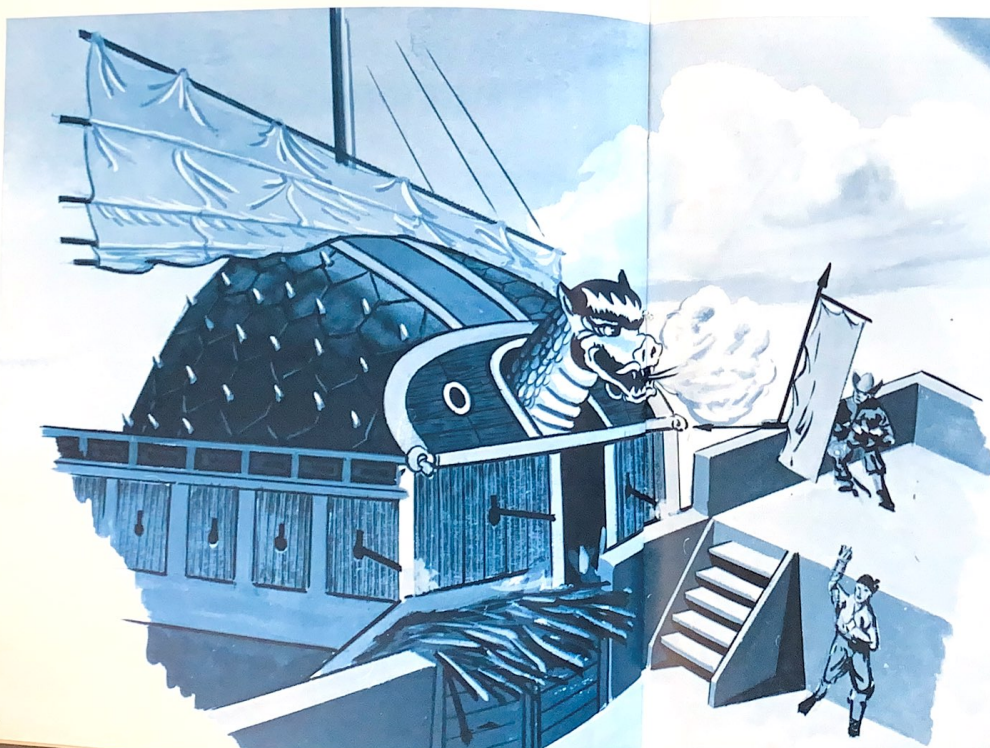


ADMIRAL YI AND HIS TURTLE BOATS

by Alvin Morland



The Japanese War Lord Toyotomi Hideyoshi must have smiled to himself as he stared at the odd-looking fleet of 80 Korean ships facing his mighty armada of 800 warships and three-decker troopships. In addition to his overwhelming superiority in numbers, Hideyoshi had other reasons to be confident. His men were armed with a new and deadly musket, purchased from Portuguese traders at Nagasaki, and the decks of his ships were crowded with fierce swordsmen ready to board the enemy fleet.

The year was 1592 and Hideyoshi, having already brought most of Japan under his control, was determined to extend his conquest into China. He had requested Korea's King Sonjo to permit his armies passage through Korea into China, as he considered this route far less hazardous than crossing 400 miles of the Yellow Sea and forcing a landing on the China coast.

Hideyoshi's request outraged King Sonjo and his scathing reply made his feelings quite clear. "We cannot even understand how you have dared to plan such an undertaking and to make such a request from us," Sonjo wrote to Hideyoshi, adding, "...to invade another nation is an act of which men of culture and intellectual attainments should feel ashamed."

But Hideyoshi was not the type to let such a stinging rebuff stand in his way. Immediately, he established a base on the island of Tsushima in the Korea Straits, only forty miles from Pusan, Korea's principal port. Here he assembled a formidable force and prepared a massive invasion by land and sea.

His army landed near Pusan in late April and easily routed the small, untrained force that opposed him. Pusan fell in ten hours and the Japanese armies thrust forward in a three-pronged maneuver. Brushing aside light opposition, they advanced 250 miles up the Korean peninsula and twenty days later entered the capital city of Hanyang (now Seoul). From there they advanced on Pyongyang (the present capital of North Korea) and King Sonjo fled with the royal family to Uiju on the Chinese border. Sonjo then requested aid from the Chinese, but the Ming emperor failed to see the threat to his country and declined to enter the conflict, leaving the Koreans to defend themselves.

Meanwhile, Hideyoshi had assembled his armada and sailed for Okpo in the Korean Straits with 50,000 reinforcements to join his victorious armies in North Korea. Now only a small fleet stood between him and the conquest of Korea. He had met little more than token resistance up to this time, and he had no reason to expect that this outnumbered fleet could do more than cause a slight delay.

Thus the stage was set for the opening battle in a series of naval engagements that, although virtually unheard of in the West, have been described by an article in the United States Naval Institute Proceedings as having as much influence on the course of history as did the victory of the Spanish over the Turks at Lepanto in 1571 and the defeat of the Spanish armada by the English in 1588.

The commander of the Korean Fleet was Yi Sun-Sin, the admiral of a provincial naval force based in Yosu, a port in southwestern Korea. Yi was born in Seoul in 1545, the same year as Sir Frances Drake. His parents wanted him to become a civil administrator and for several years Yi worked hard toward this goal. But when he was twenty-one years old, he changed his mind and began to prepare for a military career.

While taking one of the qualifying examinations for a junior officer commission, however, he met with an unfortunate accident that almost ended his military hopes. He was required to demonstrate his skills as a horseman and during one of the exercises, his steed fell. Yi was thrown, his leg was broken and he was disqualified.

Undaunted, Yi resumed his studies and perseverance paid off four years later when he was allowed to take the examinations again. This time he amazed his instructors with his knowledge of military science and tactics, and he was commissioned a junior officer at the age of thirty-two.

His military career, however, was severely hampered by political intrigue and corruption which was rampant throughout the nation. Four times he was nominated for higher rank, but each appointment was denied because unscrupulous politicians did not want a person of Yi's integrity in an influential position. In 1582 his political enemies forced him to resign his commission, but he managed to get reinstated the following year.

Yi continued to demonstrate his ability as a civil and military administrator and, in spite of opposition from corrupt politicians, he was given command of the naval station at Yosu in 1591. There he faced a number of problems that stood in his way of building an effective naval force. Taxes were inordinately high. Factional disputes disrupted law and order. Military discipline was lax and preparations for defense were totally inadequate.

Possibly even more serious than these problems, however, was the attitude of the Korean leaders regarding the will and ability of Japan to wage war. They regarded Japan as a backward country and failed to see how it could be a military threat to Korea. Consequently, they made no preparations against such an eventuality. In spite of these adverse conditions, Admiral Yi kept his fleet in a state of readiness, prepared to put to sea on short notice if the Japanese launched an invasion.

The mainstay ship of Yi's fleet evolved from a combination of ideas with which the Koreans had experimented as early as the eleventh century. But it remained for Yi Sun-Sin to combine their best features into the most effective fighting vessel in the Orient. (The opportunity to test it against contemporary warships of the Western world was lost when the Portuguese declined to sell Hideyoshi two of their well-armed vessels at the time the Japanese bought the muskets.) The name of Yi's Kohbukson or "turtle ship" was derived from the convex covering over its deck, which resembled a turtle shell. The deck—studded with spikes, spears and knives—both protected the ship's personnel and prevented boarding attacks. Each ship had about twenty loopholes spaced among its gun ports, through which marksmen fired.

Since the ships were built in several different locations, there was some variation in their design, but they averaged from 90 to 110 feet in length and 25 to 30 feet in the beam, giving them a favorable ratio of about four to one. Like other Korean boats, they had a flat bottom of ten heavy boards and no keel. The rudder was heavy and required eight men on the tiller. There were at least 100 officers and men in each ship's crew. Turtle ships were faster than any Japanese ship of that time and did not have to rely on the wind since sails were used only when cruising, with oars coming into play when engaged in combat.

Title page: Smoke pouring out of the mouth of the Dragon's head on the bow of the Turtle ships frightened the superstitious Japanese sailors. This page: Admiral Yi Sun-Sin in combat armor



The turtle ships are credited with being ironclad some 270 years prior to the *Merrimac* and the *Monitor*. Although historians do not unanimously agree that this is true, Dr. Horace Underwood pointed out in his book, *Korean Boats and Ships*, that, "...evidence in favor of the tradition is the fact that fire arrows failed to set it on fire and Japanese bullets failed to penetrate the Turtle's shell."

For offensive armament the turtle ships carried up to twenty-six cannon, including two on the bow. The guns ranged in weight from 170 to 660 pounds, in overall length from 3.5 to 6.5 feet and in caliber from 2.2 to 5.5 inches. Their maximum range was about 200 yards.

Another potent offensive weapon was the replica of a dragon's head on the bow, which emitted clouds of smoke—the first recorded use of a smoke screen in a sea battle. The smoke was a burning mixture of sulphur and saltpeter propelled through the dragon's mouth by a crude generator.

The ships in Hideyoshi's fleet were not as fast, large or as well armed as the turtle boats, nor did they provide protective covering for their crews and soldiers. The three-decked troopships averaged about fifty feet in length and had a beam of about twenty feet for a length-width ratio of approximately 2.5 to 1. A decided disadvantage in comparison with the turtle ship.

Armaments on the Japanese fleet consisted of one or two cannon and a catapult. Since these weapons were not capable of sinking ships, the Japanese relied on boarding enemy vessels and settling the issue in hand-to-hand combat. Their soldiers were armed with muskets, which had already proven effective in land battles. With a range of about eighty yards, Hideyoshi was counting on them to help as he closed to grapple and board the Korean vessels.

When word reached Admiral Yi that the Japanese had landed an army near Pusan, he immediately sailed from his base to Yosu to intercept any ships bringing supplies and reinforcements. His 80 ships encountered the tenfold-larger Japanese armada when it was off the coast of Koje Do near Okpo, only thirty miles from Pusan.

As soon as Hideyoshi sighted the Koreans, he pushed forward to destroy the fleet. Yi backed off, carefully biding his time until the water was too shallow to permit the Japanese full maneuverability. Then the Korean ships suddenly turned and with the wind at their backs, headed straight toward the enemy. As the distance between the foes narrowed, the turtle ships lowered their sails and, propelled by oars, pressed for the Japanese.

At about 200 yards from their foes, the turtle ships turned to present their starboard sides and opened fire with a thunderous cannonade that staggered the front line of the enemy ships. They then wheeled and fired their port guns.

Hideyoshi saw the rigging on one of his lead ships come down on its crew as the cannon fire made a shambles of its deck. The return fire was feeble by comparison. Too late Hideyoshi realized that his ships' armaments were no match for that of the turtle ships.

But the Japanese war lord knew that, although Yi's guns were taking a deadly toll on sailors and soldiers, they could not sink his ships. As soon as they were within range, he ordered his soldiers to open fire. To his dismay, he saw that the muskets that had proven so deadly in land battles were of little use against their ironclad targets.

Meanwhile, the Koreans were peppering Hideyoshi's ships with fire arrows shot through portholes in the high bulwarks. The failure of the fire arrows, shot by Hideyoshi's men, to set fire to the enemy ships added to his consternation. Hideyoshi was left with a final tactic: that he could win the battle by boarding

the enemy vessels and fighting it out with swords. He gave the signal to close with the enemy and board their ships.

But as the Japanese luffed up with grappling hooks ready, they were met with another surprise. Smoke began pouring from the dragon's head replicas, obscuring the turtle ships' movements and unnerving the superstitious Japanese. Then the turtle ships loomed out of the smoky haze, unleashed a volley of fire arrows and with the maneuverability of oar-propelled ships, were soon beyond reach of the grappling hooks.

Only one of the Japanese ships succeeded in attaching grappling hooks, but the wave of swordsmen who leaped on board were impaled on weapons studded in its deck, while the others were easy targets for the Korean soldiers.

Hideyoshi now realized his plight, and desperately sought a new strategy to turn the tide in his favor. But he did not have long to deliberate. The faster, larger and heavier turtle ships smashed their way through his fleet, ramming his ships right and left, while their archers poured fire arrows into the confused mass. The acrid smoke streaming from the figureheads mingled with the odor of burning timbers and the screams of wounded men were heard above the roar of the battle.

Many of the Japanese ships were now on fire and drifting helplessly. Others were out of the fight with damaged masts and torn rigging dangling around the dead and wounded on their decks. The usually well-disciplined fleet milled about. Some ships colliding with others in an effort to avoid the aggressive turtle ships and the burning vessels of their own fleet.

With fifty-eight of his ships sinking or on fire, Hideyoshi realized the fight was hopeless and signaled his convoy to withdraw to avoid further carnage. The ships that had escaped damage shook out their sails and ran before the wind. Admiral Yi took after them, overtaking eleven at Jakinpo and sending them to the bottom of the sea.

As night fell, remnants of the damaged fleet drifted along the coast, their crews putting the dead overboard, treating the wounded, washing blood from the decks, patching and replacing sails and hoping the Koreans would not find them at dawn.

But after the fight at Jakinpo, Admiral Yi was forced to return to his base at Yosu for more supplies and it was late May before he could put to sea again. Then he sailed to the Sea of Sachon where he found more of the enemy fleet. When the Japanese saw the now dreaded foe, they did not even wait to slip anchor, but cut their lines and fled. Yi overtook twelve, and promptly sank them. Although slightly wounded in this engagement, he continued eastward and sank twenty-one more at Tang Po without losing a single man.

From Tang Po, Yi sailed to Tanghang Po where he sighted the third Japanese fleet. Skillfully, he maneuvered close to the enemy's three-decked flagship and one of his archers killed the Japanese admiral. The leaderless fleet became disorganized and was an easy prey for the Koreans, who sank thirty of their ships.

Admiral Yi continued to search for the enemy, engaging them wherever he could find them. In early June, he returned to his base after having destroyed 70 vessels on his second cruise, making a total of 139 since Hideyoshi launched his invasion in May.

Yi did not remain in port very long, putting to sea again in early June. A tactician many years ahead of his time, he put his fleet through combat exercises as soon as it was under sail. Near Hansan Island, he encountered enemy ships convoying 100,000 troops to reinforce their army in northern Korea.

This time Yi approached with his smaller craft in the open of a V-shaped formation and deployed his larger ships at the wedge's vortex. His lead ships forced the enemy inside the V, where

their limited maneuverability made them an easy mark for the Korean guns, which pounded them from all sides. Archers administered the *coup de grâce* with fire arrows, destroying seventy-one ships. The V formation, which naval historians have credited Yi with developing and using for the first time, came to be known as the "crane formation."

Yi continued eastward and met more Japanese ships at Ahnkalpo. Here again he used a different tactic, pretending to flee. Sensing victory, the Japanese pursued him. When they were strung out too far apart to provide mutual support, Yi turned and picked them off one by one, destroying forty-eight ships.

By this time their fleet was decimated so that the Japanese were forced to abandon the reinforcement of their armies in Korea. They still maintained a large base at Pusan, however, and Yi was determined to eliminate it.

In August he sailed from Yösu with 166 ships and entered Pusan Harbor in column formation. The 500 Japanese ships in the harbor tried to evade him by sailing into shallow water, but Yi sent divisions of his smaller ships to attack them. As each of the divisions came within range it fired, withdrew and another division took its place—an example of salvo firing long before it came into general use by other navies. In this manner they sank more than half of the enemy ships, but unfortunately the Korean army's land assault failed to materialize and Yi had to withdraw his victorious fleet to his base at Yösu.

Following his brilliant victories, Yi was made Admiral of the Korean Fleet and was honored by King Sonjo and his people as a deliverer. Yi was far better suited to cope with the enemy in deadly combat, however, than with political intrigue. Hideyoshi realized that Yi must be removed from command of the Korean navy if his plans to invade China through that country were to have a chance of success. Having failed to defeat Admiral Yi at sea, he decided to do so by taking advantage of the factionalism and enviousness that prevailed King Sonjo's court.

In 1596, he sent a Korean traitor to King Sonjo with the information that a Japanese fleet was approaching and that it should be intercepted when it reached a certain group of islands. The king accepted the message as factual and ordered Yi to attack at the place designated by the traitor. Yi told the king that this area was too dangerous for safe navigation and that it would be better to fight the enemy when they were nearer the Korean Coast. At the urging of his advisors, King Sonjo again ordered Yi to attack as commanded, but Yi replied that he could not jeopardize his fleet by doing this and repeated his request to make the attack in a more favorable location.

Yi's enemies at the king's court then had him arrested and charged with treason. He was brought to Seoul in chains, thrown into prison and tortured. Twenty-eight days later he was tried for "failing to carry out the King's orders, stealing the hearts of the people, attempting to usurp the throne and crediting to himself the glorious achievements of others." Although Yi maintained he was innocent of any wrongdoing, he was found guilty and sentenced to death.

Fortunately for Korea, King Sonjo commuted the death sentence and allowed Yi to continue his military service as a common soldier. He was stripped of all rank and "ordered to go to the front and serve his country with distinction."

In sixteenth century Korea, it was customary for such a loss of face to inspire suicide, but Yi accepted the degradation without complaint and humbly went about his duties as a soldier in the army of General Kwon Yul. The politicians erased his name and his achievements from the records and his career appeared to have come to an ignominious close.

Yi was destined to remain a common soldier only a few



This page: With its sails lowered for combat, the Turtle ship relied on oars to maneuver. Drawings by Laberteaux. Opposite page: Cross section of Turtle ship showing fighting men on the main deck and oarsmen on the lower deck. Illustration courtesy U.S. Naval Institute

months. As he was apparently out of the way, Hideyoshi began a new invasion in January 1597. To punish the Koreans for having blocked his earlier attempts, he landed an army of about 100,000 men at Pusan and marched up the peninsula to attack Seoul. The Koreans ambushed the Japanese at Chiksan, decisively defeating them and the remnants retreated to the southern provinces. The situation was not going so well for the Koreans at sea, however. Admiral Won Kyun, one of the conspirators against Yi, had been given command of the Korean navy and in the late spring of 1597, he was ordered to sea to intercept ships carrying supplies and reinforcements to the Japanese army. The Japanese attacked, and easily defeated, the Korean fleet at Kadok Island. Admiral Won Kyun attempted to escape by beaching his ship and fleeing ashore, but he was captured by the Japanese and executed.

A loud cry was then raised for the reinstatement of Yi and, in desperation, King Sonjo restored him to the rank of Admiral and placed him in charge of the depleted fleet.

With the enemy armies still on Korean soil, Yi realized that his only hope was to cut its ties with the Japanese mainland. As there was no time to rebuild the fleet, he refitted the twelve ships that had escaped from the disastrous defeat and put to sea.

Admiral Yi anticipated that the Japanese fleet would pass the island of Chin Do, off southwest Korea, so he put his tiny fleet in a secluded position on the opposite side of the island. When the Japanese appeared as expected, he sailed forth in column formation, cutting the enemy fleet in two. The Japanese were deluded into thinking they were being attacked by a much superior force and fled in all directions.

A week later Yi encountered 133 enemy ships and retreated with the Japanese in full pursuit. When the adversaries entered the Myongyang Strait, a narrow seaway where at flood tide the current reached 11.5 knots, Yi turned and attacked. The Japanese found themselves fighting the current as well as the Koreans and in less than an hour 33 of their ships were on fire or sinking. The surviving vessels fled.

Following these victories, Yi went to work to rebuild the navy. By this time the Chinese had become aware of the danger to their country and sent an army across the Yalu River into Korea. They also sent a fleet led by Admiral Chin Lin to head the combined naval operations of the Chinese and Koreans. There was some friction between the two naval forces, but Admiral Yi diplomatically brought the vain Chin Lin under his direction by giving him credit for the victories.

The final sea battle of the war took place in November 1598. Both fleets numbered about 500 ships, but the Japanese did not want to fight Admiral Yi and tried to slip past him just before dawn. Yi was ready for them and in the early morning battle sank 50 of their ships. While he was running down the survivors, word reached him that a fresh Japanese fleet was attacking the Chinese near Noryang, a short distance to the east. He immediately broke off the chase and went to aid his ally.

When Yi reached the battle, he again used different tactics; circling the Japanese ships and driving them closer and closer together. He then employed a new weapon, which has been described as a flamethrower and also as a small cannon that fired an incendiary shell. Making skillful use of this weapon, he set fire to the enemy ships and hundreds of them burned to the water's edge.

During this battle Yi took an exposed position in the bow of his command ship and was struck by a musket bullet. Like Lord Nelson at Trafalgar, he died on the deck of his ship at the scene of the victory that destroyed the enemy's naval power.

Yi's victory at Noryang cost him his life, but it ended the threat to Korea and set back the Japanese conquest of the Far East by

300 years. Unlike the defeat of the Spanish armadas by the English, the war did not establish Korea as a major power, but there are similarities in the two conflicts.

In neither case was victory won by a single engagement. The Korean-Japanese battles lasted from 1592 until 1598 and contrary to popular belief, the Spanish were not totally defeated when their fleets met the British in 1588. In fact, they launched three more armadas against England and were not finally defeated until 1599.

Perhaps the most remarkable parallel between the two battles is that both Admiral Yi and Sir Francis Drake discarded customary tactics and put into effect new methods of naval warfare that were amazingly similar, even though neither man knew of the other's existence. The technological innovations and superior leadership of Yi and Drake ended the time-honored method of winning naval battles by grappling and boarding enemy ships. Their innovations and leadership also enabled both commanders to overcome great numerical superiority.

Honors denied Admiral Yi during his life were conferred upon him posthumously by a grateful government. In 1606 the shrine of Ch'ungnyolso ("Faithful to King and Country") was dedicated to Yi for his innovations in naval warfare and for being a master tactician whose deeds preserved the integrity of his nation. Other shrines and monuments inspire Koreans to follow his examples of loyalty, patriotism and personal bravery. His diaries, letters and reports were preserved in a shrine built near Asan.

Although he is not as widely lionized as his English contemporary, Drake, Yi Sun-Sin has received belated tributes over the past 400 years. Perhaps the finest was given him by the Japanese Admiral Togo, whose fleet defeated the Russian navy in 1905. "You may wish to compare me with Lord Nelson," Togo said, "but do not compare me with Korea's Admiral Yi Sun-Sin...he is too remarkable for anyone."

