On the eleventh hour, of the eleventh day, in the eleventh month of the year 1918 a ceasefire brought to an end the “Great War” more commonly known as World War I. A majority of the American people believed to have been tricked into the European war. The end of World War I found the United States withdrawing into isolationism. The majority of Americans began following the advice George Washington gave in his farewell address in 1796, where he warned the United States that Europe frequently engages in controversy and it would be wise for the United States to avoid her politics and wars. This isolationism lasted from the Armistice in 1918 through 1939, when the American people became concerned about war with the early progress of Adolf Hitler. The country began to divide between the group that wanted to continue with the neutrality of isolationism, and those supporting “collective security”. The “collective security” group believed that the United States was too large and powerful to continue to stay neutral from any large war. They also believed the United States would be overwhelmed if war came about, and the only intelligent approach was to side with the non-aggressor countries. The “collective security” group got their most influential leader with the election of Franklin Delano Roosevelt in 1933. Roosevelt made it clear at the beginning of his presidency that he was a supporter of “collective security”.

World War II started for the United States in the form of an economic war in 1931. Japan had to import most of their raw materials including rubber and oil, and the majority of these raw materials came from the United States. Japan set their eyes on East Asian countries to invade and acquire their raw materials to be more self-sufficient. In 1931 Japan invaded Manchuria. This disturbed the United States, but the Americans did not pursue any direct actions against the Japanese. The first major war started by Japan was in July 1937 against the Republic of China. The Japanese enjoyed early success and began to broaden their ambitions across the Pacific Rim. Japan had a long interest in developing Chinese resources for Japanese benefit. Passed in 1932, the Stimson Doctrine showed United States’ frustration and opposition to the Japanese goals in China. The Stimson Doctrine puzzled the Japanese because the United States had no economic or strategic stake in China. The Stimson Doctrine did little material good for the Chinese or the United States,
but the Doctrine did succeed in frustrating the Japanese. After this conflict began Japan experienced great success early. The Japanese began to focus elsewhere around the Pacific rim of Asia. They focused mainly on the Dutch East Indies because of their rubber and oil. Meanwhile, the economic war between the United States and Japan continued to increase. In 1938 the United States ceased all sales of aircraft to Japan. In July 1939 the United States limited trade to Japan to a day-to-day basis. On July 31, 1940 Roosevelt prohibited shipments of aviation fuel to the Japanese, and a prohibition on shipments of iron and steel soon followed in September of 1940. The Japanese reacted to these embargos by joining the Tri-Partite Pact with Germany and Italy on September 27, 1940. This move intended to threaten the United States with a possible two ocean war. Just two years later in July 1941, Roosevelt froze all Japanese assets in the United States. The Executive Order freezing Japanese assets in the United States stated:

This measure, in effect, brings all financial and import and export trade transactions in which Japanese interests are involved under the control of the government, and imposes criminal penalties for violation of the order.

President Roosevelt began regulating the nation’s exports to Japan of machine tools, chemicals, and strategic war materials. In May of 1940 President Roosevelt decided that, in order to prevent further Japanese aggression, the United States Pacific Fleet needed to be moved off the West Coast. He concluded the fleet had to be moved closer to Japan. President Roosevelt ordered the U.S. Fleet to Pearl Harbor, in the Hawaiian Islands, where he appointed Admiral Husband E. Kimmel Commander in Chief, U.S. Pacific Fleet.

When Roosevelt moved the fleet to Pearl Harbor, Admiral Yamamoto, Japan’s main naval strategist, and his staff began to plan a deadly countermove: a surprise attack on United States forces based there. Yamamoto’s plan called for aircraft to be flown off of carriers to torpedo the Naval Station and Air bases on Pearl Harbor. Yamamoto knew the only chance Japan had for victory over the United States was to destroy the Pacific fleet at the beginning. This would allow Japan time to secure its flank and build a security area before the United States could repair or replace the damaged vessels in the Pacific Fleet.

On December 1, 1941 Japan decided to go to war against the United States, with the attack on Pearl Harbor occurring on December 7, 1941. This attack failed to achieve the results that Yamamoto desired. The Japanese did sink four of the eight battleships and damaged all the others, but of the eight damaged only two were beyond repair. Further, the Japanese failed to destroy the oil depots and the machine shops at the base. So the station remained equipped and functioning. The Japanese airmen also, barely touched the submarine base on Pearl Harbor. This failure to destroy the American
submarines was the biggest mistake the Japanese committed during the attack. With the attack on Pearl Harbor the only weapon available for the United States in the Pacific was the Submarine Force. Roosevelt decided before the start of the war that “unrestricted submarine warfare” would be used in the case of aggression with the Japanese. Roosevelt concluded that unrestricted submarine warfare had the potential to destroy the Japanese empire.

On December 8, 1941 President Roosevelt gave one of the most famous speeches in United States history. The attack by Japan put the United States in an actual state of war, but Roosevelt wanted an official declaration of hostilities from Congress. Saying in his petition:
Yesterday, December 7, 1941- a date which will live in infamy- the United States of America was suddenly and deliberately attacked by naval and air forces of the Empire of Japan… I ask that the Congress declare that since the unprovoked and dastardly attack by Japan on Sunday, December 7, a state of war has existed between the United States and the Japanese Empire.

The same month Congress passed an official declaration of war against the Japanese. Admiral R. Stark, Chief of Naval Operations in Washington, gave the order to execute unrestricted submarine warfare against all Japanese ships. This went against pre-war American submarine warfare doctrine, which stated that submarines are to be used against heavy naval vessels. American Naval strategists changed their response because the bulk of the Pacific fighting force had been destroyed at Pearl Harbor. While the Pacific fleet was being repaired, the submarine force was the strongest and most available component. The United States began committing itself to the systematic destruction of as much Japanese shipping capacity as possible.

The United States submarine force accomplished several major victories throughout the war that lead to the destruction of the Japanese Empire. The most significant of these was the annihilation of the Japanese Merchant Marine. The volume of United States submarine attacks on the merchant marine grew constantly throughout the war and seriously affected the entire Japanese war effort. For the most part, the success came because of the aggressiveness of young officers that replaced the old war skippers who lacked aggressiveness and failed to sink ships. The gradual attrition of the merchant marine limited Japan’s ability to project itself across the length and breadth of the empire. This allowed the United States Navy to bring the war into Japanese controlled waters.

The Japanese Merchant Marine began the war with 6,000,000 tons of shipping, that the Japanese Army and Navy considered vital to continue the war effort. The Japanese leadership knew it was necessary to have 3,000,000 tons of shipping to meet the industrial and civilian needs. Japanese Admiral
Nomura believed that another 3,000,000 tons were required to maintain the Japanese Army and Navy on the frontlines.

Graph #1 shows the figures of Japanese Merchant and Naval losses by the United Nations throughout the war. These numbers were collected by the Joint Army-Navy Assessment Committee (JANAC).

The graph shows that United States forces are credited with sinking 9.7 million tons of Japanese merchant and naval vessels.

United States submarines sank 1,113 Japanese merchant ships that weighed over 500 gross tons, carrying a cargo that totaled 4,779,902 tons. In addition, United States submarines also sank 65 additional vessels that weighed 225,872 tons, bringing the total to 1,178 ships and 5,053,491 tons sunk by United States submarines. Graph #2 shows the tonnage sunk by United States forces throughout the war.

This graph shows the staggering amount of tonnage sunk by the United States Submarine Force. Statistics do not tell the full story of the effect the submarines had on the merchant vessels. To understand the effect, one must picture the ships being sunk, the cargo being dumped, and the oil spills spreading across the ocean.

In addition to the direct loss of merchant ships, the Japanese also suffered by the loss of efficiency from the remaining merchant vessels. The merchant vessels lost the efficiency due to new convoying tactics. The Japanese used convoying tactics in order to protect the remaining vessels. Between January 1942 and January 1944 the Japanese Merchant Marine lost 8% of carrying efficiency. That number rose to 21% by 1945. The merchant marine efficiency broke down severely in the important shipping lane between Singapore and Japan. The shipping between Singapore and Japan declined by 45% between 1943 and 1944. The ships Japan still had available took longer and longer throughout the war to deliver badly needed cargo for the war effort. Japanese Admiral Nomura stated “Submarines initially did great damage to our shipping. And later the submarines, combined with air attack, made our shipping very scarce. Our supply lines were cut and we could not support these supply lines.”

The material shortages effectively showed the psychological outlook of the commanders in the Japanese military. Tactics, not logistics, was the Japanese strength. The Japanese admirals and generals believed themselves to be warriors. They did not see themselves as supply men, ordnance men, or communications men. The commanders focused mainly on battle not logistics. The Japanese officer believed himself to be a participant of the battle rather than a Western-style manager of troops. Feeding the men, guaranteeing equipment availability, and overseeing troop health were not seen as major
factors in the thoughts of the Japanese officers. Raising doubts about logistical problems could ruin a Japanese officer’s reputation.

The destroyed supply lines had an impact on more than the war effort. It also affected Japanese civilians. Everything declined in quantity and quality, including morale. The Japanese leadership continued feeding the people with nationalistic propaganda, but they could not make textiles and food out of words. Imports of 16 key materials fell from 20 million tons in 1941 to 2.7 million tons in 1945. Between 1944 and 1945 92% of fats and oil shipments had been lost, and not on ounce of sugar reached Japan. During 1944, average caloric intake fell 12% below the minimum daily requirement. By 1945 Japan’s total shipping import totaled less than 2 million tons. Japan failed to meet the proposed 3 million tons of supplies to support the home islands. Therefore the Japanese lacked the supplies needed to continue the war effort at full strength.

The Japanese increased construction of merchant vessels in an attempt to replace losses. Before the submarine campaign in 1941 Japan used 7% of their steel production on merchant vessels. By 1945 the usage of steel rose to 46%. The concentrated attacks on oil tankers resulted in Japan focusing construction on important oil carriers. The depletion of merchant marine vessels resulted in the Japanese to forego construction of battle ships. According to the Strategic Bombing Study “Shipping lost or damaged since the beginning of the war amounts to two and one half times newly constructed shipping and Japan didn’t have the production potential to surpass wartime shipping losses.”

The submarine campaign also had a major impact on the Imperial Japanese Navy. United States submarine sank 201 Japanese naval vessels totaling 540,192 tons, accounting for 30% of total Japanese Navy losses. The great damage done to surviving ships caused by submarines considerably increased ship repair time. This further reduced opportunities for newly constructed ships that the Japanese desperately needed. The Japanese Navy spent 12% of Japans construction budget on ship repairs in 1943-1944; this figure increased to 34% in 1945.

Not only did the direct attacks on naval vessels have an impact on the Japanese Navy, but so did attacks on merchant vessels. The necessity to rebuild the destroyed merchant marine resulted in a loss of material, time, and space to rebuild naval vessels. This had a huge effect because private shipyards had no room to build or repair naval vessels because all of the available dock space was occupied by merchant ships. Secondly, the need to build escort ships and naval transports to help protect the depleting merchant ships cut into the potential to build stronger combatant ships. The Japanese Navy used 14% of its construction budget for escorts and transports in 1941, this number rose to 54.3% in 1944. The need for escorts and transports was such a
large problem, that after 1943, the Japanese Navy did not start construction on a ship larger than a destroyer. Also the submarine stranglehold on the Japanese shipping lanes cut off iron ore from the mainland. Iron ore fell from 6.3 million tons in 1941 to 341,000 tons in 1945. This proved critical on long term capability to build sufficient numbers of warships to replace the losses.

The way the Japanese used their submarine force is another important indirect effect the United States submarine campaign had on the Japanese Navy. The Japanese began using a portion of their submarine force to supply bypassed units. The Japanese army and navy built significant numbers of submarines that had the main purpose of carrying cargo. This had two effects for the Japanese submarines. The biggest difficulty the Japanese faced with using their submarines in this way was the drain it had on already scarce resources. The resources used in equipping the submarine force to supply troops were needed for other locations in the war machine. Because of this new role, the submarine force could not be used to attack the American logistics line. The American logistics line stretched thousands of miles across the Pacific Ocean. The Japanese submarines could have been used to attack these vulnerable lines. If the Japanese merchant marine had not been completely depleted; allowing the Japanese submarines to play a more important strategic role.

Not only did the Japanese Navy receive damage due to the submarine campaign on the merchant marine, but also the Japanese Army experienced the effects. As stated earlier the depletion of the merchant marine placed serious logistical restrictions on Japan to supply her home islands. This depletion also placed huge logistical restrictions on Japan to supply the Japanese Army spread throughout the Pacific. The first time the logistical problem became apparent for the Japanese army occurred in 1942 during the Guadalcanal campaign, when an overstretched logistical system and ruthless United States air attacks exposed the problem. During the campaign frontline Japanese units received only 10% of the supplies compared to the American units. These problems resulted from United States submarine attacks directly affecting the ability of Japan to move troops and important supplies into vital combat zones. For example concentrated submarine attacks on ships bringing the experienced 32nd and 35th Japanese Infantry divisions to the New Guinea theater resulted in the Japanese convoy dropping the surviving troops over 500 miles from their drop zone. This resulted in the Japanese fighting McArthur’s forces in Biak and Hollandia with “penny packets” of troops. “Penny Packets” of troops refers to small units improperly divided into units. Another case, United States submarines destroyed 6 transports loaded with troops destined for the Marinas. These troops were intended to boost the defenses of the Marinas before the United States invasion of the islands. The submarines also sunk ships loaded with concrete and wire needed for the
fortifications on the islands.

The rate of successful delivery of military supplies to the front line troops averaged 96% in 1942. This number declined to 83% in 1943, 67% in 1944 and 51% in 1945. These figures fail to show the indirect effects the United States submarine attacks on merchant vessels had in carrying supplies. The Japanese resorted to carrying much of their military supplies into the combat zones with slow and inefficient means such as barges and fishing boats. This indirect effect of United States attacks seriously impacted Japanese army units across the theatre. Throughout the war, ammunition deliveries were 15% below front line needs and 50% of all food sent to the front lines was lost or spoiled due to attacks. Front line units showed significant efforts to provide food due to the lack of food deliveries by gardening, fishing, or bartering with natives. Some sporadic accounts showed cannibalism especially in the poorly supplied areas like New Guinea. Only 3% of deaths on New Guinea were due to combat. This had a major effect on the fighting abilities of the Japanese troops because they had concerns about being able to eat instead of fighting the American troops.

The final piece of the Japanese war machine that was affected was the Japanese airpower. The submarine campaign on the shipping lanes strongly affected the production of aircraft. By 1943 Japanese airpower had reached its peak and was on the decline. By April 1944 aircraft engine production had fallen to “critical” levels due to the lack of raw materials. Due to the lack of aviation fuel Japanese engine testing had to be seriously reduced. Engine testing went from 8 hours and 5 flights to test each engine in 1941 to 2 hours of testing on 10% of the engines built in 1945. Reduction of aluminum ore imports from Indonesia and Malaysia resulted in a 70% drop in aluminum production in 1944. By the end of 1944 80% of every plane was made from aluminum pilings. This significantly reduced aircraft quality at the war’s end. By the spring of 1945, major parts for the Japanese aircraft had been fabricated from wood. The Japanese aggressively considered constructing entire aircraft out of wood.

In fact, the reduction in Japanese air power was not simply due to the reduction of the quality of the aircraft or production numbers but also due to the reduction in pilot quality. Just like the engine tests, lack of fuel limited pilot training. In 1944, Japanese aviators complained about the “inadequate training” they had received prior to attachment to an operational unit. Once Japanese pilots reached operational units, their training often did not improve. For example, due to the effective submarine campaign against Japanese oil tankers, Japanese Admiral Toyoda stationed his carriers at Tawitawi near the Borneo oil supplies. United States commanders sent submarines into the area. Alerted to the danger, the Japanese commander refused to maneuver for training for the pilots. The resulting lack of Japanese aerial training played
a major factor in the defeat that became known as the Marinas Turkey Shoot.

In addition to Japanese ground troops, the Japanese ground aviation units were also severely undersupplied. Just like the ground troops, the aviation units suffered supply depletion because of the inadequate numbers of merchants and the fear of further losses. This resulted in the use of barges and small boats to ferry supplies into the combat zones which resulted in lack of supplies. An example of the loss of supplies affecting the air units, one air staff officer stated “a 75% drop in aircraft serviceability in New Guinea from such causes loss of shipping and blamed the loss of aerial supremacy over that strategic island on transport shortages.”

The United States submarine campaign showed outstanding monetary efficiency against the Japanese merchant marine. The cost of merchant and warships sunk by United States submarines were calculated after the war by the United States Strategic Bombing Survey. United States Navy Commander Michel Poirier calculated the cost of the entire fleet of United States submarines that served or were built during the war. Poirier’s numbers include the cost of submarines in the Pacific and Atlantic Ocean. He concluded that the Japanese spent 42 times more on anti-submarine warfare and losses due to submarine attacks than the United States spent on her entire submarine fleet. The size of the Japanese economy needs to be taken into account to clearly see the magnitude the United States submarine force had on Japan. The Japanese economy was only 8.9% the size of the United States economy in 1937. The submarine campaign clearly showed extraordinary cost efficiency and effectiveness against the Japanese. A year before the end of the war, the war against Japanese shipping lines resulted in an extreme impact on the Japanese war economy and military logistical strength.

Several important lessons can be drawn from the United States submarine campaign against the Japanese Merchant Marine. First, the Japanese required the use of the sea to import materials to Japan’s home islands and supply the military forces in the captured territories. Similarly, the United States depended equally on sea trade for resources and industrial products. With the destruction of Japan’s merchant marine Japan could not continue to supply the troops garrisoned on the captured islands. This allowed the United States amphibious forces to safely bypass the immobilized and isolated Japanese islands. Secondly, the cost efficiency of the submarine campaign compared to the total losses by the Japanese showed extraordinary efficiency for the United States. This difference in cost had a huge effect on the Japanese war machine. Third, the indirect effects were as important to the success of the campaign were just as important as the direct costs of the campaign. In the case of Japan, the submarine campaign destroyed the Japanese war production, and ultimately reduced the Japanese ability
to continue the war effort. As a result, the unrestricted submarine campaign proved an efficient way to wage war against an enemy that relies on imports to supply its forces and home islands. “The United States submarine campaign in World War II was the only campaign of its type in the history of naval warfare that can be rated a complete success.”

Bibliography

Reference

Primary

Secondary
Hoyt, Edwin P. Submarines at War: The History of the American Silent Service,

Journal

Electronic Sources