## BELZONA BONDS SPADE RUDDER BEARING ON COASTER

Industry: Marine
Application: SOS-Ships and Offshore Structures

Substrate: Steel and Bronze
Products: * Belzona ${ }^{\circledR} 1221$ (super E Metal) Belzona ${ }^{\circledR} 1321$ (Ceramic S Metal),

## Problem

Significant Galvanic Corrosion - from 3 to 7 mm had occured, causing the bronze bush to be unsupported. This was a spade rudder and the forces on the bearing were great.


## Photograph Descriptions

* Vessel prepared for works in drydock ,
* Top of bearing sealed using Belzona ${ }^{\circledR} 1221$,
* Injection of Belzona ${ }^{\circledR} 1321$ into the space ,
* Completed works. The injection plugs are removed at the same time as the rudder is assembled. ,


## Application Situation

Spade rudder bearing on coastal ship.

## Application Method

Application was carried out in accordance with Belzona System Leaflet SOS-9. The top of the bearing was sealed using the Belzona ${ }^{\circledR}$ 1221, and, due to the overhang over the top of the bearing, capillaries were set in to ensure good venting during the injection process.

## Belzona Facts

All works were carried out within one day and witnessed by the Lloyds Register Surveyor. 12 kg of Belzona ${ }^{\circledR} 1321$ was required to
secure the bearing into position, providing a $100 \%$ contact between the bearing and the housing, and compressive load bearing capability significantly above the $10 \mathrm{~N} / \mathrm{mm} 2$ required.

