Rederi Ab Eckerö

Cyber Security Risk Management

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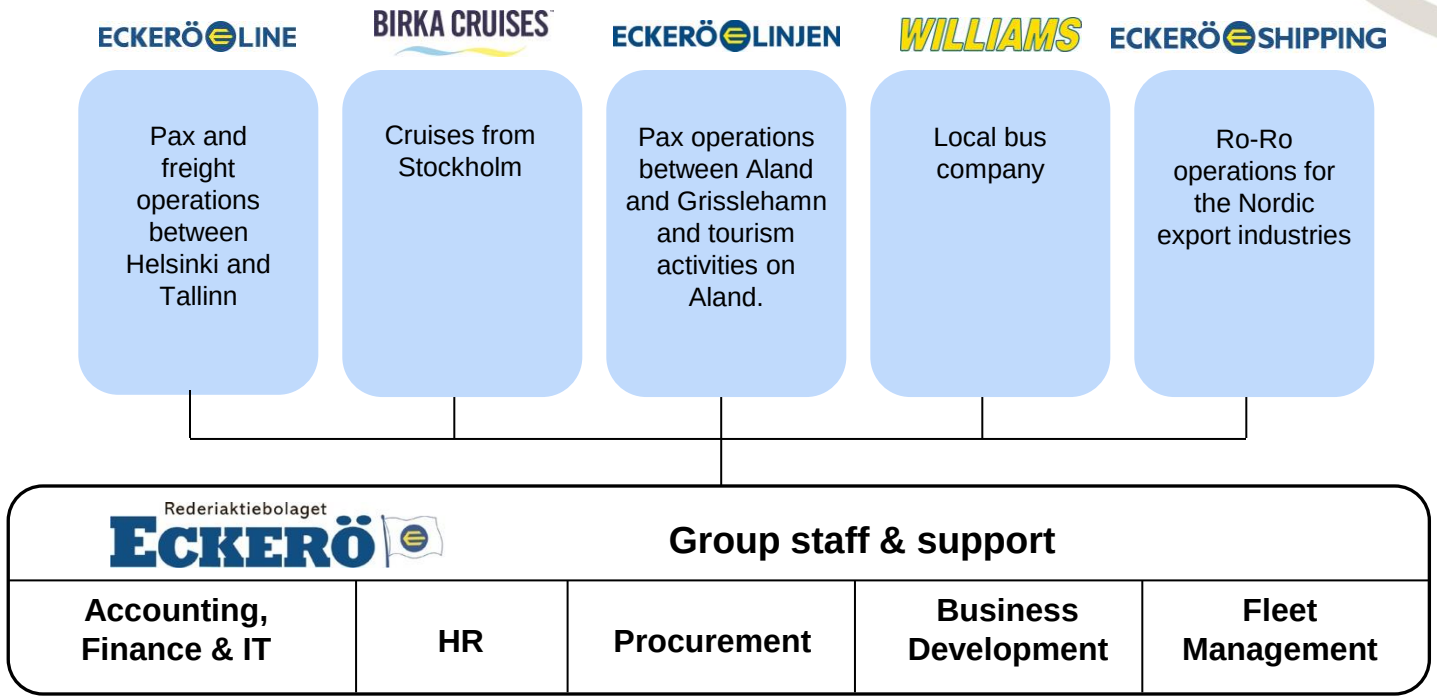
Rederiaktiebolaget ECKERÖ

Eckerö´s 5 business areas



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Pax and Ro-Pax Fleet

M/S Finlandia

Built :2001, Daewoo Shipbuilding & Heavy Machinery Ltd., South Korea
Length: 175 m. Beam: 27,6 m. Capacity: 2.520 passengers.
Freight: 665 cars (1900 lanemeters)

M/S Eckerö

Built :1979, Aalborg Værft A/S, Aalborg, Denmark
Length: 121 m. Beam: 24,5 m. Speed: 20 knots. Capacity: 1.630 passengers.
Freight: 267 cars (515 lanemeters).

M/S Birka

Built: 2004, Aker Finnyards Oy, Raumo, Finland
Length: 177 m. Beam: 28 m. Speed: 21 knots.
Capacity: 1.800 passengers, 715 cabins/1.800 beds

M/S Finbo Cargo

Built: 2000, Astilleros Espanoles S.A. (AESA), Sevilla, Spanien
Lenght: 180 m Beam: 25 m. Speed: 22 knop. Capacity: 366 passengers.
Freight: 2000 lanemeters

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Ro-Ro Cargo Fleet

Exporter

Delivered: 1991
DWT: 5 765 ton
Charter to Holmen Paper AB

Shipper

Delivered: 1992
DWT: 5 755 ton
Charter to Holmen Paper AB

Transporter

Delivered: 1992
DWT: 5 387 ton
Charter to DFDS

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Cyber Risk Management

OK, so what is new here!

- **YK2**
- **MRV**
- **IHM**
- **GDPR**

And now:
MSC-FAL.1/Circ.3 Guidelines on Maritime Cyber Risk Management

But we are already doing this.....or?

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Authorities and Class

Flag State administrations

- Transport Agency, SWEDEN
- Transport and Communication Agency, FINLAND

Classification Societies (RO)

- Bureau Veritas
- DNVGL
- Lloyds Register

Por state administrations

- Estonian Maritime administration, ESTONIA
- Transport Agency, SWEDEN
- Transport and Communication Agency, FINLAND

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1.2 ISM DOCUMENTATION — THE COMPANY´S SAFETY MANAGEMENT SYSTEM (SMS)

Doc mgmt no	PASSENGER SHIPS	CARGO SHIPS
210.000	**ISM COMPANY & SAFETY MANUAL** Company's safety and environmental protection policy. Goals, organization and operational instructions/procedures to ensure safe operation, responsibilities and authority, reporting, audits and review. ISM Code Part A, reg 1-12	**ISM COMPANY & SAFETY MANUAL** Company's safety and environmental protection policy. Goals, organization and operational instructions/procedures to ensure safe operation, responsibilities and authority, reporting, audits and review. ISM Code Part A, reg 1-12
210.005	**EMERGENCY CONTINGENCY MANUAL** Manual which describes procedures to prepare for, and respond to emergency, critical and specific situations including alerting routines. ISM Code Part A, reg 8 and SOLAS Ch III, Reg 29	**EMERGENCY CONTINGENCY MANUAL** Manual which describes procedures to prepare for, and respond to emergency, critical and specific situations including alerting routines. ISM Code part A, reg 8
210.010	**SAFETY AND FIRE TRAINING MANUAL** Ship specific Training Manual describing instructions for emergency procedures, life-saving appliances and firefighting equipment. SOLAS Ch III, reg 35	**SAFETY AND FIRE TRAINING MANUAL** Ship specific Training Manual describing instructions for emergency procedures, life-saving appliances and firefighting equipment. SOLAS Ch III, reg 35
210.015	**CHECKLIST BINDER** Ship specific checklists for operational and safety related routines onboard. ISM Code part A, reg 6-8 and 10	**CHECKLIST BINDER** Ship specific checklists for operational and safety related routines onboard. ISM Code part A, reg 6-8 and 10
210.020	**DOCUMENT MANAGEMENT SYSTEM** Binder which in detail describes the department filing and documentation of operational routines, and instructions for handling of above. Previously called 00-binder (Noll pärm)	**DOCUMENT MANAGEMENT SYSTEM** Binder which in detail describes the department filing and documentation of operational routines, and instructions for handling of above. Previously called 00-binder (Noll pärm)
210.025	**SEARCH AND RESCUE CO-OPERATION PLAN** Manual for co-operation with authorities in SAR operations. SOLAS Ch V, reg 7.3	Not applicable for cargo ships
210.030	**SOPEP MANUAL *** Ship specific Oil Pollution Emergency Plan MARPOL 73/78, Annex I, reg 26	**SOPEP MANUAL *** Ship specific Oil Pollution Emergency Plan MARPOL 73/78, Annex I, reg 26
210.035	**CARGO SECURING MANUAL *** Ship specific manual for securing of cargoes SOLAS Ch VI, reg 5	**CARGO SECURING MANUAL *** Ship specific manual for securing of cargoes SOLAS Ch VI, reg 5
210.040	**HULL OPENING OPERATION AND MAINTENANCE MANUAL** Ship specific operation manual and makers maintenance instructions for bow doors, ramps and WT hull openings SOLAS Ch II-1 and IACS UR S8	**HULL OPENING OPERATION AND MAINTENANCE MANUAL** Ship specific operation manual and makers maintenance instructions for bow doors, ramps and WT hull openings SOLAS Ch II-1 and IACS UR S8
210.045	**EMERGENCY TOWING BOOKLET** Ship specific emergency towing plans and procedures SOLAS Ch II-1, reg 3-4	**EMERGENCY TOWING BOOKLET** Ship specific emergency towing plans and procedures SOLAS Ch II-1, reg 3-5
210.050	**BALLAST WATER MANAGEMENT PLAN *** Ship specific plan for ballast water operations. BWMC, Annex section B, reg B-1	**BALLAST WATER MANAGEMENT PLAN *** Ship specific plan for ballast water operations. BWMC, Annex section B, reg B-2
225.000 and 230.000	**ENVIRONMENTAL MANAGEMENT PLAN INCL. SEEMP** ISO 14001:2015 and MARPOL Annex VI	**ENVIRONMENTAL MANAGEMENT PLAN INCL. SEEMP** ISO 14001:2015 and MARPOL Annex VI
155.000	**APPROVED DOCUMENTATION AND OPERATING MANUALS** Approved documentation on ship, equipment and systems, drawings and documentation, including makers operating and maintenance manuals	**APPROVED DOCUMENTATION AND OPERATING MANUALS** Approved documentation on ship, equipment and systems, drawings and documentation, including makers operating and maintenance manuals
160.000	**SHIPS DRAWINGS AND PLANS** Drawings from new building shipyard, updated as-built drawings, equipment and system drawings and ships plans.	**SHIPS DRAWINGS AND PLANS** Drawings from new building shipyard, updated as-built drawings, equipment and system drawings and ships plans.

*Manual which is to be approved by Flag administration or RO, no alterations or revisions shall be made without approval.

Safety Mgmt System

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Benefits

ISM:

It is actually logical that Cybersecurity is included in the Company SMS. Because that gives the Master and his collegues the responsibilty and authority to ensure that the routines are implemented and are being followed onboard. Also ”officially” clarifies the routines and limitations regarding Cybersecurity for all crew.

Operation/Technical management:

Enables more harmonized and secure routines for purchasing and installation of new system, or upgrading of existing systems and applications.

IS/IT:

Gives more authority and possibilities to control and guide installations so they are made in accordance with secure routines regarding IT and Cybersecurity. Thanks to SMS implementation it also authorizes the IT dept to issue information and directives to improve the overall IT security.

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Drawbacks

ISM:

It is difficult to formulate the text and wording of routines and processes etc in the ISM manual into practical text, because this is a new area and there is limited access to similar existing information. Another challenging aspect is limitations, the balance between writing very detailed and complicated instructions versus keeping it short and simple.

Technical management:

It might take longer time to resolve problems and disturbances on ship- and shorebased systems due to more stringent internal routines and procedures.

IS/IT:

Responsibility to ensure that the routines are followed and personnel involved must be familiar with the internal procedures regarding cybersecurity.

System owners both ashore and onboard must know the routines and find out what new systems requires to fulfill the security requirements, more preparation work in planning and procurement stages is required. This means inevitable that extra recources are needed to investigate systems and applications and make risk assessments.

What do we already have in place?

ISM:

Within the company and especially officers and crew onboard have experience of implementing new routines and regulations through the ISM/SMS. Also we are aware of the fact that new routines shall be implemented during this year and will be reviewed by external organizations and audited by internal procedures.

IS/IT:

The cyber security protection devices are more or less already in place

- Antivirus system
- Firewalls
- Access and password control

Like a menu at a restaurant.....

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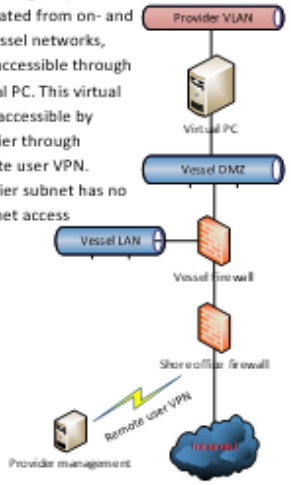
System name			
Supplier/Manufacturer			
I the system remote controlled?	☐ Yes How?		
System requires Internet connectivity	☐ Yes	Estimated monthly data usage	Mbytes
Which services on the Internet are required?			
Internet connection availability requirements (SLA)		%	
How critical is the system to the operation of the vessel?	☐ High ☐ Medium ☐ Low		

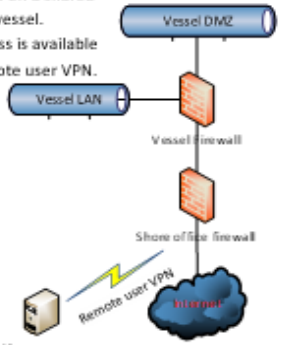
Eckerö contact	
Other system access requirements	

Below are the network connectivity options available to supplier provided equipment.

Dedicated supplier VLAN and subnet in vessel infrastructure. Subnet logically separated from on- and off vessel networks, only accessible through Virtual PC. This virtual PC is accessible by supplier through remote user VPN. Supplier subnet has no Internet access

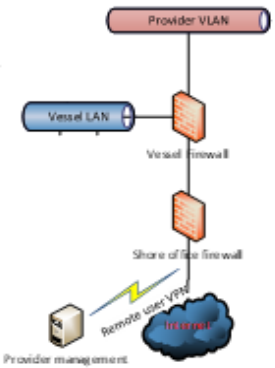


Small number of devices, with low operational risk, requiring Internet- or vessel access. The devices will be placed on a shared DMZ on the vessel. Remote access is available through remote user VPN.



If the supplier chooses to provide Internet connectivity through a dedicated connection, for example mobile network, it is mandatory the supplier takes necessary measures to prevent unauthorized access to the system.

Dedicated VLAN and subnet in vessel infrastructure for medium and high risk devices requiring Internet access and/or limited access from vessel or office LAN. Remote access available through remote user VPN



Menu:

A simple form which is supposed to be used as guidance for installing new systems and applications onboard.

It provides a quick overview for the users of how the systems and applications and installed in relation to the various protection devices in the network

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So what remains to be done until the next DoC audit?

ISM:

Finalise the text, guidelines and procedures to the ISM/SMS. We agreed to keep it at a short and relatively simple level regarding the words and language in order to ensure that all personnel can read and understand the new information.

IS/IT:

Distribute information about the implementation of the new procedures and cybersecurity in general to all personell onboard and ashore. This may be done through:

- Company intranet
- Internal training and meetings
- Internal directives and information

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Experiences so far…

Information about the new regulations and ISM routines

If we can manage to provide good information in plain language, and clear rules and guidelines about daily use of computers and cybersecurity in general it is well received and accepted by the users onboard and ashore. Additionally it clarifies much of the things which today is considered very uncertain by many persons.

A few practical simple actions:

USB memory sticks

External suppliers who needs connection to our onboard systems

The big challenge: Drydocking. Will require extra recources

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