



Mapping of pilot ports / Aland Islands

This study started in march of 2016. The dead-line is end of July.

A similar mapping study is executed in Estonia and these two studies will be presented at a seminar, to be held in Hiiumaa, Estonia, late 2016

Headings of study

A. Objectives of the Study

To map what safety equipment & port routines exist in the harbours. Analyse the current commercial activity and identify main opportunities to increase business for the ports

Recommendations to what actions need to be taken to improve safety in small ports and increase business opportunities for guest ports

B. Safety

- B.1) maritime safety in small ports meaning & definition
- B.2) definitions of ports & leisure boats Aland islands
- B.3) overview of current regulatory handling
- B.4) maritime safety in small ports, definitions

C. Pilot ports

- C.1) ÅSS Rödhamn (& Västra hamnen (Mariehamn))
 history
 current safety activities / work process
 document of rescue department inspection
 listing of safety equipment in port
- C.2) MSF pilot port of Östra hamnen
 history
 current safety activities / work process
 document of rescue department inspection
 listing of safety equipment in port
- C.3) Kastelholm pilot port history











current safety activities / work process document of rescue department inspection listing of safety equipment in port

D. Surveys of safety matters

- D.1) Perceived safety by boating visitors
- D.2) Safety know-how of port staff

E. ASRS - how does cooperation with ports look like right now

F. Marketing & Analyses of current commercial Activity

- F.1) How do ports currently market themselves
- F.3) Survey visitor profiling
- F.3) Survey visitor profiling
- F.4) Strategic actions to increase guest port revenues

G. Conclusions of the Mapping











A. Objectives of the Study

The main points are to identify the factors that contribute the most to enhance the safety of small ports. This might be physical objects as well as port routines and the staff working within the port premises.

How does the commercial revenue flow look like and what kind of marketing efforts do ports undertake currently? Where are the major improvement possibilities in this area?

Where should the scarce resources flow to make the biggest splash in terms of increased profitability?

The latest question will be more of a general overview, to be studied at a later stage within this project

B. Safety

B.1) Maritime safety in small ports - meaning & definition

In this study we will focus on 2 of the possible meanings of the above concept

The main focus will lie on the safety in small ports, implying the safety of human beings, animals, boats.

The subject can be further subdivided into material and immaterial safety measures. The first-mentioned meaning safety equipment and the latter trained staff, safety procedures.

The minor interest will be on the safety of the sea in small ports, which could include environmental aspects in and around the port area

B.2) Definitions of ports & leisure boats - Aland islands

B.2.1) Ports

According to local legislation there exist 5 different port types

commercial port, guest port, small boat port, fishing port, repair yard

because the underlying interest is to promote private boating tourism it is thus logical to exclude commercial ports, as these cannot be called small ports.

We are thus left with quest ports and small boat ports

a) Guest ports

leases berths to visiting sport- and leisure boats, for shorter or longer periods small guest ports have fewer than 400 registered guest days annually











big guest ports have more than 400 registered guest days annually registered guest days are calculated as an annual average of the past 3 years

b) Small boat ports

home port for sport- and leisureboats, where the boat owners possess a designated berth for their boats

the port is required to contain at least 50 berths, to qualify under this regulation

Visiting boats are not allowed into private / public small boat ports, thus point b) is also excluded

The focus in this study has therefore been aimed at guest ports.

B.2.2) Environmental issues

Local government regulation 2003:67 stipulates what waste fractions, types the various ports are required to be ready to accept / handle. the port captain, or other person in charge, is responsible to give out this information to persons staying in the port area.

Every vessel that arrives at port is to pay a waste disposal fee, not withstanding if they intend to use this service or not.

Each and every port is to have an up-to-date written plan for the waste disposal and handling procedures. this plan is to be certified and cleared by ÅMHM (aland environmental and health authority) and renewed every 3 years.

Limits & prohibitions

Emissions of sewage (local government law 2003:32) is prohibited within the Aland islands water area. in Finland a similar law is in force, only allowing sewage emissions 12 nautical miles from land and further out

Vessels, classified to transport max 12 passengers, for sport and leisure purposes, are exempt of some of the waste disposal laws and policies

B.2.3) Leisure boats

This regulation concerns boats with a hull length of between 2.5 meters up to 24 meters, and designated for sport and leisure purposes

The legal person that imports or / and manufactures leisure boats and equipment linked to them, is responsible and liable to ensure that these products meet essential safety and environmental requirements.

The utilisation of leisure boats is monitored by the police







| Diariear | Diarienr | Arendemening | Namn1 | Namn2 | CoAdress2 | Adress2 | Postnr2 | Ort2 |
|----------|----------|---------------------------|---|---|--|----------------------|---------|------------|
| 2013 | 0042 | Ansökan avfallsplan | Långnäs hamn | Långnäs Hamn Ab | | Långnäsvägen 638 | 22630 | Lumparland |
| 2013 | 0110 | Avfallsplan för hamn 2013 | Hamnsundets gästhamn | Saltviks kommun | (Hamnsundets gästhamn) | Lillängs 14 Nääs | 22320 | Ödkarby |
| 2013 | 0118 | Avfallsplan för hamn 2013 | Carlshamn | Carl Rundberg Ab | | Önningebyvägen 587 | 22100 | Mariehamn |
| 2013 | 0120 | Avfallsplan för hamn 2013 | Enklinge besökshamn | Enklinge gästhamn | Lahtinen Markku | | 22830 | Enklinge |
| 2013 | 0121 | Avfallsplan för hamn 2013 | Färjsundets båthamn (f.d. Godby sm | sma Färjsundets seglarförening r.f | Kenneth Gröndahl | Solhemsvägen 5 | 22410 | Godby |
| 2013 | 0122 | Avfallsplan för hamn 2012 | Käringsunds gästhamn | Storby byalag / Käringsunds gästham Rosenqvist-Metsik Berit | n Rosenqvist-Metsik Berit | Fiskevägen 58 | 22270 | Eckerö |
| 2013 | 0123 | Avfallsplan för hamn 2013 | Lotsudden Degerby | Lennart Nordlund | (Lotsudden Degerby) | Mangelgränd 5 lok 2 | 22100 | Mariehamn |
| 2013 | 0124 | Avfallsplan för hamn 2013 | ÅSS Marina | Åländska Segelsällskapet r.f. | Jansson Brage | Pb 135 | 22101 | Mariehamn |
| 2013 | 0125 | Avfallsplan för hamn 2013 | Kökar Havspaviljong, Hellsö Gästham Kökar Havspaviljong Ab / Hellsö gäst Salmelin Fredrik | Kökar Havspaviljong Ab / Hellsö gäs | t Salmelin Fredrik | Apelgränd 9 | 22100 | Mariehamn |
| 2013 | 0126 | Avfallsplan för hamn 2013 | Havsvidden | Havsvidden Ab | | Havsviddsvägen 90 | 22340 | Geta |
| 2013 | 0130 | Avfallsplan för hamn 2013 | Långnäs skärgårdshamn | Ålands Landskapsregering | Långnäs skärgårdshamn / Trafikavd. | Pb 1060 | 22111 | Mariehamn |
| 2013 | 0131 | Avfallsplan för hamn 2013 | Svinö färjhamn | Ålands Landskapsregering | Färjhamnen i Svinö / Trafikavd. | Pb 1060 | 22111 | Mariehamn |
| 2013 | 0132 | Avfallsplan för hamn 2013 | Hummelvik färjhamn | Ålands landskapsregering | Hummelviks färjeläge / Trafikavd. | Pb 1060 | 22111 | Mariehamn |
| 2013 | 0133 | Avfallsplan för hamn 2013 | Åva färjhamn | Ålands Landskapsregering | Färjhamnen i Åva / Trafikavd. | Pb 1060 | 22111 | Mariehamn |
| 2013 | 0145 | Avfallsplan för hamn 2013 | Seglinge besökshamn | Seglinge besökshamn | Seglinge fiskelag | | 22810 | Seglinge |
| 2013 | 0150 | Avfallsplan för hamn 2013 | Rödhamn gästhamn | ÅSS | Jansson Brage | Pb 135 | 22101 | Mariehamn |
| 2013 | 0153 | Avfallsplan för hamn 2013 | Kastelholm gästhamn | Kastelholms gästhamn | Eva-Len Mattsson | Norra Sundsvägen 49 | 22520 | Kasteholm |
| 2013 | 0154 | Avfallsplan för hamn 2013 | Alands Skogsägarförbund, virkeshamr Al. Ålands Skogsägarförbund, Färjsur Virkeshamnen | Al. Ålands Skogsägarförbund, Färjsu | r Virkeshamnen | Kyrkvägen 26 | 22410 | Godby |
| 2013 | 0155 | Avfallsplan för hamn 2013 | Sandvik gästhamn och camping | Sandvik Hällor AB | | Munkvervan | 22730 | Kökar |
| 2013 | 0158 | Avfallsplan för hamn 2013 | Jurmo Gästhamn | Jurmo Gästhamn | Djurmo Turism Ab / Jurmo by samfällighet | lighet | 22950 | Jurmo |
| 2013 | 0161 | Avfallsplan för hamn 2013 | Glada Laxen | Glada Laxen | Beckman Henrik | Tärnebolstad 80 | 22410 | Godby |
| 2013 | 0163 | Avfallsplan för hamn 2013 | Degerby gästhamn | Föglöbutiken AB | Degerby gästhamn | Tingsvägen 6 | 22710 | Föglö |
| 2013 | 0164 | Avfallsplan för hamn 2013 | Puttes Camping | Puttes Camping | Karlsson Jarl-Olof | Bryggvägen 40 | 22530 | Sund |
| 2013 | 0165 | Avfallsplan för hamn 2013 | Lappo gästhamn | Södra Brändö Turistservice | Åkerberg Dan-Ole | | 22840 | Lappo |
| 2013 | 0168 | Avfallsplan för hamn 2013 | Skärgårdsvarvet | Skärgårdsvarvet | Eriksson Edvin | Långholmsvägen 33 | 22710 | Föglö |
| 2013 | 0172 | Avfallsplan för hamn 2013 | Sottunga gästhamn | Sottunga Skärgårdsturism Ab | (Sottunga gästhamn) | | 22720 | Sottunga |
| 2013 | 0185 | Avfallsplan för hamn 2013 | Sjökvarteret | Stiftelsen sjökvarteret i Mariehamn | | Österleden | 22100 | Mariehamn |
| 2013 | 0191 | Avfallsplan för hamn 2013 | MSF Marina | Mariehamns Seglarförening r.f. | Kenth Mattsson | Box 155 | 22101 | Mariehamn |
| 2013 | 0540 | Avfallsplan för hamn 2013 | Notvikens stugby och camping | Notvikens stugby och camping | Fellman Erolf | Överby | 22270 | Eckerö |
| 2013 | 0559 | Avfallsplan för hamn 2013 | Deep Oil Ab, oljedepå | EKUM Bokföring | Deep Oil Ab | Ålandsvägen 20 C | 22100 | Mariehamn |
| 2013 | 0644 | Avfallsplan för hamn 2013 | Fiskehamnen | Fiskehamnen | | Korrvik | 22100 | Mariehamn |
| 2013 | 0735 | Avfallsplan för hamn 2013 | Kumlinge Gästhamn | Kumlinge Stugor Ab | Johansson Desirée | | 22820 | Kumlinge |
| 2010 | 91 | | Nordmarin småbåtsvarvet Ab | Bengt Mattsson | | Scheffersgränd 2A 4 | 22100 | Mariehamn |
| 2012 | 936 | | Mariehamns stad, Hamnverkets hamr | mn Hamnverket | | Pb 5 | 22101 | Mariehamn |
| 2010 | 614 | 1 | Näversholma Snickeri | Näversholma Snickeri | | Näversholmavägen 453 | 22710 | Föglö |
| 2010 | 06 | | Zetterströms mekaniska verkstad och Zetterströms mekaniska verkstad & slip | Zetterströms mekaniska verkstad & | slip | Varvsvägen L 183 | 22100 | Mariehamn |
| 2012 | 696 | | Berghamn | Eckerö Linjen Ab | | Torggatan 2 | 22100 | Mariehamn |
| 2009 | 1323 | | Mariehamns stad, Västra hamnen | Hamnverket | | Pb 5 | 22101 | Mariehamn |
| 2013 | 0957 | Avfallsplan för hamn 2013 | Karlby Gästhamn | Brudhäll Ab | Karlby gästhamn | Karlby | | Kökar |
| 2014 | 1 248 | | Trafikavdelningens hamn i Möckelö | Ålands Landskapsregering - Möckelö Trafikavdelningen | Trafikavdelningen | Pb 1060 | 22111 | Mariehamn |





Leisure boating is increasing in popularity, although the kind of boats prefered has shifted from larger boats to day-trip ones. this must be seen as a reaction to people having their spare time divided into increasing interests.

Hobbies for the kids, summer house, travel, boat, city dwelling, visiting friends.

Another aspect is that the taste has changed in the last few years. boating tourists want to sleep in bed, eat in restaurants.

It seems this trend towards mid-size fast boats will only accelerate.

An increasing number of boat owners have no previous experience, growing up with boats, which can lead to more boating accidents. especially this inexperience shows in tight places with little manovering space, like inside harbour pools.

B.3) Overview of current regulatory handling

Ports are continually checked by state / local authorities on their fire-plans, but apart from that no other regulatory control is exercised. These fire plans also include emergency plans.

In Sweden the small ports don't even have this fire control, which is a bit odd.

When a port is established they have to comply to rules & regulations like any other new building site, so there is nothing setting a small port apart here.

B.4) Maritime safety in small ports, definitions

On one hand there is the material safety of ports, thus safety equipment

- · fire extinguishers
- mooring pollards
- · fire hoses (water outlets)
- life buoys
- rescue ladders from the jetties
- heart starters
- other equipment

On the other we have the immaterial safety in ports, being trained staff and safety procedures

- · trained to use fire equipment
- having absolved 1st aid training
- schooled to use heart starters
- · operate port boats to assist boating guests in case of need
- the existence of emergency plans that are as practical as possible
- the social training of staff to handle difficult guests / persons in the port area
- language skills to minimise social tension & communicate efficiently in emergency

The environmental aspects grows in importance all the time, so here small ports cannot fall behind. Much is already done, collecting various wastes, septic tanks becoming more common.











C. Pilot ports

C.1) ASS - Rödhamn port

History

Rödhamn (Långö) has historically always been a safe and protected port for seafarers. As far back as the early 19th century Rödhamn has been a selected port for maritime pilots. The radio lighthouse was built in 1937, and this activity ceased 1970. It now remains as a museum.

ÅSS leases the port from the local government. The area is part recreational space for ÅSS members, part guest port, dating back to 1996.

The guest harbour has seen steady development and the seasonal average of annual overnight stays lies around 2 000 plus locals that come for the day, or just for a coffee.

In total there are 60 guest berths and some 30 berths for members. The port remains open from June 1st until August 31st.



Picture by Kjell Söderlund











Safety situation

The port lacks electrical grid connection and running water. There is only a drilled well, equip ped with a manual pump, and collected rain water.

No rescue ladders exist and there are 2 fire extinguishers on the jetties, with life buoys. Due to the lack of a municipal water connection there are no water hoses on the island, to be employed in case of a fire.

There is no port staff caring for the boating guests, as the staff run the café / restaurant.

Both for safety matters and for improved services to boating guests it would be much needed to connect the island to the mainland power grid and if possible to the water grid as well.



Picture by Kasimir Antbrams









enligt \$40.4:44 Rāddsingslagen (LL 2006:106)

| Objektsne: | 4030 |
|-----------------|------------|
| Brandsynedatum: | 2015-08-04 |

| Brandsyneobjekt: | RÖDHAMN |
|------------------|---------|
| Objektsadress: | RÖDHAMN |

| Närvarande ombud för fastigheten: | Delges protokoll: | |
|-----------------------------------|-------------------|--|
| BRAGE JANSSON | BRAGE JANSSON | |
| JOHAN WILLSTEDT | | |

Information om brandsyn:

Enligt den åländska räddningslagen så skall brundsyn görus regelbundet i eran fastighet. Syflet med brandoynen kan sammanfattas i filijande punkter;

- Säkerställa trygg utrynning och råddning av liv vid en eventuell brand eller annan olycka.
 Förhindra brandspridning till angränsande fastigheter.
- 3. Trygga rtfddningspersonafens såkerhet vid en eventuell bræst i byggnaden.
- 4. Förebyggs att brand eller annan olycka uppstår.
- Begränsa egendomsskadoma i byggnaden vid en eventuell brand.

Brandsynen koncentrerar sig på punkterna 1 till 4, vilka blide är ett intresse för er och samhälfet i stort. Vad beträffår nivån på egendomiskyddet (punkt 5), så är det till största del til själva och ort försäkringsbolag, som avgör på vilken skyddsnivå ni vill läggs er.

I Räddningsverkets protokoll så skrivs både anraktkningar (krav på åtgård) och rekommendationer för hur man. kan förhättra brand- och olycksskyddet i eran verksomhet.

Reslutat av utförd brandsyn:

Ingen anmärkning.

Anmärkningar (se bilaga)

Rekommendationer (se bilaga)

Nästa brandsyn äger rum

2018

х

Brandsynefőeráttare:

YNGVE EANDSTROM

Brandmästare

Telefon

018-531483

E-post: yngve.landstrom@mariehamn.ax



enligt §40 &44 Råddningslagen (LL 2006:106)

| Objektser: | 4030 |
|-----------------|------------|
| Brandsynedatum: | 2015-08-04 |

(BILAGA)

ANMÄRKNINGAR:

I sambund med brandsynen konstaterades följande brister i brandskyddet som skall åtgårdas (Tabell 1).

Vi önskar att ni meddelar brandsyneförättaren när bristerna är åtgärdade. Detta kan göras genom att ni fyller i datumen i nedanstående tabell och skickar den till Räddningsverket via post eller fax. Det går även bra att meddela oss via e-post eller telefon.

Hör gärna av er om det är någonting ni undrar över!

Tabell 1:

| Nr. | Anmärkningar: | Atgärdat : (Datum) |
|-----|--|-----------------------|
| 1. | "Nya stockstugan" : Brandvamare saknas Sotarled på taket saknas | |
| 2. | Museibyggnaden: Efterlysande skylt utrymningsväg skall monteras vid utgång | |
| 1. | Griffbusset: Utrymmet där gasbyttan är placerad skall var ett väl ventilerat utrymme | |
| 4. | Bostadshuset: Brandvarnare saknas (lagkrav) Gasslangar bytes Sotarled skall monteras om eldstäder är i bruk samt att de skall sotas enligt intervall | |
| 5. | Lotsstugan: Eldstaden skall sotas enligt intervall Gasslangen bytas Gasslaskans utrymme skall ordnas så att utrymmet blir välventilerat Släckaren i kök skall förvaras i avsedd ställning samt förses med släckarmarkering Brandvarnaren på loftet skall ersättas med ny samt monteras i taket | |
| 6. | Besöksbrygger och gästbrygger: Brygger kompletteras med | |



BRANDSYNEPROTOKOLL enligt 540 &44 Riddningslagen (L1, 2006; 106)

| Objektsnr: | 4030 | |
|-----------------|------------|--|
| Brandsynedatum: | 2015-08-04 | |

| | släckare samt förses med släckarmarkering Befintliga släckare förses med nya skyltar gällande släckarmarkering (urblekta skyltar) | |
|-----|---|--|
| 7. | Ordnings samt alarmeringsanslag skall finnas uppsatta på lämpliga platser på området | |
| 8. | Geillplatsen vid gästhamnen skall kompletteras med plätkärl med lock för lämpning av grillkol | |
| 9. | Möjlighet att ta sig upp ur vattnet skall finnas vid varje brygga (skall finnas där brygglängden överstiger 25 m. Brygglängden räknas som totala längden där båtar kan förtöjas/ brygga) | |
| 10. | Cafeet: Sotarled saknas på taket Avstånd från gashäll till överskåp ej enligt gällande byggregler (65 cm.) Risk för torrdestillering av skåpbotten – med brandrisk Skåpet bör skyddas med obrännbar, icke värmeledande skiva Utgångar från cafeet (2 st.) skall förses med efterlysande skyltar "utrymningsväg" | |
| 11. | Nya övernattningsstugan: Beandvarnare saknas skall finnas i varje övernattningsrum En gemensam släckare skall monteras i anslutning "väl synlig | |



enligt §40 &44 Raddningslagen (LL 2006 106)

| Objektsnr: | 4030 |
|-----------------|------------|
| Brandsynedatum: | 2015-08-04 |

REKOMMENDATIONER:

I tabell 2 nedan så redovisas Räddningsverkets förslag på hur ni kun förblittra skyddet mot brand och olyckor i eran verksamhet.

Tabell 2:

| Nr. | Förslag på förbättringar: | Atgärdat (Datum): |
|-----|--|----------------------|
| 12. | Räddningsverket rekommenderar att museibyggnaden förses med handbrandsläckare | |
| 13. | Övernattning på loftet i lotsstagan bör undvikas pga dåliga utrymningsmöjligheter | |





C.2) MSF - Östra hamnen

History

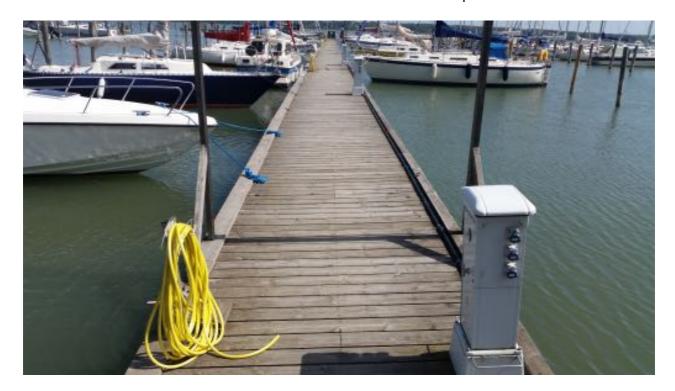
The yacht club was founded in 1917, but the guest port came much later, in the early 1980's. the lay-out of the marina changed in a radical way in 1986. since this time the overall layout hasn't seen any dramatic changes.

Some historical milestones

- 1983: some 4000 guest nights; no floating jetties, about 80 berths; service provided from barracks
- 1984: about 5800 guest nights; the pavilion is inaugurated, with showers & toilets
- 1986: 8600 guest nights registered; the port enlarged with floating jetties, now offering 240 berths
- 1987: first electrical outlets for boating visitors; a total of 12 units
- the following year some 10300 guest nights are accounted for
- 1992: the pavilion is reconstructed, hosting a sauna; berth places increased to 400 pc

Ever since the port has seen improvements, among other

better saunas, play-ground for kids, more washing mashines & dryers electrical outlets & water is now offered to all individual berth places



Picture by Rosita Broström

the boats are nowadays moored to poles and due to ever bigger boats the number of berth places keep decreasing, currently numbering 300 pc











the jetties are about 115 meters long & 2,5 m wide

there are 26 mooring places on each side

the surrounding quai is 170 m long & 4 m wide; the northern part was recently renewed (owner the local government)

Safety equpment currently in use

- 3 ladders on each side of the jetties
- fire hydrant outlets are situated at equal distances with the ladders on the jetties
- the ladders could be easier to use, as they can be quite a challenge for some to get up on
- a lifebuoy, boatshook & fire-extinguisher are located within a wooden construct, situated halfway out on each jetty, all in all 6 units
- there are 8 main electrical outlets on each pier, so about 1 each 12 meters; each mooring place has access to own electrical post
- each berth is equipped with an individual water outlet
- the electricity, not for heating purposes, is included in the harbour fee



Picture by Rosita Broström

• the water is of good quality & drinkable; also included in the harbour fee











- on the northern protected renewed jetty there are all in all 4 places with lifebuoy, boatshook & fire-extinguisher
- furtherst out on the protecting jetty there are 4 electrical outlets & water outlets
- during peak season boat guests are guided into the port by a small boat operated by port staff; the reason for this is both for safety reasons as well as for economical benefit (make best use of deep-water mooring places for sailing boats and bigger boats)
- digital security cameras are pointed out on the mooring boats; they have proven useful when accidents have occurred
- · more such cameras are planned to be installed, in order to increase safety in the port area
- lighting is provided for on the jetties, especially useful later in the summer, like august nights
- the harbour is guarded at night-time during the month of july
- first-aid kits are available in the port area
- the website of msf includes useful info concerning security when on the local seaways

Environmental aspects

- a septitank, for toilet waste, is installed on one pf the jetties, the most southern-one
- the suction drainage of septitank is free of charge
- it's also possible to empty dry & chemical toilets here
- there is waste disposal station, in a purpose-built building, with access using a code
- next-door an environmental station is located, where cans, glass, oils, batteries can be disposed of
- oil beams, in case of a serious oil / fuel spill, are located 5 km away

Other kind of services offered to guests:

sauna, showers, laundry to the diposal of guests from early wee hours into late evening 6 washing mashines & 6 dryers in the laundry toilets availabe 24 / 7 a toilet for disabled is located in the service building minimarket with basic groceries, coffee, sodas, ice creams etc a playground for kids has recently been constructed free wifi, with a code, is provided for to boating guests gas for cooking can be purchased 100 m away, south of port area vacuum cleaner & blow dryer can be lent free of charge from harbour office

The guest harbour is conveniently located merely 2 blocks from the absolute city center

Within short walking distance one can find:

the library, the post office, banks, shops Mariebad swimming centre, the maritime quarter











Picture by Kjell Söderlund

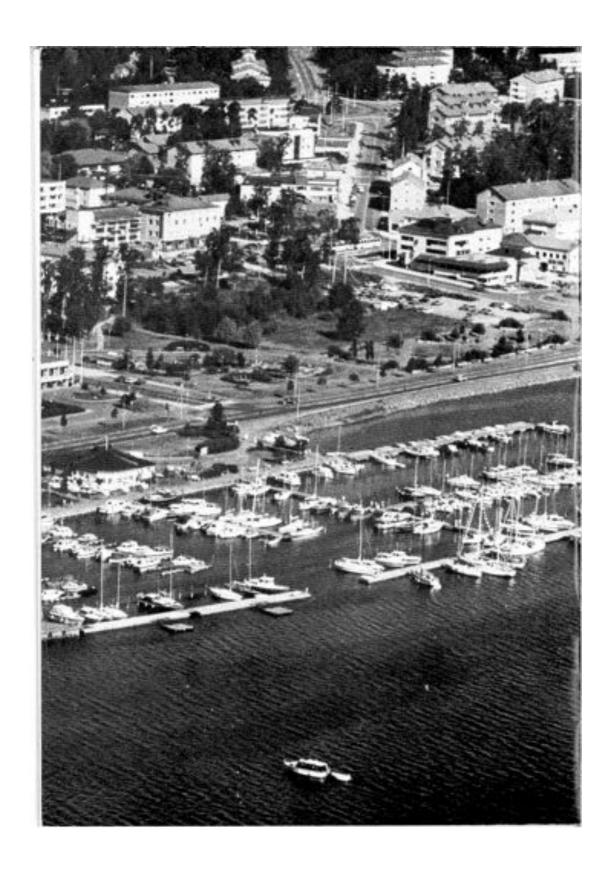
restaurants, cafes, Lilla holmen mini-zoo & park area several local beaches within walking distances



















enligt (40 &44 R348singslages (LL 2006:106)

| Diarient: | |
|-----------------|------------|
| Objektsur: | 8159 |
| Brandsynedatum: | 2015-06-08 |

| Brandsyncobjekt: | MSF GÄSTHAMN + RESTAURANGEN |
|------------------|---------------------------------|
| Objektsadress: | ÖSTRA UTFARTEN 22 100 MARIEHAMN |

| Närvarande ombud för fastigheten: | Delges protokoll: | |
|-----------------------------------|-------------------|--|
| Simon Karlsson | Gustav Rask | |
| | MSF Styrelse | |

Information om brandsva:

Enligt der älltsdeka röddningslagen så skall brandsyn göres regelbundet i erus fastighet. Syftet med brandsynen kan ramssenfatus i följande punktor;

- I. Sükerstilla trygg strymning och räddsing av liv vid en eventuell brand eller annan olycka.
- 2. Förbindra brandspridning till angränsande fastigheter.
- 3. Tryggs riddningspersonaless silkerhet vid en eventuell brand i byggsuden.
- 4. Förebygga att brand eller annan olycka uppstår.
- 5. Begränsa egendomoskadoma i byggnaden vid en eventueli hrand.

Brandryten koncentrour sig på punkterna 1 till 4, vilka både är ett immose för er och sænhäller i stort. Vad beträffar nivån på egosdomsskyddet ipsnikt 5), så är det till stärsta del ni själva och en försäkringsbelag, som avgör på vilken skyddmisså ni vill lägga er.

I Råddningsverkets protokoll så skrivs både anenårkningar (krav på åtgärd) och rekommendationer för har man kan förhätta brand- och olycknikyddet i eran verknæshet.

Reslutat av utförd brandsyn:

Ingen anmärkning

Anrolekningar (se bilaga)

Rekommendationer (se bilaga)

Nästa heardsyn äger rum

Brandsyneförrättare:

X

2016

TED ANDERSSON

Brandförman

Telefon 018-531490

E-post: ted.andersson@mariehamn.ax



onligt \$40 A:44 R3ddningslagen (L1, 2006;106)

| Discient: | |
|-----------------|------------|
| Objektsnr: | 8159 |
| Brandsynodatum: | 2015-06-08 |

(BILAGA)

ANMÄRKNINGAR:

I sambund med brandsynen-konstaterades följande brister i brandskyddet som skall åtgårdas (Tabell 1).

Vi ömskar att ni meddelar brandsynesbrättaren när bristerna är åtgärdade. Detta kan göras genom att ni fyller i datumen i nedanstående tabell och skickar den till Råddningsverket via post eller fax. Det går även bra att meddela oss via e-post eller telefon.

Hör gärna av er om det är någonting ni undrar över!

Tabell 1:

| Nr. | Anmärkningar: | Atgärdat : (Done) |
|-----|--|----------------------|
| 1 | Flortalet signalljus ur funktion. | |
| 2 | Signalljus skall testas på batteridrift minst 4 ggr/är samt dokumenteras. | |

REKOMMENDATIONER:

I tabell 2 nedan så redovisas Räddningsverkets förslag på hur ni kan förbättra skyddet mot brand och olyckor i eran verksamhet.

Tubell 2:

| Nr. | Förslag på förbättringar: | Atgärdat: (Datum): |
|-----|--|-----------------------|
| 3. | Räddningsverket rekommenderar batteri back-up för alarmsiren för att säkerställa sirenens funktion vid strömbortfall. | |





C.3) Kastelholm pilot port

History

the port was built in 1996, by the local government. It was subletted, with 5 year leases, to vari ous port operators. In 2011 the government decided to sell it. At 2012 juin 19 it was sold to pri vate interests. At this time the port had some 1100 annual visiting boats.



Picture by Rosita Broström









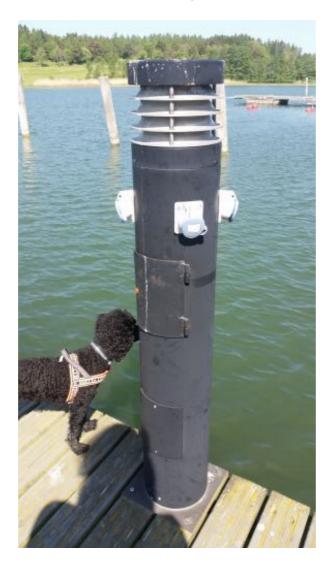


In 2015 the number of visiting boats had increased to 1700, which is a significant increase in visitors. That same year the port came in 2nd out of 511 Finnish ports when visitors could vote on most popular port.

Services

about 100 guest berths, with a protected location and evening sun electricity and drinkable water on each jetty sauna, showers, laundry, wifi, fuel pumps, drainage of septic tanks barbecue site, playground for kids 9 bikes, kayak rental

minimarket with local produce, freshly baked bread



Picture by Rosita Broström

b-rights for serving alcoholic beverages just across the straight lies a top-notch golf club, with 2 nice courses











Current safety activities

inspection of the rescue department, document

Listing of current safety equipment in port

- there are 3 jetties, each 70 metres long, each equipped with 4 rescue ladders
- · outside the sauna there is a ladder for guests
- each jetty contains a fire extinguisher and a lifebuoy
- there are an additional 4 fire extinguishers in the port area

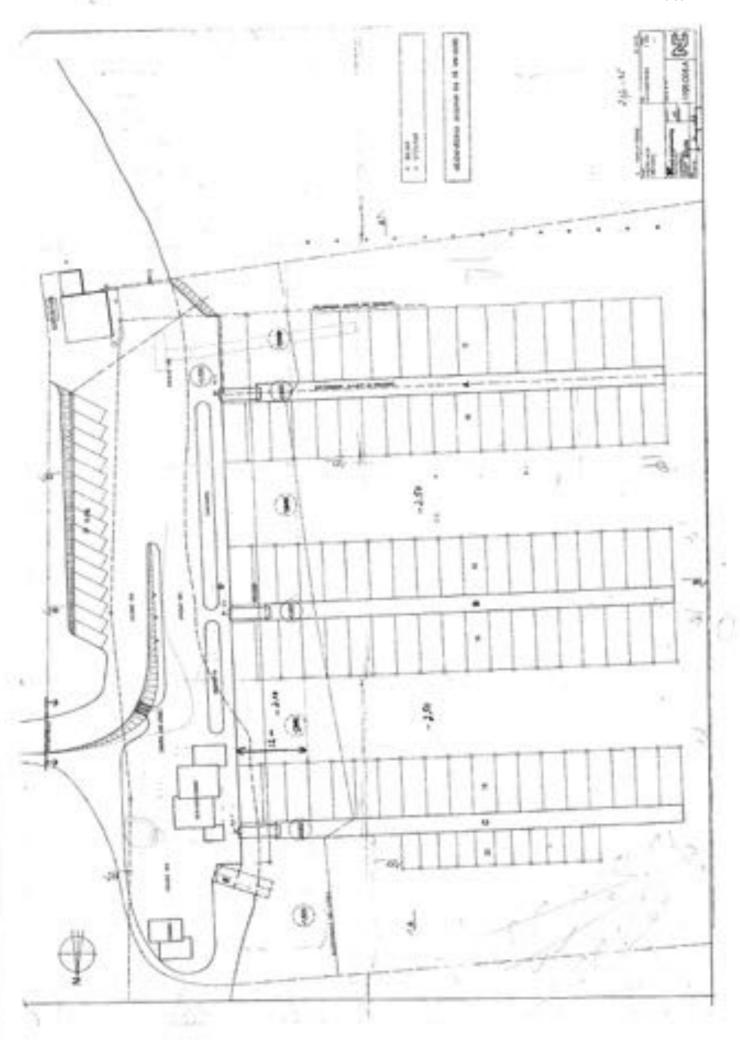
The waste disposal consists of several containers, one each for paper, cardboard, aluminium, metal, glass, plastic, biodegradable and combustible. There is also a locked metal container for hazardous waste.

The current owners have also installed a washing point to enable boat guests to wash their plates and cutlery. This service is immensely popular among guests and it is also good for the environment, as it hinders dish liquid to go directly into the sea.









| □ Brandsyn □ Kanalsyn | □ Inflyttningssyn □ Slutsyn □ |
|--|---|
| Uppvärmning: Ved | is 🗆 Olja 🗆 El 🗆 Gas 🗆 |
| Granskningsobjekt: | Vid syn konstaterade bristfälligheter: |
| Bostad | □ Pannrum |
| ☐ Gårdsbruk | ☐ Skorsten |
| □ Publika | ☐ Eldstad |
| ☐ Affārs | ☐ Garage |
| □ Industri | □ Bastu |
| □ Vård anl. | ☐ Stegar |
| ☐ Verkstad | ☐ Utrymning |
| ☐ Garage | ☐ Släck.utrustning |
| □ Fritids | ☐ Larmanordning |
| □ Tork | ☐ Nödbelysning |
| □ Lager | ☐ Brandsektion |
| ☐ Härbärg | ☐ Branddörr |
| ☐ Brädgård | ☐ Ventilation |
| ☐ Brânsie | 0 |
| a Gusthamit | 0 |
| | 0 |
| | |
| ☐ Tilläggsbeskrivning ☐ Bi | laga st |
| Godkännandet gäller på villkor at Kontrollsyn: 🗆 ja 🗆 nej | t ovannämnda brister åtgärdas inom dagar. |





D. Surveys of safety matters

D.1) Perceived safety by boating visitors

During July 2016 a guest port customer survey was carried out in cooperation with Visit Åland. The ports participating were Östra hamnen (MSF) and ÅSS (Västra hamnen). This due to their geographical vicinity of each other and the fact that they are the most important ports on Åland.

The data collected had never before been gathered so it was quite interesting to find out what boating guests thoughts of safety matters. It was deemed as important that it would be max 1 A4 and the people who turned in a filled out survey would be rewarded with an ice-cream

See annex // port safety survey

D.2) Safety know-how of port staff

As the staff had such an important role in terms of port safety there has been a smaller survey of what safety training some of the summer staff go through, or possess, when starting the job.

In terms of total number of guest ports times number of people involved the survey covered roughly 20% of staff operating the guest ports. We collected 13 filled out questionnaires

Questionnaire for the staff participating in the safety course organised by the project.

(pax = person)

Fire fighting

have you learnt how to use a fire extinguisher? when?

no: 4 pax

yes: 9 pax // school, courses

do you have theoretical knowledge how to put out fires? what to do!

no: 4-5 pax

yes: 8-9 pax // school, courses, voluntary fire fighters

how to act in case of a fire onboard a boat in the guest harbour?

no: 11 pax // no info or very limited knowledge

yes: 2 pax // not sure according to latest stand of what to do

When discussed during the course it became evident this point was unclear here we think everybody now know what to do & more importantly why

First aid











have you participated in any first aid courses? when? time (h)?

no: 4 pax

yes: 9 pax // school mostly (junior & senior high school), courses

have you learnt how to use a heart starter?

no: 10 pax

yes: 3 pax // school, courses

We suspect most wouldn't be able use one in case of a real emergency. The participants will now know what to do and what to avoid Hopefully this info will eventually get into school courses.

Boat handling

what experience / previous knowledge do you possess?

no: 3 pax

yes: 10 pax // leisure time, at work

A high level of basic knowledge

Not aware of how to make best use of smaller rib boat to taxi / guide big boats into free spot in the port

This was much appreciated by participants, even by the so-called experts

Rescuing a person in the water

have you trained how to rescue someone that has fallen into the sea?

no: 4-5 pax

yes: 8-9 pax // school, courses

In a real case scenario most people (who can swim) could make a difference

the difference in rescuing a conscious vs unconscious person?

no: 8 pax yes: 5 pax

Here the course made a difference, because knowing beforehand what one might experience & how to facilitate the rescue can make the difference between a successful and failed rescue operation

Where the above knowledge demanded during the job interview?

no: 5 pax

partly yes: 8 pax // generally only some of the above was asked for

Have you been offered training in the above matters? or in other topics related to safety in ports?











no: 11 pax yes: 2 pax

It seems the ports are not putting much economical means to train their staff Reasons for this might be: short season, no urgent need felt by port operators

Feed-back from participants

We were even surprised of the positive response we got from course participants Even seasoned port staff, with boating background, learned new practises

The project and the organiser of the course will meet up and make needed amendments for the courses to be held in 2017

E. ASRS - current cooperation with ports

The way the Swedish, Finnish and Aland Life Boat Societies work is quite distinct to how the voluntary maritime rescue society is organised in Estonia

The Scandinavian way is to have one national organisations and then many local stations underneath them. In Estonia every port has their own rescue society an they tend to belong to a national umbrella organisation.

This totally different set-up in Estonia has historical reasons but also influences this mapping, or to the point the similar mapping done in Estonia. Each and every Estonian port has its own maritime rescue society, implying they obviously have a close cooperation.

In Aland Islands the Life Boat Society has its stations in various dispersed geographical locations, but most of the times not in a guest harbour. The cooperation is thus limited. If there are serious incidents the Life Boat Society helps out, but there are no special close ties between them.











F. Marketing & Analyses of current commercial Activity

F.1) How do ports currently market themselves

The smaller ports generally are not very active in marketing themselves, whereas the bigger ones, like ASS & MSF, annually take part in boat expositions in Stockholm and Helsinki.

The latters have aired opinions that this might not be a very efficient way to market themselves.

All of them rely on word of mouth, so it's essential to have happy customers.

The digital presence of said ports is quite varied. Some only have a Facebook-account, where as others sport with both website and Facebook.

Generally one can say that the websites are not very responsive, that is they look the same on the computer screen as they do on your mobile phone screen.

The up-dates are also not common, which in turn leads to questions about the reliability of content on said website.

When comparing Swedish and Finnish guest ports and their digital presence, it's quite varied on both sides. One can say that the bigger the operation, especially coupled to other means of making a revenue, the better and more impressive the website.

New tools like drone movies, 360° pictures, twitter, instagram are absent, so at least here there is a lot of work to be done.

Some ports market themselves in the local boating reviews, but it is questionable how much that really matters.

F.3) Survey visitor profiling

The pilot ports as well as all of the visited ports in Sweden and Finland show the same pattern.

First of all the season seems to start later and when it finally kicks in one has all the visiting boats appearing at once. The absolute peak season are the last 3 weeks of July. After midsummer one tends to see more boats in the ports and in the early days of August there is still a bit of a buzz.

As soon as school start is at hand the entire business all but closes down. The are some Germans and other boats from the continent that come by in the later weeks of August, but in terms of percentage these far away visitors make up too small a part to really have a serious impact on profit.

Nynäshamn guest port has managed to raise the boat nights prior to and past peak season, when looking back some 20 years.

The ports closer to major conglomerations (bigger cities like Turku, Helsinki and Stockholm) show more business even off peak season. This obviously means 2-3 hours sailing distance.











If the port also has restaurants, shops and lies close to other services it might very well see steady visiting boats at weekends during the entire boating season. This bill fits Nagu guest port to the dot. It has only 120 guest berths compared to 300-320 at Östra hamnen, MSF, Åland but still achieves the same number of annual boat nights, some 8 000.

F.3) Survey visitor profiling

During July 2016 a guest port customer survey was carried out in cooperation with Visit Åland. The ports participating were Östra hamnen (MSF) and ÅSS (Västra hamnen). This due to their geographical vicinity of each other and the fact that they are the most important ports on Åland.

The data collected had never before been gathered so it was quite interesting to find out various facts. It was deemed as important that it would be max 1 A4 and the people who turned in a filled out survey would be rewarded with an ice-cream.

See annex // excel survey

F.4) Strategic actions to increase guest port revenues

It's obvious all ports run well below capacity during most of the operating time. Could they add 2-3 weeks to their current peak season, this would make a huge impact on their profitability.

The bulk of guests are Finnish and Swedish, but the first-mentioned make out 60-80% of all boats.

It has been seen that visiting boats diminish significantly when school start draws closer. If all Finnish and Swedish schools would postpone their summer break with 2 weeks, it might help out. This would lead to more boats outside the current 3-4 weeks of peak season. Maybe even a 50% increase could be possible.

So here port owners should unite with other tourist operators to rally for this change in legislation to occur.

A better targeting and use of marketing budgets in northern Germany could lead to more moderate increases of boating tourists from that part of the Baltic Sea.

G. Conclusions of the Mapping

Shifting through the bits and pieces of information this study has managed to compile, leaves an impression of diversity among small ports. Their current states and will to evolve depends to a large extent of the size of the port and the port operator.

Safety matters are a combination of material (equipment) and immaterial (procedures & trained personal). The boating guests seemed to put an emphasis on the immaterial side of safety, according to a survey that was done.











It is clear the level of safety can be raised in just about every small port. Much can be done with the right mindset, on the equipment side as well. The design & cost of the safety equipment does not really matter in the end, as long as it improves safety and makes life in small ports safer

In one port in Finland they had big, ugly and cheap rescue ladders, but those worked and were much better than the non-existent ones in many other ports.

Mooring pollards, or in general the morning points, are essential, as the boats could cause havoc if heavy weather were to tear them loose.







SWOT of Mapping

strengths

competitive standard of ports basic safety training of staff popular destination returning customers

weaknesses

small size of port = limited economical clout increased focus on peak season decrease of overall boating sector

opportunities

room for safety improvements
business // capacity off season
interregional cooperation of ports
public sector port investments for more tourists
tourists from southern baltic
school break change for longer season

threats

increased novice boat owners (maritime safety risks)
decrease of overnight stays
neglect of port maintenance

| ÅSS | | | | |
|--|-------------|-------|-------|---|
| Rank port safety measures | | | | |
| rescue ladders 5 6 3 4 7 6 2 1 5 1 5 7 1 4 1 7 2 1 5 5 7 3 4 4 1 2 6 6 8 3 7 3 4 2 7 6 6 1 3 3 3 1 7 6 | 1 3 2 1 188 | 3.36 | 3 | |
| water posts for fire extinguishing 6 5 6 7 2 8 5 7 7 7 6 5 3 7 8 4 1 7 7 6 5 5 7 7 2 1 5 5 5 7 2 7 3 8 3 4 2 6 6 6 4 3 2 | 5 2 6 2 234 | 4.18 | 6 | |
| trained port staff 3 3 2 3 1 1 3 3 3 2 3 3 4 4 3 4 3 4 3 4 3 1 4 4 1 3 3 5 4 3 4 1 4 2 1 2 5 5 5 2 2 5 5 5 2 2 1 5 3 | 4 6 7 3 162 | 2.89 | 1 | |
| lamps on jetties 2 4 4 6 5 2 4 4 3 2 4 1 5 2 7 8 7 4 2 3 2 4 2 2 7 7 2 3 2 6 6 5 8 1 3 8 1 7 2 7 7 6 1 5 | 6 4 5 2 200 | 3.57 | 5 | |
| fire extinguishers 4 7 5 2 3 5 6 6 4 6 7 3 2 6 3 5 3 6 4 8 3 2 6 8 3 3 4 7 4 2 3 4 2 3 6 2 1 3 5 5 5 2 2 1 | 3 1 4 1 190 | 3.39 | 4 | |
| higher jetties for easier access 8 8 8 5 4 7 8 5 8 8 2 8 6 8 2 1 5 8 8 2 8 6 8 6 8 6 8 6 8 6 5 4 2 8 7 7 5 8 8 7 1 1 8 8 8 | 8 8 8 294 | 5.25 | 8 | |
| | 7 7 3 4 176 | 3.14 | 2 | |
| heart starter 7 1 7 8 3 8 4 7 8 6 5 8 6 8 5 5 6 6 5 6 3 7 6 8 5 5 4 5 7 1 7 1 3 8 1 6 1 4 4 3 4 4 8 8 7 3 4 4 | 2 5 1 3 261 | 4.66 | 7 | |
| MSF | | | | |
| Rank port safety measures | | | | |
| rescue ladders 6 1 6 5 6 8 1 4 6 1 7 5 6 6 3 1 7 1 7 5 6 5 7 1 1 7 5 6 7 5 3 5 1 6 1 8 7 4 3 8 4 4 1 | 173 | 3.84 | 5 | |
| water posts for fire extinguishing 1 6 3 3 5 6 3 7 5 7 1 6 7 2 5 4 8 5 4 4 6 3 2 5 1 6 5 6 1 3 5 4 7 4 5 6 4 7 3 2 3 | 162 | 3.60 | 4 | |
| trained port staff 4 5 1 1 3 2 6 1 2 5 2 2 1 1 3 1 3 6 3 1 2 2 1 2 6 7 2 3 2 2 2 1 3 3 2 2 4 5 8 4 5 5 | 112 | 2.49 | 1 | |
| lamps on jetties 2 3 5 7 2 1 4 2 3 3 5 2 2 4 2 2 6 5 4 2 3 3 4 5 4 3 5 7 1 1 3 1 7 6 5 4 3 1 2 1 3 2 8 6 | 135 | 3.00 | 3 | |
| fire extinguishers 3 2 4 4 4 3 2 5 4 2 3 4 4 1 3 2 3 7 6 6 5 2 4 3 2 4 4 4 8 2 2 2 6 7 2 1 2 1 1 3 2 | 126 | 2.80 | 2 | |
| higher jetties for easier access 5 7 7 6 7 7 5 8 8 8 8 7 3 5 7 8 6 4 7 8 7 8 5 8 8 8 7 3 4 4 7 8 8 6 6 8 6 6 7 7 | 230 | 5.11 | 8 | |
| boat guidning when entering port 8 8 2 8 8 4 8 3 1 6 4 1 3 5 8 1 8 1 2 3 1 1 8 6 8 4 3 1 3 5 6 2 8 8 7 5 1 8 7 7 5 6 8 | 176 | 3.91 | 7 | |
| heart starter 7 | 177 | 3.93 | 6 | |
| | | 0.00 | | |
| Rank port safety measures | ÅSS | MSF | sum | |
| trained port staff | 162 | 1 126 | 1 288 | 1 |
| fire extinguishers | 190 | 4 143 | 2 333 | 2 |
| lamps on jetties | 200 | 5 154 | 3 354 | 3 |
| | | | | |
| rescue ladders | 188 | 3 197 | 5 385 | 4 |
| boat guidning when entering port | 176 | 2 210 | 7 386 | 5 |
| water posts for fire extinguishing | 234 | 6 180 | 4 414 | 6 |
| heart starter heart starter | 261 | 7 199 | 6 460 | 7 |
| higher jetties for easier access | 294 | 8 262 | 8 556 | 8 |

| | | Ch | ıaı | π / | 158 | S V | as | ıra | IIa | mn | ier | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | Ш | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Port ÅSS / Västra hamnen | Ц | \perp | П | \perp | | | Ц | П | \perp | | П | | Ц | | П | \perp | | Ш | Ц | 1 | Ш | \perp | \perp | Ц | \perp | Ц | П | \perp | | | П | | | | П | | П | 1 | П | | |
| boat | | \perp | Ц | 4 | \perp | | Ц | Ш | 4 | \perp | Ш | 1 | Ц | \perp | Ш | 4 | 1 | Ш | Ш | 4 | Ш | 4 | 4 | Ш | \perp | Ц | Ш | 4 | \perp | L | Ш | 1 | Ш | 4 | Н | Ш | Ц | 56 | , | _ | _ |
| Country | Н | 1 | H | 1 | | | Щ | Ш | | + | Н | 1 1 | | 1 | \sqcup | | + | | H | ١. | Н | | | H | | 1 | | | ١. | 1 | | | | | 1 | Ш | Н | \perp | Ш | | |
| Finland | | 1 | Ľ | 4 | 1 | Η. | 1 | <u>'</u> | Ψ. | + | 1 | Ψ. | Ι', | 1 ' | + | Ψ. | 1 | 1 | Η. | 1 | 1 | + | Τ. | Ľ | Ϊ. | H | + | 1 | Ψ, | Ļ. | Н. | Τ. | Ľ | + | # | 1 1 | 1 | 1 1 | + | 36 | 6 |
| Sweden Germany | | + | Н | + | + | - | Н | 1 | + | + | Н | + | Н | + | 1 | + | + | H | Н | + | \mathbb{H} | + | + | Н | + | Н | \mathbb{H} | + | + | ┝ | Н | + | Н | 1 | ₩ | + | Н | + | + | 15 3 | 2 |
| Åland | _ | + | Н | + | + | + | Н | \mathbb{H} | + | + | Н | + | Н | + | $^{++}$ | + | + | H | Н | + | Н | + | + | Н | + | Н | Н | + | + | ⊬ | Н | + | Н | + | + | + | Н | + | + | 0 | |
| Estonia | | + | Н | + | + | + | Н | \forall | + | + | Н | + | Н | + | $^{++}$ | + | + | H | Н | + | Н | + | + | Н | + | Н | Н | + | + | \vdash | Н | + | Н | + | + | + | Н | + | + | 0 | |
| Russia | | + | Н | + | + | + | Н | \forall | + | + | Н | + | Н | + | $^{+}$ | + | + | H | Н | + | Н | + | + | Н | + | Н | Н | + | + | \vdash | Н | + | Н | + | \forall | + | Н | + | + | 0 | |
| Poland | | + | Н | + | + | | H | \forall | + | + | Н | + | H | + | †† | + | + | H | H | + | \forall | + | + | Н | + | H | \forall | + | + | | Н | + | Н | + | + | + | H | + | + | 0 | |
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| | П | \top | Ħ | \top | T | | Ħ | Ħ | Ť | Ť | П | Ť | Ħ | Ť | \forall | Ť | Ť | Н | Ħ | † | Ħ | Ť | Ť | Ħ | T | Ħ | Ħ | Ť | T | T | Ħ | t | П | T | \forall | \top | П | + | Ħ | | + |
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| Motorboat | | 1 | 1 | 1 | T | 1 | П | 1 | | | П | T | П | 1 | 1 | T | T | 1 | П | 1 | П | 1 | 1 | П | 1 | П | П | Т | T | Т | П | T | П | T | 1 | 1 1 | 1 | 1 1 | П | 19 | 3 |
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| -10 m | | | 1 | | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | | | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | 1 | | 1 | | | 1 1 | Ш | 25 | 4 |
| 10-15 m | | 1 1 | Ц | 1 | 1 | 1 1 | 1 | Ш | 1 | | Ш | 1 | | 1 1 | 1 | 1 | | 1 | Ш | 1 1 | 1 | | 1 | Ш | 1 | <u>l</u> | 1 1 | 1 | | | 1 | 1 | | 1 1 | Ш | 1 | Ц | \perp | Ш | 28 | 5 |
| 15- m | Ш | \perp | Ц | 4 | Ш | | Ш | Ш | 1 | | Ш | 1 | Ц | L | Ш | 1 | \perp | Ш | Ш | 1 | Ш | 1 | 1 | Ш | Ш | Ц | Ш | 1 | \perp | L | Ц | L | | 1 | Щ | 1 | | \perp | Ш | 3 | |
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| Number of nights | | 0 - | | 15 | | 2 - | | | | | | 4 - | | | \coprod | _ | | | | 0 - | H | | 2 - | | | | | | | 1 | | | | 1- | | | H | - | Ц | | _ |
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| Dog) | Н | + | Н | + | + | | Н | + | + | + | Н | + | Н | + | ++ | + | + | H | Н | + | \vdash | + | + | Н | + | H | \mathbb{H} | + | + | - | Н | + | Н | + | + | + | Н | + | + | 2 | +- |
| Distinct platforms and and | Н | + | Н | + | + | - | Н | + | + | + | Н | + | Н | + | ₩ | + | + | H | Н | + | Н | + | + | Н | + | H | \mathbb{H} | + | + | ⊬ | Н | + | Н | + | + | | Н | + | + | \rightarrow | + |
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| (Dog) | \Box | H | \vdash | _ | <u> </u> | | Ш | _ | ++ | ++ | + | _ | ++ | 4 | + | + | ++ | + | + | - | 1 | 4 | Н- | + | H | \sqcup | _ | Н | # | + | ++ | _ | | +- |
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| laptops | H | 4 | H | 4 | \vdash | \vdash | Ш | + | + | + | + | 4 | + | + | + | + | + | + | + | \vdash | \vdash | + | \vdash | + | \vdash | \sqcup | + | $^{+}$ | # | # | + | + | | + |
| Anna / aitaa | H | + | \vdash | 1 | \vdash | 1 | Ш | + | + | + | + | + | + | + | + | + | + | + | + | \vdash | \vdash | + | \vdash | + | \vdash | H | + | \vdash | # | # | + | + | | - |
| Apps / sites | H | 4 | | | \vdash | Η. | Ш | 1 | H | + | + | + | H | + | - | + | + | | - | \vdash | - | + | + | 1 | \vdash | 1 | 1. | $^{+}$ | + | + | + | + | 0 | 0. |
| visit åland | | 4 | H | 1 | \vdash | 1 | Ш | 1 1 | 11 | + | + | 1 | + | 1 1 | 1 | + | + | 1 1 | 1 | \vdash | 1 | + | \vdash | 1 | \vdash | 1 | 1 | $^{+}$ | + | + | + | + | 14 | 13 |
| visit finland | | 4 | H | \perp | \vdash | \vdash | Ш | \perp | + | + | + | + | + | + | + | + | + | + | + | \vdash | + | + | \vdash | + | \vdash | H | + | $^{+}$ | # | + | + | + | 0 | 0. |
| gästhamnsguiden | | 1 | \vdash | 4 | 1 | 1 | Щ. | 4 | 1 | + | \sqcup | 4 | + | + | + | + | + | + | | 1 | 1 | \vdash | \vdash | + | | \sqcup | + | \vdash | # | # | + | + | 0 | 0. |
| SMHI | | 1 | \vdash | \perp | 1 | \perp | 1 | _ | 11 | 1 | \perp | 4 | \rightarrow | 1 1 | 4 | \perp | + | \perp | 1 1 | \vdash | 1 | \perp | \perp | + | 1 | \sqcup | _ | \sqcup | # | # | + | _ | 8 | 7. |
| Yr.no | | 1 | H | \perp | \vdash | \perp | Ш | _ | 1 | 4 | \perp | _ 1 | 1 | 1 | \sqcup | $\perp \!\!\! \perp$ | $\perp \downarrow$ | $\perp \!\!\! \perp$ | \perp | \perp | 1 | \perp | 1 | + | \sqcup | \sqcup | _ | \sqcup | # | # | \perp | _ | 5 | 4. |
| Eniro | - | \perp | | 1 | \perp | Ш | Ш | _ | \sqcup | \sqcup | \perp | _ | \coprod | _ | $\perp \!\!\! \perp$ | $\perp \! \! \perp$ | $\perp \downarrow$ | $\perp \! \! \perp$ | \perp | \perp | \sqcup | \perp | \perp | - | \sqcup | \sqcup | _ | \sqcup | \perp | # | $\perp \downarrow$ | _ | 0 | 0. |
| Facebook/chatt | _ | \perp | \vdash | 1 | \perp | Ш | Ш | _ | \perp | \sqcup | Щ | 4 | $\perp \downarrow$ | _ | $\perp \downarrow$ | $\perp \! \! \perp$ | $\perp \downarrow$ | $\perp \!\!\! \perp$ | _ | \perp | \coprod | \perp | \perp | 1 | \sqcup | \sqcup | 4 | 1 | | # | $\perp \downarrow$ | _ | 1 | 1. |
| Sailmate | | \perp | \perp | \perp | Щ. | 1 | Ш | 4 | \sqcup | \coprod | Ш | _ ¹ | 1 | 4 | \perp | \perp | $\perp \downarrow$ | 1 | _ | Ш | \sqcup | \perp | \perp | 1 | \sqcup | \sqcup | _ | 1 | # | 4 | \perp | _ | 4 | 3. |
| yle.fi/sää | | \perp | Ш | | Ш | Ш | Ш | _ | \coprod | \coprod | Ш | 1 | \perp | 4 | \perp | \perp | \perp | $\perp \!\!\! \perp$ | \perp | Ш | \perp | \perp | Ш | 1 | Ш | \sqcup | | \coprod | 1 | 4 | \perp | _ | 0 | 0. |
| Venelehti | | Ц | 1 | | Щ | Ш | Ш | _ | \coprod | \coprod | Ш | 1 | \coprod | _ | Ш | \perp | \perp | $\perp \! \! \perp$ | \perp | Ш | Ш | Ш | Ш | 1 | Ш | \sqcup | | Ш | 1 | 4 | \perp | _ | 1 | 1. |
| Merisää | | Ш | \perp | \perp | Ш | Ш | Ш | | Ш | Ш | Щ | _ | Ш | | Ш | Ш | Ш | Ш | | Ш | \sqcup | Ш | Ш | 1 | Ш | Ш | \perp | \coprod | \perp | Щ | $\perp \! \! \perp$ | \perp | 0 | 0. |
| Google/Webben | _ | П | | | Ш | 1 | | 1 | П | 1 | 1 | | \prod | | 1 | 1 | 1 | \rightarrow | 1 | 1 | 1 | 1 | Ш | L | | Ш | 1 | 1 | \prod | Ш | Ш | | 13 | 12 |
| Navionics | | П | | 1 | Ш | Ш | 1 | | П | I | | | П | 1 1 | 1 1 | \prod | | | 1 | Ш | Ш | Ш | Ш | Ĺ | Ш | 1 | | П | \prod | \prod | \Box | | 7 | 6. |
| Satamapaikka | | Ш | | \prod | Ш | Ш | | | П | П | | | П | | \prod | Ш | | | | Ш | Ш | Ш | Ш | Ĺ | \Box | П | \bot | П | \prod | \prod | $\perp \Gamma$ | | 0 | 0. |
| Dockspot | | \Box | | | | | | | \prod | Π | П | | | | | \prod | | | | | | | | | | П | | | | | | | 0 | 0. |
| | | | | 1 | | | | | \prod | П | П | | П | | \prod | | | | | | | | | Ι | | П | | | | | | | 0 | 0. |
| Windguru | | | | | | | | | \Box | \prod | | | П | \top | | | | | | | | | | | | П | | | | | \Box | | 0 | 0. |
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| Windguru Viva | | 1 | | + | H | | \parallel | + | \parallel | H | \parallel | 7 | Ħ | + | H | \parallel | \parallel | + | + | H | + | 1 | \parallel | | H | H | + | H | $^{+}$ | + | + | + | 0 | 0. |
| Windguru Viva Klart.se | | 1 | 1 | | | | | + | | | | | | | | | | | | | | 1 | | | | | | H | + | + | \parallel | | | _ |
| Windguru Viva Klart.se Weatherpro | | 1 | 1 | | 1 | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | + | | | | 0 | 0. |

| 1 | | | - | _ | 1.1 | _ | | - | | | _ | _ | _ | | _ | _ | | | _ | - | | | | _ | - | _ | | | | - | | | - | _ | | - | | - | | |
|----|------------------------------------|----------|---------------------|---------|---------------------|---------|-----|--------|--------------|----------|--------------|---|--------------|---|--------------|---------|---------------------|--------------|----------|--------------|-----------|-----------|----------|---------|---|--------------|---|---------|--------------|-----------|---|---|---|---------|---|--------|--------|----|---|-------|
| 24 | Saaristo Opas | Щ | Ш | \perp | 1 | \perp | Ш | Ш | Ш | \perp | 1 | Ц | 1 | Ш | 4 | \perp | \coprod | \perp | Ш | Ш | \sqcup | _ | Ш | \perp | Ц | \perp | Ц | \perp | \perp | Ш | 1 | L | Ц | 4 | Ш | | Ш | 0 | Ш | 0.0% |
| 25 | Venesatamat | | Ш | | Ш | | | 1 | | Ш | | Ш | | | | | Ш | | Ш | Ш | 1 | | | | Ш | | Ш | | | Ш | | | Ш | \perp | | | | 2 | Ш | 2.0% |
| 26 | Supersää | | | | Ш | | | | | \perp | 1 | Ш | | | | | | | | | Ш | | | 1 | Ш | | | | | | | | Ш | \perp | | | | 2 | | 2.0% |
| 27 | PredictWind | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | 2 | | 2.0% |
| 28 | Seaclear | | П | | | | | | | | | 1 | | | | | | | | | | | | | 1 | | | | | П | | | | | | | | 2 | | 2.0% |
| 29 | Lokala webbsidor (.ax) | | П | | | | | | | | | 1 | | | | | П | | | | | | | | П | | | | | П | | | П | | | | | 1 | | 1.0% |
| 30 | Finska meterologiinstitutet | П | П | | П | Τ | | | П | П | Τ | 1 | Τ | 1 | Т | Т | П | Т | 1 | П | П | П | П | П | П | Т | П | 1 | Т | П | 1 | Г | П | Τ | П | | П | 5 | П | 4.9% |
| 31 | Foreca | П | П | 1 | П | Τ | П | | 1 | П | 1 | 1 | Τ | | Т | Т | П | Т | П | П | П | П | П | 1 | 1 | Т | П | Т | 1 | 1 | Τ | Г | П | Т | П | | П | 7 | П | 6.9% |
| 32 | Kustväder.se | П | П | | П | Τ | П | | | П | Τ | П | 1 | | Т | Т | П | Т | П | | П | П | П | | П | 1 | П | Т | Т | П | Τ | Г | П | Τ | П | | П | 2 | П | 2.0% |
| 33 | ÅU sjöväder | П | П | | П | Т | П | | | П | Τ | П | Т | 1 | Т | | П | | П | | П | | П | | П | | П | Т | Т | П | Т | Г | П | Т | П | | П | 1 | П | 1.0% |
| 34 | Windfinden | | П | | П | Т | | | | П | | П | | | Т | | П | | П | 1 | | | П | | П | | П | | Т | П | | Г | П | Т | П | | П | 1 | П | 1.0% |
| 35 | Navman | | П | | П | Т | | | | П | T | П | | | Т | | П | Т | П | П | П | | П | | П | Т | П | 1 | Т | П | T | Г | П | Т | П | | П | 1 | П | 1.0% |
| 36 | Seapilot | | П | | П | Т | | | | П | T | П | T | | Т | | П | Т | П | П | П | | П | | П | Т | П | | 1 | 1 | T | Г | П | Т | П | | П | 2 | П | 2.0% |
| 37 | syellida.wordpress.com | | П | | П | Т | | | | П | Т | П | T | | Т | | П | Т | П | П | П | | П | | П | Т | П | | Т | П | Т | Г | П | Т | П | | П | 0 | П | 0.0% |
| 38 | Saaristo.org | П | П | | П | Т | | П | П | П | T | П | T | | Т | Т | П | Т | П | П | П | T | П | | П | Т | П | | Т | П | T | Г | П | Т | П | | П | 0 | П | 0.0% |
| | | П | П | | П | T | | | | П | T | П | | | Т | Т | П | Т | П | П | П | \exists | П | | П | Т | П | | Т | П | T | Г | П | Т | П | | П | 89 | П | |
| | Printed publications | П | П | | П | T | П | | П | П | T | П | T | | T | T | П | T | П | П | П | T | П | | П | T | П | | T | П | T | | П | T | П | | П | | П | |
| | Sjökort | 1 | 1 | | 1 | | 1 1 | 1 1 | 1 | П | 1 1 | 1 | 1 | | 1 | 1 | П | T | 1 | 1 1 | | 1 | 1 | 1 1 | 1 | 1 | 1 | 1 1 | | П | 1 | 1 | 1 | 1 | П | | П | 26 | П | 52.0% |
| | Trafikverket Finland Sjökortsserie | П | П | | П | T | П | П | П | П | | П | | П | | 1 | 1 | T | П | П | П | T | \sqcap | T | П | T | П | \top | | П | T | | П | T | П | | П | 2 | П | 4.0% |
| | SXK guide över Åland | П | \Box | | П | T | | | | \sqcap | \top | П | | | \top | \top | \Box | \top | П | П | \Box | \neg | \Box | | П | | П | \top | T | \Box | T | | П | T | П | | П | 0 | П | 0.0% |
| | Anders Hellbergs hamnbok | | 1 | | T: | 1 | | | | \top | \top | П | T | | T | \top | \Box | \top | П | П | \Box | \exists | \top | \top | П | \top | П | \top | T | \forall | 1 | T | П | T | | | \Box | 2 | П | 4.0% |
| | Suuri satamakirja | | \Box | | \Box | T | | П | | \top | Ť | П | T | П | Ť | \top | \Box | \top | | П | \Box | \exists | \top | \top | П | T | П | \top | T | \Box | T | T | П | T | П | | П | 0 | П | 0.0% |
| | Guideboken Satamaopas | | П | 1 | \Box | Ť | | П | | \top | Ť | П | T | П | Ť | \top | П | \top | | П | \Box | \exists | \top | \top | П | T | П | 1 | T | \Box | T | T | П | T | П | | П | 1 | П | 2.0% |
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| | Tidningen Venelehti | \Box | †† | \top | †† | Ť | П | \top | † | \top | † | Ħ | Ť | П | \dagger | \top | †† | \top | П | Ħ | \forall | \forall | \top | \top | Ħ | † | П | \top | T | Ħ | Ť | T | П | T | П | \top | П | 0 | П | 0.0% |
| | The Great Harbour book (Åbo | \vdash | †† | \top | \Box | Ť | | \Box | | \top | † | Ħ | † | П | † | \top | \forall | † | \vdash | † | \forall | \forall | 1 | \top | Ħ | † | П | \top | T | \forall | Ť | T | Ħ | $^{+}$ | Н | | \Box | 1 | П | 2.0% |
| | sjöscouter) | | | | Ш | | | | | | | П | | | | | | | | | | | | | Ш | | | | | Ш | | | П | | | | | | | |
| | Landkarta | П | П | | П | Τ | П | | | П | T | П | 1 | | 1 | 1 | Π. | 1 | П | | П | П | П | | П | 1 | П | Т | Т | П | Τ | Г | П | Т | П | | П | 4 | П | 8.0% |
| | HBL sommar | | | | П | | | | | | | | | 1 | | | П | | | | | | | | | | | | | | | | П | T | | | | 1 | | 2.0% |
| | Loggböcker | | | | П | | | | | | | П | | | | | \Box | | | | | | | | П | | | | | П | | | П | Τ | | | | 0 | | 0.0% |
| | Hamnguiden | | П | | П | | | | | П | | П | | | | | П | | | П | П | | П | | П | | | T | | П | | | П | T | | | П | 0 | П | 0.0% |
| | Nya Åland | | П | | П | | | | | П | | П | | | | | П | | | Πİ | П | | \sqcap | | П | | | | | П | T | П | П | T | | П | | 0 | | 0.0% |

Table 1

| Rödhamns gästhamn, ÅSS | jetty | jetty1 | jetty2 | jetty3 | jetty4 | | average | average |
|---------------------------------------|----------|--------|--------|--------|--------|-------|--------------|-------------|
| hight of jetty over sea level | | 0.500 | 0.850 | 0.500 | 0.400 | meter | distance to | post / |
| life buoy & fire extinguisher | length m | start | LBFE1 | LBFE2 | | end | closest post | meter jetty |
| distance previous / next | | | | | | | | |
| jetty1 | 22.2 | - | - | - | - | - | | |
| jetty2 | 104.6 | - | 24.3 | 55.1 | | 25.2 | 34.9 | 0.019 |
| jetty3 | 14.3 | - | - | - | - | - | | |
| jetty4 | 30.0 | - | - | - | - | - | | |
| water posts (none exist) | length m | start | WP 1 | WP 2 | WP 3 | end | | |
| distance previous / next | | | | | | | | |
| jetty1 | 22.2 | - | - | - | - | - | | |
| jetty2 | 104.6 | - | - | - | - | - | | |
| jetty3 | 14.3 | - | - | - | - | - | | |
| jetty4 | 30.0 | - | - | - | - | - | | |
| left side / right side (LS / RS) | | | | | | | | |
| recue ladders (none exist) | length m | start | RL 1 | RL 2 | RL3 | end | | |
| distance previous / next | | | | | | | | |
| jetty1 RS | 22.2 | - | - | - | - | - | | |
| LS | 22.2 | - | - | - | - | - | | |
| jetty2 LS | 104.6 | - | - | - | - | - | | |
| jetty3 RS | 14.3 | - | - | - | - | - | | |
| LS | 14.3 | - | - | - | - | - | | |
| jetty4 RS | 30.0 | - | - | - | - | - | | |
| LS | 30.0 | - | - | - | - | - | | |
| lightning & power (no lights / power) | | | | | | | | |
| distance previous / next | length m | start | LP 1 | LP 2 | LP 3 | end | | |
| jetty1 | 22.2 | - | - | - | - | - | | |
| jetty2 | 104.6 | - | - | - | - | - | | |
| jetty3 | 14.3 | - | - | - | - | - | | |
| jetty4 | 30.0 | - | - | - | - | - | | |

Table 1

| MSF Östra hamnen | jetty | jetty1 | jetty2 | jetty3 | jetty4 | jetty5 | | | | | | | | average | average |
|----------------------------------|----------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|--------|-----------------|-------------|
| hight of jetty over sea level | ,, | 0.440 | 0.430 | 0.440 | 0.500 | 0.510 | meter | | | | | | | distance | post / |
| . , , | | | | | | 0.510 | motor | | | | | | | | |
| life buoy & fire extinguisher | length m | start | LBFE1 | LBFE2 | LBFE3 | | | | | | end | | | to closest post | meter jetty |
| distance previous / next | | | | | | | | | | | | | | | |
| jetty1 | 155.55 | | 35.55 | 40.15 | 45.05 | | | | | | 34.8 | | 155.55 | 38.9 | 0.019 |
| jetty1 90° | 50.8 | | 17.8 | | | | | | | | 29.25 | | 47.05 | 25.4 | 0.020 |
| jetty2 | 105.15 | | 55.9 | | | | | | | | 49.25 | | 105.15 | 52.6 | 0.010 |
| jetty3 | 105.15 | | 56.5 | | | | | | | | 48.65 | | 105.15 | 52.6 | 0.010 |
| jetty4 | 105.15 | | 51.4 | | | | | | | | 53.75 | | 105.15 | 52.6 | 0.010 |
| jetty5 | 150 | | 48.2 | 46.2 | | | | | | | 53.0 | | 147.4 | 50.0 | 0.013 |
| jetty5 90° | 92.7 | | 30.6 | 54.8 | | | | | | | 8.3 | | 93.7 | 30.9 | 0.022 |
| water posts | length m | start | WP 1 | WP 2 | WP 3 | WP 4 | WP 5 | WP 6 | WP 7 | WP 8 | end | | | | |
| distance previous / next | | | | | | | | | | | | | | | |
| jetty1 | 150 | | 1.05 | 22.8 | 23.2 | 26.9 | 26.0 | 19.15 | 17.95 | 12.55 | 1.4 | | 151 | 16.7 | 0.053 |
| jetty1 90° | 50.8 | | 17.25 | 16.15 | | | | | | | 17.4 | | 50.8 | 16.9 | 0.039 |
| jetty2 | 105.15 | | 5.8 | 22.2 | 14.1 | 43.3 | | | | | 18.4 | | 103.8 | 21.0 | 0.038 |
| jetty3 | 105.15 | | 6.5 | 22.2 | 19.8 | 37.7 | | | | | 19.0 | | 105.2 | 21.0 | 0.038 |
| jetty4 | 105.15 | | 2.7 | 22.5 | 30.9 | 37.0 | | | | | 12.4 | | 105.5 | 21.0 | 0.038 |
| jetty5 | 150 | | 5.8 | 22.9 | 24.1 | 27.4 | 28.7 | 19.4 | 17.8 | | 4.7 | | 150.8 | 18.8 | 0.047 |
| jetty5 90° | 78.0 | | 19.8 | 18.0 | 19.2 | 17.3 | | | | | 3.9 | | 78.2 | 15.6 | 0.051 |
| left side / right side (LS / RS) | | | | | | | | | | | | | | | |
| recue ladders | length m | start | RL 1 | RL 2 | RL3 | RL 4 | RL5 | RL 6 | RL7 | RL8 | end | | | | |
| distance previous / next | | | | | | | | | | | | | | | |
| jetty1 RS | 150 | | 13.7 | 31.45 | 26.75 | 40.75 | 33.3 | | | | 5.1 | | 151.05 | 25.0 | 0.033 |
| LS | 150 | | 13.7 | 31.45 | 27.15 | 40.35 | 33.3 | | | | 5.1 | | 151.05 | 25.0 | 0.033 |
| jetty1 90° RS | 50.8 | | 10.9 | 25.25 | | | | | | | 10.9 | | 47.05 | 16.9 | 0.039 |
| LS | 50.8 | | 14.65 | 25.25 | | | | | | | 10.9 | | 50.8 | 16.9 | 0.039 |
| jetty2 RS | 105.15 | | 22.2 | 23.7 | 43.65 | | | | | | 18.4 | | 107.95 | 26.3 | 0.029 |
| LS | 105.15 | | 22.2 | 23.0 | 44.35 | | | | | | 18.4 | | 107.95 | 26.3 | 0.029 |
| jetty3 RS | 105.15 | | 27.9 | 27.9 | 27.8 | | | | | | 21.6 | | 105.2 | 26.3 | 0.029 |
| LS | 105.15 | | 27,9 | 27,9 | 27.8 | | | | | | 19.3 | | 47.1 | 26.3 | 0.029 |
| jetty4 RS | 105.15 | | 27.0 | 30.3 | 23.0 | | | | | | 25.2 | | 105.5 | 26.3 | 0.029 |
| LS | 105.15 | | 27.0 | 30.3 | 22.55 | | | | | | 25.65 | | 105.5 | 26.3 | 0.029 |
| jetty5 RS | 150 | | 25.9 | 36.7 | 34.5 | 33.6 | | | | | 19.6 | | 150.3 | 30.0 | 0.027 |
| LS | 150 | | 27.7 | 28.15 | 23.95 | 22.0 | 26.9 | | | | 21.7 | | 150.4 | 25.0 | 0.033 |
| jetty5 90° RS | 92.7 | | 24.4 | 23.7 | 23.4 | | | | | | 22.2 | | 93.7 | 23.2 | 0.032 |
| LS | 78.0 | | 17.2 | 16.7 | 22.0 | | | | | | 22.0 | | 77.9 | 19.5 | 0.038 |
| lightning & power | | | | | | | | | | | | | | | |
| distance previous / next | length m | | LP 1 | LP 2 | LP 3 | LP 4 | LP 5 | LP 6 | LP 7 | LP 8 | LP 9 | end | | | |
| jetty1 | 155.55 | | 6.9 | 13.5 | 14.15 | 14.4 | 16.9 | 14.0 | 17.6 | 18.75 | 18.5 | 20.85 | 155.55 | | |
| jetty1 90° | 50.8 | | 6.9 | 20.95 | | | | | | | | 19.2 | 47.05 | | |
| jetty2 | 105.15 | | 5.5 | 10.7 | 12.1 | 12.0 | 11.5 | 13.0 | 12.8 | 15.2 | | 17.15 | 109.95 | | |
| jetty3 | 105.15 | | 5.1 | 11.6 | 12.1 | 12.1 | 12.0 | 11.7 | 12.6 | 16.6 | | 11.85 | 105.65 | | |
| jetty4 | 105.15 | | 2.3 | 13.2 | 13.8 | 13.25 | 13.65 | 13.2 | 13.5 | 13.9 | | 8.7 | 105.5 | | |
| jetty5 | 155.55 | | 10.8 | 25.0 | 25.6 | 24.6 | 26.2 | 24.7 | | | | 10.5 | 147.4 | | |
| jetty 5 90° | 92.7 | | 18.0 | 21.7 | 20.0 | | | | | | | 17.4 | 77.1 | | |

Table 1

| Kastelholms gästhamn | jetty | | | | | | | average | average |
|----------------------------------|----------|-------|-------|------|------|------|------|--------------|-------------|
| life buoy & fire extinguisher | length m | start | LBFE1 | | end | | | distance to | post / |
| distance previous / next | | | | | | | | closest post | meter jetty |
| jetty1 | 70.0 | | 40.0 | | 30.0 | | | 35.0 | 0.014 |
| jetty2 | 70.0 | | 40.0 | | 30.0 | | | | |
| jetty3 | 70.0 | | 40.0 | | 30.0 | | | | |
| water posts | length m | start | WP 1 | WP 2 | WP3 | WP 4 | end | | |
| distance previous / next | | | | | | | | | |
| jetty1 | 70.0 | | 14.7 | 12.9 | 16.6 | 14.7 | 11.1 | 14.0 | 0.057 |
| jetty2 | 70.0 | | 14.7 | 12.9 | 16.6 | 14.7 | 11.1 | | |
| jetty3 | 70.0 | | 14.7 | 12.9 | 16.6 | 14.7 | 11.1 | | |
| left side / right side (LS / RS) | | | | | | | | | |
| recue ladders | length m | start | RL 1 | RL 2 | RL3 | RL 4 | end | | |
| distance previous / next | | | | | | | | | |
| jetty1 RS | 70.0 | | 20.0 | 41.0 | | | 9.0 | 23.3 | 0.029 |
| LS | 70.0 | | 12.0 | 41.6 | | | 16.4 | | |
| jetty2 RS | 70.0 | | 20.0 | 32.5 | | | 17.5 | | |
| LS | 70.0 | | 20.0 | 32.5 | | | 17.5 | | |
| jetty3 RS | 70.0 | | 20.0 | 32.5 | | | 17.5 | | |
| LS | 70.0 | | 20.0 | 32.5 | | | 17.5 | | |
| lightning & power | | | | | | | | | |
| distance previous / next | length m | | LP 1 | LP 2 | LP 3 | LP 4 | end | | |
| jetty1 | 70 | | 14.7 | 20.3 | 24.0 | | 11.0 | 17.5 | 0.043 |
| jetty2 | 70 | | 14.7 | 20.3 | 24.0 | | 11.0 | | |
| jetty3 | 70 | | 14.7 | 20.3 | 24.0 | | 11.0 | | |
| | | | | | | | | | |