



HARBOUR MASTERS REPORT TO HHAC 8th October 2020

Operational report

July

- Slipway inspection
- Ladder inspection
- Lifesaving equipment inspection
- Aids to navigation inspected
- Buildings inspection completed

August

- Ladder inspections completed
- Aids to navigation inspected
- Buildings inspection completed
- Lifesaving equipment inspected
- Slipway inspected and cleaned
- Units 12 & 13 Demolished as part of the NQ development
- New North cardinal buoy ordered. Delivery expected end of Sept /early Oct

September

- Ladder inspection completed
- Aids to navigation inspected.
- Life Saving equipment inspected
- Slipway inspected and cleaned
- The Octel building is now under contractor control
- New lights ordered for pole 1 and 2
- Estuary Navigation pole 2 replaced.

HM PMSC Report

1 Navigable Channel

Training Wall works

Purpose – The training is situated in the Hayle estuary and was built at the time of the foundry industry to help maintain a navigable channel for boats. This was part of a solution that worked in tandem with sluicing from Carnsew and Copperhouse tidal pools that enabled sediment to be flushed from the harbour out into St Ives bay.

As part of the Corinthian Harbour Marine Programme (CHMP) objectives to improve and maintain a safe a navigable channel for both commercial and leisure vessels, investigative work was commissioned to establish the original construction and current condition of the training wall which will form the basis of planning any improvements required.

The understanding was that the original training wall was made up of Copper slag which is a by-product of copper extraction by smelting. During smelting, impurities become slag which floats on the molten metal from which the blocks were formed. However, the exact building technique of the wall was unknown as it has generally remained buried due to the amount of sand that has built up on it.

Two surveys were undertaken -

Part 1 - Ground penetrating radar survey – This was produced by Kemp Engineering and it detailed a structure running along the line of the navigation poles at varying depths under the sand from 0.8 m– 1.6m. There did not appear to be any gaps in the structure and therefore it initially seemed to show that the wall has remained in place.

Part 2 - Trench Excavations - Steve Harman at Constructing Co UK was commissioned to undertake a series of 10 trenches at various points along the length of the survey data to uncover the structure and establish what it was made of, its form and condition.

The Copper slag rock was discovered in most of the trenches however the individual pieces were relatively small in size and not very deep from the top of the wall to the bottom. A mid-week review of the results was undertaken and based on this, further trenches were dug to look at how far away from the navigation poles the wall travelled and at what depth.

We also undertook extensive research of historic photos including google earth and utilising local knowledge. My thanks to Clive Polkinghorne for the photographs that he provided.

Originally the navigation poles were tree trunks and were subsequently changed to telegraph poles. The poles had lights on the top serviced by an electric cable, which was found, but the electric feed was later discontinued in favour of solar powered lights.

Some granite blocks were uncovered and despite these being considered as the wall construction it appears, they were only placed near some of the navigation poles most likely when they were changed to telegraph poles.

Based on the excavations by Steve Harman he arrived at the following conclusion –
I can say with a degree of certainty that the original structure is indeed riprap revetment style construction not a wall with an upright face, the existing structure is made of stone pitching at an incline and a finished horizontal top of at least 4/6 metres wide, where large dressed stones have been encountered I believe a granite masonry wall has been dry laid on top of the stone

pitching, this can only be identified in certain locations mainly at the higher end of the wall and not passed Chainage 150

As the excavations have conformed the horizontal section of the revetment remains mostly intact, I see no reason why the incline section should differ

Part 3 – Data review and next steps – undertaken

The data establishes as far a possible that the training ‘wall’ is in fact the bank of the tidal channel covered with stone rather than a wall structure. Due to lack of maintenance of the channel and the time of the year there is a large amount of sand on the wall and the channel has in some areas moved as far as 200 metres from the navigation poles.

The winter storms have historically created very significant movements of the sand in the outer estuary area and normally by around February the training wall is exposed to a greater extent than currently seen. Therefore, taking any action to manually uncover the wall would be wasted if its exposure can be achieved from winter tides and weather.

The recommended next steps are –

- 1) Wait until early next year before undertaking any improvement works
- 2) Take regular timeline photography of the wall and estuary to inform the natural movement of the sand and alignment of the channel
- 3) From the harbour launch, survey along a line from the channel to the navigation poles to find out the depth of the sand between the two
- 4) Undertake trials with sand suction techniques to agree the best method for sand removal and relocation
- 5) Review options to either improve the current wall with heavier interlocking stone blocks at the top and bottom of the wall and where necessary infill with stone on the banked area in between
- 6) Agree where the channel should be and detail out a costed programme to manually remove the sand
- 7) Work with SOS & RSPB stakeholders to agree where sand will be relocated to as part of dune replenishment works and sand sales to reinvest into the works
- 8) Obtain any licences required from MMO and RSPB
- 9) Conduct the above improvements in tandem with dredging the inner harbour and sluicing

2 Dredging

Dredging of the inner estuary was progressed until May at which point the Authority took a decision to temporarily suspend dredging which would enable an assessment of the operation to date and to also confirm the tonnage removed which has been recorded as follows:-

| Month | dredged | Dune Replenishment | Sold Commercially |
|--------------|------------------|--------------------|-------------------|
| February | 800 tons | 0 | 800 |
| March | 1500 tons | 350 | 1150 |
| April | 2000 tons | 500 | 1500 |
| May | 700 tons | 150 | 550 |
| Total | 5000 tons | 1000 | 4000 |

Going forward there will be a need for some localised dredging of the inner estuary over the winter months to complete the operation of removing hard packed sand and high spots in support of the sluicing operation which is due to recommence April 2021.

The removal of sediment from the estuary is based on data from ongoing bathymetric surveys which are conducted by USS a local Hayle Company who are working with the Harbour Authority as part of the dredging operation. The data received is evaluated which then enables the harbour authority to only target the areas of the estuary where sediment removal is absolutely necessary; the aim of which is to provide and maintain a channel that is safe for use. The 2 bathymetric surveys undertaken to date one pre dredge the other post dredge are available to view at the harbour office.

HHAOL have also engaged with Anthony D Bates Partnership LLP Dredging Harbour & Coastal Consultants to quote for an impact assessment report of the dredge operation. A Consultant Mr Martin Maloney recently attended the harbour to obtain background information of the site and dredge operation and has a yet to forward his quote.

I am also in the process of applying to the MMO for permission to deposit dredged sediment below the Mean High-Water Mark. This will provide the Authority with the option of returning a percentage of dredged sand to St Ives Bay.

3 Aids to Navigation

One of the chambers on the North cardinal buoy was found to be damaged and taking water which is causing the buoy to list. In consultation with the harbour owners a decision has been made to order a new foam filled buoy. Vessel availability to recover the old buoy and lay the new buoy will dictate when this operation will be possible. If the operation cannot be achieved before November it is unlikely the buoy will be replaced until the new year, in which case a new light will be refitted to the current buoy.

Navigation Pole 2 and light was damaged during storm conditions and has since been replaced

Pole 1 light is unserviceable and will also be replaced.

4 MV John Martin

All necessary permissions were obtained for the removal of the MV John Martin, which has since been broken up at Lelant quay and removed to a licenced site.

5 Marine Incidents

2020 incidents

| HHAOL Incidents | Reports | Notes |
|---|---------|---|
| Fatalities | 0 | |
| Serious Injury | 0 | Reportable to HSE / MAIB |
| Person Requiring Assistance – In Water | 3 | Includes canoes, windsurfers, kite surfers, Paddleboarders swimmers, etc. |
| Person Requiring Assistance – Ashore | 0 | Includes cut off by tide, ambulance assist, stuck in mud, etc. |
| Person Requiring Assistance – On Vessel | 1 | Includes medical issues, persons rescued on ‘Vessel Casualties’, etc. |
| Reported Injury - Ashore | 0 | Includes staff & public, minor accidents, slips & trips claims, etc |

| | | |
|--|---|--|
| Vessel Casualty Within Port Limits | 3 | A leisure Vessel capsized in the vicinity of the sand bar emergency services attended 3 POB rescued 1 required medical treatment 1 vessel sunk on its moorings 1 Fin keel yacht fell onto its side |
| Casualty Vessel Towed / Escorted into Port | 1 | Yacht grounded in the estuary was towed off by a fishing vessel |
| Collision | 0 | |
| Grounding | 5 | Includes vessels broken free from moorings and ashore (fishing vessels grounded pushing tidal boundaries) |
| Fire | 0 | Harbour property ashore or on vessels |
| Near Miss | 0 | Near collisions or near accidents. |
| Speeding | 6 | 4 x jet skis 2 leisure vessels verbal warnings issued |
| Updated risk assessment following an incident accident or navigational condition | 0 | |
| Pollution Incidents | 1 | Sewerage discharge from SW pumping station east quay |
| | 1 | Rubbish from vessel maintenance E quay |
| Liftering's replaced | 1 | (North Quay) |
| liftering's repacked | 3 | (North Quay, South quay and middle weir) |
| Aids to Navigation | 2 | Nav lights + 1 pole replaced New NC buoy ordered |
| Unauthorised lifting operation | 0 | |
| Club incidents | 0 | |

Peter Haddock
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