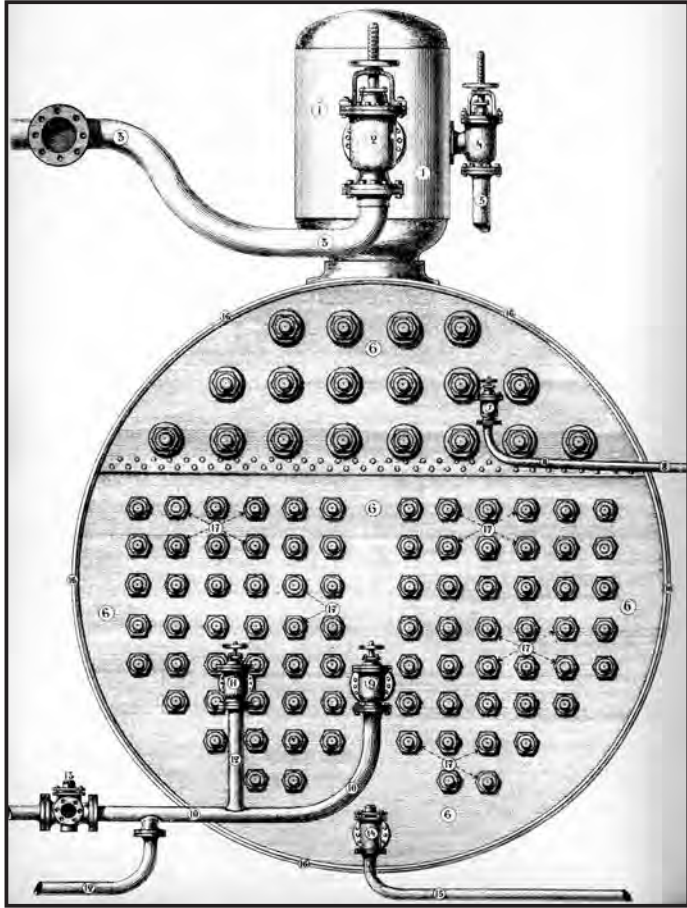


## Boiler

Merchant ships were typically fitted with Scotch boilers, where the fire passes through tubes surrounded by water (Brown 1931: 167). The *Karin* carried water for her boiler in the aft peak tank (Appendix A: 92).



### Key

1. Dome
2. Main stop valve
3. Main steam pipe
4. Auxiliary steam valve
5. Auxiliary steam pipe
6. Back-end plate
7. Brine / scum valve
8. Brine / scum pipe
9. Main check valve
10. Main feed pipe
11. Donkey check valve
12. Donkey feed pipe
13. Communication cock
14. Blow out cock
15. Blow out pipe
16. Boiler shell
17. Stay nuts and washers

**Figure 143:** Diagram of the back end plate of a boiler (Paasch 1890: Plate 48)



**Figure 144:** The outer surface of the boiler's back end plate (Photo: Maitland)

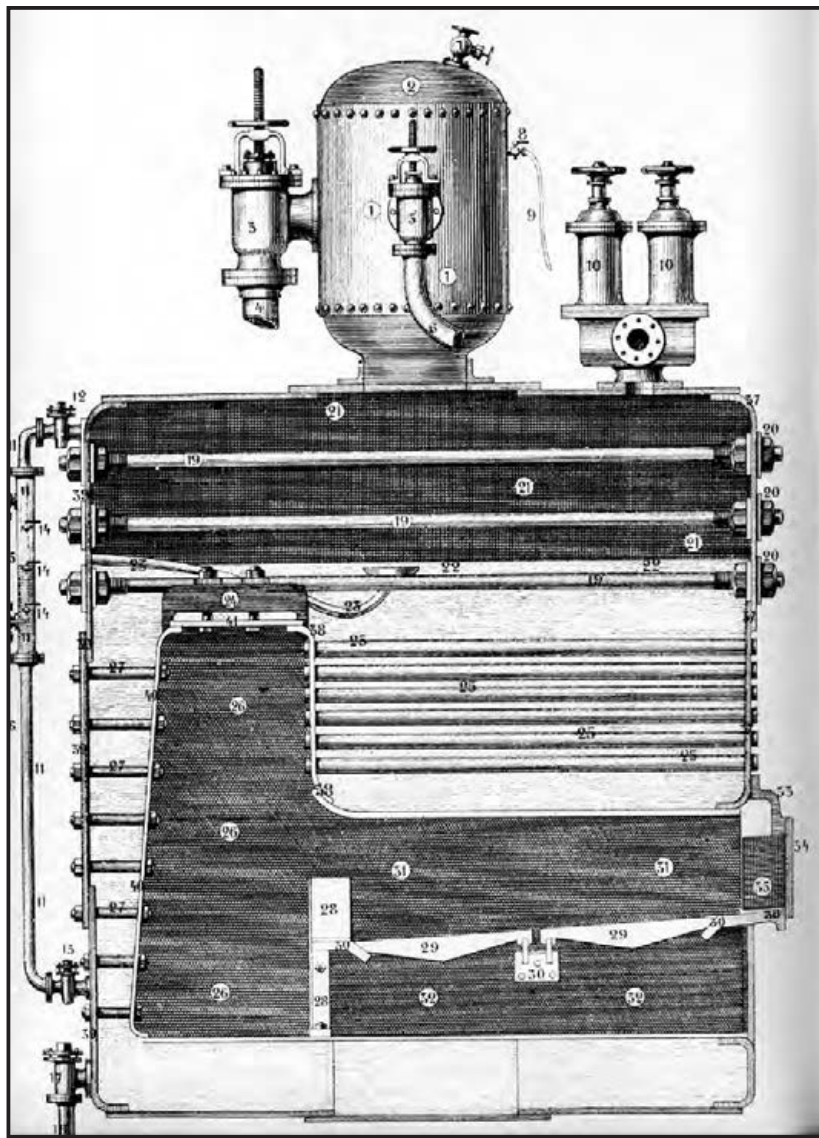


**Figure 145:** Close-up of a boiler stay nut and gasket on the outer surface of the boiler's back end plate (Photo: Maitland)



**Figure 146:** Blow out or blow off cock (Paasch 1890: Plate 48; Photo: Maitland)





**Key:**

1. Dome
2. Crown of dome
3. Stop valve / Main stop valve
4. Main steam pipe
5. Auxiliary steam valve
6. Auxiliary steam pipe
7. Whistle pipe valve
8. Steam gauge cock
9. Steam gauge pipe
10. Safety valves
11. Water gauge column
12. Steam cock of 11
13. Water cock of 11
14. Test cocks
15. Water gauge glass
16. Drain pipe
17. Blow off cock
18. Blow off pipe
19. Boiler stays
20. Boiler stay nuts
21. Steam space
22. Water level
23. Brine pipe
24. Dogs on crown of combustion chamber / fire box
25. Boiler tubes
26. Fire box
27. Fire box stays
28. Fire bridge
29. Fire bars
30. Fire bars bearers
31. Furnace
32. Ash pit
33. Furnace front
34. Fire door
35. Baffle plate
36. Dead plate
37. Front tube plate of boiler
38. Back tube plate of boiler
39. Back end plate of boiler
40. Back plate of fire box
41. Crown of fire box

**Figure 147:** Diagram of the longitudinal section of a boiler (Paasch 1890: Plate 46)



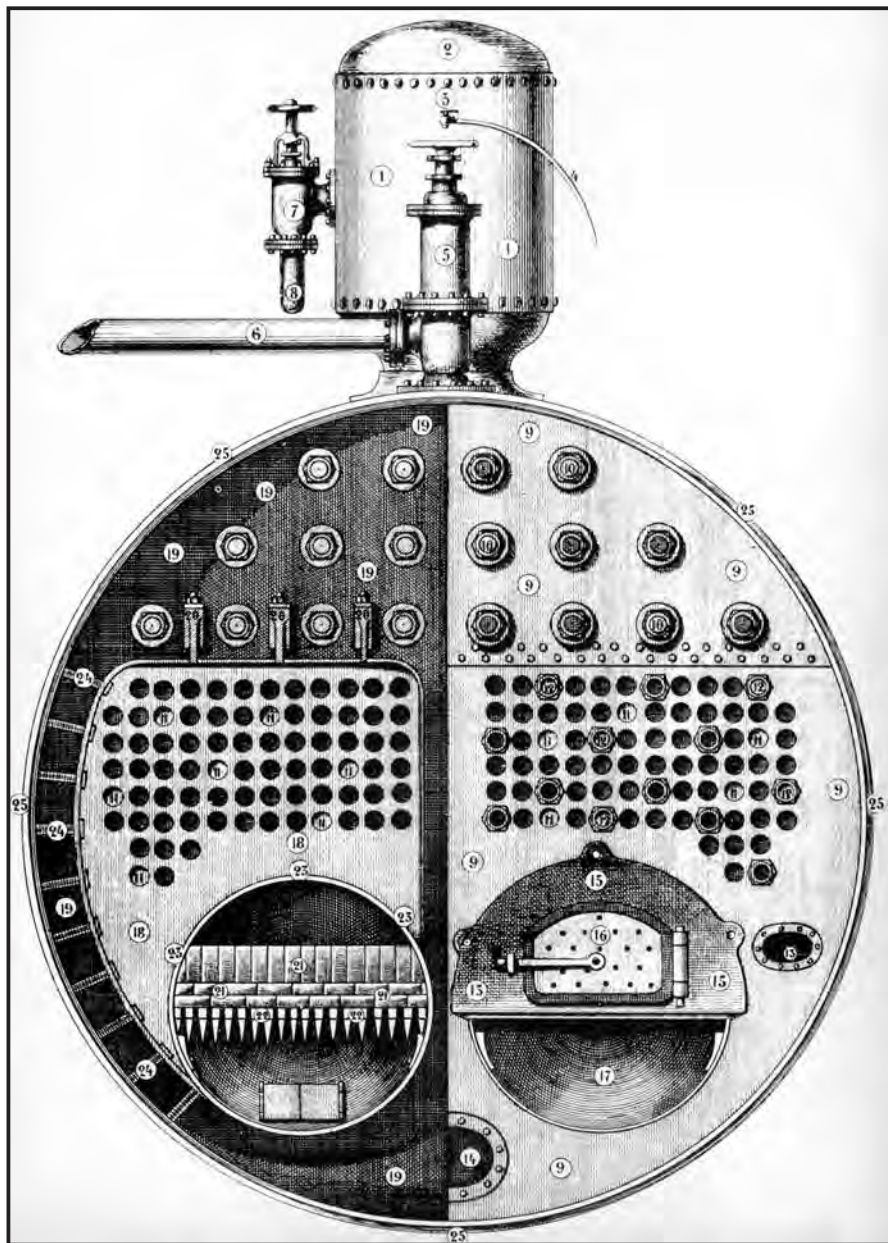
Fire box stays      Boiler stays

**Figure 148:** Inner surface of the boiler back plate (Photo: Maitland)



**Figure 149:** Close-up of the boiler stays on the inner surface of the boiler back plate (Photo: Maitland)





**Key:**

1. Dome
2. Crown of dome
3. Steam gauge cock
4. Steam gauge pipe
5. Safety valve
6. Waste steam pipe
7. Auxiliary steam valve
8. Auxiliary steam pipe
9. Front tube plate of boiler
10. Outside nuts and washers of boiler stays
11. Boiler tubes
12. Stay tubes
13. Hand hole
14. Sludge hole
15. Furnace front
16. Furnace door
17. Ash pit
18. Back tube plate
19. Back end plate of boiler - inside view
20. Dogs, on crown of fire box
21. Fire bridge
22. Fire bars
23. Furnace crown
24. Fire box stays
25. Boiler shell

**Figure 150:** Diagram. Right side — Front tube plate of a boiler; Left side — Inside view of back end plate (Paasch 1890: Plate



**Figure 151:** Possible front tube plate (Photo: Maitland)



**Figure 152:** Front tube plate of boiler (Photo: Maitland)





**Figure 153:** Boiler shell plate (Brown 1931: 167; Photo: Maitland)



**Figure 154:** Boiler shell plate (Photo: Maitland)



**Figure 155:** The iron lining of the ash pit and furnace (Brown 1931: 167; Photo: Maitland)



**Figure 156:** Furnace door (Brown 1931: 166; Photo: Maitland)



**Figure 157:** Possible fire bars (Photo: Maitland)



**Figure 158:** Brass boiler tube ends or buffer plate from the condenser (Renda 2010; Bauer 1905: 271;; Photo: Maitland)





**Figure 159:** Ash pit inspection door (Renda 2010; Photo: Maitland)



**Figure 160:** Pile of brass boiler pipes (Photo: Maitland)



**Figure 161:** Possibly the remains of safety valves (Photo: Maitland)



**Figure 162:** Brass pipes and flanges (Photo: Maitland)



**Figure 163:** Curved iron pipe and flange - there were numerous pipes leading to and from the boiler (Photo: Maitland)

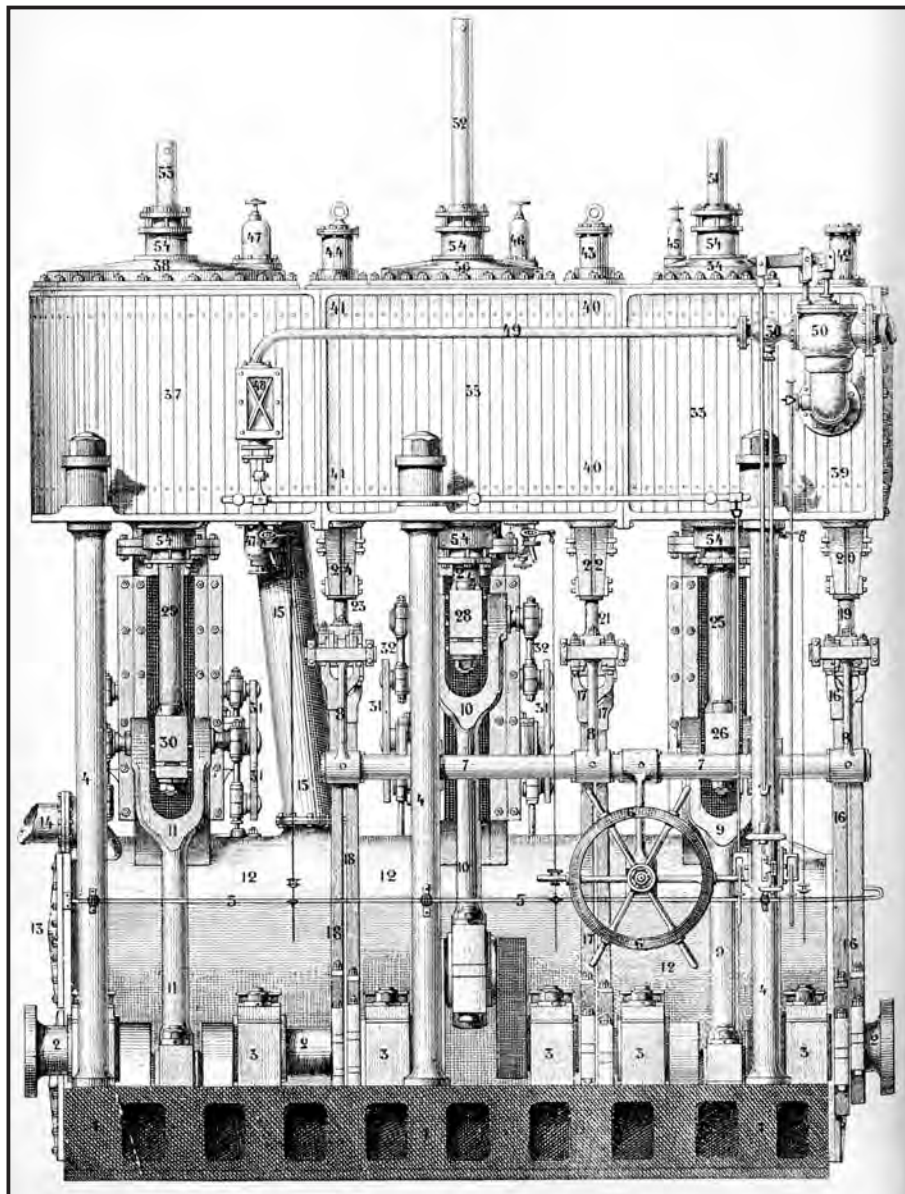


**Figure 164:** Wider brass pipe from the boiler (Photo: Maitland)



## Engine

The *Karin* had a triple expansion engine and the following specifications are listed as: horse power - normal; working pressure - 195; heating surface 1400 square feet; speed - 8/9 knots; consumption - 6 tons. The engine was built by Stork Bros. & Co., engineers. The engine was placed aft in the vessel (Appendix A: 3)



### Key:

1. Bed plate
2. Crank shaft
3. Main bearings
4. Cylinder columns
5. Hand rail
6. Reversing wheel
7. Weigh shaft
8. Weigh shaft levers
9. High pressure connecting rod
10. Intermediate connecting rod
11. Low pressure connecting rod
12. Condenser
13. Condenser door
14. Circulating pump discharge pipe
15. Eduction pipe
16. High pressure eccentric gear
17. Intermediate eccentric gear
18. Low pressure eccentric gear
19. High pressure valve spindle
20. High pressure valve spindle guide
21. Intermediate valve spindle
22. Intermediate valve spindle guide
23. Low pressure valve spindle
24. Low pressure valve spindle guide
25. High pressure piston rod
26. High pressure piston rod crosshead
27. Intermediate piston rod
28. Intermediate piston rod crosshead
29. Low pressure piston rod
30. Low pressure piston rod crosshead
31. Pump levers
32. Pump links
33. High pressure cylinder

34. High pressure cylinder cover
35. Intermediate cylinder
36. Intermediate cylinder cover
37. Low pressure cylinder
38. Low pressure cylinder cover
39. High pressure valve casing/box/steam chest
40. Intermediate valve casing/box/steam chest
41. Low pressure valve casing/box/steam chest
42. High pressure balance cylinder
43. Intermediate balance cylinder

44. Low pressure balance cylinder
45. High pressure cylinder escape valve
46. Intermediate cylinder escape valve
47. Low pressure cylinder escape valve
48. Starting / auxiliary valve
49. Starting valve pipe
50. Auxiliary stop valves
51. Tail rod of high pressure piston
52. Tail rod of intermediate piston
53. Tail rod of low pressure piston
54. Stuffing boxes

**Figure 165:** Diagram of a triple expansion engine (Paasch 1890: Plate 50)





Main bearing  
Turning wheel  
Crank shaft  
Crank web

**Figure 166:** Section of a small crank shaft (Paasch 1890: Plate 59; Photo: Maitland)



**Figure 167:** Side view of the small crank shaft (Photo: Maitland)



Crank shaft  
Thrust shaft

**Figure 168:** Crank shaft attached to the thrust shaft (Paasch 1890: Plate 59; Photo: Maitland)



**Figure 169:** Side view of the crank shaft and its attachment to the thrust shaft (Photo: Maitland)



**Figure 170:** Possibly part of the crank shaft where it connects to the propeller shaft, the flat edge on the flange indicates it rested on something flat (Photo: Maitland)



**Figure 171:** High / intermediate / low pressure connecting rod (Photo: Maitland)





**Figure 172:** Part of a connecting rod, note the stuffing box glands on either side (Photo: Maitland)



**Figure 173:** Part of a connecting rod, possibly from an eccentric gear (Photo: Maitland)



**Figures 174 - 175:** Two views of connecting rods from the triple expansion engine, the high level of concretion makes identification difficult (Photos: Maitland)



Piston      Piston rod



Stuffing box

**Figures 176 - 177:** Views of the piston; in a triple expansion engine, there would have been three (Paasch 1890: Plate 51; Photo: Maitland)





**Figure 178:** Possible engine casing breather (Renda 2010; Photo: Maitland)



**Figure 179:** Possible cylinder head inspection cover (Renda 2010; Photo: Maitland)



**Figure 180:** Sea chest grating, this is fitted onto the hull and filters the incoming water (Renda 2010; Photo: Maitland)



Connecting flange

Stuffing box gland

**Figure 181:** Connecting flange with a stuffing box gland (Photo: Maitland)



**Figure 182:** Double stuffing box gland (Photo: Maitland)



**Figure 183:** Possible stop valve gear on the triple expansion engine (Photo: Maitland)





**Figure 184:** Three way cock, it has a connecting flange, the remains of the gasket are visible (Photo: Maitland)



**Figure 185:** Assortment of ball valves, throttle valves and stop cocks (Photo: Maitland)



**Figure 186:** Possible valve, there were numerous valves which regulated the flow of water, air or steam throughout the engine room (Paasch 1890: 143; Photo: Maitland)



**Figure 187:** Close-up of the manufacturer's stamp on the artefact — 50 H. The valve appears to be brass (Photo: Maitland)



**Figure 188:** Double-seated valve (Bauer 1905: 141; Photo: Maitland)



**Figure 189:** Cooling water inlet valve (Renda 2010; Photo: Maitland)





**Figure 190:** Inner valve (Renda 2010; Photo: Maitland)



**Figure 191:** Inner and outer valve parts (Renda 2010; Photo: Maitland)



**Figure 192:** Assortment of flanges, gaskets and washers (Photo: Maitland)



**Figure 193:** Assortment of miscellaneous equipment (Carpenter 1917: 555; Photo: Maitland)

Deck cap      Round mast or gaff fitting



**Figure 194:** Spring still attached to a rod, probably part of a safety valve (Paasch 1890: Plate 52; Photo: Maitland)



**Figure 195:** Assortment of miscellaneous equipment (Photo: Maitland)

Springs      Ball valve      Valve handle      Stuffing box glands





Valve handles

Electric connection box

**Figure 196:** Assortment of miscellaneous equipment (Photo: Maitland)



Door handle

Pipe joiner

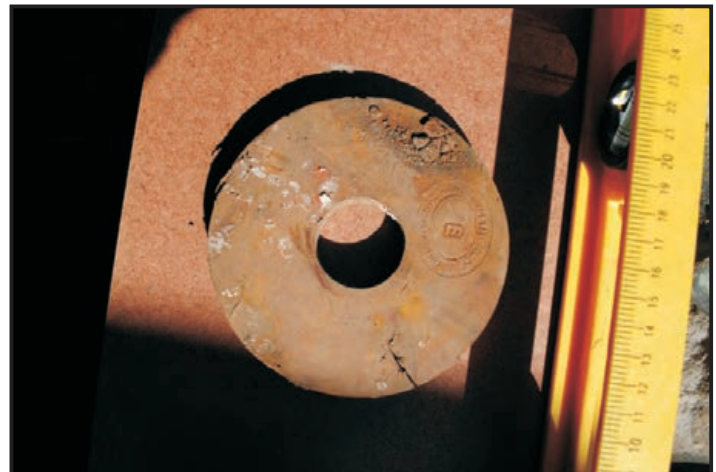
Gasket

Handle

**Figure 197:** Assortment of miscellaneous equipment (Photo: Maitland)



**Figure 198:** Intact gasket in gland (Photo: Maitland)



**Figure 199:** Close-up of gasket with the manufacturer's stamp — James Walker & Co. Carford St. West India Dock Rd. London (Photo: Maitland)



**Figure 200:** Globe valve, drip tap valve and stop cocks (Photo: Maitland)

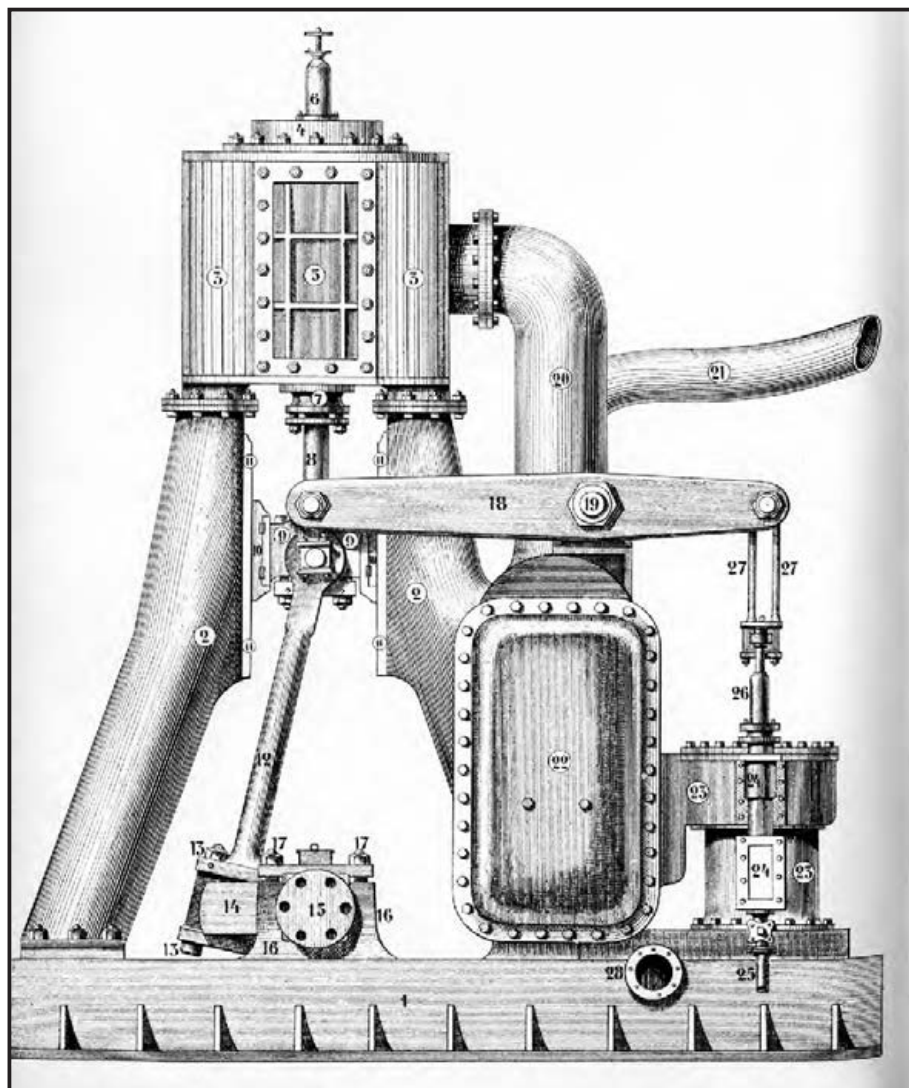


**Figure 201:** The remains of a Bourbon steam pressure gauge (Morrison 1895:113; Photo: Maitland)



## Condenser

Paasch (1890: 109) defines a condenser as follows, “a cast iron appatatus, into which steam after its use in the cylindars is discharged for condensation; i.e. : reduced to water. This water is taken by the air-pump and brought into the hotwell, and from thence by the feed-pump through the feed-pipe supplied to the boilers.”



### Key:

1. Bed plate
2. Cylinder columns
3. Cylinder
4. Cylinder cover
5. Slide valve casing door
6. Escape valve
7. Stuffing box
8. Piston rod
9. Piston rod crosshead
10. Guide blocks; guide shoes
11. Crosshead guide
12. Connecting rod
13. Connecting rod bottom end bolt
14. Crank web; web of crank shaft
15. Coupling flange
16. Main bearing
17. Main bearing bolts
18. Pump lever
19. Centre gudgeon
20. Eduction pipe
21. Circulating pump discharge pipe
22. Condenser door
23. Circulating pump
24. Bilge pump
25. Bilge pump suction pipe
26. Bilge pump plunger
27. Pump links
28. Flange for connecting injection pipe

**Figure 202:** Diagram of part of an engine, showing cylinder, circulating pump, etc (Paasch 1890: Plate 53)



**Figures 203 - 204:** Both sides of possible condenser door (Photos: Maitland)





**Figures 205 - 206:** Views of internal structure of the condenser, the condenser tubes probably fitted through the holes (Photos: Maitland)



Pump lever      Pump links      Bilge pump plunger

**Figures 207 - 208:** Views of the main section of bilge pump (Paasch 1890: Plate 53; Bauer 1905: 321; Photos: Maitland)

## Pumps



**Figure 209:** Part of a pump with a name plate — ZUIG ACHTER PIEK (Suck Aft Peak - the Aft peak pump). Probably the engine room valve leading to the boiler water tank, situated in the aft peak (Photo: Maitland)



**Figure 210:** These name plates read from top to bottom:  
 — Lens Laadruim B5 (Empty cargo hold ballast tank)  
 — Donkey Suction from Ballast Tanks  
 — Suction No. 1 Tank Port  
 (Werz 2010; Photo: Maitland)





**Figure 211:** An unidentified engine part, there are the remains of a turning wheel on the one end and the two pieces are pivoted. Possibly part of the circulating pump and condenser (Photo: Maitland)



**Figure 212:** Drain covers (Photo: Maitland)



**Figures 213 - 214:** Views of a crankshaft lubricating oil pump assembly (Renda 2010; Photos: Maitland)



**Figures 215 - 216:** Pump gland and casing (Renda 2010; Photos: Maitland)



## Steering Gear



**Figure 217:** Mitre wheel on a shaft, possibly part of the steering gear (Photo: Maitland)



**Figure 218:** Close-up of the mitre wheel (Photo: Maitland)



**Figure 219:** Possibly part of the *Karin's* steering gear (Photo: Maitland)



**Figure 220:** Part of the reversing gear (Photo: Maitland)

## Electric Generator and Fittings

The generator was probably connected directly to the engine and supplied electricity throughout the vessel.



**Figure 221:** Electric motor coil (Renda 2010; Photo: Maitland)



**Figure 222:** Electric motor armature (Renda 2010; Photo: Maitland)





**Figure 223:** Dynamo's manufacturer's plate — Sir W.G. Armstrong, Whitworth, & Co Ltd. Elswick Standard D.C. Dynamo.

- No. 4360
- Type
- K.W. 7.1
- Amps. 71
- Volts 100
- R.P.M. 365
- Winding Compound



**Figure 224:** Electric motor casing breather (Renda 2010; Photo: Maitland)



**Figure 225:** Electric junction box (Branch 1910:154; Photo: Maitland)



**Figure 226:** Electric connector, various female nipples and covers for receptacles and rosettes. The second item from the left is stamped — W. Roazs Patent London (Canadian General Electric 1920: 110; Photo: Maitland)



**Figure 227:** Ceramic electrical connector (Photo: Maitland)



**Figure 228:** Electric earth strap (Renda 2010; Photo: Maitland)





**Figure 229:** Electric ceramic connector and bayonet light fitting (Photo: Maitland)



**Figure 230:** Various ceramic electrical connections (Photo: Maitland)



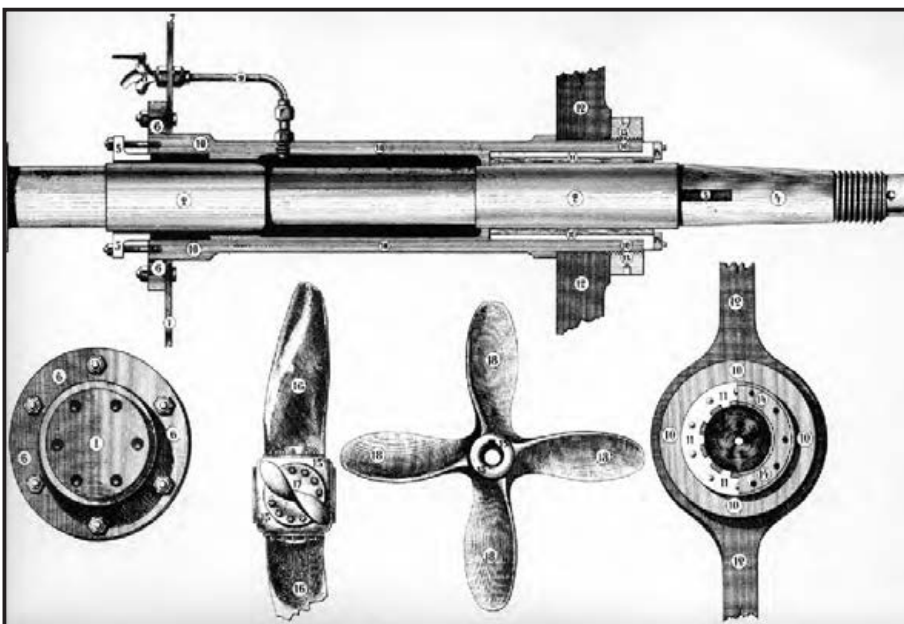
**Figure 231:** Electric wiring in a metal conduit (Photo: Maitland)



**Figure 232:** Electric wiring in a flexible conduit (Branch 1910: 108; Photo: Maitland)

### Propeller

The *Karin's* propeller was cast in one solid piece. In addition, the vessel carried a spare propeller.



#### Key:

1. Coupling flange
2. Liner; sleeve; casing
3. Key way
4. Tail end
5. Stuffing box gland
6. Stern tube flange
7. Stuffing box bulkhead
8. Tunnel cock; water service cock
9. Water service pipe
10. Stern tube
11. Stern bush
12. Propeller post
13. Stern tube nut
14. Guard ring
15. Propeller bosses
16. Propeller blades (movable)
17. Propeller blade flange
18. Propeller blade (fixed)

**Figure 233:** Diagram of propeller shaft, stern tube, propellers (Paasch 1890: Plate 60)







## SC Equipment



**Figure 240:** The ship's bell. It is not engraved with the vessel's name. There may be a manufacturer's stamp inside; however, the inside is coated with conglomerate (Photo: Maitland)



**Figure 241:** Marine chronometer, engraved with the following — Gowland Maker to the Admiralty Sunderland No.  $\frac{5}{8990}$

It is solid brass; has engraved roman numerals; a separate second hand at the bottom and at the top is an up-and-down indicator.

This is marked off in increments of 8 from 0 - 56. Above the 0 is engraved — Up; above the 56 is engraved — Down; in place of the 24 is engraved — Wind. This mechanism in marine chronometers was originally developed in 1774, it counts down the time until the clock needs to be wound up again (Gould 1923: 210; Photo: Maitland).

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**Figure 242:** Advert from Christie's Shipping Register, Maritime Compendium and Commercial Advertiser (1858). There were eleven Gowland family members that were watchmakers; from Robert Gowland who was active in the 1750s until George Gowland died in 1884 ([www.ecodeltempo.altervista.org](http://www.ecodeltempo.altervista.org)).





**Figure 243:** Mounted Walker's Cherub taffrail log with attached rotator and governor (Photo: [www.prices4antiques.com](http://www.prices4antiques.com))



**Figure 244:** The *Karin's* taffrail log and governor. The plate is engraved with — Walker's Cherub Ship Log T.W. (Mark II) 900.

The dial is marked around the edges from 0 - 100 which represent miles. The brass hand represents the miles run. The rotator (not recovered) is towed by a patent log line that revolves according to the speed of the ship. The governor is attached to the line, just abaft the rail and helps to make the log work at a uniform speed (Brown 1931: 137; Photo: Maitland)



**Figure 245:** Plano-convex lens of a brass telescope or binoculars ([www.wikipedia.org](http://www.wikipedia.org); Photo: Maitland)



**Figure 246:** Standard socket rowlock, probably from the *Karin's* lifeboat (Carpenter 1917: 988; Photo: Maitland)



**Figure 247:** Non-ferrous blade, possibly from a ventilating fan (Photo: Maitland)



# The Equipment and Supplies of the



## *S.S. Karin*



## Ship's Tools



Boat clamp Cold chisels Reversible spanner Tool grinder handle Blacksmith's tongs Punch Tool handle Valve spanner

**Figure 248:** Various tools (Carpenter 1917: 83, 192, 886; Photo: Maitland)



**Figure 249:** Fire hooks or valve hooks (Carpenter 1917: 284, 447; Photo: Maitland)



Coal shovel Iron work skidding tongs Chisel scraper Ring spanner Engineer's wrenches Square head wrench for cocks Blacksmith's tongs Monkey wrenches

**Figures 250 - 251:** Various tools (Carpenter 1917: 189, 192, 199, 289, 295, 438, 440, 1021; Renda 2010; Photo: Maitland)



Deck punch Stilson wrench Blacksmith's sledge Open end spanners Flogging spanner Rat tail files Tamping bar



**Figure 252:** Valve spanner (Renda 2010; Photo: Maitland)



**Figure 253:** Fire hoe head, for boiler work (Carpenter 1917: 447; Photo: Maitland)





**Figure 254:** Engineer's hammer (Carpenter 1917: 18; Photo: Maitland)



**Figure 255:** Ship's adze (Carpenter 1917: 22; Photo: Maitland)



**Figure 256:** Chisel end bar (Carpenter 1917: 296; Photo: Maitland)



**Figure 257:** Stencil brush (Carpenter 1917: 787; Photo: Maitland)



**Figures 258 - 259:** Engineer oilers (Carpenter 1917: 475; Photos: Maitland)





**Figure 260:** Kerosene lantern burners (Carpenter 1917: 417; Photo: Maitland)

### Miscellaneous Artefacts



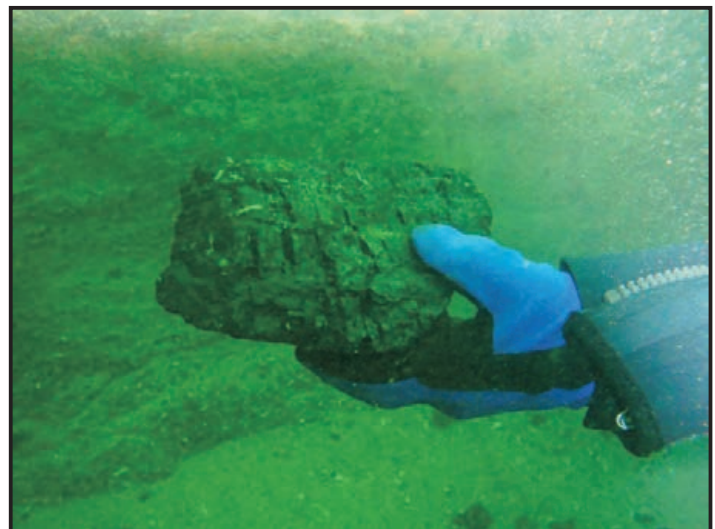
**Figure 261:** Shaped wooden artefact possibly part of the lifeboat (Photo: Maitland)



**Figure 262 :** Wooden handle (Photo: Maitland)



**Figure 263:** Coir matting (Photo: Maitland)



**Figure 264:** Coal on the site of the *Karin* (Photo: Subtech)





**Figure 265:** Leather boots (Photo: Maitland)



**Figure 266:** Belt (Photo: Maitland)

### Galley Utensils



**Figure 267:** Frying pan (Photo: Maitland)



**Figure 268:** Forks, dessert spoons and teaspoon. The following photographs are close-ups of the maker's marks from left (Photo: Maitland)



**Figure 269:** Fork engraved with — BP (in a circle), followed by the letters B, S, FR and script engraving — Western Silver. BP = British Plate (Photo: Maitland)



**Figure 270:** Fork engraved with — (...)VONAH SILVER SHEFFIELD — F.M. & Co (Photo: Maitland)





**Figure 271:** Dessert spoon engraved with — AMARANTHINE WT & S. Amaranthine means everlasting (Photo: Maitland)



**Figure 272:** Dessert spoon engraved with — H.F. & Co. — S, in a shield stamp. The S is the town mark for Sheffield. This mark is from H. Fisher & Co. who manufactured items between 1908 and 1973. They had their factory in Sheffield ([www.silvermakersmarks.co.uk](http://www.silvermakersmarks.co.uk); Photo: Maitland)



**Figure 273:** Dessert spoon engraved with — A.D. & Co. GEM SILVER. Probably Austin & Dodson, makers of all types of cutlery from 1835 - 1925. Based in Sheffield (Woodhead 1991:14; Photo: Maitland)



**Figure 274:** Teaspoon engraved with — HARRISON & HOWSON ALPHA SHEFFIELD. These manufacturers were also known as Harrison Brothers and Howson, active from 1862 - 1919 ([www.silvermakersmarks.co.uk](http://www.silvermakersmarks.co.uk); Woodhead 1991: 98; Photo: Maitland)



**Figure 275:** Wooden cutlery handle (Photo: Maitland)





**Figure 276:** Silver lid with maker's mark engraved on underside (Photo: Maitland)



**Figure 277:** Close-up of maker's mark — SWAN (Photo: Maitland)

### Stone



**Figure 278:** White polished stone, possibly a tabletop (Photo: Maitland)



**Figure 279:** Side view of the white polished stone, showing varying thicknesses. The fragment on the left has a polished curve cut out (Photo: Maitland)



**Figure 280:** Many of the thinner white slabs had holes drilled vertically and horizontally through them (Photo: Maitland)



**Figure 281:** Grey polished stone, possibly a table top (Photo: Maitland)





**Figure 282:** Side view of the grey polished stone, showing varying thicknesses and bevelled edges (Photo: Maitland)

### Enameled Artefacts



**Figure 283 - 284:** Enameling is the process of fusing glass powder onto metal, or ceramic. This process delays the corrosion of metal objects and is more hygienic. Enameling was very popular in the first half of the twentieth century. The artefacts found were mostly just slightly curved pieces. We did find two handles, the handle on the right is probably from a jug ([www.wikipedia.com](http://www.wikipedia.com); Photo: Maitland)

### Glass



**Figure 285:** Various bottle necks  
 1. Shard probably from a Codd bottle  
 2. Aqua glass with a laid on strengthening ring, no seam  
 3. No diagnostic features  
 4. Brown glass with crown top, single seam (Lastovica 1982: 16 - 19; Photo: Maitland)



**Figure 286:** Various bottle bases  
 1. Green, flat, no pontil mark  
 2. Aqua, inverted  
 3. Brown embossed — ..SSON.. — ..APERR(E) — ..SST..  
 4. Aqua slightly inverted (Lastovica 1982: 16 - 19; Photo: Maitland)





**Figure 287:** Various embossed shards

1. Blue medicine — REGISTERED TRADEMARK MAGNESIA
2. Aqua, raised leaves and grapes
3. Aqua, rampant lion
4. Brown, abstract design
5. Thick dark green shard
6. Brown, — ..EWERIE.. (Breweries)
7. Green, — ..ER.. — ..M..

(Photo: Maitland)



**Figure 288:** Fragments of porthole and skylight glass (Photo: Maitland)

## Ceramic Artefacts

### Tiles

Thick earthenware tiles were found throughout the site. These were probably the original tiles from the *Leksveer*. The polychrome patterns on each tiles would have made a cohesive design when 4 or 16 tiles were placed together.



**Figure 289:** In-situ tile (Photo: Subtech)



**Figure 290:** There were two different styles of these thick tiles, this one was lighter with more blues and greens. (Photo: Maitland)





**Figure 291:** The other design has much more red ochre in it (Photo: Maitland)



**Figure 292:** Side view of the tiles, you can see here that the tiles were glazed and not made from pre-coloured clay, it is also more an underglaze than true glaze (Photo: Maitland)



**Figure 293:** Thin green glazed tiles (Photo: Maitland)



**Figure 294:** Thin white glazed tiles (Photo: Maitland)



**Figure 295:** Dark brown stoneware tiles (Photo: Maitland)



**Figure 296:** The underside of the dark brown stoneware tiles showing adhesive ridges (Photo: Maitland)



## Stoneware



**Figure 297:** Stoneware handle (Photo: Maitland)



**Figure 298:** Stoneware shards with an internal white glaze, no diagnostic features (Photo: Maitland)



**Figure 299:** Plain stoneware shards, no diagnostic features (Photo: Maitland)



**Figure 300:** Carbonated drinks, particularly ginger beer was packaged in stoneware bottles. The drink maker's logo was applied to the bottle with underglaze transfer printing (Lastovica 1982: 29; Photo: Maitland)

## Earthenware



**Figure 301:** Assortment of decorated shards, the ones on the left are decorated with incisions, slip and glazes. The ones on the right are maker's underglaze transfer prints. Close-up in Figures 302 - 305 (Photo: Maitland)



**Figure 302:** The TT and H entwined in a rope is the trademark of Thomas Twyford. From 1898 the firm was known as Twyford Ltd and was based in Hanley, England (Godden 1991: 629; Photo: Maitland)





**Figure 303:** Blue, underglaze transfer print. All that is recognisable is a garter mark, this element was widely used, in a variety of forms, in many British marks and the company's name or initials would have been in the center (Godden1991:13; Photo:



**Figure 304:** Blue, underglaze transfer print. All that can be discerned is the ribbon (Photo: Maitland)



**Figure 305 - 306:** Two sides of an earthenware shard; black underglaze transfer print but there is not enough of the trademark to identify (Photo: Maitland)



**Figure 307:** Undiagnostic ceramic shards (Photo: Maitland)



**Figure 308:** While these shards are not diagnostic, their glaze was applied in such a way as to cause tiny bubbles to erupt during firing. This is called a pinhole glaze. I do not know if this was intentional (Photo: Maitland)





**Figure 309:** Undiagnostic foot rings (Photo: Maitland)



**Figure 310:** Undiagnostic edges or corners (Photo: Maitland)



**Figure 311:** Unidentified rims (Photo: Maitland)



**Figure 312:** Close-up of decorated rims - Blue-and white design, blue line, gold line on the rim edge, crenulated and slip dots (Photo: Maitland)



**Figure 313:** Close-up of raised rims (Photo: Maitland)



**Figure 314:** Close-up of incised rims (Photo: Maitland)

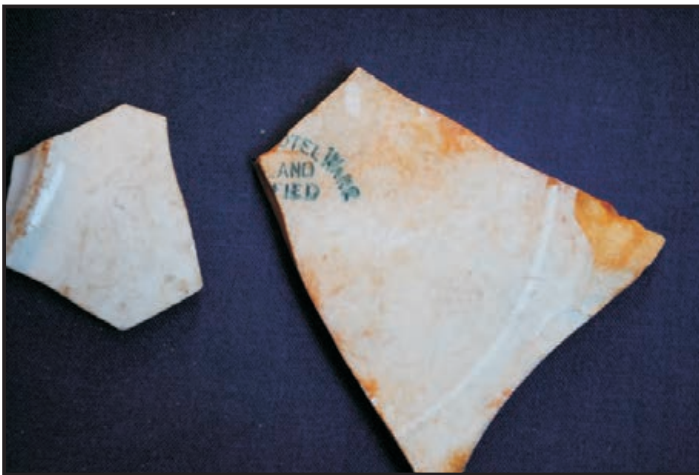




**Figure 315:** Selection of thick rims (Photo: Maitland)



**Figure 316:** Close-up of thick rim (Photo: Maitland)

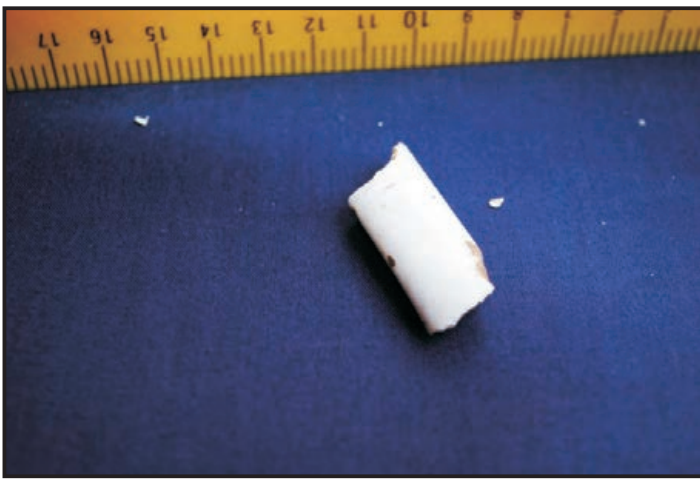


**Figure 317:** Close-up of flatware foot ring with transfer print — ..OTELWARE ...LAND ..FIED. Probably Hotelware England (Photo: Maitland)

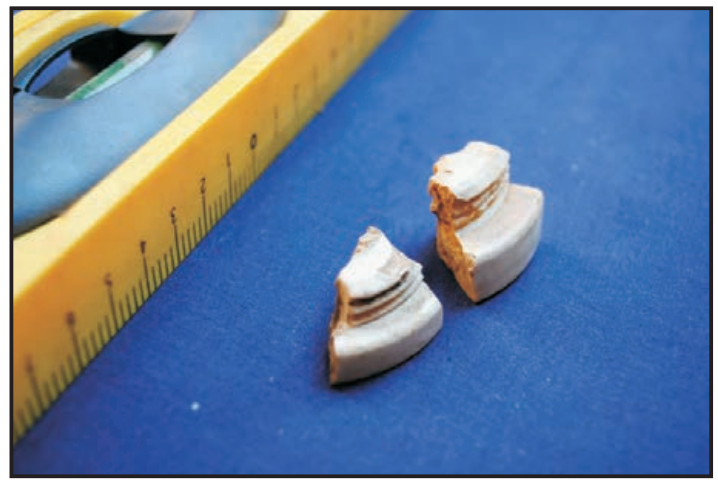


**Figure 318 - 319:** Fragments that show a square edged hollow-ware, the maker's mark on the bottom is — Rürfir... probably a German or Dutch manufacturer (Photo: Maitland)





**Figure 320:** Cup handle (Photo: Maitland)



**Figure 321:** Threaded ceramic, possibly a pot lid (Photo: Maitland)



**Figure 322 - 323:** Ceramic with a thick glass layer (Photo: Maitland)



The Cargo of the



***S.S. Karin***



## Wood



**Figure 324:** Possibly the remains of dunnage, which was placed under the cargo to stabilize it (Photo: Maitland)



**Figure 325:** The *Karin* carried a small cargo of “jarrah” wood (Photo: Maitland)

## Sugar



**Figure 326:** Sugar sacks still adhering to the hull plating (Photo: Maitland)



**Figure 327:** Close-up of sugar sacks (Photo: Maitland)

## Petrol Drums



**Figure 328:** In-situ drum lid (Photo: Subtech)



**Figure 329:** Compressed drum (Photo: Maitland)





**Figure 330:** Internal view of drum cap (Photo: Maitland)



**Figure 331:** External view of drum cap (Photo: Maitland)



**Figure 332:** Drum lid with cap missing (Photo: Maitland)



**Figure 333:** Three different drum lids found, stamped with the following (from left to right):  
— V O C O S A L T D - 4372  
— A T L A S - I C C 5 - 1455 23  
— I . C . C . 5 - 14527 - 208



The  
*Lion*



## Introduction

In 2009 during the Durban Harbour Entrance Widening project, the dredger brought up some metal pieces in the proposed position of the sand trap. On examination, these pieces were deemed to be older than 60 years and thus protected under the National Heritage Resources Act. In order to avoid removing the wreck, the sand trap was moved and no more of the wreck was taken out. These pictures are a record of the artefacts removed.

## Historical Background of the *Lion*

I believe this is the wreck of the *Lion*. Firstly, the position of the wreck (See Figure 12); secondly, in Appendix B (228) the Natal Advertiser reports “she (the *Karin*) will automatically disappear in the same way as the sunken *Lion*”. Lastly, the construction of the wreckage is congruent with that of the *Lion*.

The *Lion* was built in 1882 by Thms. I.W. & S.B. Co., a steel or iron twin screw steamer of 141 tons; her dimensions were 101' 6" x 19' 6" x 8' 5". She was employed as a harbour tug. Her home port was London and she was owned by the African Boating Company. On 21 July, Captain Hugh Legg had taken lighters to the Outer Anchorage and on returning, heavy seas drove her onto the concrete blocks of the North Pier. Seven lives were lost. In 1944 a dredger bought her boiler (Maitland: Unpublished Shipwreck Database).

## The Artefacts



**Figure 334:** Keel showing centre keelson, intercostal keelson and reversed frames (Paasch 1890: Plate19; Photo: Maitland)



**Figure 335:** Turn of the bilge showing frames and riveted hull plating (Paasch 1890: Plate19; Photo: Maitland)



**Figure 336:** Wooden hold ceiling (Photo: Maitland)



**Figure 337:** Stern tube and propeller (Paasch 1890: Plate 60; Photo: Maitland)





**Figure 338:** Tunnel shaft bearing and thrust shaft of the propeller (Paasch 1890: Plate 59; Photo: Maitland)



**Figure 339:** Close-up of the brass guard ring of the propeller, stamped — SHARD (Paasch 1890: Plate 60; Photo: Maitland)



**Figure 340:** Connecting rod (Paasch 1890: Plate 58)



**Figure 341:** Skylight glass (Photo: Maitland)



**Figure 342:** Stockless bower anchor (Paasch 1890: Plate 64; Photo: Maitland)



**Figure 343:** Stockless bower anchor (Paasch 1890: Plate 64; Photo: Maitland)





# Conclusion

From a 2010 archaeological perspective, the *Karin* is neither exciting nor of huge historical significance, she only sank 83 years ago. I spoke to a Capt. Lief Stephen Albert Israelsson in February 2010 and he recalled Capt. Asdal talking about the *Karin* and her sinking. The wreck of the *Karin* is thus within living memory. Unfortunately, the result of this is that her historical importance is underplayed. In addition, her position in the shipping channel, of the busiest port in Africa, meant that the wreck had to be removed quickly and efficiently without the usual archaeological methodology.

The vessel has structural details, as well as insights into the daily lives of the coastal steamer sailors, that are not a part of the written record. The fixed keel was installed after the construction of the vessel and is not drawn on the blueprints. The assortment of cutlery and crockery reflects the crew's simple shipboard life. While these are not earth shattering revelations they colour-in our picture of the past.

The report may contain identification inaccuracies, this is due to time constraints. The conglomeration and the deterioration of the artefacts also hampered identification.

This report does not include all the photographs of the recovered artefacts. I have included all these on the report DVD. They may be of use to future researchers.





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