



As of 1 December 2022, there are 1628 navigation aids in Estonia, of which 55 are lighthouses, 235 are beacons, 33 are day beacons and 1305 are navigation buoys.

ABRUKA LEADING LINE FRONT BEACON

Geographical coordinates: 58° 09.0121'N; 22° 32.1295'E.

The steel tower with right-angled slabs painted red at the top and white at the bottom is situated on the eastern coast of Abruca island (also known as Abro or Abrow) and aids ship route navigation between the Western Baltic Sea and Roomassaare. **The front Abruca leading light beacon together with the Abruca Lighthouse 679 m away creates a leading line of 259.3°**, which helps safely sail between Saaremaa and Allirahu.

LIGHTHOUSE HISTORY AND INFORMATION

- In 1895-1896 the Roomassaare harbour was built and ship traffic went up significantly.
- In 1897 to ensure the safety of naval travel, the **Abruca leading line** was constructed. It consisted of two towers with a wood construction:
 - **Abruca leading light rear lighthouse** (now known as the Abruca Lighthouse) was a 28-metre-tall, white painted, wooden, octagonal truncated pyramid shaped building, on the upper part of which was a balcony and a quadrangular light room. The light (a one-wick kerosene lamp) was situated 27 m above sea level and was visible from 11 nautical miles away.
 - **Abruca leading light front beacon** consisted of a wooden candelabra, which when raised, elevated the open flame to a height of 21 m above sea level, with a visibility range of 10 nautical miles.
- During the First World War the rear lighthouse height was increased by 9 m. The permanent light was now situated 37 m above sea level and was visible from 14 nautical miles away.
- In 1923 the front wooden beacon was replaced with an angle iron truss pyramid tower, the east side of which was covered with planks and painted white. The light was situated 21 m above sea level and was visible from 11 nautical miles away.
- In 1931 the wooden **Abruca leading light rear lighthouse** tower was replaced with a 34-metre-high reinforced concrete tower according to Ferdinand Adoff's design solution. An automatic omnidirectional sector carbide lantern by the company AGA was installed on the roof platform 37 m above sea level, with a visibility range of 14 nautical miles.
- By the beginning of the 1990s the **Abruca Lighthouse** carbide lantern had been replaced with an electric lamp, which was in the historical 500 mm standard AGA lantern.
- In 1996 the **Abruca Lighthouse** was connected to a navigation aid remote sensing system. Two years later the front leading light beacon was also connected to the remote sensing system.
- In 1998 a 21-metre-high metal tower with a wooden shell was built, replacing the **Abruca front leading light beacon** with a new one. The wooden shell was split horizontally, the upper part was painted red and the lower painted white. The leading light lantern's height above sea level was and is 22.6 m, visible from 8 nautical miles away in the darkness.
- In 1999 a Tideland LED lantern was mounted above the incandescent lamp lantern already present in the **Abruca lighthouse**.
- In 2006 a 66 W capacity LED leading light range lantern (Sabik E8554) was installed in the lighthouse and some years later, in 2013, the Tideland lantern was replaced with an LED omnidirectional light (Sabik E8276). The maximum total light intensity in the light system in the leading light range direction is **68,436 cd** (one candela (cd) is equal to the light intensity of one lit candle). The omnidirectional lantern and the range lantern work simultaneously. The visibility of the **Abruca Lighthouse** in the dark has been set as 11 nautical miles in the nautical charts.
- The **Abruca leading light front beacon** is presently being lit with a 15 W capacity LED range lantern (Sabik E855). The maximum total intensity (main lantern + emergency lantern) of the light system in the direction of the leading line is 64,500 cd. The beacon's visibility in the dark has been set as 8 nautical miles in the nautical charts.
- In good weather the beacon is visible from **22 km away**.

Sources:
Peeter Peetsalu „Merekultuurilugu“ (Cultural History of the Sea),
Jaan Vali „Eesti tuletornide ajalugu“ (History of Estonian Lighthouses).

NAVIGATION AID FACTS

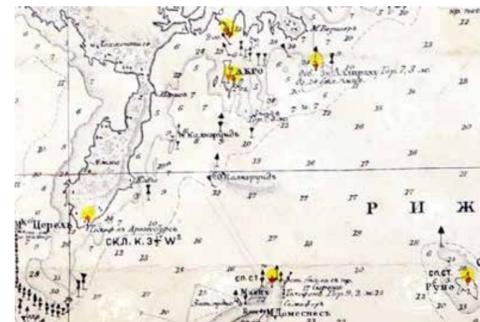
Navigation aid number: 971
Surface elevation above sea level: 1.2 m
Aid elevation above surface elevation: 18.1 m
Light height above sea level: 22.6 m
Light characteristics: Q W quick flashing light



Flashing period description: 0.5+0.5=1



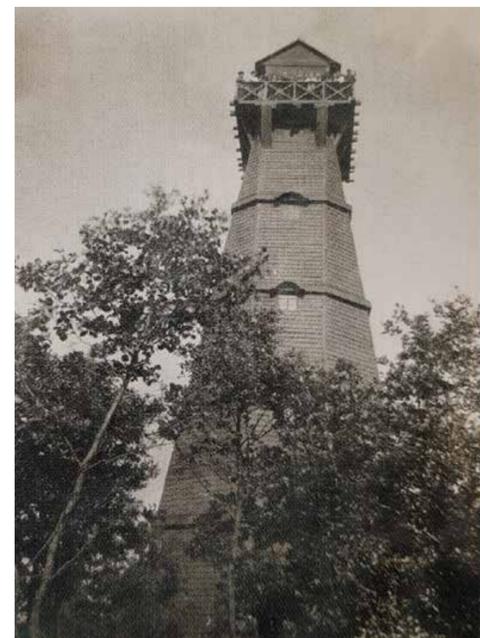
Extract from the map atlas "Eesti merekaardid" (Nautical Maps of Estonia) from the year 2022 with the lighting sector of the lighthouse



Abruca leading light lighthouse and beacon on the 1912 nautical chart "Восточная часть Балтийского моря и Рижский залив" (Eastern part of the Baltic Sea and the Gulf of Riga)



This is what the initial design of the Abruca leading light front beacon with a live flame in a steel cage might have looked like. Sketch by Roman Matkiewicz



Abruca leading light rear lighthouse before renovation, picture from the year 1915



Abruca Lighthouse, photo from the year 2020 by T. Vilu



Abruca leading light front beacon's present range lantern (Sabik E855), photo from the year 2018, T. Vilu



Abruca leading line front beacon, photo from the year 2018, T. Vilu



Abruca leading line front beacon, photo from the year 1935