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## THE SHORT HISTORY OF THE HEL PENINSULA LIGHTHOUSES (1)

The lighthouse on the foreland of Hel Peninsula has always been very important for safe navigation in the Gulf of Gdańsk. Anyone coming from the west to Gdańsk had to sail around the Peninsula, and it often happened that they lost orientation and ran aground on a shoal near the promontory.

It appears from a review of the various archival sources and studies on Hel's lighthouses that the first mention of a navigational light on the Hel are already in the old chronicles of the 7<sup>th</sup> century.<sup>1</sup> Displaying a light in this place was a necessity, due to a number of vessels running aground on the shoals of the Peninsula.

Initially, light was shown on an elevated tower of an old church at Neu Hela 116.5 feet<sup>2</sup> (35.5 m) high, which was deliberately increased by 10 feet in order to put there a lantern with candles. The candles were backed by a brass reflector. It is possible that coal was also burned at the tower. After the old church had been destroyed during the 17<sup>th</sup> century fire of the city, a boom with a coalfire basket was built in a different place of the Peninsula. Information about the new lighthouse spread quickly and gave a pretext for the Polish King, John III, to visit Hel on 25<sup>th</sup> September 1678 and see the new structure. In 1702 the lighthouse was destroyed by a storm, but it was immediately rebuilt. Similar events took place in 1763 and 1790.

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<sup>1</sup> Archiwum Państwowe w Gdańsku, Rejencja Gdańska [State Archives in Gdańsk, State Administration Office of Gdańsk], Ref. 9/1516, 9/1517, 9/1518; Geheimes Staatsarchiv Preußischer Kulturbesitz in Berlin-Dahlem [hereinafter: GStA PK Berlin], Rep. 93B, Ref. 4803 and 4805; F.K. Zemke: *Deutsche Leuchttürme einst und jetzt*, Herford 1991, p. 178; G. Wiedemann: *Das deutsche Seezeichenwesen 1850–1990 zwischen Segel- und Container-Schiffsverkehr*, Hamburg 1998, p. 313.

<sup>2</sup> Foot – a unit of length equal to 0.3048 m.

### **The construction of the masonry lighthouse**

The rebuilt construction, looking like a well sweep, ceased operating only in 1827, when a new, masonry lighthouse was built. Although the construction of the new lighthouse began in 1806, it was stopped as a result of the wars of that time. The State Archive in Gdańsk holds documents from the 1820s which present the designs of the Hel lighthouse. Figure 1 presents the outer view of the Hel lighthouse. They indicate that the Hel lighthouse was to be a five-storey, round, brick, white tower crowned with a metal gallery and a glassed lantern room. There are also other designs, which show a tower of a similar height, but divided into seven and nine storeys, respectively. The lantern room was equipped with three rows of rectangular windows on its entire circumference and a semicircular, dark green roof featuring a profiled rotary chimney indicating wind direction. Inside the lantern room there were eventually six Argand lamps (although originally 11 or 14 lamps were designed), with pipe wicks and concave parabolic mirrors, fuelled by rapeseed oil. The ceremony to launch the Hel lighthouse took place on 1<sup>st</sup> August 1827. This fact was announced in the form of a notice to sailors.



Fig. 1. The Hel lighthouse from 1826–1939  
(photograph taken from author collection)

This lighthouse, as the first in Germany, was already since 1827 equipped with an alternating light. The lantern, affixed to the metal stem of the clockwork, was put in motion by the mechanism driven by weights suspended on chains running inside a central funnel. The keeper on duty would pull up the weights every few hours to drive the entire mechanism. One cycle of the clockwork was 3 min, which gave a beam of light lasting 5–6 s, eclipsed every 30 s. The lighthouse's slender tower was 41.7 m high, with 180 granite steps leading to its top. Its light was 37.7 m above the sea level, and could be discerned from a distance of 17 NM from the coastline.

### **Problems with the fog signal station**

In addition to light signals, at times of poor visibility Hel lighthouse warned sailors about dangerous waters by transmitting sound signals. Initially, these were sounds of a ringing bell, and during the 19th century and until the 1930s these were gun shots at intervals of 4 min. The fog signal station at Hel had two signalling guns operated by the keepers on duty. On 8<sup>th</sup> December 1910, in foggy weather, one gun exploded, as a result of which the keeper on duty, named May, died. The fog station was also completely destroyed, and its re-launching was not a simple thing. After the accident, there was no signal gun at Hel. A press release from the German archive presents the accident as follows: On 8 December 1910 a note appeared in "Berliner Morgenpost" newspaper about an explosion of a signal station. This dramatic message applied to the fog signal station at Hel. The accident happened on 8<sup>th</sup> December 1910 around 5.00 p.m. During foggy weather the fog station began transmitting sound signals, or shooting from special guns located between the dunes. Around 5.00 p.m., there was an explosion, as a result of which the station was blown up. The operator's body was found near the ruins of the signal station, on the dunes, where it was thrown by force of explosion. *Hafenbauinspektion* of Gdańsk, which was responsible for the operation of aids to navigation, immediately sent a steamer, the crew of which was to find out what happened.<sup>3</sup>

The other keeper, Karl Werner, who had been replaced as operator of the gun half an hour before the explosion, was interrogated in order to establish the

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<sup>3</sup> From the collection of GStA PK Berlin, Rep. 93B, Ref. 4805.

facts. His duties in the operation of the signals was taken over by the keeper May, who died during the explosion.

The fog signal station on Hel was operated by lighthouse keepers in addition to their duties related to the lighthouse. In foggy weather they had to transmit additional sound signals, that is to say, to shoot from special guns, the eastern and western ones, installed in the area of dunes. In December 1910 the fog guns used for transmitting the signals were temporarily replaced by 90 mm field cannons model 73 cast by Böhleschen at the royal bell-foundry in Spandau. They would shot with blank cartridges, and their only job was to produce sound warning the mariners who sailed near the Hel's shore about danger.<sup>4</sup> The guns were placed in a kind of shed called *Kanonenhäus*, which ensured a more convenient operation for the keepers. Before proceeding with the shooting, they have also to refill the cartridge shells with black gunpowder, with one charge containing about 0.7 kg gunpowder. The investigation commission found that the powder magazine, placed in the basement in the vicinity of the gun station, contained 12 barrels of gunpowder, of which four had been opened and used. The keeper May came to the gun station about 3.45 p.m., and by 4.30 p.m. he filled 30 to 35 loads with gunpowder, which were then placed on the western table of the station. This was a typical operation performed by the keepers after the service at persistent fog. However, the keeper Werner returned to his living quarters after his duty, promising to come at about 7.00 p.m.

After the change, regular shots were still heard for about 10 minutes, followed by a single shot and explosion. After hearing it, Werner immediately went into the area of the fog station. May's body was found by a fisherman Claudke – who came to the rescue together with other residents of Hel – about 20 metres from the completely destroyed fog station. Later he testified that no fire burned in the gun room, nor was there any gunpowder.

The fog signal station at Hel was equipped with two special signalling guns, while the western one was complained about by the keepers due to its very frequent failures. The same was true this time. At that time, some items of the trigger device of the western cannon were being replaced, while the eastern one functioned without problems for the whole period. The keeper had already shot during the last night, and in the morning on the day of accident. The keeper's assistant Grönwaldt testified – he was shooting on the night of 7/8<sup>th</sup> December between

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<sup>4</sup> Ibid., Ref. 4803.

2.00 and 4.00 a.m., then, until 5.00 a.m., he was filling the shells with gunpowder – that the shooting continued until 10.00 a.m., that is, until the fog completely disappeared. Later, together with the keeper Werner, he cleaned the guns, disassembled the locks, and replaced a spring, the tip of the striker, and the fixing in the western gun. In the afternoon around 3.00 p.m. came another fog, and the keeper Werner began transmitting sound signals.

The cause of the accident, as was suggested by the commission based on the testimony of the keepers, could be the fact that, to shorten the route between the cannon station and the powder magazine at the basement, the keepers would often roll a barrel into the porch. They usually did so when the stock of previously prepared cannon charges was running down. However, for safety reasons there was a door between the basement with gunpowder and the porch, which according to the existing rules should be closed. The commission managed to find that at that unfortunate day the door was closed. The storing of barrels in the porch constituted an improper handling of explosives and could cause an explosion, but the direct cause of it could not be determined.

That long-term gun shooting was arduous and dangerous is further confirmed by the fact that the guns were located in a shed, where – after many hours of shooting – so much smoke accumulated that further operation of them became virtually impossible. In the previous inspection conclusions of August 1903 there is even a petition to mount an appropriate ventilation channel that should reduce the concentration of smoke in the shed.<sup>5</sup> In the inspection of 1906 one may find a note of a need to supply the operators with devices for filling and pressing-in the blasting caps.<sup>6</sup> Such equipment was offered by a Berlin company for 500 marks. On the basis of the conducted studies it can be assumed that these requests were never met. Because the technical working of the sound signal gun was unsatisfactory, the problem was solved by replacing the non-operational signal gun with a field gun, a cheaper alternative chosen by the authorities. To this end, in August 1903 comparative trials were carried out to test a typical fog signalling gun versus an 80 mm field-gun. The field gun was loaded with 0.5 kg of powder, and the audibility of both was assessed at between 1 and 2 sea miles. The lack of substantial difference between the two was explained by the aspect of the barrel. In the fog signal gun the barrel was horizontal, while in the field gun it was slightly

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<sup>5</sup> Ibid.

<sup>6</sup> Ibid., Ref. 4804.

raised. The cost of casting one 90 mm barrel was 2300 marks, and shells, made in a factory in Magdeburg, would cost 10.75 marks per item; the contract covered the supply of 100 items.

The troubles with safe handling of the Hel guns were also addressed in a February 1910 report to the Minister of Public Affairs. That document contained information that new equipment was needed for the firing of charges, in which percussion caps must be installed before the insertion of the charge, as well as the operator must maintain special attention during these operations and strictly observe the procedures for handling the gun.<sup>7</sup>

After the explosion, it was difficult to resume the operation of the Hel fog signal station, since there was no another special fog signal gun at Hel. What was left were only the guns of the land troops. There was one fog signal gun and two field guns, one 80 mm and the other 90 mm. The 90 mm gun was defective because of carriage model 73 was destroyed during the explosion.<sup>8</sup> Owing to rising market prices, there were plans to provide other signal stations with the 134 barrels of powder still left in the station's storeroom. The condition of the Hel fog signal gun was disastrous, and the device was suitable for a museum exhibit rather than for the most important item of the station.

After a series of tests, in 1911 the authorities were presented with proposals for a new fog signal station with a pneumatic siren to be installed at Hel. This solution was seen as much safer than the previous one.

In 1911 the German authorities were presented with a design of a new fog signal station equipped with a much safer fog siren, but unfortunately the project was not implemented until the end of World War I.

In 1920 the lighthouse was taken over by the Polish administration. The light system in the Hel lighthouse was upgraded in 1926, when the 99-years-old system composed of oil Argand lamps was replaced with a system by Julius Pintsch company from Berlin. The system, modern for its time, consisted of a 120 mm high kerosene lamp with incandescent mantle 60 mm in diameter enclosed in a Fresnel lens; all that was installed on a 1 m high table. The optic, enclosed in a metal screen driven by a weight system, circulated around its axis, causing characteristic flashes of light.

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<sup>7</sup> *Ibid.*, Ref. 4803.

<sup>8</sup> *Ibid.*, Ref. 4804. Letter dated 14.06.1912.

The Maritime Office in Gdynia, which administered the lighthouse at the time, decided in 1929 to renovate its external facade. The lighthouse was plastered and painted with horizontal red-and-white stripes to turn attention of hydroplane pilots of the Marine Air Squadron, who began their training flights at the Puck airport.

In the 1920s a modern siren station was built at Hel to transmit fog signals. Why so late – it could not be determined for now, but there are hopes that further research will unravel this puzzle.

Another modification of the lighthouse's light system took place at the end of 1938, when it was electrified. The new system consisted of a Fresnel lens with an incandescent light bulb with a power of 300 Watts, with three filaments, each powered by 100 Watts. Such arrangement ensured that even if one or two filaments burned out, the lantern would still emit light.

For many years, this beautiful Hel lighthouse showed a safe way to the ports, but at the outbreak of World War II it became dangerous to its surroundings. In September 1939, the structure towering over tree tops was a perfect landmark for the enemy to shell the Henryk Laskowski batteries region. Therefore, the Hel defence commander, Capt. (N) Włodzimierz Steyer, obtained the consent of the Fleet Command to destroy the lighthouse. On the night of 18/19<sup>th</sup> September 1939 explosives were placed under the tower, and the lighthouse was blown up on 19<sup>th</sup> September 1939 at 1.30 p.m., just when the German battleship *Schleswig-Holstein* fired a volley.<sup>9</sup>

### **Góra Szwedów Lighthouse**

The design and construction of a new lighthouse in the area of a hill (dune) called Szwedzka Górka was a response of maritime authorities to the repeated cases of running aground by ships heading for Gdańsk, which erroneously identified the Jastarnia-Bór lighthouse as the Hel lighthouse. Too early modification of the course by the ships heading from the western direction to Gdańsk often ended up in the way described above.

As it turned out, the Jastarnia-Bór lighthouse, which stood near the south-eastern corner of Bór village, was located in the wrong place of the Peninsula. It might be that the light of the Hel lighthouse could not be seen from here.

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<sup>9</sup> R. Witkowski: *Hel na straży wybrzeża 1920–1939*, Warszawa 1974, p. 277.

These reasons resulted in a modification of the navigational marks system at the Peninsula; a decision was made to build a new lighthouse closer to the Hel Promontory. The Góra Szwedów lighthouse (Fig. 2) was designed in 1931. It was the first typically Polish light tower built in the interwar period. The steel skeleton tower was topped with a round lantern room equipped with electric light. The structure, made entirely of Polish parts, was put into service in 1936. Called a “lighthouse without continuous supervision”, its light was turned on and off remotely from the premises of the Hel lighthouse. The keepers from Hel, which was about 3 km away, also periodically supervised Góra Szwedów lighthouse.

The grid a few segments, a height of 195 cm each, made up with basis a 17 m high structure. Its light was visible from a distance of 16 NM.

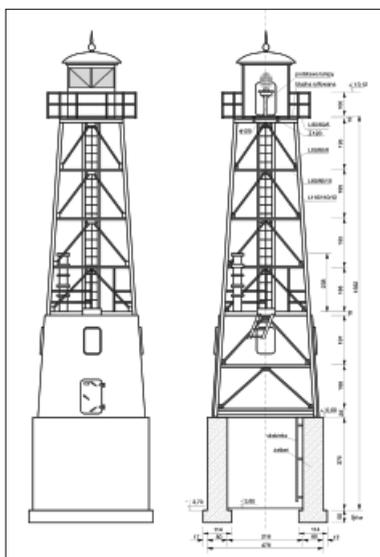


Fig. 2. The Góra Szwedów lighthouse  
(photograph taken from author collection)

The secluded lighthouse without continuous supervision attracted hooligans who easily climbed the tower and damaged the lighting system. These incidents made it necessary to modify the bottom part of the tower structure, which was enclosed with metal sheets at the height of approximately 4 m. Unfortunately, this change failed to delivered the expected results. Climbing by outsiders and acts of

vandalism continued. The fact that the lighthouse stood at military grounds did not prevent devastation of equipment and theft of e.g. cables. One day, a trap was even arranged by covering the entry into the basement with crumbling planks. As a result, the next visit by the keeper almost ended tragically. He fell into the lower room of the tower, hurt himself, and could not escape from the trap without help. After a few hours after the incident, his colleagues, concerned about his absence, came up to Góra Szwedów and freed the exhausted keeper.

The lighthouse was finally turned off in 1990, with the tower abandoned as it was; only the light system together with the lantern room were dismantled and handed over to the Maritime Office in Gdynia.

The heavily damaged lighthouse tower at Góra Szwedów still remains in place (which can be seen in photos from 2007), haunting the tourists with an unpleasant. Perhaps the efforts by the “Friends of Hel” Association to take charge of the tower and land, which is still a tourist attraction, will give an opportunity to maintain this facility in a good state of preservation.

The attached drawing of Góra Szwedów lighthouse was established through detailed measurements made in 2008 by a team of Hel enthusiasts, because no designs or drawings of the lighthouse were found at the Maritime Office.

### **The second Hel lighthouse**

Navigating around Hel Promontory without the sight of the lighthouse proved to be difficult also in times of war. This is why Germany decided to build a new lighthouse of a similar height on the old site (Fig. 3). The new tower was octagonal, with solid construction of the lower walls, and narrowing towards the top. The red-brick tower was 41.5 m high, based, like its predecessor, on piles sunk into the ground. Its foundation was laid a few meters towards SE from the old one. The construction started in 1942, lasted seven months, and was completed in the same year. The lighthouse was fitted with a new lantern room, equipped with electric light bulb powered with 1000 W, placed together with the other (spare) in an automatic changer. The new lighthouse survived the war, and works to this day.

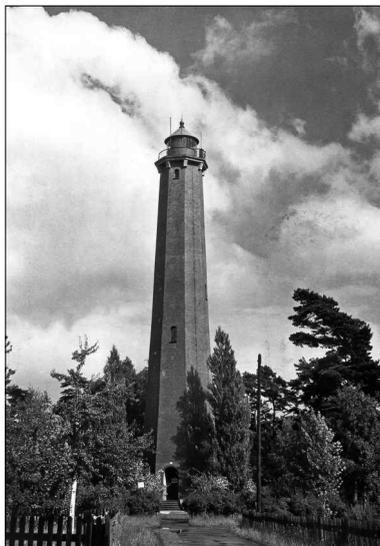


Fig. 3. The second Hel lighthouse from 1942  
(photograph taken from author collection)

## KRÓTKA HISTORIA LATARNI MORSKICH HELU (I)

### Streszczenie

W opracowaniu zaprezentowano krótką historię latarni morskich, które były usytuowane w pobliżu Cypla Helskiego i od wieków ostrzegały żeglarzy, rybaków i marynarzy przed niebezpieczeństwem pobliskich płycizn i mielizn.

Pierwsze wzmianki o świetle nawigacyjnym na Helu pojawiły się już w starych kronikach z VII wieku. Światło pokazywano również na wieży starego kościoła w Neu Hela, a później w innym miejscu cypla, gdzie palono ogień w specjalnym metalowym koszu. Długie lata podobne światło było umieszczone na specjalnym wysięgniku w kształcie żurawia studziennego. Taką konstrukcję nazywa się też latarnią dźwigniową.

Dopiero w roku 1827 oddano do użytku nową murowaną latarnię morską, która powstawała od 1806 roku. Źródłem światła był w niej układ sześciu lamp Arganda. Była to jedna z pierwszych latarni o charakterystyce światła regulowanej przez system zegarowy, napędzający podstawę z lampami. Światło latarni było później kilkakrotnie zmieniane na nowocześniejsze.

Latarnia helska podczas mgły i złej pogody informowała żeglarzy o niebezpieczeństwie mielizn, wysyłając początkowo sygnały dźwiękowe dzwonu, później wystrzały

armatnie, a w końcu sygnały syreny pneumatycznej. Z wystrzałami armatnimi wiąże się jedna z historii Helu, kiedy w 1910 roku na skutek złej obsługi armaty zginął miejscowy latarnik May. Po przeprowadzeniu dochodzenia postanowiono wymienić armaty na inne, ale ostatecznie zmieniono system ostrzegawczy na pneumatyczny z syreną mgłową.

Przejęta w 1920 roku przez polską administrację morską latarnia Hel działała niezawodnie do września 1939 roku, kiedy zniszczono ją metodą wybuchową, aby uchronić obrońców Helu przed celnym ogniem artylerii niemieckich okrętów, kierowanym na podstawie pozycji latarni.

Drugą latarnią morską z okolic Cypla Helu była latarnia Góra Szwedów, metalowa konstrukcja, działająca w latach 1936–1990. Jej pozostałości istnieją do dziś.

Kolejna murowana konstrukcja latarni Hel powstała w 1942 roku, jeszcze podczas działań wojennych. Ośmiokątna wieża z czerwonej cegły o wysokości 41,5 m, z nowoczesnym systemem świetlnym, działa do dziś i przyciąga rzesze turystów chętnych do jej zwiedzenia.