

## HISTORICAL BACKGROUND

According to the Peace Treaty of Versailles 1919 Germany was prohibited to have submarines. While waiting for the prohibit to be canceled, the Germans were however working in secret to build a fleet of submarines. For this purpose the three shipyards Krupp-Germania, Weser and Vulkan formed the shipbuilding bureau Ingenieurskantoor voor Scheepsbouw (IvS) in July 1922 in Haag, Holland. The company was financed by Krupp-Germania and a secret marine foundation through various German fictitious firms. The bureau offered its services abroad, which had the consequence that six countries, e.g. Finland and the Soviet Union, built submarines by German design.

In December 1925 the Finnish naval bureau contacted a number of shipyards and requested tenders for the construction of three 400 ton submarines and one submarine at 99 tons. The shipyard Crichton-Vulcan (CV), located in Turku, backed by IvS, and later became Wärtsilä Oy, was in September 1926 given the order to build a 465 ton submarine. In the contract the displacement was stated as 600 ton while in submerged position, the overall length as 63,5 meters and width as 6,1 meters. The hull should withstand 75 meters depth and the ballast tanks should be able to be filled within 30 seconds. The submarine would reach 13.5 knots while surfaced and 8.0 knots while submerged. The armament would consist of one 75 mm cannon, one 12.5 mm anti-aircraft machine gun, two fore and two aft 533 mm torpedo tubes and mine deposit chambers for a total of 20 mines. The main engines would consist of two diesels of 530 hp each. The electric engines would give 360 hp. The operation range when surfaced at 10 knots would be 1 500 nautical miles and while submerged at 4 knots 75 nautical miles. In April 1927 another two identical submarines were ordered by CV. SV1, SV2 and SV3 (sukellusvene) were used as working titles, but when the first submarine, named Vetehinen, was launched in June 1930 they were increasingly referred to as the Vetehinen class. Some minor deviations were then made compared to the building contract, e.g. the displacement was increased to 493 tons in surface position and 716 tons while submerged and the diesels to 580 hp. Further the cannon armament was changed to one 76 mm cannon and one 20 mm cannon. The subsequent two submarines Vesihisi and Iku-Turso were launched in August the same year.

The Russian S class submarine was the result of a confidential naval cooperation between Russia and Germany. In 1926 a Russian delegation visited the German navy and the shipbuilding bureau IvS. The Russians requested submarine design blueprints, which also were promised by the Germans. The outcome was that in spring 1931 the IvS offered a submarine similar to the German IA class submarine. After some adjustments the construction of the first S class submarines was begun in Leningrad and in December 1934 the first submarine was put in the slipway at the Ordzjonikidze shipyard. The three first submarines were at first numbered N1-N3 (nemetskaja = German). After the first test runs 1936 the names were changed to S1-S3 (srednjaja = middle size). In the West the secret cooperation between the Soviet Union and Germany was unknown, and therefore it was for long believed that "S" meant Stalinetz. The S class submarine had a displacement at 856 tons in surface position and 1090 tons in submerged position. The length, width,

and height were 77.98 m, 6.4 m, and 4.44 m. Its operational range was 9,800 nautical miles at 10 knots in surface position and 148 nautical miles at 3 knots submerged. Surfaced it could reach 19 knots and 9 knots when submerged. The maximum operational depth was 80 meters. The armament consisted of six 533 mm torpedo tubes (four fore and two aft), one 100 mm bow cannon and one 45 mm stern cannon. In all, the Soviet Union came to build 48 S class submarines during 1934-1947. The S1-S3 (the IX series) and the S4-S6 (the IXb series) were built at the Ordjonikidze shipyard in Leningrad, the S7-S20 (the IXb series) and S46-S48 (the XVI series) were built at the Krasnoje Sormovo shipyard in Gorkij, the S21-S24 and S101-S104 (the IXb series) were built at the Sudomech shipyards, S25, S52, and S27 (the XVI series) in Molotovsk, S31-S37 (the IXb-series) at the Marti shipyard in Nikolajev, and the S51-S57 (the IXb series) were built at the Dalzavod shipyard in Vladivostok.

The Soviet SC class submarine was middle size by the standards of that time (displacement in submerged position 704 tons, overall length 57 meters, armament four bow and two stern 533 mm torpedo tubes and two 45 mm cannons, crew 38 men). The first submarine was built 1930 and was called Scuka (the Pike) – which resulted in that the class were to be called the Shch class or SC class. The first series (III) consisted of four submarines; SC301 Scuka, SC302 Okun, SC303 Jorsj, and SC304 Makrel, all dedicated for the Baltic Fleet of the Soviet Navy. The next series (V) was built 1932-1935 and consisted of SC305 Lin, SC306 Piksja, SC307 Treska, SC308 Sjomga, SC309 Delfin, SC310 Bjelucha, SC311 Kumzja and SC312-316. At first the submarines were named after fishes and other marine animals, but since SC312 they only had class designation and number. However, the already given names were kept. Thus, the eleven first had their names written in brass at the bow. Thereafter, the captains had to be satisfied with class designation and number painted on both sides of the submarines' towers. In some cases those were also in brass. The construction of the third series (X) was begun 1936. Each series meant improvements to speed, range, and armament compared to prior series. The Soviet Union built 86 SC class submarines before and during the World War II, and they made service in the Pacific Ocean Fleet, Black Sea Fleet, Baltic Fleet, and the Northern Fleet.

## **1939-1940**

The World War II broke out 1 September 1939 when superior German forces marched over the borders of Poland. One week earlier, the Soviet Union and Germany had signed a Treaty of Non-aggression. This surprised the world around since Germany was generally regarded as an antagonist to the Soviet Union. Meanwhile Hitler and Stalin had secretly agreed to divide Eastern Europe. The Soviet Union was given e.g. Finland and the Baltic States, while Germany was given the western half of Poland.

In Finland the news of Hitler's and Stalin's handshake was met with astonishment and dismay. Both Finland and Germany regarded the westward Bolshevik expansion as a threat and in Finland people were sympathetic with Germany. The Finns feared that the Hitler's and Stalin's Non-aggression Treaty would give their country consequences.

In October 1939 the government of Finland was requested to send a delegation to Moscow to “discuss concrete political questions”. At the following negotiations the Soviet Union demanded, while referring to the safety of Leningrad, that they should be given some particular pieces of land from Finland. The demands were only partially accepted and this ended with the leaving of the Finnish delegation without reaching a deal. The great power Soviet Union could of course not accept Finland’s refusal to comply with the demands.

30 November 1939 at dawn, the Soviet forces attacked Finland and the so called Winter War was a fact. Simultaneously Finnish cities were bombed by the Russian Air Force. The Red Army was superior to the Finnish Army in every numerical aspect. By land the Soviet Union entered with 460,000 men, 2,100 cannons, 2,100 tanks, and 550 aircraft. The Finnish army had 185,000 men, over 330 cannons, and 116 aircraft at disposal. Despite the numerical superiority the Soviet Union suffered several great losses and in December 1939 the Russian offensive came to halt. New Russian units were added to the battle. In March 1930 the Soviet Union had no fewer than 600,000 men – against Finland’s 150,000 men – in the Karelian Isthmus. Finally Finland had to conform. The war continued until 12 March 1940 when peace was made in Moscow at the Soviet Union’s terms. However Finland kept its independence. Official losses for the Soviet Union were 217,000 men and for Finland the losses were 23,157 men. The Russian figure could however be questioned strongly since they had hardly taken into account the thousands of Russian soldiers which froze to death during the harsh winter in the wilds.

Finland’s choice to go to war instead of submitting to the Soviet demands in the way the Baltic States did and the stubborn resistance they offered the Russians gave the country great respect in the world around. Thus during the autumn 1939 Estonia, Latvia, and Lithuania had to accept Soviet naval and air bases within their territories. Stalin wasn’t satisfied with that. The Red Army marched across the borders in the summer 1940 and the Baltic States were incorporated as socialistic councilors with the Soviet Union.

## **1941**

Hitler watched the Soviet expansion with increasing discontent. Germany must be secured in the east to win the war against Britain. Hitler’s discontent of the Soviet Unions actions resulted in that 18 December 1940 he signed his secret Directive No 21 regarding war of aggression against the Soviet Union. The operation went under the codename Barbarossa and was commenced 22 June 1941 when German troops stormed over Soviet Union borders. The neutral Finland was Germany’s brother in arms without being allied with Germany. The same day as Germany commenced the attack on the Soviet Union Finland was attacked by Soviet forces and the country was once again at war with the Soviet Union (the so called Continuation War).

In the Baltic Sea the Red Fleet was superior to the German and Finnish fleets. Kriegsmarine was tied to the western front in the war against the British naval power and its mission in the Baltic Sea was, in addition to protecting the home coast and sea routes, to minimize the mobility of the Red Fleet through laying mines. The Red Fleet had in the

Baltic Sea over 68 submarines at their disposal, whereof 13 were S class and 18 were SC class. Before the war against Germany only one submarine had been lost, the S2 which went down 3 January 1940 by a Finnish mine nearby the Märket lighthouse in the Åland Sea. The Finnish submarine force consisted of the three above mentioned submarines Vetehinen, Vesihisi, and Iku-Turso as well as the smaller Saukko and Vesikko.

As the Operation Barbarossa was staged German and Finnish minelayers laid thousands of mines in the Gulf of Finland. The purpose of the minings were to inflict the Red Fleet losses as it retreated from the Baltic States to Leningrad and thereafter stop it from returning to the Baltic Sea. Also the Soviet Union placed mine barrages as they suspected a German attack. Thus only a few days after the German attack was commenced the Gulf of Finland came to be closed from the Baltic Sea. Germany, Finland and the Soviet Union laid in total over 5,200 mines and 2,000 anti-demining obstacles in the Gulf of Finland.

In the summer 1941 German forces advanced into the Baltic States and towards Leningrad meanwhile the Soviet Union army and fleet retreated with severe losses to Leningrad. Already in September 1941 the German forces had reached Leningrad. The Germans didn't however manage to seize control of the city despite besieging it from September 1941 to January 1944.

1941 was a dismal year for the Russian Baltic Sea submarines. Especially during the retreat from the Baltic States to Leningrad they lost a number of submarines in the Finnish and German mined areas. SC305 serviced in the school division in Kronstadt and thus never needed to pass through the mined areas, although S7 managed to stay intact through the dangerous waters. During the time June – November 1941 the Russian Baltic Sea Fleet lost 29 submarines in total, thereof seven S class and four SC class, as the successes were very limited. According to western sources only one merchant vessel at 3,724 gross register tonnage (grt) was sunk through interference by Russian submarines.

## **1942**

During the spring 1942 the Finnish and German fleets added more mines to the mined areas in the Gulf of Finland. Also submarines nets were laid out, which were guarded by submarines hunters armed with sink depth charges. Meanwhile 30 hibernating submarines were equipped in Leningrad for a submarine war in the Baltic Sea. A large share of the submarines faced their destiny as they hit mines and went to the ocean floor. During 1942 the Red Fleet lost twelve submarines in total in the Baltic Sea, whereof one S class and nine SC class. The Russian submarines successes have on the contrary been a subject of divided opinions. According to western researchers the Russian Baltic Sea submarines shall during 1942 have through direct interference been able to sink 18 merchant vessels of a total of 37,789 grt, while Russian marine historians have claim that the submarines managed to sink 39 merchant vessels of a total of 109,093 brt.

The target of the Soviet submarines was primarily the so called ore trade, i.e. the merchant vessels that shipped iron ore from Luleå and Oxelösund to the German war

industry. Further the German Lapland army was partly supplied by sea and practically all of Finland's trade routes with other countries went across the Baltic Sea. Therefore it was of great importance for the Soviet Union that the transport routes over the Baltic Sea were interrupted.

The S7 and the SC305 were two of the submarines that during the spring 1942 were equipped in Leningrad for a marine war. The S7 belonged to the first group of ten submarines that went to sea in May-July. The second group, also consisting of ten submarines, went to sea in August-September. The SC305 had to wait for its acid test until October as it as one of the members of the third group of 16 submarines went to sea. Of those only seven, e.g. the S7, had taken part in the earlier tours.

At first the Soviet submarines patrolled the Baltic Sea, but in the end of August they unexpectedly began to appear in the Åland Sea where extensive sea shipping was at hand. Because of the increasing presence of enemy submarines in the Åland Sea the Finnish submarine flotilla was ordered to Mariehamn in order to perform escort services and at night be dedicated to submarine hunting. It was assumed that the Soviet submarines surfaced at night to charge their batteries in the protection of the dark. The Finnish submarines were thus equipped with extra armament consisting of depth charges in containers at the afterdeck. Each submarine's patrol area was delimited by a "no man's area" because if a submarine was spotted in the dark it could be attacked without prior identification. The combination of good hydrophones and silent run in surface position by electrical engines would hopefully yield results.

### **The sinking of S7 by Vesihisi**

In the morning of 2 July 1942 the S7 was heading towards the mined areas of the Gulf of Finland in order to reach the Baltic Sea. After a fearsome journey lasting 68 hours they managed to pass through the mined areas and out to clear waters. The nerve tension must have been unbearable as Sergej Prokofjevitiĵ Lisin, the captain by third rank in command of the S7, maneuvered his submarine through the massive mined areas, sometimes with the mines' mooring cables scraping along the side of the hull.

The S7 steered towards the Swedish coast and as they reached Landsort they followed the coast southwards. 9 July outside Kråkelund Lisin discovered the northbound Swedish steamer Margareta of 1,272 grt. S7 approached Margareta surfaced. Aboard Margareta the submarine was discovered, but they thought it was a Swedish submarine as it was nothing unusual that Swedish submarines patrolled the area. When S7 was only 400 meters away from Margareta it sheered towards her and launched a torpedo which rushed through the water and hit its target midships. Margareta was breached in half and within a minute she sank to the bottom and took 14 of the 18 crew with her.

11 July Lisin discovered a southbound convoy consisting of 28 ships escorted by the Swedish picket boats Snapphanen and Jägaren outside Västervik. S7 was in submerged position. Lisin observed the convoy through the periscope and chose one of the larger vessels. Two torpedoes were launched at the Swedish ship Luleå, a motor vessel at 5,611

grt fully loaded with iron ore, and S7 then quickly submerged into the depth. However, Snapphanen had observed the torpedo launch and quickly went to the site and dropped four depth charges before one of S7's torpedoes hit Luleå in the port forebody with a violent explosion. The volume of water rushed through the hole torn open by the torpedo and Luleå went down within two minutes. Of Luleå's crew, eight men drowned. After dropping six depth charges Jägaren went to the site where Luleå went down and managed to salvage 27 men from the water. Meanwhile Snapphanen continued to drop depth charges at the supposed location of the submarine. However S7 managed to escape the depth charges and was at a safe distance from the submarine hunters.

Thereafter the S7 managed to sink the German merchant vessel Käthe at 1,599 grt at 30 July and 5 August the Finnish merchant vessel Pohjanlahti at 683 grt before she returned to Leningrad in the end of August.

In October 1942 S7 went to another mission in the Baltic Sea. The mined areas in the Gulf of Finland were passed and in the afternoon 21 October they approached Söderarm submerged. When it became dark Lisin ordered surface position in order to charge the batteries. The hydrophone operator monitored the surroundings and reported no foreign sounds. The submarine crossed the water surface and entered surface position. The diesels were started and S7 went northwards. Lisin and four from the crew went up to the bridge in the tower. There was moonlight and after a while they could see the blinking light from the lighthouse of Söderarm at portside. The five Russian crewmen gazed over the sea without seeing any hostile vessels.

The Finnish submarine Vesihisi was simultaneously surfaced in the Åland Sea northeast from Långskär. The moon was seen from time to time in the partly cloudy weather which made it dark even though visibility was good. Suddenly the outlook spotted a foreign submarine in surface position in southward bearing four nautical miles from the Finnish submarine. The officer in command at Vesihisi Olavi Aittola maneuvered his submarine towards the foreign submarine and approached it in a beneficial T position without being spotted by its crew. The submarine was identified as a Soviet submarine of S class. When Aittola estimated that the Soviet submarine was within fire range he launched a bow torpedo from about one and a half nautical mile distance. Aboard Vesihisi they counted the time for the torpedo to reach its target. The estimated two minute time passed without any explosion. Aittola then thought that the torpedo missed its target, and he opened fire with the 76 mm cannon. However, he only managed to fire two shots before a muffled bang was heard and the ocean was lit with a high column of fire.

The torpedo hit the S7 astern. S7 was shaken by a violent explosion and the five crewmen in the tower were thrown to the water as the submarine quickly went down and only left a spot of oil at the surface. After only a few minutes Vesihisi was at the site and picked up Lisin and three other crewmen who survived the sinking. Before Vesihisi left the site they dropped a depth charge at the location where oil went to the surface.

The four Russian crewmen were brought to land to be interrogated by the intelligence service. A captain by third rank was a valuable source of information and Lisin came to

constitute one of the most valuable captives that the Finnish navy took during the war. After the Finns had interrogated Lisin he was “lent” to Germany for further interrogations.

The achievement of Lisin to sink four vessels in one and the same mission was noticed in the Soviet Union. Only two days after S7 was sunk Lisin was awarded the “Golden Star order” and the title of honor “Hero of the Soviet Union”, an award only six submarine captains were rewarded during the World War II. His portrait was mounted on the wall at the naval officer club in Kronstadt and he was honored as a hero. When they subsequently found out that Lisin was captured and furthermore maybe revealed too much about the Soviet fleet he fell into disgrace and his portrait discretely disappeared from the wall of the naval officer club.

The torpedo shot of Vesihisi, launched at great distance against a moving target in the dark, must be seen as an accomplishment beyond the ordinary. The supreme commander and the marshal of Finland Gustaf Mannerheim paid attention to the accomplishment by sending a telegram the following day with the following content:

*By the reason of the masterly shot which in the dark at a distance of 3,000 meter sank an enemy submarine I give to the general of the naval forces and especially to those who performed the sinking my best wishes and my recognition.*

The Finnish submarine Iku-Turso repeated in 27 October 1942 the achievement by launching a torpedo at the Russian submarine SC320.

### **The sinking of SC305 by Vetehinen**

5 November 1942 yet another convoy was subject to a torpedo attack in the Åland Sea. This time it was the “newcomer” SC305 by command of Dmitriy Mikhailovich Sazonov who had entered the game. By night Iku-Turso and Vetehinen went out from Mariehamn to hunt the hostile submarine. In the logbook of Vetehinen the following is to be read.

*1700: Departure to hunt submarines in the Åland Sea with sub Iku-Turso.*

*2118: In the direction 360° encountered hostile submarine, whose course was 270°.*

*2130: Submarine in question disappeared while westbound. Started to search for it by help of the hydrophone.*

*2250: Sighted the submarine again.*

*2255: Launched both bow torpedoes at a distance of 250 meters. The torpedoes missed.*

*2256: Opened fire with the Bofors cannon. Three hits were noted. About a half minute later ran into the submarine ahead of the tower. Opened fire also with the Madsen cannon against the hostile submarines hull.*

*2257: Ceased fire. In all six shots were fired with the Bofors cannon and eight with the Madsen cannon. The enemy submarine went down with a strong starboard list and should be regarded as destroyed. Thereafter the site was listened in to but no sounds were recorded.*

0125: Departed from the site to Mariehamn.

The eye witness record of Veikko Hyytiäinen<sup>1</sup> probably describes best what took place at that dark night at the Åland Sea.

*The darkness comes. The diesels are quiet and the camouflage nets are taken away. Before departure we already have the leather clothes on out on the deck, and many talk with a low voice. The crew of the neighbor vessel is wished good luck. Hands are shaken with colleagues of corresponding rank at the neighbor ship. Now my ears are met with a sentence from the deck of the other boat and which now sounds like an insult: "now you also do something!". This is happily answered by our good-natured machinist Matin-Jussi: "well, we'll probably bring a Russian back in tow."*

*Order at deck. Our manager, captain lieutenant Antti Leino is coming. Formation – dressing – attention. The delivering is done with a low voice. The captain asks with a similarly low voice the electrical machinist if the troubling gyrocompass is ready and is answered that now the water cooled Anschützen is working again. The captain commands "dispersing."*

*The machine crew enters down through the hatch astern and pulls it back afterwards. The last light astern disappears. The deck crew, artilleryists, and torpedo workmen disperse to fore and aft stations. The men loose the moorings and by help of boathooks they steer the boat away from the neighbor's side. The captain at the speaking-tube: "slowly ahead."*

*The journey to the patrol area is begun. Now the deck is completely empty. Even the bow hatch is closed. The only breathing hole is the entry hatch at the tower. The tower is dark, but further down in the maneuver room there is still a light. However, it cannot be seen from outside.*

*We are on our way to sea. The lookout men come to the bridge. I am just mounting the night vision at its holder between the shafts of the periscopes. There is some nudging as everybody is finding their places. I have the open entry hatch between my legs when I control the night vision with the telescope. Maybe a bit too strong light cross in this darkness. I dampen it slightly. It is cloudy but the sight is good. How far away could a dark, low submarine be spotted? I am astonished. The lighthouses at the Swedish coast are seen clearly. It is good to have them to control your position. They can also be used by our Russian brother as he aims his stem between Understen and Märket. The Finnish side is dark and gloomy. We are heading slowly. In the radio room the hydrophone operator sits with the headphones over his ears and listens to sounds in the water. Slowly he turns the wheel around, searching for sounds... foreign sounds.*

*The logbook recorder in the tower reports to the bridge: "the hydrophone operator says he could hear propeller sounds on the port quarter. The own propeller is disturbing." The captain: "good, slowest possible forward!" Then to the steersman "aport!"*

*Suddenly the tension increases. It is spread across the ship: we have got contact! The lookout men are putting efforts. Down from the speaking-tube the captain is heard to say: "about 100 degrees from aport." "80 degrees from aport" – and so on. Soo the target was straight forward. Everyone at the bridge was searching eagerly. The telescopes turn right and to the left. Nothing can be seen. The captain asks: "wherefrom is it heard?"*

*It takes a while and then with a low voice: "nothing is heard." The captain in the speaking-tube: "half speed forwards." Nobody says anything. The silence lasts a long while. Suddenly, almost doubting, a lookout says: "there it is, somewhat aport!" The others look quickly. The silhouette of the submarine is weakly sighted, at port bow. There it is with stopped engines surfaced. Now the events follow quickly. The captain gives quick orders and turn to me: "fire the first between the bow and the tower and the other between the tower and the stern!"*

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<sup>1</sup> "Finland's submarines in peace and war" by Kalervo Kijanen (the original title "Sukellus hälytys")

*To the steersman: "a bit apart."*

*Now the enemy submarine's stem is sighted in the cross. The cross' vertical line is moving towards the tower. I take aim at the bow cannon's front edge, and with emphasis: "Fire!"*

*In the tower beneath me the fire button is pressed. I feel a slight shaking in the hull as the air pressure pushes the torpedo out from its tube. The cross moves to the fore cannon, but slower. Now it stops at the edge of the tower. Then I realize and say loudly: "it goes astern." No bearing dragging. The enemy has discovered us and guessed what would come. Our captain was afraid that the submarine would run away and with a bit panic in his voice he commanded "full speed ahead! Portside better! Man the cannon!" Like squirrels the men run to the cannon. Some comes through the tower hatch. Some have been at the bridge as lookout men and throw themselves down to the deck. Hard training has resulted in that no errors were made despite that everything is done in the darkness. The submarine grows in the telescope. I say loudly what the others also see in their telescopes: "now they are going to dive, they go down the tower hatch." Our boat trembled. Our stem had hit the side of the Russian submarine. Our cannon spit fire and steel. The first shot through the tower. Round rings of fire are sighted at the hits. The captain yells at high voice in the speaking-tube: "full speed astern!" It takes a while before the machine stops and goes astern. The water foams at the stern, when the machines work at maximum.*

*The shells from the Bofors 76 mm semiautomatic cannon are rattling against the metal deck. Would the bow get loose or would we go down together? Loose! There has become a great hole, as our stem is equipped with a submarine net cutter, which is like two giant saws. Of those, one goes from the bow diagonally downwards and the other diagonally upwards. The teeth of the saw are 20 cm each. The stern of the Russian submarine is sinking. The bow is raising high into the sky. The hull makes a strange rolling movement. The tower and the cannons turn to the left. The bow points almost at the sky and the Russian submarine goes down in the deep.*

*Message from below: "bow torpedo room is leaking." The pumps are started. But it is still too early to say if they manage to pump enough. The captain orders the radio operator to tell the submarine in the neighbor square about what happened and ask it to come closer in case we needed help.*

Vetehinen managed to reach land despite its damages and at the following diver examination the following damages were observed.

- the right blade of the bow rudder was pushed down about 10° and its protecting bow was broken off,
- the stem and its lower net saw was broken off and the lower saw had only one tooth left,
- the keel was dented at a length of 10-15 meters,
- the hull was dented and bent together with the stem about two square meters from below,
- the bow deep rudder was not working, and
- the sixth ballast tank was leaking.

Vetehinen was repaired 15-22 November 1942 in Turku and was then taken back to service.

Vetehinen's ram hit and the torpedo hits of Vesihisi and Iku-Turso must statistically have made Finland's small submarine fleet to the most successful in the World War II in this peculiar event of sea warfare.

### **1943**

In 1943 the situation in Leningrad was markedly improved for the besieged Russians. Through a Russian offensive south from Ladoga, the siege was revoked in January and the million people city once again had an eastern land connection.

The Russian submarines' attack the previous year against the shipping in the Baltic Sea resulted in that Finland and Germany decided to close the Gulf of Finland completely with submarine nets and minings. During Mars-May a 30 nautical miles long and 60-90 meter deep submarine net was laid across the narrowest part of the Gulf of Finland. Along the submarine net submarine hunters were patrolling. Also complementing minings were made. Simultaneously the submarine brigade was preparing for a new offensive. They had over 22 submarines at their disposal, whereof 4 S class and 9 SC class. Despite repeated attempts no submarine managed to get through the submarine net and the minings to the Baltic Sea. The Red fleet lost five submarines that year in the Baltic Sea, whereof two S class and three SC class.

### **1944**

Through a Soviet great offensive in January 1944 the German siege of Leningrad was definitely broken. During some weeks the front was moved to Narva where the Germans temporarily managed to stop the Russian offensive. The Russian submarines in Leningrad, by count 18, were not at first ordered depart because by wise experience from last year they realized that it didn't pay off to try to navigate through the submarine net and the mine barrages.

The battle of the Atlantic Ocean was already lost for Germany's part. In German Baltic Sea ports were therefore 70 VIIC class submarines that previously made service in the Atlantic. To fight the Red fleet Germany sent during summer 1944 13 of those submarines to the Gulf of Finland. They were stationed in Tallinn, Helsinki, Kotka, and the Finnish archipelago. In Kotka a special UBoot-Führungsstaff was placed which would lead the operations in the Gulf of Finland. The German submarines didn't have great successes though. In September they lost their bases in Finland and Estonia, whereafter they operated from support locations in the Danzig bay. Germany lost during July 1944 – February 1945 five of their submarines in the Gulf of Finland.

9 June 1944 the Red Army commenced a great offensive against Finland in the Karelian Isthmus. The Russians made advancements towards Vyborg which was reached by 20 June. Northeast of the city in the Tali-Ihantala region the Finns managed however to stop the Russian colossus. Finnish troops and Finnish artillery were mobilized to the area from other front regions. Very intensive battles followed during several days. Through concentrated artillery fire, the warding fire of the infantry, and through the air force and the German air division Kuhlmeys' bombings they managed to stop the Soviet attack. 50,000 Finnish and 150,000 Russian soldiers participated in the battle. The Finnish field artillery fired during two weeks a total of about 120,000 rounds whereof over 12,000 were fired on the most intensive day 3 July. The Soviet Union's losses have been estimated to 22,000 men, while Finland lost 8,800 men. Once again the Finns had struck the world around with astonishment and respect. The Finnish bulldog spirit was heavier

than the Russian numerical superiority. The Battle of Tali-Ihantala is the largest battle in the Nordic countries' history.

Similar battles broke out somewhat later at Vuosalmi and the Vyborg bay. Also then the Finns were able to fend off the Soviet attack. Thereafter the battle turned to positional warfare until the armistice of 4 September. The final armistice treaty was signed 19 September. A condition for the truce was however that all German forces in Finland must immediately leave the country 14 September the latest. If not, the Finns had to disarm and turn the Germans to the Soviet Union. The German Navy and the German Air Force had no problem to leave Finland within due time. For the German Lapland Army it was however impossible to leave the country on such short notice. This forced Finland to turn its weapons against the brother in arms. During the war against the Soviet Union Finland had got invaluable help from the German Lapland Army. Without it Finland would have had a hard time to defend its over 1,000 kilometer long border towards the Soviet Union. Partly thanks to the German Lapland Army Finland could continue to exist as an independent nation. Despite that, the Finns had to break their loyalty. If the Finns had chosen to deny the Russian armistice conditions, it would probably have meant the end of Finland as an independent nation.

The armistice treaty of 19 September 1944 prescribed that Finland would let their waters and ports to the Soviet Union as long as the war against Germany lasted. Finland also had to assist with pilots and marine staff in the difficultly navigated archipelago. Hereby the ten ready Russian submarines in Leningrad had a safe route inside the skerries past the mined Gulf of Finland out to the Baltic Sea. Those submarines achieved during the last three months of the year relatively great successes at the same time as only one of them (M96) was sunk. According to Russian sources they sunk 28 merchant vessels of 75,221 grt through direct interference. Corresponding data from western sources say 13 vessels of 35,754 grt.

## **1945**

In January-April 1945 extensive German shipping took place in the Baltic Sea. German forces and civilian fugitives were cut off from western land connections by the Red Army. This meant partly that German forces had to be supported by sea, partly that retreating troops and refugees had to be transported by sea to western ports. The protection of the German shipping was very weak because of the lack of escorting vessels and trained staff. The submarine brigade in Leningrad had six to eight submarines at sea simultaneously, which according to Russian sources managed to sink 26 merchant vessels of 107,228 grt although only one submarine (S4) was lost. According to western researchers 15 vessels of a total of 67,504 grt was sunk by the Soviet submarines. Most successful, measured by sunk tonnage, was the submarine captain Marinesko and his submarine S13 which 30 January sunk Wilhelm Gustloff (25 484 grt) and 10 February sunk General Steuben (14 660 grt). At the losses about 10,000 men died, whereof most were civilian fugitives and wounded soldiers. It should be noted for the defense of Marinesko that he, who had a mission to sink as many hostile vessels as possible, could

not reasonably have known that Wilhelm Gustloff and General Steuben, who weren't carrying the Red Cross emblem, were carrying fugitives and wounded aboard.