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Ports Energy and Carbon Savings

Deliverable 3.8.3

Installation handed-Over and Staff training Completed Report

Project No. 2S03-009

NAME	ORGANISATION
Jeremy Clarke	Portsmouth International Port

REVISION	DATE	AUTHOR	ORGANISATION	DESCRIPTION
Original	18/12/2018	Jeremy Clarke	Portsmouth International Port	Original

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1. Introduction

Training of the Workforce and handover of the Installation

The Ravestein Linkspan delivered to the Port in early 2018 is now operational but has yet to receive a certificate of final completion.

This is not unusual since the linkspan needs to be operated for a 12 month period before this can be completed contractually.

As noted previously, training started immediately that the linkspan was fitted as the berth was needed to continue cargo operations almost immediately.

Training has been completed satisfactorily and the manuals for operation (or at least the covers) are copied within this report as proof that they exist.

The training in operation of the link span is now complete and the handover of the installation itself will take place early next year (subject to no faults) which is the contractually expected time.

The contents of this report are respectfully submitted as proof of the entry into service of a linkspan part funded by Interreg 2Seas funds which have allowed Portsmouth International Port to provide a new improved and commercially more efficient piece of infrastructure that is now more energy efficient than it would have been without those funds.

2. Substantial Completion of Contract Document

2.1. Document supporting evidence of partial completion of the contract.

Following installation and operation of the new energy efficient linkspan it was found that the upper deck fingers (those part of the ramp that allow the width roadway to be reduced or increased depending upon the width of the ships upper deck ramp). As these were replaced in March 2018 there is a further 12 month period now applicable before the completed linkspan can be fully accepted provided that the replacement ramp and fingers prove sufficient to the job upto and including March 2019 (see certificate below).

PORTSMOUTH INTERNATIONAL PORT
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Portsmouth
CITY COUNCIL

Contractor: Ravestein BV File Ref: MAR/539

Address: Waalbandijk 11, 6653,
Deest, the Netherlands.

ICE Conditions of Contract ICC
Certificate of Substantial Completion

Contract: MAR/539 – Berth 4 Linkspan Date: 25 April 2018

In accordance with clause 48 of the Conditions of Contract I accept the following work(s) as having been substantially completed to my satisfaction.

1) The whole of the Works, except for the supply and installation of the upper deck finger rams.

on the 29th March 2018. The 12 months defects correction period on this portion of the work will commence on the 30th March 2018. A list of outstanding work items is attached.

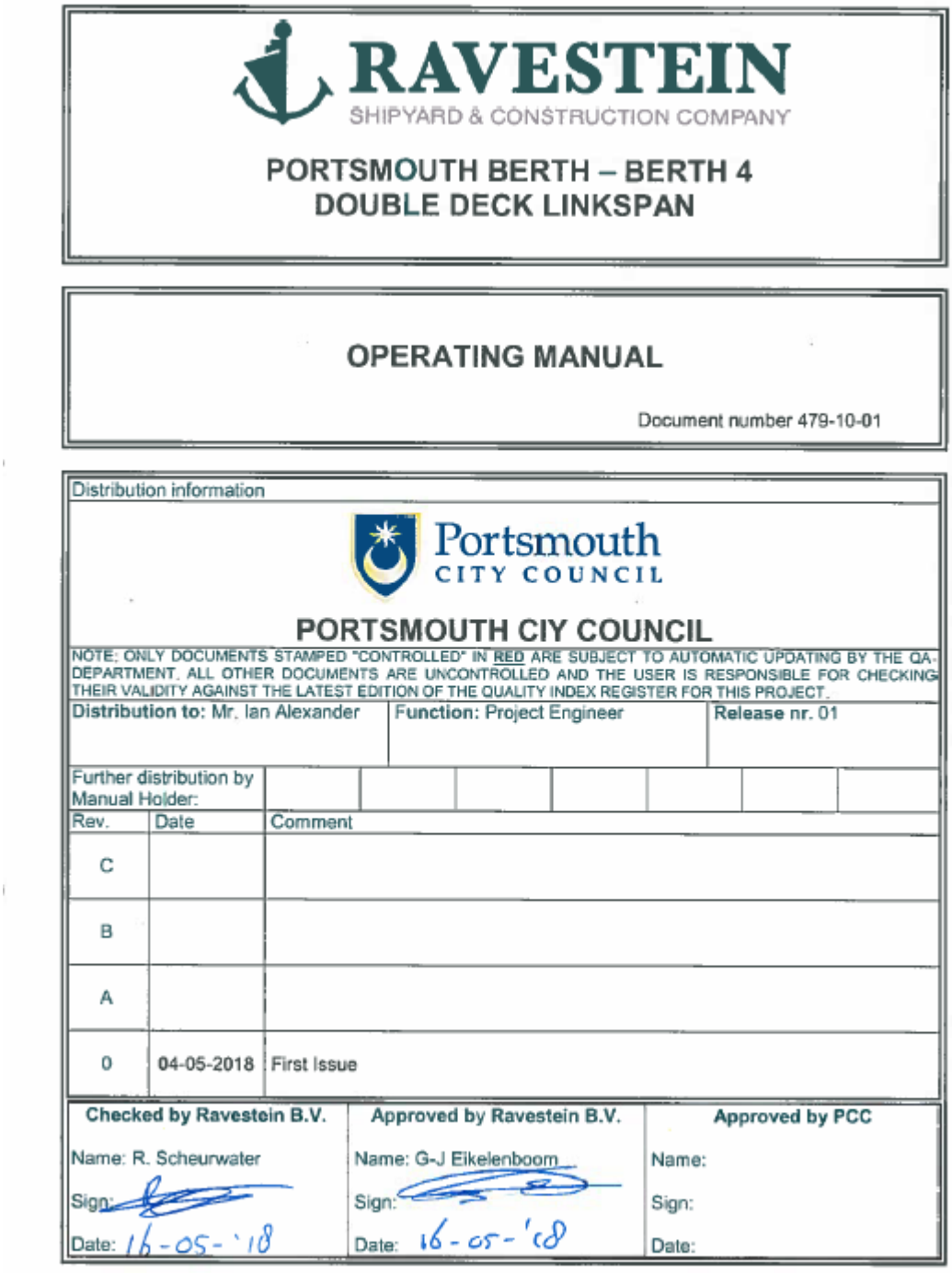
pp .....
Port Engineer

Distribution

1. White to Contractor
2. Yellow to Legal Services
3. Pink Office to Project File
4. Blue to Project Manager
5. Green to Finance

3. Operating Procedure Documents

3.1. Ravestein Linkspan Operating Manual Front Page



RAVESTEIN
SHIPYARD & CONSTRUCTION COMPANY

PORTSMOUTH BERTH – BERTH 4
DOUBLE DECK LINKSPAN

OPERATING MANUAL

Document number 479-10-01

Distribution information

Portsmouth CITY COUNCIL

PORTSMOUTH CIY COUNCIL

NOTE: ONLY DOCUMENTS STAMPED "CONTROLLED" IN RED ARE SUBJECT TO AUTOMATIC UPDATING BY THE QA-DEPARTMENT. ALL OTHER DOCUMENTS ARE UNCONTROLLED AND THE USER IS RESPONSIBLE FOR CHECKING THEIR VALIDITY AGAINST THE LATEST EDITION OF THE QUALITY INDEX REGISTER FOR THIS PROJECT.

Distribution to: Mr. Ian Alexander	Function: Project Engineer	Release nr. 01

Further distribution by Manual Holder:							

Rev.	Date	Comment
C		
B		
A		
0	04-05-2018	First Issue

Checked by Ravestein B.V.	Approved by Ravestein B.V.	Approved by PCC
Name: R. Scheurwater	Name: G-J Eikelenboom	Name:
Sign:	Sign:	Sign:
Date: 16-05-'18	Date: 16-05-'18	Date:

3.2. Ravestein Operating Manual Contents

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Project Portsmouth – Berth 4, New Linkspan
Title/Subject Operating Procedure
Doc. No. 479-10-01
Rev. 0
Date 04-05-2018
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Contents

1 Introduction

1.1 Project identification

This plan describes the Operation Procedure for the double deck linkspan for Berth 4, Portsmouth International Port, UK.

For full technical description of this linkspan, see the basis of design document 479-00 rev. B.

For a general arrangement drawing of this linkpan, see dwg. 14068-00.

This Operation Procedure has been divided in three parts:

Appendix A: User manual for operation of the linkspan.

Appendix B: Load sketches indicating the allowed traffic on the linkspan during operation.

Appendix C: Environmental data for operational and survival condition of linkspan.

1.2 Safety on site

The extend of the safety precautions during the operation of the double deck linkspan is limited to the activities carried out on site during the operation activities and gives a detailed description of the most relevant activities. This document is to be read in conjunction with the site Health & Safety regulations.

Access to all structural compartments will be arranged during operation activities.

Please note that access to ballast tanks and void tanks in the steel structure should be treated as confined space access.

2 Operating principle

2.1 Description of the linkspan operation

Before a vessel can berth the linkspan the following information must be forwarded to the linkspan operator to enable determination of the linkspan position and the mode of operation for the linkspan:

- Width of vessel
- Vessel draught / freeboard

13. The operators on the linkspan need to secure the upper deck finger flaps, which do not have to be lowered, with chains. When the flaps are secured the rest of the flaps can be lowered by the operator in the control cabin.
14. The operator can now check the display mimic for gradients and height alarms, and if all is correct initiate traffic flow. The gradients on the transition interface pontoon – vessel will be checked visual. If required the operator will modify the freeboard settings, or modify the adjustable ramp position to improve the transition gradients.
15. The traffic lights and the traffic barriers are operated from the control room.
16. In case of significant alarms in the ballast system, which will cause danger for traffic operations, the PLC will initiate traffic light stop signals until the alarms have been resolved.
17. When traffic operations are complete, the operator can give permission for the ship to cast off.

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16. In case of significant alarms in the ballast system, which will cause danger for traffic operations, the PLC will initiate traffic light stop signals until the alarms have been resolved.
17. When traffic operations are complete, the operator can give permission for the ship to cast off.
18. The operator can now raise the upper deck finger flaps in upward position.
19. Then, the upper deck can be lowered and retracted by retracting the hydraulic cylinders.
20. The linkspan can then be set to parking position. The PLC will start the ballast system which will bring the linkspan to a programmed approved parking freeboard level. The PLC control system will automatic stop the pumps, when the linkspan is at the parking freeboard and shut off the automatic freeboard system.

2.2 Functional description Linkspan operation

The linkspan will have 4 levels of operation:

1. PARKING POSITION – OUT OF SERVICE
2. AUTOMATIC FREEBOARD CONTROL – NO SHIP
3. SHIP BERTHING, LOADING & DISCHARGING OF A SHIP
4. POWER FAILURE, REDUCED LEVEL OF OPERATION

2.2.1 Parking position – Out of service

Linkspan at parking position (out of service)
The key in the control desk is turned "off"

1. Operation from control cabin is not possible
2. Manual operation is not possible

Conditions:

- No ship berthing to the linkspan
- Upper deck in lower position and resting at the towers at 5500mm above pontoon deck level
- Adjustable ramp in pontoon lowered and flat with lower deck
- Flaps upper deck in up position and secured (if required)
- Hydraulic system stand-by (Main pumps off)
- Traffic barriers down
- Traffic light on quay red.
- No personnel required at the linkspan
- Key in control desk linkspan turned in "off" position
- No manual operation possible
- Navigation lights on
- Deck lighting on reduced level

The parking position of the linkspan will be at a pre-set safe ballast configuration such that the linkspan remains between the minimum and maximum freeboard limits during all tides.

The parking position will only be operated from the HMI in the control cabin.
Pushing the button "parking position" will start up the ballast system with one or two pumps (to be discussed) and the linkspan will be ballasted to the pre-set 'parking' freeboard height.

- Deck lighting on reduced level

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14. The operator can now check the display mimic for gradients and height alarms, and if all is correct initiate traffic flow. The gradients on the transition interface pontoon – vessel will be checked visual. If required the operator will modify the freeboard settings, or modify the adjustable ramp position to improve the transition gradients.
15. The traffic lights and the traffic barriers are operated from the control room.
16. In case of significant alarms in the ballast system, which will cause danger for traffic operations, the PLC will initiate traffic light stop signals until the alarms have been resolved.
17. When traffic operations are complete, the operator can give permission for the ship to cast off.
18. The operator can now raise the upper deck finger flaps in upward position.
19. Then, the upper deck can be lowered and retracted by retracting the hydraulic cylinders.
20. The linkspan can then be set to parking position. The PLC will start the ballast system which will bring the linkspan to a programmed approved parking freeboard level. The PLC control system will automatic stop the pumps, when the linkspan is at the parking freeboard and shut off the automatic freeboard system.

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Linkspan at parking position (out of service)
The key in the control desk is turned "off"

1. Operation from control cabin is not possible
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Conditions:

- No ship berthing to the linkspan
- Upper deck in lower position and resting at the towers at 5500mm above pontoon deck level
- Adjustable ramp in pontoon lowered and flat with lower deck
- Flaps upper deck in up position and secured (if required)
- Hydraulic system stand-by (Main pumps off)
- Traffic barriers down
- Traffic light on quay red.
- No personnel required at the linkspan
- Key in control desk linkspan turned in "off" position
- No manual operation possible
- Navigation lights on
- Deck lighting on reduced level

The parking position of the linkspan will be at a pre-set safe ballast configuration such that the linkspan remains between the minimum and maximum freeboard limits during all tides.

The parking position will only be operated from the HMI in the control cabin.
Pushing the button "parking position" will start up the ballast system with one or two pumps (to be discussed) and the linkspan will be ballasted to the pre-set 'parking' freeboard height.

The system will each time choose another pump or set of pumps for maintenance purposes.

Each time a pump starts-up, the ventilator will start running for a period of 10 minutes.

If faster movement of the linkspan is required, it is possible to select and start-up the other pumps.

When the linkspan is at the pre-set parking freeboard, the pumps will stop and the system will shut off.

If required it is possible to stop the ballast system at any time by pushing the stop button. The system will then stop immediately at the current freeboard level.

2.2.2 Automatic freeboard control – no ship

Linkspan at automatic freeboard control, no ship berthing to the linkspan.
The key in the control desk is turned "on".

1. Operation from control cabin is possible
2. Manual operation is possible

Conditions:

- No ship berthing to the linkspan
- Upper deck in lower position and resting at the towers at 5500 mm above pontoon deck level
- Adjustable ramp in pontoon lowered and flat with lower deck
- Flaps upper deck in up position and secured (if required)
- Hydraulic system stand-by (Main pumps off)
- Traffic barriers down
- Traffic lights on quay red, on linkspan traffic lights off
- No personnel required at the linkspan
- Key in control desk linkspan turned in "on" position
- Manual operation possible
- Navigation lights on
- Deck lighting on desired level (reduced level/off/on)

The linkspan will keep a set freeboard position, which is typed into the HMI. The freeboard height is continuously measured by a freeboard sensor, which is located on the front of the linkspan at portside. If the difference in freeboard height and the set freeboard becomes too large, the pump systems will start-up.

Automatically the pumps will start up and the linkspan will be pumped to the set freeboard height. At the required height the pumps will stop. The system will each time choose another pump or set of pumps for maintenance purposes.

Each time a pump starts-up, the ventilator will start running for a period of 10 minutes.

If faster movement of the linkspan is required, it is possible to select and start-up the other pumps.

If required it is possible to stop the ballast system at any time by pushing the stop button. The system will then stop automatically at the current freeboard level.

2.2.3 Ship berthing, loading and discharging of a ship with ship ramps

The linkspan is at automatic freeboard control, a ship berthing to the linkspan.
The key in the control desk is turned "on"

1. Operation from control cabin is possible
2. Manual operation is possible

Conditions:

- Personnel required at the linkspan during berthing of ship
- Personnel required at the linkspan during lowering of ship ramps
- Platform at a pre-set position and resting at the cylinders. (only if required)
- Adjustable ramp in pontoon deck lowered and flat with lower deck
- Flaps upper deck in up position
- Hydraulic system on
- Traffic barriers down
- Traffic lights on quay red.
- Key in control desk linkspan turned in "on" position
- Manual operation possible
- Navigation lights on
- Deck lighting on desired level (reduced level/off/on)

Prior to the berthing of a ship the linkspan will be ballasted to the required freeboard.
The desired freeboard will be typed in the HMI and then the pump system will ballast or de-ballast the linkspan to the set freeboard height. After reaching of the set freeboard height the system will keep the linkspan at the set freeboard.

If required the upper deck can be lifted up to the desired height for the ship berthing. Normally the platform is resting at the towers at 5500mm above the pontoon deck. The desired height will be reached by pushing the up or down button on the control panel. The measuring system at each of the four cylinders will control the synchronisation of the movement. The four cylinders will always be operated simultaneously. The upper deck can only be raised without traffic load. After raising the platform to a specific height, the weight of the upper deck is resting on the cylinders (including traffic load).

After the ship berthing is completed the ship ramp can be lowered on the pontoon deck. The operator will check if transition angles are acceptable. If not the freeboard of the linkspan must be changed manually until transition are acceptable.

Then the required number of upper deck flaps can be lowered onto the ship deck. When the upper flap cylinder is fully extended, the flaps are on the ship deck.

The operator can check the control panel for gradients, alarms etc. and if all correct initiate traffic flow.
The traffic barriers and traffic lights can be operated from the control cabin on the linkspan.

During traffic flow the PLC will continuously monitor the freeboard height, deck gradients, ballast system and hydraulic system. It is the operators responsibility to continuously check the transition angle from the pontoon deck with the ship ramp and to modify the linkspan freeboard if required.

In case of significant alarms, which will cause danger for traffic operations, an alarm will be raised and the operator can stop the traffic flow if required.
When traffic operations are completed, the operator will give permission to the ship to raise the ship ramps.

The upper deck will always be lowered to its lowest position, where it is resting at the towers. By pushing the down button on the control panel, the four lifting cylinders will retract simultaneously.

The operator can now decide to stop the linkspan system and put the linkspan at the parking position or leave the linkspan at the automatic freeboard control.

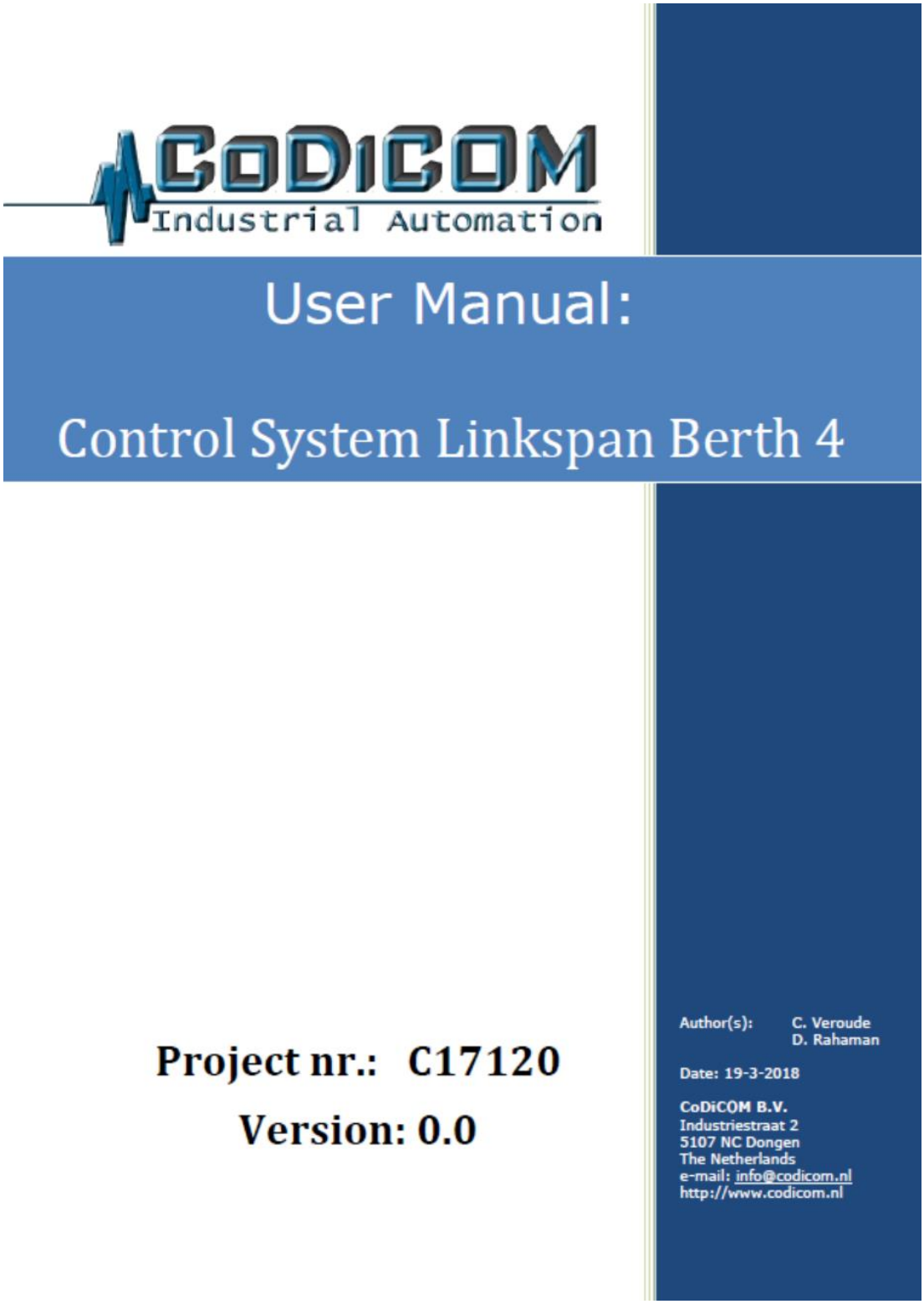
2.2.4 Pump failure – reduced level of operation

Normally the linkspan is operating with four (4) ballast pumps. When one of the pumps has a failure or requires maintenance, the other pumps can still be used. The ballasting system is than capable of operating at a maximum of 75% of the normal speed.

In case of traffic on the linkspan, the traffic flow will have to be reduced, because there are only three (3) ballast pumps available instead of four (4) to keep the transition angles within allowable range.

The Hydraulic Powerpack Unit (HPU) is equipped with three (3) pump sets, from which two (2) pump sets are used for normal operations, with one (1) pump set stand-by. When one (1) pump set has a failure the stand-by pump set can be used for the operation.

3.3. Codicom Linkspan Operating Manual Front Page



3.4. CODICOM General Description with photograph

Usermanual

C17120 Control system "Linkspan Berth 4"

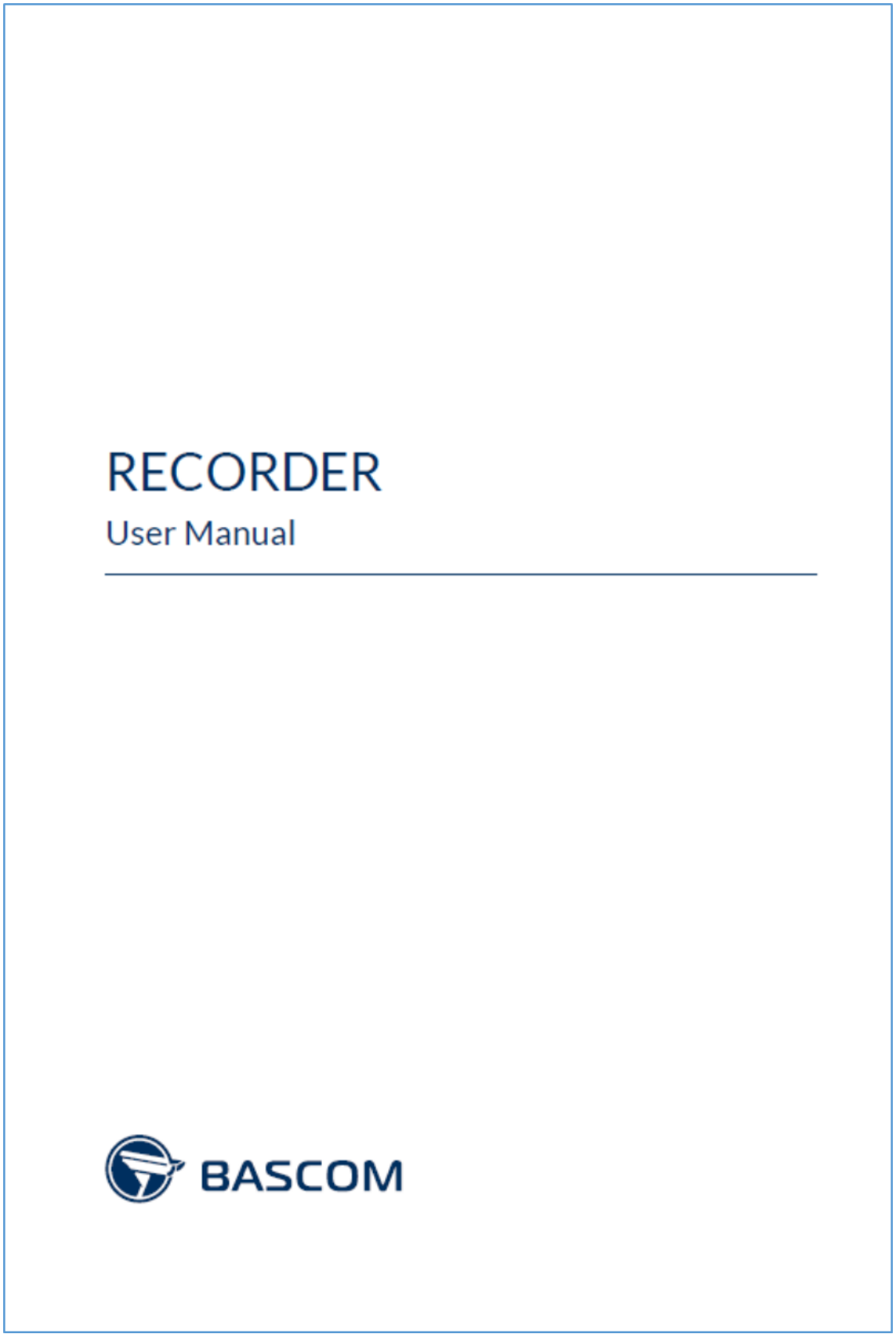
2. General description of the installation

This control system is designed for controlling the Linkspan at Berth 4.

The Control system is capable of controlling:

- Control from lower deck control cabin
- Control from upper deck control cabin
- Control from emergency control panel on main cabinet LCC1X
- Control from emergency control handheld, which can be plugged in connector at main cabinet LCC1X

3.5. CCTV Recorder Manual Front Page



3.6. CCTV Recorder Certificate of Conformity

Declaration Of Conformity

Bascom Camera's B.V. hereby declares that the product is in conformity with the essential requirements and other relevant provisions of guidelines 2004/108/EC, 2006/95/EC and 2011/65/EU. A copy of the declaration of conformity can be found on our website: www.bascom-cameras.com/conformity/.

CE RoHS