant Okamoto T., No.200, op.cit., pp.197-200; and Interrogation of Captain Kamide S., op.cit., pp.310-312.

⁸⁹"Japanese Aerial Anti-Sub Tactics," December 23, 1944, 3d(14), Section 6, USSBS, RG 243.

Besides beginning the war with pitifully deficient escort forces, the Imperial Navy was slow to correct this flaw. Relatively light losses in the war's early stages caused continued neglect, even antipathy, for development of maritime protection weapons and doctrine. When the lone General Staff officer for anti-submarine warfare clamored for remedial action in 1942, his superiors transferred him to sea duty, and Tokyo simply did without an anti-submarine officer for six months.⁸⁰ Escalating losses at last prompted naval leaders to take notice of the danger. The General Staff created a Twelfth Section to improve escort coordination and issued a rough set of instructions to unify maritime protection practices, which it updated six months later. In 1944 the Navy launched a full scale investigation into escort methods and technology, and several officers wrote books on the topic. That summer the General Staff established an anti-submarine training unit at Kure.⁸¹ Experiments began on new weapons, including anti-submarine rockets and torpedoes,⁸² and the aircraft industry designed a plane expressly for aerial escort, the Q1W1 Tokai ("Lorna"). But the new

⁸⁰Oi, "Why Japan's Anti-Submarine Warfare Failed," pp.592-593.

⁸¹Japanese Monograph No.125, pp.7,9,14,15.

⁸²Interrogation of Lieutenant-Commander Okamoto T., No.257, op.cit., p.260; and Interrogation of Captain Kamide S., op.cit., p.310.

weapons never reached the production stage, the new planes were slow and vulnerable to American fighters, and the new doctrine was still in its infancy when the war ended. The Imperial Navy's concern for anti-submarine warfare had come too late to save the nation's merchant marine.

Minelaying constitutes another method of attacking merchant shipping, and it was another offensive tactic for which the Japanese were unprepared. During the war over one hundred Imperial Navy warships struck mines, and forty-nine of them sank.⁸³ The merchant fleet suffered much more severe losses, over two million tons sunk or damaged, from mines.⁸⁴ The true number of mining victims was probably higher, since many ships rocked by explosions of unknown origins credited torpedoes with the damage.⁸⁵ Besides accelerating physical destruction of shipping, minelaying delayed merchant marine operations by forcing vessels to avoid suspected minefields or wait until minesweepers could clear lanes through them. Overall, mines were extremely successful in neutralizing

⁸³Two battleships, two escort carriers, eight heavy cruisers, thirty-eight destroyers, five submarines, and fifty-four other types were mine victims. Of these, nine destroyers, four submarines, and thirty-six auxiliaries sank. United States Strategic Bombing Survey, The Offensive Mine Laying Campaign Against Japan, (Washington: Naval Analysis Division, 1946), p.1.

⁸⁴Ibid.

⁸⁵Interrogation of Captain Tamura Kyuzo, No.34, October 10, 12, and 16, 1945, Interrogations, Vol.I, p.21.

Japan's merchant fleet and causing "a great commotion" among the naval authorities.⁶⁶

Mine research was originally the province of the Navy Torpedo School, and for years mine warfare, which like anti-submarine warfare the Japanese considered "defensive," did not receive proper attention. The Navy finally opened a Mine School in 1941, but as the latecomer among naval educational institutions it never had enough personnel or funding for serious study and research.⁶⁷ Investigations of magnetic and acoustic mines began in 1939 but produced only disappointing results by the time of Pearl Harbor. With the war came more intensive studies, including technical information and sample mines supplied by the Germans. But the Imperial Navy's knowledge of mining countermeasures never kept pace with American minelaying progress. "Little attention was paid by those who were concerned" until the massive U.S. mining campaign of 1945.⁶⁸ At that late hour the Navy set up a research department of five professors at Tokyo Imperial University, but demanded little of them and received little in return.⁶⁹

⁶⁶Tamura Kyuzo, History of Japanese Minesweeping, 1937-1947, Minesweeping Division, Sasebo, Second Demobilization Bureau, 1948, p.3.

⁶⁷Kaijo Goei Sen, pp.31-34.

⁶⁸Tamura, History of Japanese Minesweeping, 1937-1947, pp.8-9.

Japan's minesweeping equipment and operations were consequently abysmal during World War II. Often the minesweeping service had only those craft too decrepit for other uses.¹⁰⁰ When the massive B-29 mining raids began in the spring of 1945, the Imperial Navy began withdrawing subchasers from escort duty and converting them to minesweepers. Coastal defense vessels escaped this fate only because they were too large.¹⁰¹ The case of minesweeping equipment at the Osaka Naval Station is enlightening. Though it was responsible for maritime security for one fourth of the nation's coastline, there were no minesweepers there before April, 1945. Within a month, the area commander had assembled six seaplanes, three converted subchasers, and nineteen converted fishing boats. Eventually he added twenty-two more former fishing boats and two ex-schooners to his flotilla. This under-equipped force managed to sweep 37 mines and detonate 70 more with sympathetic explosions, but the Americans had dropped at least 500 mines in these waters.¹⁰² Equipment and

⁹⁹Ibid, pp.9-10; and Interrogation of Captain Tamura Kyuzo, No.34, op.cit., p.18.

¹⁰⁰Interrogation of Captain Tamura Kyuzo, No.34, op.cit., p.17.

¹⁰¹Interrogation of Captain Tamura Kyuzo, No.285, November 8, 1945, Interrogations, Vol.I, p.267.

¹⁰²Interrogation of Rear Admiral Matsuzaki Akira, No.251, October 30, 1945, USSBS, Interrogations, Vol.I, pp.246-247.

men for countering mines was in such short supply that once the Navy transferred a kamikaze unit from the Ryukyus to minesweeping duties in the Inland Sea.¹⁰³

The sweeping gear itself was always behind the times. The basic Japanese model was a copy of the British type, and the Navy added magnetic minesweepers captured at Singapore straight to its arsenal.¹⁰⁴ This equipment was effective on 1930s' vintage mines, but World War II witnessed rapid development of many new types. Unfortunately for the Japanese, they were never able to narrow the gap between the new American mines and their own obsolescent sweeping gear. They had to use the more primitive magnetic rod sweepers until August, 1944, when electric sweepers at last began reaching the fleet.¹⁰⁵ The Navy also employed old-fashioned net sweepers, which never achieved much.¹⁰⁶ When a proliferation of types appeared in 1945, the Japanese took an average of two months to discover countermeasures for each of them,

¹⁰³Interrogation of Captain Tadenuma Saburo, No.226, October 27, 1945, USSBS, Interrogations, Vol.I, p.217.

¹⁰⁴Interrogation of Captain Tamura Kyuzo, No.34, op.cit., p.17; and Tamura, History of Japanese Minesweeping, 1937-1947, p.9.

¹⁰⁵Tamura, History of Japanese Minesweeping, 1937-1947, p.9.

¹⁰⁶Interrogation of Captain Tamura Kyuzo, No.285, op.cit., p.267.

meanwhile suffering heavier shipping losses than normal.¹⁰⁷ The Navy borrowed American and British designs for degaussing equipment, a device for protecting vessels from magnetic mines, but still could not produce enough to meet demands.¹⁰⁸ Equipment in general was backward enough to make about twenty minesweepers themselves victims of their intended prey.¹⁰⁹

Even when they did no damage, the very presence of mines could paralyze maritime traffic. The fear that U.S. planes had dropped magnetic mines in Palau Harbor closed the port for three weeks. The island garrison had no sweeping equipment and only reopened the harbor by using makeshift gear, such as drums lashed with metal and wire.¹¹⁰ Mines seriously hindered shipping at Munda, Osaka, Batavia, Sasebo, Singapore, Buin, Surabaya, Takao, Shortland, Hiroshima, Kavieng, and numerous other ports.¹¹¹ Forty percent of all ships over

¹⁰⁷Ibid; and Tamura, History of Japanese Minesweeping, 1937-1947, pp.8,11.

¹⁰⁸Interrogation of Commander Tadenuma Saburo, op.cit., p.217.

¹⁰⁹Interrogation of Captain Tamura Kyuzo, No.34, op.cit., p.21; and Tamura, History of Japanese Minesweeping, 1937-1947, p.11.

¹¹⁰Interrogation of Commander Nakajima Chikataka, No.454, November 22, 1945, USSBS, Interrogations, Vol.II, p.433.

¹¹¹Interrogation of Commander Tadenuma Saburo, op.cit., p.217; Interrogation of Vice-Admiral Fukudome Shigeru, op.cit., p.510; Interrogation of Commander Doi Yasumi, No.224, October 27, 1945, USSBS, Interrogations, Vol.I,

one thousand tons entering the Balikpapan area hit mines, and often salvaged vessels struck other mines and so sank again.¹¹² After November, 1944, steel ships avoided the place completely.¹¹³ Mining closed the Shimonoseki Straits, perhaps the most vital waterway in Japan's home waters, an average of two weeks per month in the war's final stages.¹¹⁴ Normal monthly traffic through this passage amounted to 1,250,000 tons,¹¹⁵ so minelaying there disrupted Japanese seaborne transit schedules on a grand scale. Combat units larger than light cruisers never entered the straits again after March 27, 1945.¹¹⁶ Early in the war clearing a channel through a minefield took four days, and though the mine-sweepers eventually managed to halve this figure, by 1945 delays had become an accepted corollary of sea trans-

p.209; and Interrogation of Commander Doi Yasumi, No.435, November 20, 1945, USSBS, Interrogations, Vol.II, p.397.

¹¹²Interrogation of Rear Admiral Matsuzaki Akira, op.cit., p.245.

¹¹³Interrogation of Captain Oi Atsushi, op.cit., p.59.

¹¹⁴Interrogation of Captain Tamura Kyuzo, No.34, op.cit., p.19.

¹¹⁵Interrogation of Captain Minami Rokuemon, No.256, November 1, 1945, USSBS, Interrogations, Vol.I, p.257.

¹¹⁶Interrogation of Commander Tadenuma Saburo, op.cit., p.217.

port.¹¹⁷ The alternative was brutal: half of all ships that struck mines sank, except in deep water, where the sinking rate was 70%.¹¹⁸ For those that survived, average repair times ranged from 70 to 95 days, depending on the vessel's size.¹¹⁹

American forces planted 25,000 mines in the Pacific in World War II, about half of them near Japan during the war's final five months.¹²⁰ The Imperial Navy's minesweeping forces, which numbered 350 craft and 20,000 men when the war ended,¹²¹ successfully swept perhaps 15% of the mines in Japan's coastal waters.¹²² The numbers of mines were multiplying impressively every week, and the nation faced total pollution of its waterways by the end of the year. The mine-

¹¹⁷Ariyoshi, Brief Survey of Japanese Shipping During the Pacific War, 1941-1945, p.22.

¹¹⁸Interrogation of Captain Tamura Kyuzo, No.285, op.cit., p.267.

¹¹⁹USSBS, The Offensive Minelaying Campaign Against Japan, p.26.

¹²⁰Ibid, pp.1-2,28; and "Taikirai Sen Sanko Shiryo," Sono Hachi (Nihon Sokai Senshi), by Kaijo Jieitai, Daiichi Jutsuri Gakko, Document No.25, Kaijo Goei 4, Boei Kenshusho.

¹²¹Interrogation of Captain Tamura Kyuzo, No.34, op.cit., p.21.

¹²²Accurate figures for the entire Japanese minesweeping effort apparently do not exist. Partial statistics for various naval districts and local commands consistently indicate a success rate of 12% to 20%. See Interrogation of Rear Admiral Matsuzaki Akira, op.cit., p.247; and Interrogation of Captain Tamura Kyuzo, No.34, op.cit., p.18.

sweepers proved utterly incapable of retarding, let alone halting, this inundation. It took twenty-three American minesweepers a full week to clear a channel into Tokyo Bay for the surrender ceremonies. American and Japanese spent two years completing minesweeping in the waters around Japan,¹²³ and enough mines escaped detection to claim 42 more victims of 72,867 tons in the three and a half years following the surrender.¹²⁴ As flawed as the U.S. mining campaign was, and it definitely suffered from a multitude of mistakes,¹²⁵ it easily overwhelmed the Imperial Navy's minesweeping forces. Postwar observers succinctly described this neglected arm of the fleet as "neither extensive, efficient, nor adequate for the purpose."¹²⁶

Japan's armed forces in World War II had thus weakened the nation's merchant fleet by extensive commandeering and then failed to protect the remaining shipping from the hordes of torpedoes and mines strewn across the Pacific Ocean by the U.S. Navy. Such errors alone gravely evis-

¹²³See Tamura, History of Japanese Minesweeping, 1937-1947; and Morison, Supplement and General Index, pp.12-14.

¹²⁴"Soshitsu Sempaku Ichiran Hyo," 1948, Sempaku Uneikai, Document No.11, Sempaku 4, Boei Kenshusho.

¹²⁵Interrogation of Captain Tamura Kyuzo, No.103, October 22, 1945, USSBS, Interrogations, p.116; and USSBS, The Offensive Minelaying Campaign Against Japan, p.18.

¹²⁶USSBS, The Offensive Mine Laying Campaign Against Japan, p.26.

cerated the maritime transport sytem, but it was the shipping administration failure that irrevocably sealed the fate of the Japanese merchant marine.

CHAPTER 6
ADMINISTRATION AND FATE OF THE
MERCHANT MARINE IN WARTIME

Both in its backwardness and in the harm it brought to the maritime transport system, the failure of Japan's shipping and escort management rivalled the Navy's impotence in anti-submarine and anti-mining warfare. Routing, scheduling, tactics, and organization remained undeveloped and ineffective until 1945, when there was scarcely a merchant fleet left to safeguard. The core of the matter was the proliferation of shipping control offices and the Imperial Navy's defective administrative structure for merchant ship protection.

The protection of maritime traffic was solely the Imperial Navy's domain, but the Army and the civilian government also participated in the general management of the nation's shipping. Within the Navy, merchantmen obeyed the directives of shipping sub-headquarters scattered among the many byways of the Japanese Empire. These offices were mostly clerical,

however; the Combined Fleet, the Naval Transportation Headquarters in the Navy Ministry, and even area fleets and naval districts decided on transport arrangements and issued orders through the local sub-headquarters.¹ Because the line commanders confined themselves to directing only auxiliaries on combat operations, this command setup functioned smoothly.

The problem was that the Army and the government each maintained their own organizations for shipping administration. The Army used its main headquarters at Ujina and five sub-headquarters in the field to supervise the transportation of its men and material to the fronts.² In April, 1942, the Ministry of Transportation and Communication formed the Shipping Control Board, staffed equally by government bureaucrats and representatives of private shipping firms, to handle vessels unrequisitioned by the military.³ The armed forces and civilians settled all seaborne transport questions through negotiation. Japanese shipping policy in World

¹Interrogation of Captain Oi Atsushi, No.61, United States Strategic Bombing Survey, Naval Analysis Division, No.72, Interrogations of Japanese Officials, Volume I, (Washington: United States Government Printing Office, n.d.), p.56.

²Ibid; and USSBS, The Campaigns of the Pacific War, (New York: Greenwood Press, 1969), p.378.

³Interrogation of Captain Oi Atsushi, No.61, op.cit., p.56.

War II was therefore more the child of political compromise than rational design.

The three groups fought incessantly over allocations, and advice from civilian experts frequently went unheeded.⁴ This divided control hampered "distribution of material for repairs, of the proper assignment of facilities to effect the repair and in the distribution of crews."⁵ Worse, there was considerable waste of available tonnage and duplication of effort when there was no margin for error. One civilian concluded in hindsight: "...there was no question that operations of all vessels has to be coordinated and directed under one authority to meet with the critical emergency of the nation."⁶ The three did not even hold regular conferences until the Navy General Staff organized monthly meetings in July, 1943.⁷ Nine months later the two military branches met in the emperor's presence to ease the

⁴"Japanese Shipping During the War From Local Point of View," by Kawashima R., Korean Agent of Shipping Control Association, 54ff(6), Section 2, USSBS, RG 243, pp.1-2.

⁵Interrogation of Rear Admiral Horuichi Shigetada, No.199, October 30, 1945, USSBS, Interrogations, Vol.1, p.195.

⁶Ariyoshi Y., Shipping Control Association, Brief Survey of Japanese Shipping During the Pacific War, 1941-1945, November, 1945, 54ff(4), Section 2, USSBS, RG 243, pp.19-20.

⁷Japanese Monograph No.125 (851-116), Surface Escorting Operations, December 1941 - August 1945, Prepared in June, 1949, by the Liquidation Division, Second Demobilization Bureau, p.10.

quarreling over shipping, and the monarch himself intervened to urge closer cooperation.⁹ "There was no precedent for such a session - which indicates the gravity of the shipping menace."¹⁰ Finally, on May 1, 1945, when the bulk of Japan's merchant fleet lay broken on the Pacific floor, all parties agreed to a unified maritime transport command.

The failure to rationalize shipping management was thus a result of the paranoia about jurisdictional authority that was an inexcusable though perhaps understandable characteristic among Imperial Japan's semi-autonomous military forces. But obviously this could not have caused the faulty command structure for maritime transport protection within the Navy. The safety of the sea lanes was simply not a major concern of the Navy until the war was well underway. Indeed, for many years the Navy had no agency for merchant marine security. The Imperial Navy had never appreciated the complexity of shipping organization nor the time needed to render it effective.¹⁰

⁹Ibid, p.13.

⁹Hayashi Saburo, in collaboration with Alvin D. Coox, Kogun: The Japanese Army in the Pacific War, (Quantico: The Marine Corps Association, 1959), p.83.

¹⁰Chihaya Masatake, "The One Big Battle Idea of the Japanese Navy ('Chihaya's History')," 1947, unpublished manuscript, Naval Operational Archives, Washington Navy Yard, pp.5-6.

Before the war, shipping protection in the Navy General Staff was under the jurisdiction of four sections in two different bureaus. Three of these sections dealt with shipping security only tangentially, but in the fourth, which oversaw fleet readiness, was a Defense Preparations Office that, among several other duties, directed "matters concerning education and training connected with defense preparations and commerce protection."¹¹ In practice, however, the Defense Preparations Office had so many assigned tasks that, while some staff officers managed to produce a basic yearly plan for shipping protection by laboring in their spare time, in prewar days not one person had this responsibility as his chief duty.¹² Commander Nakamura Takeo of this section assumed the principal responsibility for commerce protection after Pearl Harbor, and he and his successor, Sogawa Kiyoshi, were the only general staff officers who devoted their full attention to this task before 1943.¹³

Within the Navy Ministry there were also several sections that wielded some authority over maritime escort. Most of these were secretarial rather than managerial in function,

¹¹Senshishitsu Cho, Volume 46, Kaijo Goei Sen, (Tokyo: Asagumo Shimbunsha, 1976), p.16.

¹²Ibid, pp.15-17.

¹³Arthur J. Marder, Old Friends, New Enemies: The Royal Navy and the Imperial Japanese Navy, Strategic Illusions, 1936-1941, (Oxford: Clarendon Press, 1981), p.321.

however, and they simply drafted the plans and ideas from the First Section of the Military Affairs Bureau. This agency, like its parallel in the General Staff, had overarching responsibility for naval armaments and readiness, so among all these duties commerce protection attracted little notice.¹⁴

Among the line commands, the principal agents for safeguarding the merchant fleet were the four naval districts. These were geographically distributed Navy commands with defense responsibility for all of Japan's coastal waters. The Navy added four "guard districts" for the same purpose in overseas possessions. Beginning in 1938, the General Staff assigned Resident Port Officers to each district. Their primary responsibility was intelligence, but commerce protection was another concern. The Navy Ministry specified, in September, 1941, the range and nature of transportation security activities within their jurisdiction. These included maintaining liaison with merchant captains, studying escort methods and results, drafting and assigning merchant crewmen as needed, organizing convoys, and coordinating merchantmen arrivals, berthing, departures, and routing. When the war started, then, these eight Resident Port Officers (one in each of the four naval and four guard districts)

¹⁴Kaijo Goei Sen, pp.17-19.

were the Imperial Navy's only line billets, other than the escort vessel captains themselves, with responsibility for protecting the merchant marine. The command structure further hampered the effectiveness of commerce defense, since Resident Port Officers reported to the district commanders, whose main duty was to support all fleet activities.¹⁰

Consequently, escort management within the Imperial Navy was almost an incidental activity in prewar days. Those few offices and personnel charged with these matters handled them on a parttime or indirect basis; there was no central agency for realistic and comprehensive maritime protection planning. Before 1941, the Navy's Yearly Operational Plan in case of war with the United States contained just four or five vague sentences on the subject: "...forces should cooperate as needed to protect non-combatant shipping. Maritime commerce security... should be executed by suitable forces as necessity indicates.... Maritime commerce ...will be secured within the limits allowed by circumstances."¹¹

As the likelihood of war in the Pacific deepened in 1941, the Japanese began to take the first overdue steps to rectify this organizational weakness. In March, the Diet at last

¹⁰Ibid, pp.19-23.

¹¹Ibid, p.4.

formally authorized the Navy to escort merchant shipping.¹⁷ Five months later the Cabinet agreed to entrust all seaborne transport planning to a "special agency" under Navy direction, essentially an adaptation of an existing voluntary shipowners' association.¹⁸ This agency, however, undertook no planning or preparations. Rather, it was a simple control mechanism to streamline the government's authority over the industry, similar to what the General Mobilization Law of 1938 was then establishing in most Japanese industries. It took years of war, with its bitter losses and wasteful experimentation, to forge a viable shipping and escort management structure.

The military successes of early 1942 led to the creation of the First and Second Escort Units on April 10 to guard the sea lanes to the central and southwestern Pacific. These two small commands were the first Japanese units solely devoted to maritime protection. It was little more than a beginning, however, since, as previously pointed out, these units were totally inadequate in the numbers and quality of their forces. Six months later, the General Staff added a section exclusively for escort operations and issued its first directive, albeit a general one requiring several

¹⁷Japanese Monograph No.125, p.3.

¹⁸Kaijo Goei Sen, pp.54-56.

updatings, on unifying maritime transport security practices.¹⁹ In November, 1943, nearly two years after Pearl Harbor, the Navy united all naval and guard district, base force, and Surface Escort Unit functions under a new command, the Grand Escort Fleet. Admiral Oikawa Koshiro, one of the Navy's most senior men and a former Navy Minister, became its commander.²⁰

Despite its insufficient forces and a faulty communications network among its subordinate formations, the Grand Escort Fleet was a major advance in transport security administration. But the Navy soon nullified this newly acquired unification of escort direction. Within months of the Grand Escort Fleet's birth, the General Staff established a rival office, the special Escort-of-Convoy Headquarters to oversee the resupplying of Micronesia for the imminent American offensive there.²¹ Then, in August, 1944, Imperial Headquarters Order No.33 placed the Grand Escort Fleet and all other shipping protection units under the Combined Fleet. This spelled disaster, for the Philippines operations of the next few months provoked the war's last

¹⁹Japanese Monograph No.125, pp.4-7.

²⁰Oi Atsushi, "Why Japan's Anti-Submarine Warfare Failed," United States Naval Institute Proceedings, Volume 78, No.6, (June, 1952), p.595.

²¹Ibid, p.599; Japanese Monograph No.125, p.12.

significant fleet actions, and Combined Fleet naturally diverted anti-submarine vessels from convoy duty to surface combat.²² The Navy distributed the few remaining maritime security forces among four Escort Fleets (plans called for eight, but lack of trained personnel prevented this, though a fifth Escort Fleet joined the Navy eventually²³). These were tactical formations with no geographical area of responsibility, and so they protected specified convoys on an ad hoc basis.²⁴ This system retarded the development of the Navy's still backward anti-submarine doctrine and tactics, because the Escort Fleets employed different command structures and different combinations of ships for every mission.²⁵ Not until the spring of 1945, when there were pitifully few combat or commercial vessels of any kind still afloat, did the Navy restore the Grand Escort Fleet's independence by placing it on an equal footing with all other naval activities under a single, unified agency, the General

²²Oi, "Why Japan's Anti-Submarine Warfare Failed," p.600; Japanese Monograph No.125, p.13; and USSBS, The Campaigns of the Pacific War, p.381.

²³USSBS, The Campaigns of the Pacific War, pp.380-381.

²⁴Interrogation of Lieutenant-Commander Yatsui Noriteru, No.159, USSBS, Interrogations, Vol.I, p.162.

²⁵Interrogation of Rear Admiral Matsuyama Mitsuhiro, No.229, USSBS, Interrogations, Vol.I, p.230.

Navy Command.²⁵ This logical organizational framework appeared too late to do anything except preside over the death throes of Japan's once formidable merchant marine.

Japanese shipping protection tactics also marched out of step with the cadence of total war as it developed in the Pacific. There were no provisions for a convoy system in the Navy's plans, and during 1942 convoys were an exceptional occurrence. Merchant marine captains resisted the whole idea anyway, for they reasoned convoys were inefficient because time was lost in assembly and faster ships had to steam along at the rate of the slowest.²⁷ These arguments closely resemble the embraced, and subsequently proven shortsighted, by the British Admiralty up to 1917 when confronted with the undeniable U-boat peril. World War I educated the Royal Navy on the value of convoys, but that lesson eluded Japanese observers. In the war's early stages American torpedo and submarine defects reduced the consequences of these misguided Japanese decisions and suggested that there was scant need for change.

²⁵Japanese Monograph No. 125, p. 16.

²⁷Interrogations of Ships' Officers, 54tt(14), op.cit.; Brief Survey of Japanese Shipping During the Pacific War, 1941-1945, p.7; and Oi, "Why Japan's Anti-Submarine Warfare Failed," p.593.

But as the U.S. Navy rectified its deficiencies, Japan's maritime transport losses soared and forced a reluctant acceptance of a convoy system. Though the arguments raged for another year,²⁰ convoys became standard practice in 1943. Soon merchantmen began to sail in groups even when escorts were unavailable, primarily to rescue survivors and keep track of sinkings.²⁰ The merchant fleet did not dispense with convoys until after the fall of Luzon, which permanently severed the sea lanes to the south.²⁰

Nevertheless, the Navy was not prepared for the extensive planning and organization needed to make the system effective. At a time when Allied convoys crossing the Atlantic often numbered seventy vessels, the Japanese considered ten- or fifteen-ship flotillas unmanageable.²¹ Even in convoys of five or so merchantmen, the normal size in 1943, the tactical and command problems were legion. Speed discrepancies and poor merchantmen training often necessitated the use of

²⁰Oi, "Why Japan's Anti-Submarine Warfare Failed," pp.597,599; and Interrogation of Lieutenant-Commander Yasumoto Shisei, No.194, October 28, 1945, USSBS, Interrogations, Vol.I, p.186.

²⁰Interrogation of Commander Sogawa Kiyoshi, No.460, November 19, 1945, USSBS, Interrogations, Vol.II, p.441; and Interrogation of Captain Ishito Denichi, 54bbb(17), Section 2, USSBS, RG 243.

²⁰Interrogation of Captain Oi Atsushi, No.61, op.cit., p.58.

²¹Oi, "Why Japan's Anti-Submarine Warfare Failed," p.598.

two maneuver systems, one for the private vessels and another for the escorts.³² The convoy commander would choose the formation, since there was no agreement in the Navy about optimum sailing patterns.³³ But before the creation of the Combined Escort Fleet, naval districts and base forces could issue orders on such matters.³⁴ This was sometimes troublesome, since in the course of a voyage convoys might pass through the jurisdiction of several commands, possibly possessing different signals or tactical doctrines. In the early months of the war some commands were ignorant of ship arrivals until the vessel actually steamed into the harbor.³⁵ In general, "poor method and inadequacy of convoy formation" caused additional reduction of shipping efficiency.³⁶

It took almost two years to solve the relatively straightforward matter of selecting a tactical convoy com-

³²Lieutenant-Commander G.M. Williams to Captain Steadman, January 10, 1946, 51b(36)(1), Section 2, USSBS, RG 243.

³³Interrogation of Lieutenant-Commander Yasumoto Shisei, op.cit., p.186.

³⁴Interrogation of Commander Sugita Binzo, No.34, October 10, 12, and 16, 1945, USSBS, Interrogations, Vol.I, p.22; and Kaijo Goei Sen, p.22.

³⁵Interrogation of Captain Abe Tokuma, No.468, USSBS, Interrogations, Vol.II, p.485.

³⁶Brief Survey of Japanese Shipping During the Pacific War, 1941-1945, p.8.

mander. At first, the senior escort captain present assumed command, but since he was usually totally occupied with his own ship, "utter confusion" reigned among the convoys. So the Navy reactivated retired naval officers to serve as convoy directors. Unfortunately, the normal practice was to assign one for the merchant vessels and one for the naval escorts, and this divided command led to equally "poor results." Next the Navy tried designating one commander as senior or staffing the same convoy with classmates, but neither method improved cooperation. When Imperial Headquarters reorganized the anti-submarine forces into Escort Fleets in the summer of 1944, convoys at last had one officer with the necessary prestige and authority in overall command. But since these officers were of flag rank, at first they attempted to direct operations from shore bases, and confusion continued among the convoys at sea. Only when the Escort Fleet commanders began to personally accompany their charges did reasonable order appear among the convoys.³⁷ By then the year 1944, and Japan's merchant marine, were both nearly gone.

The Japanese merchant marine paid a ghastly toll for the Navy's shortcomings in anti-submarine warfare, mining countermeasures, administrative structure, and convoy doctrine

³⁷Interrogation of Commander Sogawa Kiyoshi, op.cit., p.441.

and tactics. All told, 90% of all merchantmen over 500 tons became victims of enemy attack.³⁰ Japan entered the war with 6,384,000 tons of shipping, but only 23% of that tonnage, was still afloat in August, 1945, and much of that was awaiting repairs.³⁰ To be sure, fires, storms, and other natural causes destroyed about 100,000 tons per year. A further two and a half million tons succumbed to aerial bombs, and given the strategic situation in the war's final years, losses to air attack were unavoidable.⁴⁰ But American submarines claimed 1,113 merchant victims of 4,779,902 tons, over 60% of the tonnage lost to enemy action, plus 201 warships of 540,192 tons. And mines accounted for another half million tons sent to the bottom.⁴¹ An earlier and fuller commitment to seaborne transport security within the Imperial Navy must certainly have alleviated this staggering devastation.

³⁰Interrogation of Rear Admiral Matsuzaki Akira, No.463, November 1, 1945, USSBS, Interrogations, Vol.II, p.455.

³⁰"Kaigun no Sembi Narabi ni Sembi no Zembo," Document No.52, Zempan 3, Boei Kenshusho.

⁴⁰"Soshitsu Sempaku Ichiran Hyo," 1948, Sempaku Unei Kai, Document No.11, Sempaku 4, Boei Kenshusho.

⁴¹Japanese Naval and Merchant Losses During World War II, Prepared by Joint Army-Navy Assessment Committee, February, 1947, 1, i, Section 2, USSBS, RG 243.

The irony is that it took two years for the American submarine forces to correct their many problems. Torpedoes were in short supply, both magnetic and contact fuzes were defective, the cautious skippers outnumbered the bold, and bases were primitive and too distant from the main patrol zones. The Japanese Navy wasted the invaluable breathing space before the U.S. underwater onslaught really began in earnest. In 1942 the struggling American submarines sank 884,928 tons of Japanese merchantmen. This only slightly exceeded Japanese prewar estimates, and hence provoked more complacency than alarm. Losses doubled the next year, but by then the chance for major reform was gone. American underwater forces in 1944, now with swollen numbers, reliable torpedoes, aggressive commanders, forward bases, and wolfpack tactics, cut a bloody swath through the sea lanes of the western Pacific. Japan lost another 3,694,026 tons from its shrinking merchant marine that year.⁴² Even counting additions through construction, salvage and captures, the nation retained but 40% of the shipping which had been available in December, 1941. The carnage continued unabated in 1945, so that by the time of surrender one and a half million tons were all that remained.⁴³ Of this total, half was unusable

⁴²"Soshitsu Sempaku Ichiran Hyo," op.cit.

⁴³"Kaigun no Sembi Narabi ni Sembi no Zembo," op.cit.

from damage,⁴⁴ and massive minefields confined the rest to harbors in the home islands. In forty-four months of war, the Japanese had lost between eight and nine million tons of cargo vessels, the equivalent of one third of the world's merchant fleet when World War II began.⁴⁵

Japanese imports declined at a pace so precipitous that it is difficult to comprehend. In fiscal year 1940, the last full year before war erupted in the Pacific, Japan imported sixty-seven million tons of raw materials. The next year saw a 27% decrease, more from the military's drafting of shipping than from enemy attacks. In the last full year of the war, deliveries barely surpassed twenty-seven million tons, and the final months of hostilities produced more severe drops.⁴⁶ The case of coal, the vital mainstay of Japanese industry, is an illustrative example. In the last eight months before the war, monthly coal imports averaged 2,291,463 tons, but in a similar period at the war's end, just

⁴⁴Kato Masuo, The Lost War, (New York: Alfred A. Knopf, 1946), p. 163.

⁴⁵Japanese Naval and Merchant Ship Losses During World War II; "Chronological History of Japanese Merchant Marine, 7 Dec 1941 to 14 Aug 1945," 53a(44)(b), Section 2, USSBS, RG 243; "Kaigun no Sembi Narabi ni Sembi no Zembo," Document No.52, Zempan 3; "Daitoa Senso Kan Soshitsu Sempaku Tokeihyo," Compiled September 1, 1948, Document No.10, Sempaku 4; and "Soshitsu Sempaku Ichiran Hyo," Document No.11, Sempaku 4, Boei Kenshusho.

⁴⁶Intelligence Memorandum from Richard Reeve, October 17, 1945, 53a(49)(b), Section 2, USSBS, RG 243.

460,843 tons per month arrived. Nor was this atypical, for many commodities suffered proportionately steeper drops in deliveries. Non-ferrous metals, for instance, fell by 85%, pig iron by 89%, pulp by 90%, raw cotton and wool by 91%, fats and oils by 92%, iron ore by 95%, soda and cement by 96%, lumber by 98%, and fodder by 99%. And not one ounce of sugar or raw rubber reached Japan in 1945.⁴⁷ Even with the choice vessels of the merchant fleet at their disposal, the armed forces had to cut munitions shipments by nearly half from 1943 to 1944. Successful deliveries of the military supplies dispatched tapered off from an average of 96% in 1942, to 83% the next year, then to 67% in 1944, and finally to 51% as the war ended. Bear in mind that, to begin with, munitions shipments were on average 15% below frontline needs.⁴⁸ Another index of shipping activity, monthly rates of cargo handled, showed a decline from 2,608,107 tons in 1942 to 1,041,428 tons three years later.⁴⁹

The desperate measures which the Japanese adopted to offset shipping losses bear witness to the scale of the merchant navy's debacle. There were several attempts, for

⁴⁷"Juyo Busshi Kaijo Yusen Keikaku Jisseki Hyo," Document No.33, Zempan 3, Boei Kenshusho.

⁴⁸Interrogation of Lieutenant-Colonel Iwakoshi Shinroku, No.416, November 17, 1945, Section 8, USSBS, RG 243.

⁴⁹"Monthly Average of Cargo Handled," 54tt(9), Section 2, USSBS, RG 243.

instance, to construct overland supply lines to strategic areas rather than rely on sea routes. The notorious "death railway" in Southeast Asia and the planned road through rugged, malarial Santa Isabel Island are two examples.⁸⁰ Tokyo also hoped to ease the shipping bottleneck by increasing the activity of the ports along Japan's western coast and the railroads. The quantity of locomotives and rolling stock did grow steadily,⁸¹ as did ton-miles, freight train miles, and average length of haul.⁸² Yet neither the railroads nor the western ports were adequate for their new responsibilities, which in turn created fresh difficulties.⁸³ Submarines were another option, especially for supplying outposts bypassed by American "leapfrogging" strategy, but they could carry only 80 to 300 tons of cargo. The twenty-six submarines that had completed the perilous trip from Germany to Japan by late 1944 carried a combined load

⁸⁰Interrogation of Captain Ohmae Toshikazu, No.467, November 20, 1945, USSBS, Interrogations, Vol.II, p.470.

⁸¹"Railroad Car Tables," 541(3), Section 2, USSBS, RG 243.

⁸²"Wartime Rail History," 54tt(6), Section 2, USSBS, RG 243.

⁸³Brief Survey of Japanese Shipping During the Pacific War, 1941-1945, pp.10-14.

smaller than that of a single surface blockade runner.⁶⁴ Yet the Navy considered adding raw materials transport duties to the submarines' already burdensome task of provisioning isolated outposts.⁶⁵ And some shipping substitute schemes bordered on the absurd, such as the plan to tow gasoline in rubber bags.⁶⁶

The military consequences of the merchant fleet's demise were direct and persistent. Even at Guadalcanal, when the Imperial Japanese forces were at maximum strength and America was still in the preliminary stages of mobilization, Allied logistical superiority was decisive:

Under the circumstances, no amount of bravery could avail for the Japanese Army. Each American division could expect to receive several hundred tons of supplies per day; but the Japanese logistical flow amounted only to dozens of kilograms at times. Hunger, disease, and shortages of shells and cartridges drastically reduced Japanese combat effectiveness.... In other words, Japanese Army operations on Guadalcanal were utterly unfeasible.⁶⁷

⁶⁴Special History No.019, "Blockade-Running Between Europe and the Far East by Submarines, 1942-1944," December 1, 1944, RG 457.

⁶⁵Interrogation of Captain Watanabe Yasuji, Commander Ishiwata Hiroshi, and Commander Doi Kazu, October 25, 1945, 54nn(7), Section 2, USSBS, RG 243.

⁶⁶Interrogation of Nakamura Haruso, No.174, October 26, 1945, 51b(22)(p), Section 2, USSBS, RG 243.

⁶⁷Hayashi, Kogun, pp.65-66.

By the time the Japanese withdrew from the island, many units had only 5% of their prescribed complement of equipment and weapons, and all were on the verge of starvation.⁸⁰ Allied control of the air was undoubtedly the principal reason for the interruption of supplies in the Solomons. But the shrinking merchant fleet contributed to the disaster by preventing both the delivery of the necessary quantities of munitions to the theater area and the proper distribution of the trickle that did arrive. The breakdown of the supply system had begun.⁸¹

Examples of the hardships imposed by shipping shortages abound in the war's later campaigns. The malnutrition of Japanese troops in New Guinea was legendary: only an estimated 3% of the deaths there were from combat.⁸² U.S. submarines sent wire and concrete cargoes bound for Saipan to the bottom, thus weakening the island's defenses.⁸³ The lack of sea transport also ruined attempts to reinforce and fortify the Philippines, for only 60% of the planned shipments actually sailed and a majority of the transports never

⁸⁰Interrogation of Lieutenant-Colonel Shirai Fumitaba, December 5, 1945, No.501, 15g, Section 2, USSBS, RG 243.

⁸¹Interrogation of Lieutenant-Colonel Iwakoshi Shinroku, op.cit.

⁸²"Chihaya's History," p.92.

⁸³Ronald H. Spector, Eagle Against the Sun: The American War with Japan, (New York: Macmillan, Inc., 1985), p.302.

arrived.⁸² The grave merchant losses wrecked the air units, too:

The loss of shipping was the most serious loss in our operations. We were dependent upon shipping for all our supplies, except aircraft.... Without fuel, ammunition and replacement of technical personnel our aircraft were useless. We were able to repair the landing strips without much delay, but we were always short of aircraft fuel and ammunition. This was also true for anti-aircraft ammunition.⁸³

One Army staff officer cited a 75% drop in aircraft availability in New Guinea from such causes and thus blamed the loss of aerial supremacy over that strategic island on transport shortages.⁸⁴

Every component of Japan's war machine, including the home front, felt the ravages of the U.S. submarine offensive. Food was already short when the war began, but by 1945 the Japanese population subsisted on a meager 1,500 calories per day.⁸⁵ At that time consumers could buy just 8% of the paper, 4% of the soap, and 2% of the cotton or woolen goods

⁸²Interrogation of Lieutenant-Colonel Iwakoshi Shinroku, op.cit.; and Hayashi, Kogun, pp.126,130.

⁸³Interrogation of Captain Miyazaki Takashi, No.446, November 19, 1945, USSBS, Interrogations, Vol.II, p.420.

⁸⁴Interrogation of Colonel Rinsuka Kaneko, No.440, November 21, 1945, USSBS, Interrogations, Vol.II, pp.407-408.

⁸⁵Masuo Kato, The Lost War, (New York: Alfred A. Knopf, 1946), p.170.

available before the war.⁶⁶ The government instituted price control in 1937, but the cost of living still climbed 71% in the next six years. This was, however, reasonable compared to the skyrocketing prices that the black market's unbridled expansion eventually entailed.⁶⁷ Three bags of rice costing one hundred yen in prewar days could fetch ten thousand yen in 1945.⁶⁸ By then the merchant marine's demise was "keenly felt" and "everywhere visible."⁶⁹

Industrial production was the most crucial of all the American submarines' victims. Within eighteen months of Pearl Harbor, raw materials' shortages were already closing some factories.⁷⁰ Neither steel works, aircraft assembly lines, or shipyards, escaped the enforced idleness brought on by blockade.⁷¹ The Japanese strove, often with the use of

⁶⁶Masatake Okumiya and Jiro Horikoshi, with Martin Caidin, Zero!, (New York: Ballantine Books, 1956, 1973), p.293.

⁶⁷Interrogation of Mr. Nagamura, Chief of Commercial Affairs Bureau, Ministry of Commerce and Industry, No.83, October 15, 1943, Section 8, USSBS, RG 243; and Enemy Japan, Prepared by the Office of War Information, (U.S.: Public Affairs Press, 1945), p.22.

⁶⁸Kato, The Lost War, p.171.

⁶⁹Oi, "Why Japan's Anti-Submarine Warfare Failed," p.601.

⁷⁰Interrogation of Lieutenant-Colonel Iwakoshi Shinroku, op.cit.

⁷¹See Interrogation of Vice-Admiral Kurita Takeo, No.47, October 16, and 17, 1945, USSBS, Interrogations, Vol.I, p.51; Masatake Okumiya and Jiro Horikoshi, with Martin Caidin, Zero!, (New York: Ballantine Books, 1956, 1973),

ingenious substitutes or alternate construction methods, to keep production flowing. The high command, for instance, experimented with wood as a replacement for metal armor on airplanes.⁷² U.S. Marines on Iwo Jima discovered terracotta mines capped with wooden fuzes.⁷³ These cases illustrate why Navy Chief of Staff Admiral Toyoda Soemu named the dearth of shipping the single most influential factor in the decline of production.⁷⁴

The tanker situation was, if possible, more desperate than that of other cargo vessel types. Losses were surprisingly light in 1942,⁷⁵ yet Japan's early victories brought extended communication lines and increased demands on the liquid fuel transports. Tanker construction therefore became

p.125; and Oil and Chemical Division, USSBS, APO 234, November 15, 1945, 51b(39)(d), and Interrogation of Vice-Admiral Hosogaya Shinzaburo, Rear Admiral Aitoku I. Rear Admiral Yano, Rear Admiral Kidera K., Captain Akabane T., and Mr. Sawemura, No.127. October 22, 1945, 46j, Section 2, USSBS, RG 243.

⁷²Kato, The Lost War, p.165.

⁷³Jeter A. Isely and Philip A. Crowl, The U.S. Marines and Amphibious War, (Princeton: Princeton University Press, 1951), p.485.

⁷⁴Interrogation of Admiral Toyoda Soemu, No.378, November 13-14, 1945, USSBS, Interrogations, Vol.II, p.215.

⁷⁵Postwar tabulations disagree on the exact tonnages destroyed (one source lists no tanker sinkings for 1942), but the tanker fleet actually grew in the first year of the war, despite the low shipyard output. See Gerhard M. Williams to Director, Oil and Chemical Division, USSBS, January 23, 1946, 51b(36)(1), Section 2, USSBS, RG 243.

a priority by 1943. The shipbuilding industry responded with nearly a million tons of new oil carriers in the next twenty-four months, almost double the tanker tonnage available at the war's start.⁷⁶ But, as with the merchant fleet in general, Allied forces inflicted stiff losses on the tankers in 1943 and virtually swept them from the seas the following year. Aircraft scored heavily, sinking 366,000 tons of tankers, but it was undeniably the submarines' torpedoes that did the brunt of the damage. They sank seven hundred thousand tons of tankers, or 44% more than Japan possessed in December, 1941.⁷⁷ In January, 1945, Imperial Headquarters decided to terminate both tanker construction and tanker voyages to the south, since they realized those ships had no realistic chance of returning.⁷⁸

These tanker losses translated to incredible fuel shortages at the front. Japanese forces in the Philippines, for instance, requested 89,000 tons of petroleum products in 1943 but received only 50,000. The following year units in Burma, the Bismarcks, New Guinea, and China collected 56,000

⁷⁶Military Supply Division, USSBS (Pacific), Japanese Merchant Shipbuilding, No.54, (Washington: United States Government Printing Office, 1947), pp.1-2,44.

⁷⁷"Survey on Oil Tankers," 51b(30)(b), Section 2, USSBS, RG 243; and Interrogation of Rear Admiral Yamamoto Yoshiyo, No.242, November 5, 1945, 51b(22)(yy), Section 2, USSBS, RG 243.

⁷⁸Interrogation of Captain Abe Tokuma, op.cit., p.485.

tons of the 115,000 they needed.⁷⁰ The amount of petroleum from the southern regions that actually reached Japan never surpassed 28% after September, 1943, and only 9% arrived in the war's final fifteen months.⁸⁰ Oil imports in 1944 fell 48% from the preceding year.⁸¹ Charcoal-burning cars became a common sight in the home islands, even for government officials.⁸² Fuel shortages also plagued military operations by limiting training (especially of pilots),⁸³ confining the fleet to waters near the oil-rich Netherlands East Indies, and sometimes reducing cruising speeds.⁸⁴ The scarcity of aviation gasoline prompted a curtailment of engine and aircraft testing, and hence some fatal defects escaped all but

⁷⁰"Military Analysis...Ground Logistics," Preliminary P.O.L. Report, December 15, 1945, 64b(9), Section 2, USSBS, RG 243, p.20.

⁸⁰"Production, Consumption and Amounts of Southern Zone Petroleum Received in Japan," 51b(36)(1), Section 2, USSBS, RG 243.

⁸¹"Total Oil Imports for Army, Navy and Civilian Use," 51b(30)(b), Section 2, USSBS, RG 243.

⁸²Enemy Japan, p.22.

⁸³Interrogations of Captain Fuchida Mitsuo, No.113, October 10, 1945, and of Rear Admiral Katsumata Seizo, No.129, October 25, 1945, USSBS, Interrogations, Vol.I, pp.131, 135.

⁸⁴Interrogation of Commander Mori Kokichi, No.233, November 3, 1945, USSBS, Interrogations, Vol.I, p.244.

the merciless scrutiny of combat.⁶⁶ The cruel irony of the situation was that the Japanese restored captured oil wells to quite adequate production,⁶⁶ so the necessary fuel was available. But the tankers needed for oil distribution did not survive the submarines' onslaught. For example, at one point Manila depots had enough fuel for the units stationed in the Philippines, but one armored division in the archipelago could obtain only enough for seven hours' of operation.⁶⁷

As early as 1943, the Imperial Navy was discussing "the serious nature of the shipping situation."⁶⁸ When U.S. submarine attacks increased in frequency and ferocity in 1944, Japan's war machine was doomed. At least one Navy General Staff officer believed the shipping disaster alone would have ended the war by the spring of 1946,⁶⁸ and certainly it figured prominently in the decision to surren-

⁶⁶Interrogation of Major-General Yui Sadao, No.300, November 2, 1945, 53a(52)(a), and Interrogation of Colonel Hara Hiroshi, No.337, November 10, 1945, 53a(52)(d), Section 2, USSBS, RG 243.

⁶⁶See Chapter 2 above.

⁶⁷"Military Analysis...Ground Logistics," op.cit., p.20.

⁶⁸"Navy Ministry Secret #1235: Navy Ministry Proposal for Meeting the Shortage of Shipping Space for Operational Purposes," October 11, 1943, JICPOA Item #5972, OSS Report No.77729, February 7, 1944, RG 226.

⁶⁸Interrogation of Captain Watanbe Y., No.65, October 15, 1945, USSBS, Interrogations, Vol.I, p.70.

der.⁸⁰ The code of bushido might have prolonged the war past August, 1945, but by then the failure of the merchant fleet had irreparably blunted the samurai's sword.

It is tempting to dismiss Japan's dismal wartime record for shipping protection as the product of ignorance or stupidity. Some Japanese refer to an underestimation of the potential of American submarines as the cause.⁸¹ Others have even blamed it on the Japanese temperament.⁸² But it was not mental deficiencies, faulty intelligence on U.S. underwater capabilities, or racial characteristics that ruined Japan's anti-submarine effort in World War II. Even before the war, for instance, the General Staff displayed no little prescience about maritime security problems in its plans for a model escort, a 1,200-ton craft with 20-knot speed, a cruising radius of 5,000 miles, and ample anti-aircraft armament as well as depth charges and "other suitable things."⁸³ And

⁸⁰Ibid; and Interrogation of Takamine Meitatsu, November 23, 1945, 54tt(7), Section 2, USSBS, RG 243.

⁸¹Interrogation of Vice-Admiral Fukudome Shigeru, No.503, December 9-12, 1945, USSBS, Interrogations, Vol.II, p.530; Interrogation of Admiral Nomura Kichisaburo, No.429, November 8, 1945, Interrogations, Vol.II, p.388; and "General Summary of Interviews on Army-Navy Oil Operations and of Overall Oil Allocations Between the Army, Navy, and Civilians," October 27, 1945, 15g, Section 2, USSBS, RG 243.

⁸²Oi, "Why Japan's Anti-Submarine Warfare Failed," pp.587-588; and Chihaya, "Chihaya's History," p.18.

⁸³Kaijo Goei Sen, p.10.

tenacious "Bungo Pete," the destroyer commander who became the scourge of American submarines that tried to penetrate the Inland Sea, should dispel any doubts about the suitability of Japanese seamen for anti-submarine warfare.

The real trouble lay in the Navy's failure to make room for such vessels in the construction schedules and to devote time and staff officers to developing merchant shipping defense tactics, doctrine, and organization. Once again, the fundamental problem was a shortage of appropriations that pressured the Imperial Navy into poor judgments. The battle fleet always came first:

...the Navy was compelled to concentrate its efforts on its first-line armament and was unable to work on such fields as escorting operations because it was short of personnel, materials and funds, and as such, it was absolutely necessary to adopt the policy of concentrating on its first-line armament in order to maintain balance of power with foreign nations.⁸⁴

In their thinking anti-submarine warfare was "defensive," and hence not worth major expenditures of the Navy's time, money, or most fertile minds. One officer lamented after the war:

Japan didn't have time or resources to construct all equipment needed, so Japan had to use outdated equipment to supplement strength for protection of communication lines and defense preparation strength; these matters were considered to be of secondary importance, and World War II showed the errors in this thinking.⁸⁵

⁸⁴Japanese Monograph No.125, pp.2-3.

⁸⁵Vice-Admiral Nakazawa Yu, "Showa Kyunen Mujoyaku Shita

The Navy castigated itself after the war for its defective, "one-sided" armaments plans and officially accepted much responsibility for losing the war in this way.⁶⁶ "We thought that we could hold on for a long time, but in the end the destruction of our shipping was very bad for us."⁶⁷

Teikoku Kaigun Gumbi Keikaku ni Tsuite," February, 1957, Document No.3, Itakana, Boei Kenshusho.

⁶⁶"Daitoa Senso ni Okeru Wagamonoteki Kokuryoku to Kaigun Sembi Sui-i ni Kansuru Setsumei Shiryo," Report of the Military Affairs Bureau, Ministry of the Navy, October 1, 1945, Document No.47, Zempan 1, Boei Kenshusho.

⁶⁷Interrogation of Commander Doi Yasumi, No.224, October 27, 1945, USSBS, Interrogations, Vol.I, p.211.

CHAPTER 7
THE JAPANESE NEGLECT OF
ANTI-SUBMARINE WARFARE

Geography and industrialization had combined to make Japan's merchant marine a vital component for waging total warfare in the World War II era. When war broke out in the Pacific, the nation's shipping and shipbuilding industries were healthy and willing to abide by the government's wishes. World War I had amply demonstrated to the world the submarine's potential for disrupting this indispensable maritime commerce. Yet the Imperial Navy consistently neglected anti-submarine doctrine, training, administration, and weaponry until it was far too late. The subsequent demise of the merchant fleet, and the war effort which depended upon it, was therefore predictable, but the Navy's apparently irrational behavior is more difficult to explain.

The answer lies deep in the traditions and development of the Japanese Imperial Navy, and, indeed, in the very nature of the country's transformation from a feudal to an industrial society. When Perry's "black ships" forced an end to

centuries of isolation in Japan, they also accelerated the collapse of a social order already straining under inherent contradictions. After fifteen years of strife, the feudal shogunate yielded authority to a group of young samurai determined to modernize along Western lines. Yet both the speed of Japanese industrialization and the philosophy of those who guided it helped perpetuate certain archaic attitudes and beliefs, with profound effects for the course of the country's modernization. These two aspects of Japan's particular road to an industrial society, faith in Western models and retention of some feudal characteristics, can explain the Japanese neglect of the invaluable merchant marine in World War II.

When the Meiji regime modernized the nation's naval forces, it naturally looked to Great Britain, the world's leading maritime power, for inspiration. The Japanese accordingly emulated the tactics, organization, education, and traditions of the Royal Navy. And when in his writings Alfred Thayer Mahan formalized the strategic principles that had propelled Great Britain to naval supremacy, he found a ready audience in the Imperial Navy. Unfortunately for the Japanese, they blindly adhered to some of his precepts without grasping the totality of his theories. In particular, they became enslaved to the notion that the goal of all naval strategy was annihilation of the enemy's forces. As Samuel Eliot Morison summed it up:

Just as Clausewitz taken out of context or misunderstood has created the mischievous shibboleth that destruction of the enemy's army is the true objective of land warfare, so Mahan taken out of context or misunderstood has supported another bad principle, that the main objective of a navy at all times should be to destroy the enemy's fleet.¹

"The navy's fighting spirit," agreed Admiral Yamamoto's biographer, "was prone to be directed, to a disproportionate degree, against the enemy fleet alone."²

Specifically, the Japanese adopted Mahan's doctrine that control of the sea rested on the "decisive battle" between the opposing fleets, and this became the central theme of all Imperial Navy thinking.³ "The Combined Fleet," one former officer recalled, "...was gripped in a single concept that the fleet versus fleet action was the only warfare it must aim at." He added: "The task to protect the sea-borne trade was miserably slighted."⁴ Therein lay the problem, for

¹Samuel Eliot Morison, Strategy and Compromise, (Boston: Little, Brown and Company, 1958), p.108.

²Agawa Hiroyuki, The Reluctant Admiral: Yamamoto and the Imperial Navy, (Tokyo: Kodansha International Ltd., 1969, 1982), p.264.

³Arthur J. Marder, Old Friends, New Enemies: The Royal Navy and the Imperial Japanese Navy, Strategic Illusions, 1936-1941, (Oxford: Clarendon Press, 1981), p.312; and Rear Admiral Yokoi Toshiyuki, "Thoughts on Japan's Naval Defeat," U.S. Naval Institute Proceedings, Vol.86, No.10, (October, 1960), pp.71,74.

⁴Oi Atsushi, "Why Japan's Anti-Submarine Warfare Failed," U.S. Naval Institute Proceedings, Vol.78, No.6, (June, 1952), p.601.

the emphasis on the clash of battle fleets crowded out consideration of anything unrelated to this showdown.

Whereas in the age of sail a nation's heavy warships did embody practically the totality of its naval strength, technological advances and industrial expansion in the half century between Mahan's writings and Pearl Harbor removed command of the sea from the exclusive domain of squadrons of capital ships. No single naval defeat in the World War II era, no matter how devastating, could break a nation's military power, because by then command of the sea rested on many elements: submarines, logistical systems, mines, base facilities, flotillas of lesser combatant vessels, and, most especially, aircraft. Eradication of such numerous and diversified naval forces was thus impossible in one or two or even a half dozen engagements. Unless one of the belligerents collapsed psychologically, then, general warfare between two first rate powers was bound to last for years, with the advantage belonging to the nation whose armed forces rested on the more secure economic foundation. These changes, however, escaped the attention of the Japanese, to whom forcing and winning the "decisive battle" was the only strategic goal right down to 1945: "The Japanese naval authorities had confounded the war with the battle.... Our navy lost the war by 'battling' instead of 'warring' ... We conceived the war with America on a far small scale, studied it as a battle We never became aware of this mistake,

much less outgrew it."⁶

The misapplied doctrines of Alfred Thayer Mahan loomed over the Imperial Navy's strategic thought like no other influence in its history. The Japanese translated more of the American's works than any other nation, and The Influence of Sea Power upon History, 1660-1783 became a naval and war college textbook.⁶ Akiyama Saneyuki, dubbed "the father of Japanese naval strategy," met and discussed these ideas with Mahan himself.⁷ It is hard to contradict one officer's contention that Mahan was more influential in Japan than Katsu Kaishu, the Imperial Navy's founder.⁸ Nor did the passing years diminish his prestige. In 1932, the Navy General Staff published a fresh translation of Mahan's Naval Strategy, and seven years later a General Staff officer restated the Japanese version of Mahanianism in a new book.⁹

Japan's prolonged adherence to the "decisive battle" doc-

⁶Chihaya Masatake, "The One Big Battle Idea of the Imperial Japanese Navy ('Chihaya's History')," 1947, unpublished manuscript, Navy Operational Archives, Washington Navy Yard, pp.3, 125, 126.

⁸William E. Livezey, Mahan on Sea Power, (Norman: University of Oklahoma Press, 1981), p.76.

⁷Ronald H. Spector, Eagle Against the Sun: The American War with Japan, (New York: Macmillan, Inc., 1985), p.44.

⁹Yokoi, "Thoughts on Japan's Naval Defeat," p.71.

⁸Stephen E. Pelz, Race to Pearl Harbor: The Failure of the Second London Naval Conference and the Onset of World War II, (Cambridge: Harvard University Press, 1974), p.26.

trine before World War II is not surprising in light of similar attitudes among Western strategists. For example, the Royal Navy, almost sacrosanct in Imperial Navy eyes, endorsed this view, too.¹⁰ And the same idea dominated American naval planning before Pearl Harbor.¹¹ Furthermore, Japan's limited experiences in the wars with China and Russia seemed to confirm the theory.¹² Said one naval officer in defeat: "The idea of the Battle of Tsushima has preposessed us, this fatal 'One Big Battle Idea.'... We find ourselves done for!"¹³ The only other major fleet engagement of the twentieth century, the Battle of Jutland, was inconclusive and so did nothing to discourage the disciples of Mahan.

Once war actually came to the Pacific, circumstances forced the reeling Allies to scrap plans for a climactic battle. It was eighteen months before reinforcements arrived in sufficient quantities to permit major offensive operations, and in the interim the U.S. Navy hit upon the

¹⁰Marder, Old Friends, New Enemies, pp.297,324.

¹¹Ibid; Pelz, The Race to Pearl Harbor, p.88; and Spector, Eagle Against the Sun, p.19.

¹²Yokoi, "Thoughts on Japan's Naval Defeat," p.71; Pelz, The Race to Pearl Harbor, pp.25-26; Oi, "Why Japan's Anti-Submarine Warfare, Failed," p.587; "Chihaya's History," pp.9,12,32; and Spector, Eagle Against the Sun, p.44.

¹³"Chihaya's History," p.126.

proper strategy of multiple, sustained assaults to wear down and overwhelm the enemy. But nothing altered the fundamental principles of Imperial Navy strategy. The "decisive battle" endured throughout the war as the "focal point of Japanese naval strategy and of fleet training and preparation for so many years."¹⁴ This elusive goal lay behind the battles at Midway, the Philippine Sea, and Leyte Gulf. It was thus the shadow of Mahan that lured the Combined Fleet to its doom off Saipan in June, 1944, while an outmanned American task force invited destruction at Biak.¹⁵ Even then, with its air power irretrievably broken, the Imperial Navy kept its capital ship strength intact as it awaited another opportunity for a fleet engagement.¹⁶ The wartime directives of the Navy General Staff ceaselessly discussed preparations and plans for the "decisive battle," though over the years the proposed location continually moved westward. In July, 1945, one directive was even planning the "decisive battle of the Homeland."¹⁷ One historian has aptly summarized: "...the

¹⁴Fuchida Mitsuo and Okumiya Masataka, Midway: The Battle That Doomed Japan, Edited by Clarke H. Kawakami and Roger Pineau, (Annapolis: United States Naval Institute Press, 1955), p.78.

¹⁵Spector, Eagle Against the Sun, 293.

¹⁶Oi, "Why Japan's Anti-Submarine Warfare Failed," p.600.

¹⁷Naval Directive 525, July 5, 1945, Daikairei Eiyaku, Sono Ichi, Meirei 1, Boei Kenshusho.

concept of 'one decisive naval battle' remained in their minds until they had no navy left."¹⁰

In addition to shaping strategic thought, adherence to the Mahanian doctrine permeated all facets of Imperial Navy policy and activity. For instance, when the Navy began mobilizing in 1941 for the expected fleet engagement, the General Staff damaged its own future efficiency by posting all the Naval War College students to line commands.¹⁰ Concern for the Mahanian showdown is also evident in the Combined Fleet's authorization in 1945 of the "extravagant" use of the desperately few minesweeping forces to keep a channel open for the capital ships.²⁰ Aviation training provides another clear illustration of the unforeseen byproducts of this strategic straitjacket. Instruction at the flight schools centered on offensive tactics, while patrol and anti-submarine methods never received proper attention.²¹ As a result, the pilots themselves preferred "combat" assign-

¹⁰Morison, Strategy and Compromise, p.73.

¹⁰Interrogation of Vice-Admiral Ozawa Jisaburo, No.227, October 30, 1945, United States Strategic Bombing Survey, Naval Analysis Division, No.72, Interrogations of Japanese Officials, Volume I, (Washington: United States Government Printing Office, n.d.), p.227.

²⁰Interrogation of Commander Tadenuma Saburo, No.226, October 27, 1945, USSBS, Interrogations, Vol.I, p.217.

²¹Marder, Old Friends, New Enemies, p.322; and Fuchida and Okumiya, Midway: The Battle That Doomed Japan, pp.148-149.

ments to reconnaissance missions and positively "objected" to convoy protection duty.²² Indeed, because it considered air power simply another element in the "decisive battle," the Navy never undertook a thorough study of the difficulties and demands of extended air operations:

...we repeatedly failed to investigate our future needs for mutual assistance between military bases, the transportation and logistics requirements of our forces, and the anticipated distances between our air installations and those of the enemy. Our second fault lay in the fact that we never studied properly the problems of air-base construction, maintenance, and supply. Neither did we appreciate accurately the limitations of air operations which could be conducted from any land installation.²³

"The leaders of our navy had imagined 'One Big Battle,' further than which they could not think."²⁴ Certain areas in particular reveal the depth of the Imperial Navy's devotion to the "decisive battle."

One such victim of the Mahanian legacy was Japan's submarine service. According to the Navy's plan for the final fleet confrontation, Japanese submarines were to locate the U.S. fleet as it steamed westward across the Pacific and

²²Interrogation of Commander Terai Yoshimori, No.427, November 22, 1945, USSBS, Interrogations, Vol.II, p.383; and Interrogation of Lieutenant-Commander Okamoto T., No.257, November 5, 1945, USSBS, Interrogations, Vol.I, p.259.

²³Okumiya Masatake and Horikoshi Jiro, with Martin Caidin, Zero!, (New York: Ballantine Books, 1973), p.169.

²⁴"Chihaya's History," p.37.

whittle it down prior to the main engagement. During the battle itself, submarines would attack and disorganize the American squadrons of capital ships.²⁶ Japanese engineers developed the midget submarine for this purpose as well and designed submarine carriers to transport these vessels to the decisive battle site.²⁷ For years before the war, the Combined Fleet's submarine exercises stressed cooperation with air and surface forces in attacking the hostile battle fleet.²⁷ "We heard almost nothing about its function as a devastator of the sea trade," remembered one officer.²⁸

As a result of the submarine's projected role in the coming conflict, the bulk of the Imperial Navy's undersea forces boasted sizable torpedo and gunnery batteries, were capable of cruising to the eastern Pacific, and sometimes carried a floatplane for scouting. The result was a fleet of

²⁶Ito and Pineau, The End of the Imperial Japanese Navy, p.23; Spector, Eagle Against the Sun, pp.478-481; Marder, Old Friends, New Enemies, p.301; Erminio Bagnasco, Submarines of World War Two, (Annapolis: U.S. Naval Institute Press, 1973, 1985), pp.172-174; Boei Shujo, Senshi Shitsu, Senshi Shiryo 47-1-2, Rengokoku Tai-Nichi Sakusen Shido Gaiyo (Zemben), November, 1972, p.65; and Dorr Carpenter and Norman Polmar, Submarines of the Imperial Japanese Navy, (Annapolis: U.S. Naval Institute Press, 1986), pp.1-5.

²⁸Yokoi, "Thoughts on Japan's Naval Defeat," p.74.

²⁷Office of Naval Intelligence, Monthly Information Bulletin, Volume XII, No.12, June, 1930, p.19; "Chihaya's History," p.22.

²⁸"Chihaya's History," p.22.

unwieldy vessels of 1,700 tons or greater displacement, easily twice the size of most submarines in the world's other navies.²⁹ Such warships packed tremendous offensive punch, but their oversized hulls generated excellent sonar echoes, maneuvered too awkwardly to evade attack, and proved ideal targets for depth charges.

The U.S. Navy also planned to employ its submarines primarily against the enemy fleet, so the American boats suffered from several of the same defects. The fact that they ran up an impressive record suggests that their Japanese counterparts might have functioned effectively as commerce destroyers despite their shortcomings. And Imperial Navy planners did assign this role to the submarines.³⁰ Allied lines of communication stretched around the globe and were particularly vulnerable when American forces penetrated the western Pacific after 1943. But Japanese submarines sank less than one million tons of shipping during the war, over half of it before 1943.³¹ This is a tribute to Allied anti-

²⁹In fact, as the war ended the Japanese were building 5,000-ton behemoths, each equipped with three aircraft, for bombing raids on the North American mainland.

³⁰Senshishitsu Cho, Volume 100, Daihonei Kaigumbu: Daitoa Senso Kaisen Keii, Part I, (Tokyo: Asagumo Shimbunsha, 1979), p.401; Spector, Eagle Against the Sun, p.486; and Marder, Old Friends, New Enemies, p.326.

³¹"Yamashita Kisen Kaisha Sonan Sempaku Ichiran Hyo Oyodo Shashin," Document No.17, Sempaku 4, Boei Kenshusho; and Jurgen Rohwer, Axis Submarine Successes, 1939-1945, (Annapolis: U.S. Naval Institute Press, 1983).

submarine skills, which improved by quantum leaps as the war progressed. But it also underscores a lack of commitment to commerce raiding on the part of the Japanese.

The Imperial Navy did not launch a concentrated offensive on Allied shipping lanes because it continually assigned higher priorities to other submarine missions throughout the war. At first, with the "decisive battle" weighing heavily on Navy minds, the submarine commanders disdained merchantmen to stalk enemy warships in the forward battle zones. And they did achieve some success in 1942, principally against the American aircraft carriers, but these were "bright flashes that will fascinate a fool only."³² Fast, well screened capital ships were infinitely less rewarding targets than the plentiful, plodding cargo vessels.

Later on, resupplying bypassed islands superceded warship hunting as the major drain on Japan's submarine fleet. Once the American juggernaut gathered steam, underwater replenishment was the only kind possible for many isolated garrisons. When such improvisational logistics proved viable, staff officers found it increasingly easier to resort to them when the number of blockaded outposts multiplied.³³ The Navy also faced pressure from the Army to keep its sol-

³²"Chihaya's History," pp.21-22.

³³Interrogation of Captain Watanabe Y., No.65, October 15, 1945, USSBS, Interrogations, Vol.I, p.70.

diers supplied, for the generals could have refused any further support for the admirals' ventures on the Pacific islands.³⁴ Besides, the newly acquired territories were not yet economically self-sufficient, and there was no other way to replenish the frontline units.³⁵

The diversion of submarines to this inherently inefficient duty amounted to a serious loss of offensive potential. By January, 1943, Japanese submarines had already conducted thirty-eight transport missions.³⁶ Troops at Guadalcanal, Truk, Rabaul, Lae, Salamaua, Wake, the Marshalls, Nauru, Ocean, and Marcus Islands all received sustenance in this manner.³⁷ The Navy eventually designed and constructed submarines expressly for supply operations.³⁸ The Army also

³⁴Interrogation of Commander Nakajima Chikataka, No.75, October 21, 1945, Interrogations, Vol.I, p.144.

³⁵Ibid; and Interrogation of Commander Okumiya Masatake, No.75, October 12, 1945, Interrogations, Vol.I, p.82.

³⁶Ito and Pineau, The End of the Imperial Japanese Navy, p.82.

³⁷Interrogation of Captain Watanabe Yasuji, Commander Ishiwata Hiroshi, and Commander Doi Kazumi, October 25, 1945, 54nn(7), Section 2, USSBS, RG 243.

³⁸Transport submarine specifications and building schedules are found in "Specifications of Submarine Transport and SS and SB Boats," 27(a)25, Section 2, USSBS, RG 243; Navy General Staff Secret Document No.142: Vice-Chief of the Naval General Staff to Vice-Minister of the Navy, April 22, 1943; and Vice-Minister of the Navy to Vice-Chief of the Naval General Staff, June 3, 1943, "Kaigun no Gumbi Narabi ni Sembi no Zembo," Document No.52, Zempan 3, Boei Kenshusho.

built about two dozen transport submarines of its own.³⁹ Hence the growing tendency to rely on underwater supply absorbed construction capacity as well as diverting existing submarines from the potentially lucrative Allied shipping lanes. Aside from being unpopular among personnel of the "silent service", supply duty was, according to the former director of the Navy's submarine department, "quite bad tactics" and "senseless."⁴⁰ The meager quantities carried were "little more than a few drops of water on a red-hot iron."⁴¹ Indirectly, this too was the fault of the prolonged adherence to the Mahanian doctrine, for submarines had to substitute for craft that had been neglected over the years in favor of combatant units.

The armaments program was another area where the commitment to the "decisive battle" was especially evident. Until lack of materials rendered major construction projects impossible, the nucleus of the Navy's shipbuilding effort was the battle fleet, particularly the capital ships at the heart of it. In official parlance: "...naval armaments must provide as its primary duty all things for the destruction

³⁹Carpenter and Polmar, Submarines of the Imperial Japanese Navy, pp.142-144.

⁴⁰Interrogation of Vice Admiral Miwa Shigeyoshi, No.366, October 10, 1945, Interrogations, Vol.II, pp.293-294.

⁴¹"Chihaya's History," p.81.

of the enemy's main battle force."⁴² In the early twentieth century, the Imperial Navy defined its strength strictly in terms of its battleships and battlecruisers as it strove for an "8-8 fleet."⁴³ Little had changed by the late 1930s, when the Yamato-class "superbattleships" dominated the armaments program. After Midway, the emphasis shifted from battleships to aircraft carriers, but the goal remained the same: outfit the Navy for the "decisive battle."

Concern for the battle fleet influenced practically every phase of the armaments program. The Japanese designed midget submarines, for instance, because they believed these weapons could assist in the "decisive battle."⁴⁴ The Navy's long range bombers are another example, since the fleet's air wing initially developed them for reconnaissance and attrition of approaching hostile battleships.⁴⁵ And, because for decades the Japanese believed they would fight the

⁴²Senshiysu Cho, Volume 46, Kaijo Goei Sen, (Tokyo: Asagumo Shimbunsha, 1976), p.6.

⁴³The "8-8 fleet" referred to the minimum number of battleships and battlecruisers (i.e., eight each) believed necessary for defense of the western Pacific. Concerned with the expansions of the German and American navies since the turn of the century, in 1918 the General Staff began demanding an "8-8-8 fleet" - eight battleships, eight battlecruisers, and eight more battleships. See Daihonei Kaigumbu, Part I, p.104.

⁴⁴Yokoi, "Thoughts on Japan's Naval Defeat," p.74.

⁴⁵Agawa, The Reluctant Admiral, p.105.

"decisive battle" in the rough seas near the home islands, they never bothered to design torpedo boats.⁴⁶ This was doubly unfortunate, for not only did the American version of these pesky craft perform admirably in the Solomons battles, they also proved to be ideal anti-submarine vessels. Japanese destroyers are another case in point. They packed an impressive array of ordnance, because the Japanese desired maximum firepower for the expected clash of battle fleets. This left little room for depth charges or other anti-submarine equipment.⁴⁷ Said one admiral in retrospect: "It was foolish for us not to provide sufficient destroyers for escort purposes. Japanese DD's were built too expensively and were considered too valuable for pure escort work. Japanese doctrine was that DD's were for combat and not intended for escort work."⁴⁸

The Imperial Navy's commitment to frontline battle strength resulted in the serious neglect of various ship types necessary for a well rounded fleet. Maritime commerce

⁴⁶"Chihaya's History," pp.13-14.

⁴⁷Warren S. Howard, "Japanese Destroyers in World War II," United States Naval Institute Proceedings, Volume 78, No.1, (January, 1952), p.56.

⁴⁸Interrogation of Vice-Admiral Hara, Rear Admiral Sumikawa, and Rear Admiral Kojima, No.25, November 18, 1945, "Supplemental Report of Certain Phases of the War Against Japan," Naval and Naval Air Field Team No.3, 1945, 77m, Section 2, USSBS, RG 243.

escorts are the primary example. The Japanese thought such vessels were defensive in nature, "...and defensive forces were considered to be of secondary importance. Consequently, there were not enough subchasers."⁴⁰ It had, in fact, taken six years for the Navy to build its first four coastal defense ships, an indication of the difficulty of completing vessels not directly needed for the battle fleet.⁴¹ In a postwar statement, the Navy Ministry acknowledged that protection of shipping routes was as essential a naval activity as battling the enemy fleet and that the unbalanced armaments program had therefore led to defeat.⁴²

Other neglected ship types included fleet train units, cargo ships, and troop transports. In short, the Imperial Navy suffered from a chronic inability to move men and material to the battlefronts. A former General Staff supply officer estimated that the supply system began to deteriorate significantly during the grim struggle for Guadalcan-

⁴⁰"Characteristics of Submarines and Anti-Submarine Operations," August, 1942, Document No.15807, Enemy Publication No.288, Allied Translator and Interpreter Section, Southwest Pacific Area.

⁴¹Kaijo Goei Sen, pp.10-11.

⁴²Report of the Military Affairs Bureau, Navy Ministry, October 1, 1945, "Daitoa Senso ni Okeru Wagamonoteki Kokuryoku to Kaigun Sembi Sui-i ni Kansuru Setsumeishiryo," Document No.47, Zempoan 1, Boei Kenshusho.

al.⁶² In a postwar study the Navy called the Solomons campaign "a war of transportation," and it described the outcome as "a defeat of the ability of Japanese transportation." The problem, the Navy belatedly admitted, was that cruisers, destroyers, and submarines, which had been designed for the "decisive battle," had to perform logistics chores.⁶³ Even the Yamato, the mightiest battleship of all time, once acted as a troop transport in this theater.⁶⁴ Furthermore, the shorthandedness of its logistical services led the Navy to the extensive merchant shipping drafts discussed above.⁶⁵

The fighting in the Solomons also shattered the prewar belief that barges could be quickly and cheaply built to handle any unanticipated transport needs. It took 73 large barges to carry one infantry regiment and its basic impedimenta seventy miles in a day, and a regiment with its artillery needed an entire Shipping Engineer Regiment (containing 110 barges and boats of various types) to move forty

⁶²Interrogation of Lieutenant-Colonel Iwakoshi Shinroku, No.416, November 17, 1945, Section 8, USSBS, RG 243.

⁶³"Kaigun no Sembi Narabi ni Sembi no Zembo," op.cit.

⁶⁴Samuel Eliot Morison, Breaking the Bismarcks Barrier, 22 July 1942 - 1 May 1944, Volume VI of History of United States Naval Operations in World War II, (Boston: Little, Brown and Company, 1950, 1984), pp.410-411.

⁶⁵See Chapter 4.

miles.⁶⁶ And there were never enough of them: "... we didn't have enough barges to begin with. Had plenty of big ships but not enough landing craft."⁶⁷ The Navy altered construction goals in 1943 to include thousands of wooden and steel barges,⁶⁸ but by that time it was too late.

By then, fleet operations, too, had demonstrated the deficiencies in the number and quality of supply vessels.⁶⁹ The Malaya invasion plans reveal grave inadequacies in the Navy's logistical system at the war's outset, well before the shipping crisis became acute. The plans prohibited supply vessels from replenishing anything but large warships; smaller combatant craft had to rely on tenders. Any ship with water storage or distillation facilities could not approach fresh water tankers. Even auxiliary minesweepers faced impressment into the fleet train.⁷⁰ The Combined Fleet

⁶⁶"Study of Japanese Shipping Activities," Prepared by Statistical Sub-Section, C-2, Headquarters, First Marine Amphibious Corps, August 10, 1943, Serial 03127, EF37/QA/(25), Naval Operational Archives.

⁶⁷Interrogation of Commander Okumiya Masatake, No. 75, October 12, 1945, USSBS, Interrogations, Vol.I, p.80.

⁶⁸"Kaigun no Sembi Narabi ni Sembi no Zembo," op.cit.

⁶⁹"Supply Bases and Fueling Fleet Units at Sea," June 10, 1943, Item No.10,678, CINCPAC-CINCPOA Bulletin No.54-45, Translations and Interrogations Number 20, February 25, 1945, 3e(7), Section 6, USSBS, RG 243.

⁷⁰Operational Order No.1, Secret Malaya Force, November 20, 1941, Showa Jurokunen 11-12 Gatsu, Nambo Butai, Hito Butai, Marai Butai, Ranin Butai, Meireinado Kotei, Kaijo Hen, by Matsubei Nagabo, November 5, 1957.

was thus something of an imperfect war machine even before the devastation of the merchant marine completely ruined its logistical base.

Because of the military's extensive authority in Imperial Japan, the emphasis on the battle fleet had consequences that stretched beyond the Navy's own armaments program. As previously noted,⁸¹ private yards bore the brunt of the Navy's shipbuilding program. In times of depression, the Navy contracts had been the salvation of the industry, but when prosperity returned to the ways in the mid-1930s, warships diverted much production capacity from merchant ship construction.⁸² The Yamato-class battleships, for example, took nearly three years to launch and another two to outfit. Carriers required at least two years each, and even 429-ton submarines occupied the yards' attention for a year apiece.⁸³ In the last five full fiscal years before the war, commercial yards built an average of 400,000 tons of warships annually.⁸⁴ And during these years merchant ship construction received far less than half the amount of finished

⁸¹See Chapter 3 above.

⁸²Military Supplies Division, USSBS, Japanese Naval Shipbuilding, Report No.46, 15 November, 1946, p.3.

⁸³Ibid, p.8.

⁸⁴Kaijo Goei Sen, p.69.

steel allotted to production of Navy surface forces.⁶⁶ Because naval shipbuilding is more complicated than other types,⁶⁶ it is impossible to compute precisely how much merchant shipping the "decisive battle" kept off the ways. But the total must certainly have numbered in the hundreds of thousands of tons.

The entire civilian economy was at the mercy of military demands, and private industry simply had to get by with whatever the Army and Navy left for it. The armed forces requisitioned two-thirds of all wartime motor vehicle production, for instance.⁶⁷ And those traveling on the railroads for military purposes outnumbered private ticketholders four or five to one.⁶⁸ Until late 1944, the Army and Navy controlled from 57% to 67% of the nation's seaborne transport.⁶⁸ The military naturally grabbed the lion's share of materials, too, especially steel, coal, and the other necessities of heavy manufacturing. By 1936, the

⁶⁶"Steel Distribution," 43b(5), Section 2, USSBS, RG 243.

⁶⁶Nakagata Kohachi, Zosengyo Kai, Volume 127, Kyoikusha Shimpan Sangyokai Shirizu, 1979, p.110.

⁶⁷USSBS (Pacific), Japanese Motor Vehicle Industry, (Washington: United States Government Printing Office, 1946), p.1.

⁶⁸"Daitoa Senso ni Okeru Wagamonoteki Kokuryoku to Kaigun Sembi Sui-i ni Kansuru Setsumeishiryo," op.cit.

⁶⁸Ibid.

armed forces already claimed nearly half the national budget.⁷⁰

Because the country was waging a major war, the military's share of labor and resources would, of course, have been high no matter what strategic principles had guided Imperial Japan. Yet in some cases it was precisely the aberrant Mahanian desire to maximize initial frontline strength that disrupted the economic foundations of the war effort. For example, producing large caliber weaponry for the fleet absorbed most of the nation's limited high pressure chambers and piping facilities, which prevented any serious expansion of the synthetic fuel industry.⁷¹ Moreover, it undercut the production of machine tools, an item "always urgently needed."⁷² The long term effects of the reduction of capital goods production are incalculable but readily imaginable. In sum, rampant Mahanianism created a sense of immediacy about military production that obscured the fundamental indispen-

⁷⁰Daihonei Kaigumbu, Vol.I, p.116.

⁷¹Major-General Okada Kikusaburo, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," November, 1945, Document No.51021, in Donald S. Detwiler and Donald B. Burdick, Editors, War in Asia and the Pacific, 1937-1949, (New York: Garland Publishing, Inc., 1980), pp.5-6.

⁷²Revision of Report of Sangyo Kikai Toseikai, October 2, 1945, 39mm(3), Section 2, USSBS, RG 243; Interrogation of Mr. Hoshino Naoki, No.505, November 19,22,28, 1945, 15g, Section 2, USSBS, RG 243; and "Kaigun no Sembi Narabi ni Sembi no Zembo," op.cit.

sability of a healthy, balanced economy to the war effort. As one history of total war has phrased it: "The fact that the war was to be won or lost in the nation's factories had never clearly established itself in the mind of the Japanese Supreme Command."⁷³

Following foreign patterns of modernization had thus brought to Imperial Japan disadvantages along with benefits. In this sense, the Japanese paid dearly for their eager acceptance of alien models and ideas. On the other hand, they also suffered because they did not depart enough from their traditional concepts. Specifically, the centuries' old samurai philosophy came to haunt Japan in World War II. Far from disappearing with industrialization, the code of bushido became more pervasive than ever because the Meiji oligarchs, who were themselves samurai, extended the warrior ethic to all social classes through the new, universal school system.⁷⁴ This created arguably the most persistent, dedicated, and stolid fighting men in modern times, yet in some ways the samurai code was inappropriate for twentieth century warfare.

⁷³Peter Calvocoressi and Guy Wint, Total War: The Story of World War II, (New York: Pantheon Books, 1972), p.783.

⁷⁴For a fuller discussion of this, see Richard J. Smethurst, A Social Basis for Prewar Japanese Militarism, (Berkeley: University of California Press, 1974).

Bushido, "the way of the warrior," glorified all the attributes of the medieval knight: physical prowess, self-sacrifice, stamina, courage, purity of spirit. All of these qualities are welcome ones for a soldier in any age, and certainly they were part of the extraordinary performance of the Japanese infantryman, sailor, and airman in World War II. But the samurai code also promoted values detrimental to military forces in the modern age: an intense loyalty that fostered factionalism, a faith in the warrior's inherent superiority that brooked no interference with military prerogative, a brand of spiritualism that shunned intellectual processes, and a sense of honor that outweighed the commitment to national survival. All of these traits were steppingstones along the path to the deck of the Missouri.

Every Japanese schoolboy learned the story of the Forty-Seven Ronin at an early age and strove to emulate the fanatical loyalty those celebrated samurai displayed towards their murdered master. In the feudal age, the warriors paid loyalty to the local lord in return for the profits gleaned from parcels of land. At various times, such as the Tokugawa era, powerful lords forged coalitions of lesser nobles and their retainers to claim the shogunate and authority over a united Japan, but loyalty was still a personal relationship. When the victorious anti-Tokugawa samurai started Japan on the path to industrialization in 1868, they attempted to transfer this fanatical loyalty from an individual to an

institution. They selected the emperor, heretofore little more than a religious figure, to be the embodiment of the state and the object of the people's allegiance. The kamikaze phenomenon indicates that by and large they succeeded.

Social change such as this requires decades or longer, but in nineteenth century Japan industrialization did not wait for it. Consequently, the old patterns of loyalty sometimes persisted. The Satsuma Rebellion (1876-77), where fealty to province took precedence over allegiance to the nation, is one example. Another alternative was the transference of loyalty to a new master; for the ex-samurai, the fledgling Army or Navy presented a new object for traditional fidelity. Unfortunately, from their inception the two military branches developed so differently that they became bitter rivals instead of partners in national defense. The intense loyalty of the samurai thus fanned the flames of a fierce and deeply rooted schism between the nation's armed forces.

"The Army and Navy always quarreled with each other," testified one officer after the surrender.⁷⁵ Of course, during World War II all countries suffered somewhat from interservice friction. The U.S. had plenty of scuffles between "doggies" and "birdmen," "swabbies" and "jarheads."

⁷⁵Interrogation of Captain Ohmae Toshikazu, No.150, October 24, 1945, USSBS, Interrogations, Vol.I, p.160.

Yet in a crisis the sailor and soldier realized that all were first and foremost Americans (or British or Germans or Russians). But in Japan, allegiance to the Army or Navy often took precedence over the interests of the nation.⁷⁶ The contrast between the combined and unified Allied forces that stormed across the Pacific and the backbiting, suspicious Imperial Japanese forces that opposed them is striking.

To begin with, the origins of Army and Navy lay in different foreign models. The Army patterned itself after the land forces of France and Germany, and the Navy turned its attention to the successful Royal Navy of Great Britain. The traditionally sea-minded province of Satsuma supplied most of the Navy's first leaders, while an astonishingly high percentage of the nation's early generals hailed from the powerful and rival domain of Choshu. Also, Navy officers considered themselves more cosmopolitan than their Army equivalents because of their extensive sea duty.⁷⁷ The armed

⁷⁶Ito and Pineau, The End of the Imperial Japanese Navy, p.205.

⁷⁷Asada Sadao, "The Japanese Navy and the United States," in Pearl Harbor as History: Japanese-American Relations, 1931-1941, Edited by Dorothy Borg and Shumpei Okamoto, with the assistance of Dale K.A. Finlayson, (New York: Columbia University Press, 1973), p.225; and Marder, Old Friends, New Enemies, p.290.

forces soon split over their strategic orientation, too.⁷⁰ The Imperial Army naturally concentrated on mainland Asia and devoted much energy to preparing for confrontations with China and Russia. But the Navy favored expansion to the south and east and so came to regard Great Britain and eventually the United States as its most likely antagonists.

Though the Satsuma-Choshu rivalry diminished after the turn of the century, other factors perpetuated the Army-Navy rift. The yearly budget discussions antagonized both sides, as each fought for an advantage in funding.⁷¹ The Navy stooped to concealing some expenditures in order to avoid losing appropriations to the Army.⁷² The rising political activism of both services poured fresh fuel to the flames. In the 1930s, Navy officials became so wary of the Army's turbulent political interventions that they positioned a tank outside the Navy Ministry Building and stationed a light cruiser in Tokyo Bay. And when junior Army officers attempted a coup in 1936, the Navy prepared to destroy the

⁷⁰Yokoi, "Thoughts on Japan's Naval Defeat," pp.68-69.

⁷¹Ibid, pp.240,247,258; and Fujiwara Akira, "The Role of the Japanese Army," Translated by Shumpei Okamoto, in Borg and Okamoto, Pearl Harbor as History, p.190.

⁷²Captain T. Ohmae, "Stockpiling of Liquid Fuel in Japan: A Navy Report," in Detwiler and Burdick, War in Asia and the Pacific, 1937-1949, Volume 5, pp.3,5.

Diet Building to keep it out of the soldiers' hands.⁸¹ Later they added machine guns to the Navy Ministry's defenses, and some Japanese feared an eruption of open civil war between the armed forces.⁸²

The pressures of war did evoke a begrudging cooperation on occasion. Army and Navy air units sometimes exchanged supplies, flew combined missions, or transferred aircraft to the other service.⁸³ There was also a limited exchange of personnel when the Army began to build its own transport submarines.⁸⁴ And General Staff representatives from both branches did meet three times a week to exchange views and information.⁸⁵ Admiral Nagano Osami, Chief of the Navy General Staff for much of the war, even claimed that smooth cooperation marked joint operations planning and intelligence dissemination.⁸⁶

⁸¹Agawa, The Reluctant Admiral, pp.98-99,100,102.

⁸²Marder, Old Friends, New Enemies, pp.101,125.

⁸³Interrogation of Rear Admiral Horiuchi Shigetada, No.199, October 30, 1945, USSBS, Interrogations, Vol.I, p.196; Interrogation of Lieutenant, Junior Grade, Okuno Y., No.228, November 1, 1945, USSBS, Interrogations, Vol.I, p.228; and Interrogation of Captain Komoto H., No.360, November 12, 1945, USSBS, Interrogations, Vol.II, p.288.

⁸⁴Interrogation of Captain Watanabe Yasuji, Commander Ishiwata Hiroshi, and Commander Doi Kazu, op.cit.

⁸⁵Interrogation of Lieutenant-General Kawabe, No.447, November 26, 1945, USSBS, Interrogations, Vol.II, p.422.

⁸⁶Interrogation of Fleet Admiral Nagano Osami, No.392, November 20, 1945, USSBS, Interrogations, Vol.II,

The majority of the evidence, however, suggests that during the war the squabbling intensified rather than decreased. The strategic differences established in the preceding decades only hardened under the crucible of war. The Army provided troops for the Navy's South Pacific campaigns only reluctantly, and the threat of withdrawing support was always present.⁸⁷ Cooperation on aerial missions was haphazard at best.⁸⁸ At the Battle of Leyte Gulf, for instance, Admiral Kurita's battle force sailed without air cover to its doom because there was no liaison with the nearby Army airbases.⁸⁹ Commander Genda Minoru, the Navy's brilliant air tactician, admitted that mutual obstinacy prevented the ser-

pp.352,355.

⁸⁷Interrogation of Commander Nakajima Chikataka, op.cit., p.144; Interrogation of Lieutenant-General Arisue, No.217, October 26, 1945, Section 8, USSBS, RG 243; Interrogation of Admiral Fukudome Shigeru, No.524, December 12, 1945, 15g, Section 2, USSBS, RG 243; and OSS Report No.86999, July 29, 1944, RG 226.

⁸⁸Interrogation of Captain Ohmae Toshikazu, No.150, October 24, 1945, USSBS, Interrogations, Vol.I, p.160; Interrogation of Commander Doi Yasumi, No.224, October 27, 1945, USSBS, Interrogations, Vol.I, p.209; Interrogation of Rear Admiral Takata Toshitane, No.258, November 1, 1945, USSBS, Interrogations, Vol.I, p.264; Interrogation of Captain Miyazaki Takashi, No.446, November 19, 1945, USSBS, Interrogations, Vol.II, p.417; John B. Lundstrom, The First South Pacific Campaign: Pacific Fleet Strategy, December 1941 -June 1942, (Annapolis: United States Naval Institute Press, 1976), p.199; and Okumiya and Horikoshi, Zero!, pp.155-156.

⁸⁹Interrogation of Vice-Admiral Kurita Takeo, No.47, October 16, 17, 1945, USSBS, Interrogations, Vol.I, p.38.

vices from surrendering control of their shore-based squadrons to achieve the highly desirable goal of unified command of air operations.⁸⁰ The Army General Staff also proposed a merger of all military forces under a command rotating between the services, but the suspicious Navy rejected it out of hand.⁸¹

The depth and pervasiveness of interservice feuding could and often did reach astonishing levels. The Navy, to cite one case, did not inform the Prime Minister, Army officer Tojo Hideki, of the Pearl Harbor plan until November, 1941.⁸² The Navy also concealed the true losses suffered at Midway from him for one month.⁸³ The Navy was not the only party capable of childish jealousy and petty harassment, however. For its part, the Army declined Navy offers of technical assistance for its transport submarine program, thereby forfeiting decades of irreplaceable experience.⁸⁴

⁸⁰Interrogation of Captain Genda Minoru, No.473, November 27, 1945, USSBS, Interrogations, Vol.II, pp.496-497.

⁸¹Marder, Old Friends, New Enemies, p.292fn.; Hayashi, Kogun, p.152; and Interrogation of Admiral Toyoda Soemu, No.378, November 13-14, 1945, USSBS, Interrogations, Vol.II, p.321.

⁸²"Interrogation of Tojo Hideki," February 29, 1948, War in Asia and the Pacific, 1937-1949, Vol.II.

⁸³Morison, Breaking the Bismarcks Barrier, p.23fn.

⁸⁴Interrogation No.366, October 10, 1945, USSBS, Interrogations, Vol.II, p.298.

And when one member of the press corps praised the Navy at the Army's expense, Tojo himself intervened to have the man dismissed and then drafted into the Army.⁶⁶ Imperial General Headquarters, on occasion with the concurrence of the emperor, several times felt it necessary to send prestigious delegations, once including an imperial prince, on front line tours to ease the Army-Navy tension.⁶⁷

The mutual postwar recriminations also indicate the intensity of the hostility between the sister services. The Army accused the Navy of being spineless and overly secretive about its true potential against the U.S. Navy.⁶⁸ Complained one Army officer after the war: "We were confident of the Navy's ability to hold back the United States fleet.... Why didn't they tell us they weren't so confident! We trusted them; they did not come out and warn us of their limitations....They were not open enough!"⁶⁹ Navy authori-

⁶⁶Kato Masuo, The Lost War, (New York: Alfred A. Knopf, 1946), p.108.

⁶⁷OSS Report No.64785, February 29, 1944; and OSS Report No.88017, July 16, 1944, RG 226.

⁶⁸Japan's Decision for War: Records of the 1941 Policy Conferences, Translated, Edited, and with an Introduction by Nobutake Ike, (Stanford: Stanford University Press, 1967), pp.69,90,193; and The Memoirs of Prince Fumimaro Konoye, Translated from the Asahi Shimbun, December 20-30, 1945, Issued by Okuyama Service, p.58.

⁶⁹Quoted in Spector, Eagle Against the Sun, pp.76-77. Emphasis in the original.

ties were no less critical of the Army, whom they castigated as "a cripple," "selfish," "weak," and even "horse dung" (maguso).¹⁰⁰ They labelled an Army attempt to intrude into shipyard management a "plot," which they happily foiled.¹⁰⁰ The Navy reserved a special scorn for Army pilots, whom they rated only 20% as proficient as naval fliers.¹⁰¹ Rather than "discussions" or "conferences," both sides normally referred to their joint policy-making sessions as "negotiations."

The damage inflicted by the Army-Navy rivalry went far beyond military operations. The armed forces seldom cooperated in research, for instance, which led to unnecessary duplication of effort.¹⁰² They also obstructed mass production because they refused to establish common standards for their weapons and equipment. Components, too, varied from

¹⁰⁰Okumiya and Horikoshi, Zero!, p.171; Interrogation of Captain Ohmae Toshikazu, op.cit., p.176; and Marder, Old Friends, New Enemies, p.181fn.

¹⁰⁰"Showa Kyunen Muyoyaku Shita Teikoku Kaigun Gumbi Keikaku ni Tsuite," Gunreibu Daiichika Shusekibuin (Kaigun Chusa Yori) Kaigun Chujo Nakazawa Sa, February, 1957, Itaku na San, Boei Kenshusho.

¹⁰¹Okumiya and Horikoshi, Zero!, p.62; Interrogation of Captain Watanabe Y., op.cit., p.68; and Interrogation of Vice-Admiral Hara, Rear Admiral Sumikawa, and Rear Admiral Kojima, op.cit.

¹⁰²Hayashi Saburo, in collaboration with Alvin D. Coox, Kogun: The Japanese Army in the Pacific War, (Quantico: The Marine Corps Association, 1959), pp.83-84; Interrogation of Lieutenant-General Endo, No.279. November 3, 1945, 15g, Section 2, USSBS, RG 243; and Kato, The Lost War, p.167.

the Army to the Navy, down to the threads on otherwise identical screws.¹⁰³ In addition, the two branches fought over materials allocations with scant regard for civilian requirements.¹⁰⁴ The 1943 debate over future aircraft allotments is a classic example of the interservice competition in Imperial Japan. For months the two sides wasted time arguing and bandying figures about, but in the end the result was, as usual, a compromise unsatisfactory to both.¹⁰⁵ One time neighboring Army and Navy aircraft plants found themselves with incomplete but complementary stocks of materials. Rather than pool their resources, both factories ceased production.¹⁰⁶ With such episodes in mind, one Army officer later remarked: "Herein lay a major cause of wasted national energy and a hindrance to the full manifestation of combat power."¹⁰⁷ "Yes," an Army Ministry official agreed, "there was much confusion mostly resulting from bickering

¹⁰³Ibid, pp.167-168; Hayashi, Kogun, pp.80-81; and "Chihaya's History," pp.91-92, 113.

¹⁰⁴Interrogation of Rear Admiral Yamamoto Yoshiyo, No.210, November 3, 1945, 51b(22)(tt), Section 2, USSBS, RG 243; "Revision of Report of Sangyo Kikai Toseikai," op.cit.; and Interrogation of Admiral Nomura Kichisaburo, No.429, November 8, 1945, USSBS, Interrogations, Vol.II, p.389.

¹⁰⁵Hayashi, Kogun, p.81; "Kaigun no Sembi Narabi ni Sembi no Zembo," op.cit.

¹⁰⁶Interrogation of Lieutenant-General Endo, op.cit.

¹⁰⁷Hayashi, Kogun, p.151.

between the Army and the Navy. This not only reduced the efficiency of the military but hurt the civilian economy as well."¹⁰⁰

Naturally, the bitter feelings spilled over into maritime transport management efforts. Each service had its own shipping control offices, and predictably coordination was rudimentary to non-existent.¹⁰¹ Among other results, poor communication helped trap many Army freighters in Truk harbor for the scorching U.S. carrier raid there in February, 1944.¹¹⁰ More lethal in the long run was the steady attrition from submarines' torpedoes, and much of this, too, was the product of interservice rivalry. The under-manned and under-equipped escort forces needed close cooperation to maximize their limited potential, but they suffered from just the opposite. With their dual shipping management administrations, the Army and Navy conducted transport operations in the same way they fought much of the war: virtually independently. It was not unusual for Army transports to run afoul

¹⁰⁰Interrogation of Major Takahashi T., No.529, December 21, 1945, 15g, Section 2, USSBS, RG 243.

¹⁰¹Hayashi, Kogun, pp.82-83; and Kawashima R., "Japanese Shipping During the War from Local Point of View," 54ff(6), Section 2, USSBS, RG 243, pp.1-3. See also Chapter 5 above.

¹¹⁰Japanese Monograph No.125 (851-116), Surface Escorting Operations, December 1941 - August 1945, Prepared in June, 1949, by the Liquidation Division, Second Demobilization Bureau, p.14

of torpedoes while Navy escorts rode at anchor in nearby ports, or for Navy cargoes to decay on the same piers from which empty Army freighters departed.

The harm inflicted by the misplaced loyalty of the samurai was thus substantial, but the medieval warrior's chauvinism further multiplied its effects. During the centuries of its predominance over the social structure of feudal Japan, the military class had developed an unshakeable faith in its own talents, judgment, and motives along with a corresponding contempt for the abilities, ideas, and character of commoners. Military education in Imperial Japan reinforced these traits.¹¹¹ Not surprisingly, the philosophy embraced in the 1889 constitution did not subjugate the military to civilian control. Rather, the armed forces had the same access to the throne as the Cabinet, a privilege they jealously guarded. Unlike the Western democracies or even the fascist or bolshevik dictatorships, there was no check on the military save the historically weak authority of the emperor. In the United States, too, there was disagreement, sometimes amounting to unhealthy discord, between the military branches, but the firm hand of civilian authority always reined in any centrifugal tendencies.

¹¹¹Akira, "The Role of the Japanese Army," p.192.

Far from being politically ascendant, the Cabinet was only one of the agencies in Japan competing for that status. The original Meiji oligarchs had retained civilian predominance through moral presence and force of personality, but once they passed from the scene no one had the necessary prestige to compensate for the inherent institutional defects. The armed forces grew gradually in independence and influence. In the 1930s, for example, they regularly withheld information, such as warship tonnage and oil reserve figures, from the Cabinet.¹¹² Consequently, there was no longer any individual or body within the government of Imperial Japan capable of creating a coherent, reasoned national defense policy.¹¹³ Representatives of the Army and Navy did meet regularly to hammer out plans, yet that often resulted in a compromise that respected the prerogatives of both services but was not necessarily the most logical or appropriate course of action. Imperial Headquarters, for instance, issued not operational commands but "Army-Navy Central Agreements" for every significant military under-

¹¹²Togo Shigenori, The Cause of Japan, (New York: Simon and Schuster, 1956), pp.118,127; Interrogation of Irie Hiroshi, Kimura Hideo, and Omura Yoshichika, No.57, October 18, 1945, 51b(22)(c), Section 2, USSBS, RG 243; and Interrogation of Mr. Hoshino Naoki, op.cit.

¹¹³Daihonei Kaigumbu, p.119; Yokoi, "Thoughts on Japan's Naval Defeat," p.69; and The Memoirs of Prince Fumimaro Konoye, pp.61,62.

taking.¹¹⁴ In November, 1943, the armed forces acquiesced in the establishment of a Ministry of Munitions intended to provide desperately needed coordination to the war effort, but it "proved to be nothing more than a new stage for Army-Navy rivalries."¹¹⁵

With a firm conviction in their own beliefs and abilities and no true check on their authority, the military leaders of Japan sooner or later intervened in every phase of state affairs. By the 1930s, they were monitoring diplomatic dispatches, regardless of military relevance.¹¹⁶ Indeed, in 1936 the Army simply sidestepped the Foreign Ministry and negotiated the Anti-Comintern Pact on its own.¹¹⁷ Through a system of resident inspectors, the military also directed industrial production.¹¹⁸ The inspectors were often junior officers with no business experience, yet they were the ultimate authority at the site. In one case, a Harvard graduate and successful shipyard president was at the beck and call of lieutenants.¹¹⁹ Prince Higashikuni declared:

¹¹⁴Daikairei Eiyaku, op.cit.

¹¹⁵Hayashi, Kogun, pp.80-81.

¹¹⁶Togo, The Cause of Japan, p.60.

¹¹⁷See Carl Boyd, The Extraordinary Envoy: General Hiroshi Oshima and Diplomacy in the Third Reich, 1934-1939, (Washington: University Press of America, 1980).

¹¹⁸Interrogation of Admiral Toyoda Teijiro, No.10, October 5, 1945, 1a(14)(f), Section 2, USSBS, RG 243.

...the primary reason for defeat was that the militarists who should have looked after their own business, i.e., strategy - the military side, went into every field of Japanese life. They should have looked after their own business, i.e., fighting the war. It was a mistake for them to have butted into political and economic life.¹²⁰

Where the shortsighted loyalty and aggressive self-confidence of the samurai had disrupted the war effort, the warrior's indifference to intellectual processes spelled catastrophe. The samurai had traditionally viewed himself as a romantic figure, prone to follow the heart instead of the head.¹²¹ Moral fiber, the feudal warrior believed, was a truer source of inspiration than the forces of reason. The institutions for military education in Imperial Japan employed this concept as their very foundation. "Spiritual strength was considered to be the primary element in the acquisition of victory," remembered an Army officer.¹²² One Japanese historian echoed this when he noted "a tendency to emphasize the importance of spiritual factors and neglect training in logical thinking" as part of the Army's general

¹¹⁹Kato, The Lost War, p.168.

¹²⁰Interrogation of Prince Higshikuni, No.426, November 14, 1945, 1a(14)(d), Section 2, USSBS, RG 243.

¹²¹See Ivan Morris, The Nobility of Failure: Tragic Heroes in the History of Japan, (New York: New American Library, 1975).

¹²²Hayashi, Kogun, p.118.

doctrine that "the power of the spirit, not the rational calculation of relative strengths in troops and material, led to victory in war." For this reason, he claimed, "the Japanese Army ...continued to stress spiritual qualities rather than the element of rationality as the decisive factor in victory. The product was an officer who frequently manifested an irrational spiritualism along with his limited intellectual vision."¹²³ Education in the Navy revolved around the same principles.¹²⁴

This irrationality found extensive expression in Imperial Japanese policymaking due to the growing political influence of the military. However, the government's approach to research and planning for war shows that the penchant for anti-intellectualism was not confined to the Army and Navy. In 1940, the Prime Minister's office established an agency with the promising title of the Total Warfare Research Institute (Soryokusen Kenkyusho) to: "conduct education and training of government officials about the national war potential and to conduct basic research into national, total warfare." But this was an academic institution only; its research results remained buried in the school's archives

¹²³Akira, "The Role of the Japanese Army," pp.192-193.

¹²⁴Asada, "The Japanese Navy and the United States," p.226.

until after the war.¹²⁶ The Cabinet Planning Board, formed in 1938 to assist with industrial mobilization, was the principal civilian office for economic research and planning. It was a Ministry of Finance office with fifty members and hundreds of lesser employees.¹²⁶ The Board, claimed one Japanese observer, dodged "...the unpleasant realities of Japan's economic situation. Many of the reports of the Planning Board were designed primarily to please the militarists.... the work of the board was studded with inaccuracies and deficiencies."¹²⁷ Given the documentation that has survived the war, these are unprovable accusations, but the Planning Board's performance lends credence to them. For example, the Board faithfully accepted, apparently without any corroborating research of its own despite its substantial manpower, the Navy's figures on such vital matters as shipping capacity, anticipated sinkings, new construction, and fuel consumption.¹²⁸

¹²⁶The indifference to the Institute's research is all the more regrettable in light of the topics investigated. Student and faculty research delved into all phases of warfare, including matters such as "Resources, Labor, and Commerce in National Defense," "Research on the Supply and Demand of Technicians and Laborers," "Outline of National Total War," and "Materials on Marine Transportation." Full details are in Morimatsu Toshimu, Soryokusen Kenkyusho, (Tokyo: Hattei Sha, 1983).

¹²⁶Interrogation of Irie Hiroshi, Kimura Hideo, and Omura Yoshichika, op.cit.

¹²⁷Kato, The Lost War, pp.169-170.

In light of what transpired in World War II, the predictions for merchant ship sinkings are particularly revealing. It is naturally difficult to judge accurately all the many factors involved in such a complex situation: the numbers of enemy submarines available, their patrolling frequency and endurance, the effectiveness of their weapons and tactics, the efficiency of anti-submarine defenses, and so on. One cannot therefore be too critical of estimates based on these myriad variables. But the Imperial Navy did not even consider the problem until mid-1941, when economic planning in the Cabinet revealed a need for this type of information. And by then there was no time for elaborate interdepartmental discussions among all relevant agencies, so a single officer of the General Staff inherited the task. He multiplied the World War I U-boat success rate by the expected density of American submarines in the Pacific to construct his forecast.¹²⁸ He concluded that losses in the first three years of war would be 2,100,000 tons, later revised to 2,700,000

¹²⁸Compare, for instance, the Navy's forecasts with the Cabinet Planning Board's estimates on these matters proffered at the Liaison Meeting of October 31, 1941, and again at the Imperial Conference the following week. Japan's Decision for War, pp.220-222; "Juyo Kokusaku Kettei Tsuzuri," July, 1940 - December, 1941, Document No.50, Zempan 1, Boei Kenshusho; Kaijo Goei Sen, pp.60-61,66-68; and Oi, "Why Japan's Anti-Submarine Warfare Failed," p.589.

¹²⁹Kaijo Goei Sen, pp.67-68.

tons.¹³⁰ This was of course far from the over six million tons the Allies actually sank by December, 1944.¹³¹ Even the official Japanese history says of this: "...our Navy, quite frankly, seems to have been totally dreaming."¹³² The telling aspect of this episode is not that such stopgap analytical methods produced wildly inaccurate estimates, but that these figures, unchallenged and unchecked, formed the basis of policymaking at the highest levels of government. Nor was this an exceptional case. Navy fuel consumption exceeded prewar estimates by fully 50%,¹³³ yet no one in the government ever questioned the Navy's figures during the months of conferences prior to Pearl Harbor. Not surprisingly, many Japanese have themselves described planning in both military and civilian circles in this period as "wishful thinking" with no basis in fact.¹³⁴

¹³⁰Kaijo Goei Sen, p.66.

¹³¹"Soshitsu Sempaku Ichiran Hyo," 1948, Sempaku Uneikai, Document No.11, Sempaku 4, Boei Kenshusho.

¹³²Kaijo Goei Sen, p.7.

¹³³Lieutenant-General Hoshina to Commander Williams, November 15, 1945, 51b(36)(1), Section 2, USSBS, RG 243.

¹³⁴"Kaigun no Sembi Narabi ni Sembi no Zembo," op.cit.; Okada, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," pp.5-6; Agawa, The Reluctant Admiral, pp.196,197; and Akira, "The Role of the Japanese Army," p.194.

The fatal divergence of planning from reality was a constant theme of Japanese war direction during World War II. This is evident in the Navy's map maneuvers and wargames, where referees sometimes permitted units to refuel without a loss of time in order to avoid disrupting plans.¹³⁶ And it was commonplace for a commander to initiate an offensive over the logistics section's insistence that it could not supply the operation.¹³⁶ Confusion and flights of fantasy characterized nonmilitary planning as well. After the war, ex-Foreign Minister Togo claimed that the paucity of information on which the Cabinet based its decisions shocked him.¹³⁷ In 1943, the government ordered plant expansion to continue despite the rising materials shortage, because no one believed the growing shipping crisis would last.¹³⁸ Often the military's production plans bore little resemblance to the nation's actual industrial potential.¹³⁸ The Bureau of Ships once complained that the Navy General Staff officers were displaying total indifference to the country's actual capabilities with their incessant demands for air-

¹³⁶Agawa, The Reluctant Admiral, p.197.

¹³⁶Interrogation of Lieutenant-Colonel Shirai Fumitaba, No.501, December 5, 1945, 15g, Section 2, USSBS, RG 243.

¹³⁷Togo, The Cause of Japan, p.127.

¹³⁸Interrogation of Hoshino Naoki, op.cit.

¹³⁸Daihonei Kaigumbu, pp.305-306.

craft, "as though they were deaf."¹⁴⁰ Warship construction schedules at times were not even available to the shipyards, and the Navy altered them so frequently that it was difficult to discern which plans were currently operative.¹⁴¹ By 1944, the Japanese public had nicknamed their leadership "the charcoal bus," because, like that product of wartime fuel shortages, the government could make only slow, lurching progress towards its destination.¹⁴²

Under these conditions, the Japanese war effort brimmed with inefficiency. Manpower distribution is a case in point, for the military's indiscriminate drafting of skilled labor crippled many war industries.¹⁴³ Ironically, the Army had to assign troops to stevedore duties because it had drafted so many of the trained longshoremen.¹⁴⁴ Up to 50% of aircraft

¹⁴⁰"Kaigun no Sembi Narabi ni Sembi no Zembo," op.cit.

¹⁴¹Interrogation of Vice-Admiral Hosogaya Shinzaburo, Rear Admiral Aitoku I., Rear Admiral Yano, Rear Admiral Kidera K., Captain Akabane T., and Sawemura W., No.127, October 22, 1945, 46j, Section 2, USSBS, RG 243; Interrogation of Fujii S., Nochizaki S., Sakai G., Kokubo R., Shigetori H., Mizukami T., Oya M., Niekawa E., and Sagawa S., No.215, October 23, 1945, 46j, Section 2, USSBS, RG 243; and Japanese Monograph No.125, p.8.

¹⁴²Kato, The Lost War, p.112.

¹⁴³Ibid, pp.166-167; Interrogation of Suehiro Gantaro, No.13, October 8, 1945, Section 8, USSBS, RG 243; and Interrogation of Fujii S., et al., op.cit.

¹⁴⁴Interrogation of Fukuhara Keiji, Asada S., Kato E., and Takezaki Michio, October 27, 1945, 54gg(2), Section 2, USSBS, RG 243; and Okada, "The Principal Problems and the Obstacles Which Confronted the Japanese Shipping During

delivered to the Navy proved defective, some so seriously that the Navy returned them to the factory for corrections, even though that meant a month's delay.¹⁴⁶ The shipyards spent two years converting the old battleships Ise and Hyuga to aircraft carriers, but their flight decks and hangars were so limited that they never conducted combat air operations.¹⁴⁶ There is little wonder that maritime transport, too, suffered from "unrealistic" expectations, especially since the Army and Navy habitually ignored the advice of civilian shipping experts.¹⁴⁷

The citizens of Imperial Japan also inherited a high sense of honor from the samurai code, which amounted to an excessive pride that favored death over shame. This is what motivated so many Japanese, civilians as well as soldiers, to opt for suicide when facing the possibility of capture. Under the right circumstances, this fear of disgrace evoked inspired service on behalf of the nation, but sometimes it

Wartime."

¹⁴⁶Interrogation of Commander Fukamizu, No.202, October 31 - November 1, 1945, USSBS, Interrogations, Vol.1, p.205.

¹⁴⁶Interrogation of Rear Admiral Matsuda Chiaki, No.345, November 12, 1945, USSBS, Interrogations, Vol.1, pp.277-283.

¹⁴⁷Kawashima, "Japanese Shipping During the War From Local Point of View," pp.1-3; and Okada S., "The Principal Problems and the Obstacles Which Confronted the Japanese Shipping During Wartime," November 5, 1945, 46j, Section 2, USSBS, RG 243.

generated an obduracy that doomed Japan to wasteful or self-destructive policies and actions. For instance, this characteristic tended to reinforce the Army-Navy rivalry, since it made it difficult for either side to back down when they clashed on issues. When, as occasionally happened, a disagreement over a course of action escalated into a question of honor, the chances for a rational settlement became even more remote. The Army's refusal of the Navy's offer of technical aid for submarine construction is convincing proof of the folly of excessive pride.¹⁴⁰

Naturally, this was yet another destabilizing element in the management of the war effort. But the damage inflicted by the extreme devotion to honor extended beyond even this, for it played a key role in the disastrous decision to go to war. Japan and the United States were on a collision course for years before Pearl Harbor, and, provided neither revamped its fundamental orientation towards Asian affairs, especially the conflict in China, war was practically unavoidable. Some of the leaders of Imperial Japan, however, believed that there were viable alternatives to war or economic strangulation,¹⁴¹ but the obstinacy of the military

¹⁴⁰Interrogation No.366, op.cit., p.298.

¹⁴¹Japan's Decision for War, pp.195,197-198; and Interrogation of Rear Admiral Takata Toshitane, op.cit., p.266.

would allow no concessions. For its part, the Army refused to contemplate troop withdrawals from China because that would imply that its involvement to that point had been an error. And the Navy, too, was culpable, because its pride prevented the admission that, despite decades of splitting the military budget equally, it was not as prepared as its rival to go to war. A firm anti-war stance from the Navy could easily have prevented hostilities, but, as the Japanese naval historian Asada Sadao has pointed out, the Navy risked war rather than shame, thus placing its honor ahead of the fate of the nation.¹⁵⁰ After the war one general admitted that defense spending reductions and diplomatic reconciliation would have preserved the nation's economic well-being,¹⁵¹ and the Navy Ministry called the decision to fight the United States "unjustifiable" (muri).¹⁵²

For Japan, then, the ultimate cost of rapid, government-directed industrialization was high. To be sure, there were other, lesser reasons for Japan's fatal mismanagement of the merchant marine, and the war effort in general, in World War II. For example, the nation's marginal participation in

¹⁵⁰Asada, "The Japanese Navy and the United States," p.258.

¹⁵¹Okada, "Prewar Material Potential and the Resolve to Fight the United States and Great Britain," p.6.

¹⁵²"Daitoa Senso ni Okeru Wagamonoteki Kokuryoku to Kaigun Sembi Sui-i ni Kansuru Setsumeishi Shiryō," op.cit.

World War I deprived it of valuable experience in early twentieth century total warfare, experience from which the United States and Great Britain profited inestimably twenty-five years later. Also, the growing enchantment with Germany in the 1930s, even among the Imperial Navy,¹⁵³ diverted the military's attention from industrial mobilization planning in the western democracies, where thought on total war was more advanced.¹⁵⁴ Yet these are only minor factors that accentuated rather than formed the Japanese indifference to total warfare management.

The neglect of the merchant marine was indeed part of a general pattern. The slavish adherence to their version of Mahanianism rendered the Japanese woefully unprepared for the type of war that eventually swept across the Pacific. The sometimes counterproductive attributes of the samurai prevented any serious redress of that situation once the war began. As some of the participants remember: "This inability to coordinate the military and economic strength at our disposal ...might accurately be described as characteristic of the entire nation."¹⁵⁵

¹⁵³Hayashi, Kogun, pp.18,23; and Asada, "The Japanese Navy and the United States," p.229.

¹⁵⁴The United States Army composed an Industrial Mobilization Plan in 1933 and regularly updated it. Great Britain had its Royal National defense College, and France founded the National Defense Research Institute in the mid-1930s.

¹⁵⁵Okumiya and Horikoshi, Zero!, p.170.

CHAPTER 8

SUMMATION

Though many factors contributed to Japan's overwhelming defeat in World War II, historians generally agree on which were most significant. Few scholars, for instance, fail to apportion substantial responsibility to the Allies' superiority in manpower, resources, and industrial capacity. There are several other frequently cited reasons for Japan's fate, such as technological inferiority, intelligence and counter-intelligence deficiencies, overconfidence, tactical and strategic errors, faulty judgment due to "victory disease," and poor flexibility when faced with the rapid succession of air and sea campaigns that characterized the fighting in the Pacific.

These are all logical and cogent explanations of the war's outcome, but there is another that has seldom received proper attention: the failure of Japan's maritime transport system. Most histories of World War II either ignore this critical factor or list it as just one aspect of the Allies' comprehensive economic campaign against Japan. Even the

exceptional few that place the shipping problem in perspective do not explore Japan's merchant marine policy or its roots and ramifications.

The importance of merchant shipping in the Pacific theater of World War II stemmed from the nature of the war and the physical realities of Japan's national power. Participation in total warfare in that age required a healthy economy that rested on a substantial population, a firm industrial base, access to petroleum and other raw materials, and a flexible transportation system. Imperial Japan possessed all of these assets, though it could not match the ultimate strength of its opponents. In particular, the island nation depended on imports for many strategic resources, especially the oil that powered both the factories and the armed forces. This rendered the merchant fleet absolutely vital to Japan's war effort, for the moment imports slackened their pace, so would the wheels of industry. Also, military operations waged across thousands of miles of ocean depended on maritime transport for their logistic support.

Steel shipping and shipbuilding in Japan began humbly amidst the dying Tokugawa shogunate's chaotic attempts to modernize the nation. The maritime industries remained inconsequential until the late nineteenth century, when active governmental support at last enabled them to claim a fair share of the domestic market. But it was World War I that finally made the shipyards and freight lines

internationally competitive.

The 1920s brought a worldwide recession to the maritime industries, however, because the war had fostered serious overexpansion. In Japan, the shipyards entered a prolonged depression, though innovative scheduling practices saved the shipping companies from immediate retrenchment. But the persistence of the global shipping glut eventually caught up with them, too, and by the early 1930s the depression was in full swing. Once again, the government stepped forward to save the maritime industries. It launched a massive "scrap and build" subsidy program that encouraged renovation of the nation's aging merchant marine. It was monumentally successful in assisting both shippers and shipbuilders, and it also appreciably enhanced the military value the nation's commercial fleet. In addition, because of the outbreak of war in China in 1937, the government was able to impose its control on and centralize the maritime industries, thus assuring their full cooperation in the approaching Pacific war.

During the war, the nation's shipyards suffered from labor and steel shortages, technological backwardness, mismanagement, and heavy commitments to military contracts. But the harsh South Pacific campaigns impressed the Imperial Navy with the need for shipping, and after 1942 merchant construction became a high priority item. The shipbuilding industry responded well, despite its shortcomings, and by 1944 the yards were outproducing even the most optimistic

prewar estimates.

However, the rate of new launchings never kept up with the phenomenal rate of sinkings. After decades of neglecting maritime transport security, the Imperial Navy discovered it could not improvise effective submarine and mining weapons, doctrine, or administration. Escort and minesweeping forces were inadequate in quantity, quality, and organization. The result was utter catastrophe for the Japanese merchant marine. Even though limited numbers, defective torpedoes, and rudimentary tactics damaged the effectiveness of American submarines in the early part of the war, they managed to destroy nearly five million tons of commercial shipping (out of a merchant fleet totally under six and a half million tons at the time of Pearl Harbor) by August, 1945. And when Allied advances brought the home islands within flying range, mine-laying aircraft virtually closed the shipping lanes with a flood of mines the Japanese were powerless to halt. Before the Russians or atomic bombs ever intervened, the shipping disaster had dismantled Japan's economic foundation and sealed the country's fate.

The beliefs and policies responsible for the nation's neglect of merchant marine protection were longstanding ones dating back to the nineteenth century. From its inception, the Imperial Navy modelled itself on the undisputed queen of the seas, Great Britain's Royal Navy. This brought a dogmatic acceptance of the theories of Alfred Thayer Mahan, the

historian who formalized the strategic concepts that had guided the Royal Navy in the age of sail. However, Mahan's Japanese adherents misinterpreted his emphasis on the "decisive battle" and failed to grasp the limited applicability of his ideas in the eras dominated by steam and then aircraft. In armaments, training, and strategic thought, the Imperial Navy aimed only for the anticipated climactic fleet engagement that they erroneously believed would decide any future conflict.

The ex-samurai who led Japan through industrialization also helped lay the basis for the neglect of the merchant marine in the values they instilled in Japanese society. In organizing the modern state of Japan after the Meiji Restoration of 1868, these men spread their class philosophy, the code of the feudal warrior, to all Japanese. Many of the qualities of the samurai were useful ones for a nation at war, but others created difficulties in the management of early twentieth century total warfare. Intense loyalty, military chauvinism, indifference to intellectual development, and excessive commitment to honor all cost the Japanese dearly during World War II. They fostered a confused, inefficient organization of the war effort and an impulsive recklessness that wasted human and material resources. This atmosphere prevented the optimal utilization of one of the nation's outstanding military assets, the Japanese merchant marine.

BIBLIOGRAPHY

Published Sources:

Agawa, Hiroyuki, The Reluctant Admiral: Yamamoto and the Imperial Navy, (Tokyo: Kodansha International Ltd., 1969, 1982).

"Australia Needs Airplanes," Business Week, January 30, 1937, p.44.

Bagnasco, Erminio, Submarines of World War Two, (Annapolis: United States Naval Institute Press, 1973, 1985).

Bateson, Charles, The War with Japan: A Concise History, (East Lansing: Michigan State University Press, 1968).

Blair, Clay, Jr., Silent Victory: The U.S. Submarine War Against Japan, (Philadelphia and New York: J.B. Lippincott Company, 1975), Volumes I and II.

Boone, Andrew R., "Motorships of the Silk Fleet Sail World's Greatest Sea Race," Popular Science Monthly, Vol.126, (April, 1935), pp.14-15, 105-106.

"Bottoms Down," Business Week, May 23, 1942, pp.36-38.

Bryant, Arthur, The Turn of the Tide, 1939-1943, (London: Collins, 1957).

Calvocoressi, Peter, and Wint, Guy, Total War: The Story of World War II, (New York: Pantheon Books: 1972).

Carpenter, Dorr, and Polmar, Norman, Submarines of the Imperial Japanese Navy, (Annapolis: U.S. Naval Institute Press, 1986).

Collier, Basil, The War in the Far East, 1941-1945: A Military History, (New York: William Morrow and Company, Inc., 1969).

Daitoa Senso Kaisen Keii, Part I, Senshishitsu Cho, Volume 100, (Tokyo: Asagumo Shimbunsha, 1972).

"The Development of Japanese Shipbuilding," Scientific American Supplement, No.1652, (August 31, 1907), p.130.

Diebold, William, Jr., "The Wartime Use of Shipping," Foreign Affairs, Vol.19, (July, 1941), pp.751-763.

Dull, Paul S., A Battle History of the Imperial Japanese Navy (1941-1945), (Annapolis: United States Naval Institute Press, 1978).

Fuchida, Mitsuo, and Okumiya, Masatake, Midway: The Battle That Doomed Japan, Edited by Clarke H. Kawakami and Roger Pineau, (Annapolis: United States Naval Institute Press, 1956).

Fuller, J.F.C., The Conduct of War, 1789-1961, (Rutgers: Rutgers University Press, 1968).

Hayashi, Saburo, in collaboration with Alvin D. Coox, Kogun: The Japanese Army in the Pacific War, (Quantico: The Marine Corps Association, 1959).

Hodges, G. Charles, "A Little Brown War Baby," Sunset, Vol.39, (September, 1917), pp.92-94.

Howard, Warren S., "Japanese Destroyers in World War II," United States Naval Institute Proceedings, Vol.78, No.1, (January, 1952), pp.51-57.

Howe, Quincy, Ashes of Victory: World War II and its Aftermath, (New York: Simon and Schuster, 1972).

Hoyle, Martha Bird, A World in Flames, (New York: Atheneum, 1970).

Iseley, Jeter A., and Crowl, Philip A., The U.S. Marines and Amphibious War, (Princeton: Princeton University Press, 1951).

Ito, Masanori, with Roger Pineau, The End of the Imperial Japanese Navy, (New York: W.W. Norton and Company, Inc., 1956).

"Japan Makes a Shipbuilding Record," Literary Digest, Vol.61, (April 26, 1919), p.22.

Japan Surveys the European War, (Tokyo: The Tokyo Press Club, 1940).

"Japanese Capitulate in West Coast Ship Rate War," Business Week, December 31, 1938, p.40.

"Japanese Shipbuilding," Cassier's Magazine, Vol.29, January, 1906), pp.259-261.

Japan-Manchukuo Yearbook Company, The Japan-Manchukuo Yearbook, 1938, (Tokyo: The Japan-Manchukuo Yearbook Company, 1937).

Japan's Decision for War: Records of the 1941 Policy Conferences, Translated, Edited, and with an Introduction by Nobutake Ike, (Stanford: Stanford University Press, 1967).

"Japan's Miraculous Commercial Rise," Literary Digest, Vol.72, (January 7, 1922), pp.28-30.

Jentschura, Hansgeorg, Jung, Dieter, and Mickel, Peter, Translated by Antony Preston and J.D. Brown, Warships of the Imperial Japanese Navy, 1869-1945, Annapolis: United States Naval Institute Press, 1970, 1982).

Kaigun Gunsempi, Part I, Senshishitsu Cho, Volume 31, (Tokyo: Asagumo Shimbunsha, 1969).

Kaijo Goei Sen, Senshishitsu Cho, Volume 46, (Tokyo: Asagumo Shimbunsha, 1976).

Kato, Masuo, The Lost War, (New York: Alfred A. Knopf, 1946).

Kinvig, Clifford, Death Railway, (New York: Ballantine Books, Inc., 1973).

Kokka Sodojin, Genkoshi Shiryo No.43, (Tokyo: Misuzu Shobo, 1970).

Lane, Frederic C., with the collaboration of Blanche D. Coll, Gerald J. Fischer, and David B. Tyler, Ships for Victory: A History of Shipbuilding Under the U.S. Maritime Commission in World War II, (Baltimore: The John Hopkins Press, 1951).

Liddell Hart, Sir Basil H., History of the Second World War, (New York: G.P. Putnam's Sons, 1970).

Lillico, Stuart, "Japan at Sea," Current History, Vol.45, (February, 1937), pp.48-53.

Livezey, William E., Mahan on Sea Power, (Norman: University of Oklahoma Press, 1981).

Lundstrom, John B., The First South Pacific Campaign: Pacific Fleet Strategy, December 1941 - June 1942, (Annapolis: United States Naval Academy Press, 1976).

Marder, Arthur J., Old Friends, New Enemies: The Royal Navy and the Imperial Japanese Navy, Strategic Illusions, 1936-1941, (Oxford: Clarendon Press, 1981).

"The Maru Ships on the Trade Lines of the Seven Seas," Literary Digest, Vol.72, (January 7, 1922), p.52.

The Memoirs of Prince Fumimaro Konoye, Translated from the Asahi Shimbun, December 20-30, 1945, Issued by Okayama Service.

A Military History of World War II, Edited by T. Dodson Stamps and Vincent J. Esposito, (West Point: United States Military Academy, 1953).

Morimatsu, Toshio, Soryokusen Kenkyusho, (Tokyo: Hattei Sha, 1983).

Morison, Samuel Elliot, History of United States Naval Operations in World War II, (Boston: Little, Brown and Company, 1947-1984), Volumes III, IV, V, VI, VII, VIII, XII, XIII, XIV, XV.

_____, Strategy and Compromise, (Boston: Little, Brown and Company, 1958).

Nakagata, Kohachi, Zosengyo Kai, (Tokyo: Kyoikusha Shimpansangyokai Shirizu, 1979).

Nihon no Zosengyo, Seiji Keizai Kenkyusho Hen, (Tokyo: Toyo Keizai Shimpsha, 1959).

Office of War Information, Enemy Japan, (United States Public Affairs Press, 1945).

Oi, Atsushi, "Why Japan's Anti-Submarine Warfare Failed," United States Naval Institute Proceedings, Vol.78, No.6, (June, 1952), pp.587-601.

Okumiya, Masatake, and Horikoshi, Jiro, Zero!, (New York: Ballantine Books, 1956, 1973).

Pelz, Stephen E., Race to Pearl Harbor: The Failure of the Second London Naval Conference and the Onset of World War II, (Cambridge: Harvard University Press, 1972).

Potter, E.B., Nimitz, (Annapolis: United States Naval Institute Press, 1976).

Rohwer, Jurgen, Axis Submarine Successes, 1939-1945, (Annapolis: United States Naval Institute Press, 1985).

Rose, Lisle A., The Long Shadow: Reflections on the Second World War Era, (Westport: Greenwood Press, 1978).

Roskill, Captain Stephen W., The Strategy of Sea Power, (London: Collins Clear-Type Press, 1962).

"Shipbuilding in Japan," Engineering Magazine, (Vol.36, (November, 1908), pp.267-270.

Smethurst, Richard A., A Social Basis for Prewar Japanese Militarism, (Berkeley: University of California Press, 1974).

Spector, Ronald, Eagle Against the Sun: The American War with Japan, (New York: Macmillan, Inc., 1985).

Sulzberger, C.L., World War II, (New York: American Heritage Press, 1970).

Thomas, David A., Japan's War at Sea: Pearl Harbor to the Coral Sea, (London: Andre Deutsch Limited, 1978).

Togo, M., "Japan and Ships," North American Review, Vol.207, (March, 1918), pp.370-377.

Togo, Shigenori, The Cause of Japan, (New York: Simon and Schuster, 1956).

"Tokyo's Shipping," Business Week, September 2, 1944, p.113.

United States Strategic Bombing Survey, The Campaigns of the Pacific War, (New York: Greenwood Press Publishers, 1969).

_____, The Electric Power Industry of Japan, (Washington: United States Government Printing Office, n.d.).

_____, Interrogations of Japanese Officials, (Washington: United States Government Printing Office, n.d.), Volumes I, II.

_____, The Japanese Aircraft Industry, (Washington: United States Government Printing Office, 1947).

_____, Japanese Merchant Shipbuilding, (Washington: United States Government Printing Office, 1947).

_____, Japanese Motor Vehicle Industry, (Washington: United States Government Printing Office, 1946).

_____, Japanese Naval Shipbuilding, (Washington: United States Government Printing Office, 1946).

_____, The Offensive Minelaying Campaign Against Japan, (Washington: Naval Analysis Division, 1946).

_____, The War Against Japanese Transportation, 1941-1945, (Washington: United States Government Printing Office, 1947)

War in Asia and the Pacific, 1937-1949, Edited by Donald S. Detwiler and Charles B. Burdick, (New York: Garland Publishing, Inc., 1980), Volumes I,II,III,IV,V,VI.

Willmott, H.P., Empires in the Balance: Japanese and Allied Pacific Strategies to April 1942, (Annapolis: United States Naval Institute Press, 1982).

"World Builds Ships," Business Week, January 30, 1937, p.40.

Yokoi, Rear Admiral Toshiyuki, "Thoughts on Japan's Naval Defeat," United States Naval Institute Proceedings, Vol.86, No.10, (October, 1960), pp.68-75.

Yomiosa, Yoshihiko, Nihon Koku Nenryo Shi, (Tokyo: Yoken-do Hakko, 1956).

Yoshikawa, Takeo, with Lieutenant-Colonel Norman Stanford, "Top Secret Assignment," United States Naval Institute Proceedings, Vol.86, No.12, (December, 1960), pp.26-39.

Archival Sources:

Boei Kenshusho Archives, Tokyo.

British Foreign Office, Japan Correspondence.

United States National Archives, Washington, D.C., and Suitland, Maryland.

United States Navy Operational Archives, Washington Navy Yard, Washington, D.C.