

Programme: 100m LNG Dual-fuel Ro-Ro Passenger Ferry

Review Period: February 2023

<u>Name</u>	<u>Job Title</u>	
David Tydeman	CEO	
[REDACTE]	Ship Delivery Director	
[REDACTE]	Ship Delivery Director	
[REDACTE]	CFO	



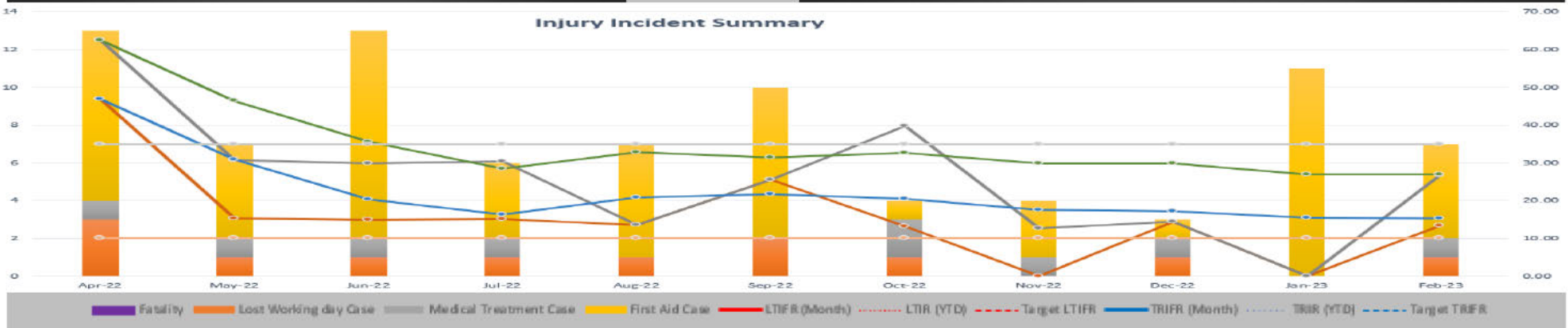
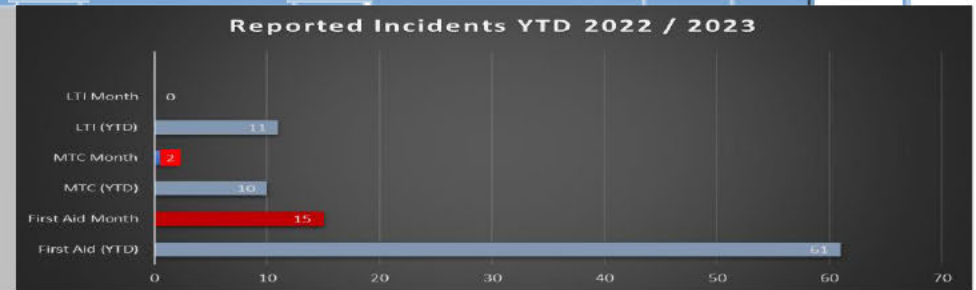
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HSE Dashboard February 2023

* Per 1,000,000 working hours
 ** Estimated no. of hours worked

Incident Statistics	Target	Actual		Fatal	0	Fire	0	Proactive Statistics	Target		Actual	
	2022	Month	YTD						Month	2022	Month	YTD
Number of Hours Worked**	870,000	74419	779892	RIDDOR	1	Damage	0	Number of YSYD Cards	>50	>600	50	527
Number of Lost Time Incidents (> 3 Days)	< 9	1	12	LTI (> 3days)	1	Environmental	0	Toolbox Talks Issued	2	24	2	20
Lost Time Incident Freq Rate*	< 10.14	13.44	15.39	Medical Treatment (MTC)	1	Serious Near Miss	0	Housekeeping Inspections	4	48	4	37
Number of Recordable Injury Incidents	< 30	1	16	First Aid	5	YSYD	50	Emergency Drills Completed	>4	>48	2	22
Total Recordable Injury Incident Rate*	< 35.0	26.87	26.39	Total Injuries	2	TOTAL Incidents	2	Vessel Compliance Checks	30	420	30	320

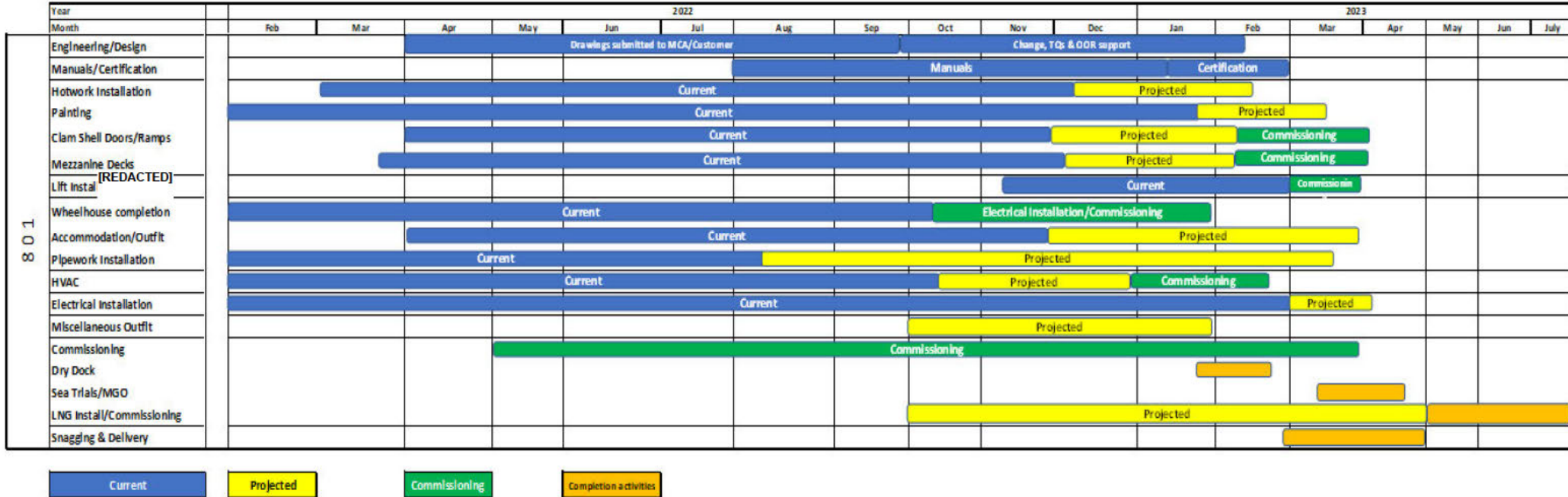


HSE Summary February 2023

Progress Update:

- We experienced a RIDDOR this month - incidents reported with – 1 RIDDOR, 1 MTC reported.
- 801 took more fuel on board successfully, full communications, effective barriers and sufficient supervision was observed throughout.
- 801 Dry Dock was delayed until 22nd Feb, The docking is ongoing with and is due to leave [REDA Saturday 4th March.
- Vessel Daily HSE inspections continue to be valuable on both vessels, these along with the weekly safety walk around is helping drive continual improvement throughout all areas of the yard and both vessels, these inspections were noted as a positive improvement from the HSE.
- Following a successful trial of various gloves covering all work activities these are now in full circulation with distribution controlled through departmental Management via our stores.
- 802 is in the process of piloting a new PTW system onboard and about to trial a new wireless emergency alarm system, the system includes call buttons attached to send SMS to First Aiders.
- New HSE Action Trackers have now been developed for actions arising from the weekly HSE Walk Arounds, this will help track effective closure of any observations / findings identified. We will also be using the same method for the actions for the Health and Safety Committee meetings.
- We have recently delivered internal training to our apprentices including Confined Space Awareness, Top Man Responsibilities, Permit to Work awareness, Toolbox Talks, this was well received with varied interaction throughout, this is ongoing.

801 Level 0 Programme



Revised plan currently with FMPG board for approval.

LNG Update

Latest LNG update/plan below, now based on confirmed lead time and [REDACTED] update:

Preliminary Plan, Pending Skid Approval from [REDACTED] Register

	2022		2023									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct
Plan Approval												
Equipment Order + Manufacture + Inbound Equipment												
Skid Manufacture, Assembly & Testing												
Despatch to Shipyard												
Installation at Ship												
Commissioning and Testing												
Vessel Available for Service												

[REDACTED] Update 12/12/2022

FMPG PO 111310 (replacing 111098) received against VOR 400005853a + 400005883a, thanks for trust in us.

Actions ongoing:

1. Procurement: Ordering VMS at skid maker. Equipment needed for skid assembly already ordered. PRV's can't be in time as known, est delivery end-Jul-23/early-Aug-23 at yard, borrow from bunkerline meanwhile;
2. Engineering:
 - a. P&ID draft to be approved,
 - b. VMS GA + STP under work as priority. We can & will change orientation of vent outlet (Z) to upwards as requested by you;
 - c. Pkg of all doc updates will be taken under work and IPI update will follow in couple of weeks.
3. Class approval: after documentation is ready, we will send replies to comments + package to LR, hopefully DAD will follow soon;

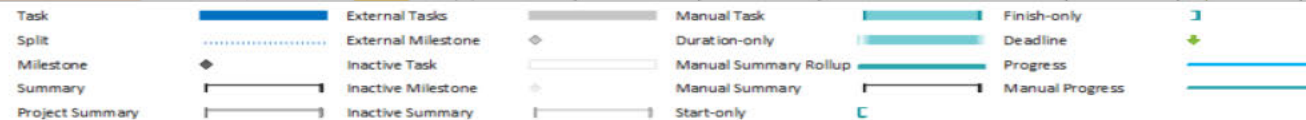
801 RAG Status



[REDACTED]

Discipline	Overall Status					
	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23
Overall Status	A	A	A	A	A	A
Safety	A	A	A	A	A	A
Engineering- Design	R	R	R	R	R	R
Procurement	A	A	A	A	G	G
Hot-Work	A	A	A	A	A	A
Piping - FM PG	A	A	A	A	A	A
[REDACTED] Piping	A	A	A	A	A	A
[REDACTED] Piping	A	A	A	A	A	A
Mechanical	A	A	A	A	A	A
[REDACTED] Electrical	R	A	R	R	R	R
[REDACTED] HVAC	A	A	A	A	A	A
Commissioning	A	A	A	A	A	A
LNG	R	R	R	R	R	R
Lift Install	A	A	A	A	A	A
RO-RO Equipment			A	A	A	A

801 Critical Path



801 Dry Dock

Planned scope:

Hotwork

- Clam Doors- Complete
- Freeing Ports – Complete
- Stbd shell penetrations- Complete

Propulsion, Hull outfit and warranty

- Drop rudders, refurbished
- Removed propeller hubs and shafts, replaced with 802 units.
- Completed machining/refurbishment of stern tube mating face and flange seals.
- Flushed gear boxes.
- Reinstalled props and rudders.
- Hydraulically pitched CPP system from inside the vessel via OD box.
- Swung rudders and verified centre point.
- Replaced ICCP hull anodes.
- Replaced 2 off echo sounders transducers and speed log.

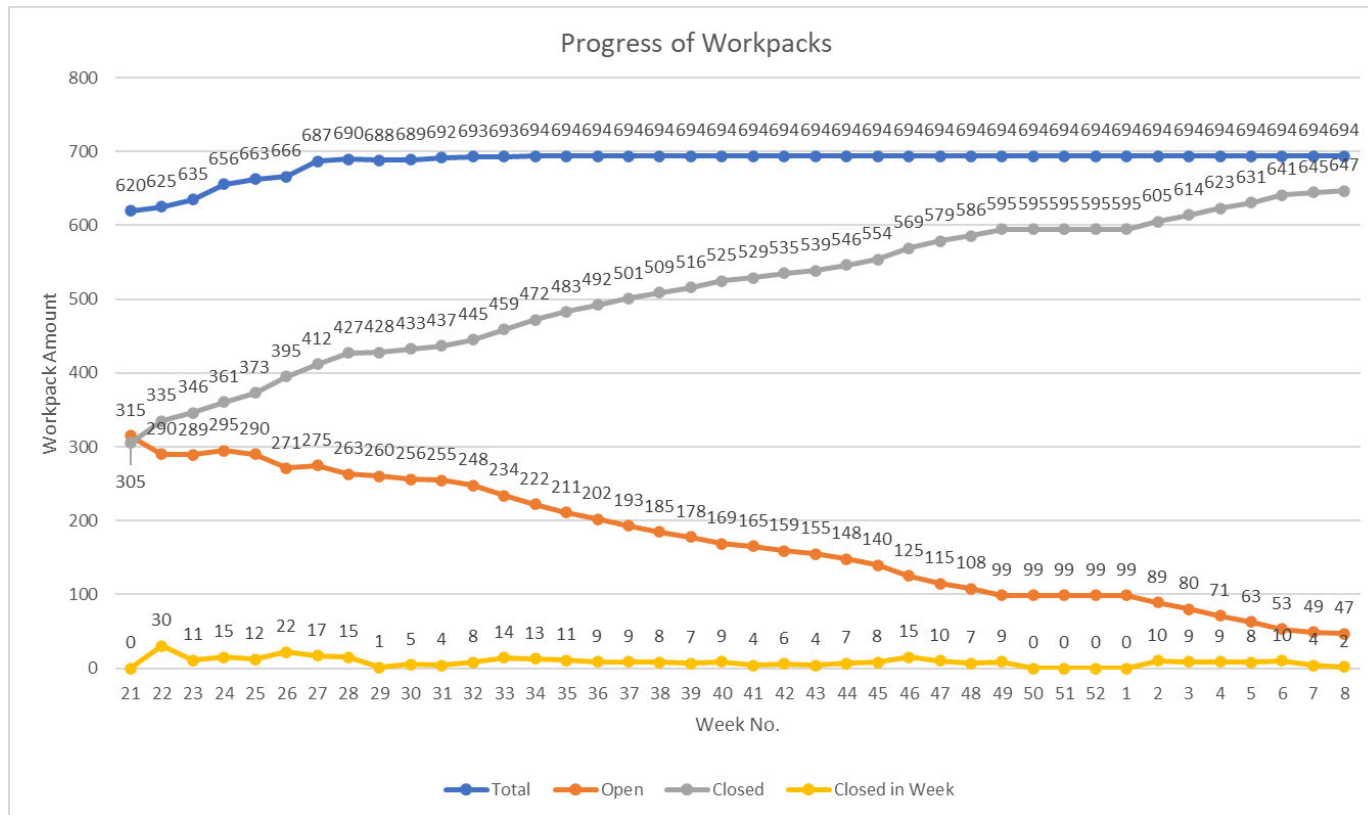
Painting

- Underwater Hull- Complete
- Top Sides touch up.

Very successful dry docking with all projected scope complete.
Planned contingency dry docking for May no longer required.

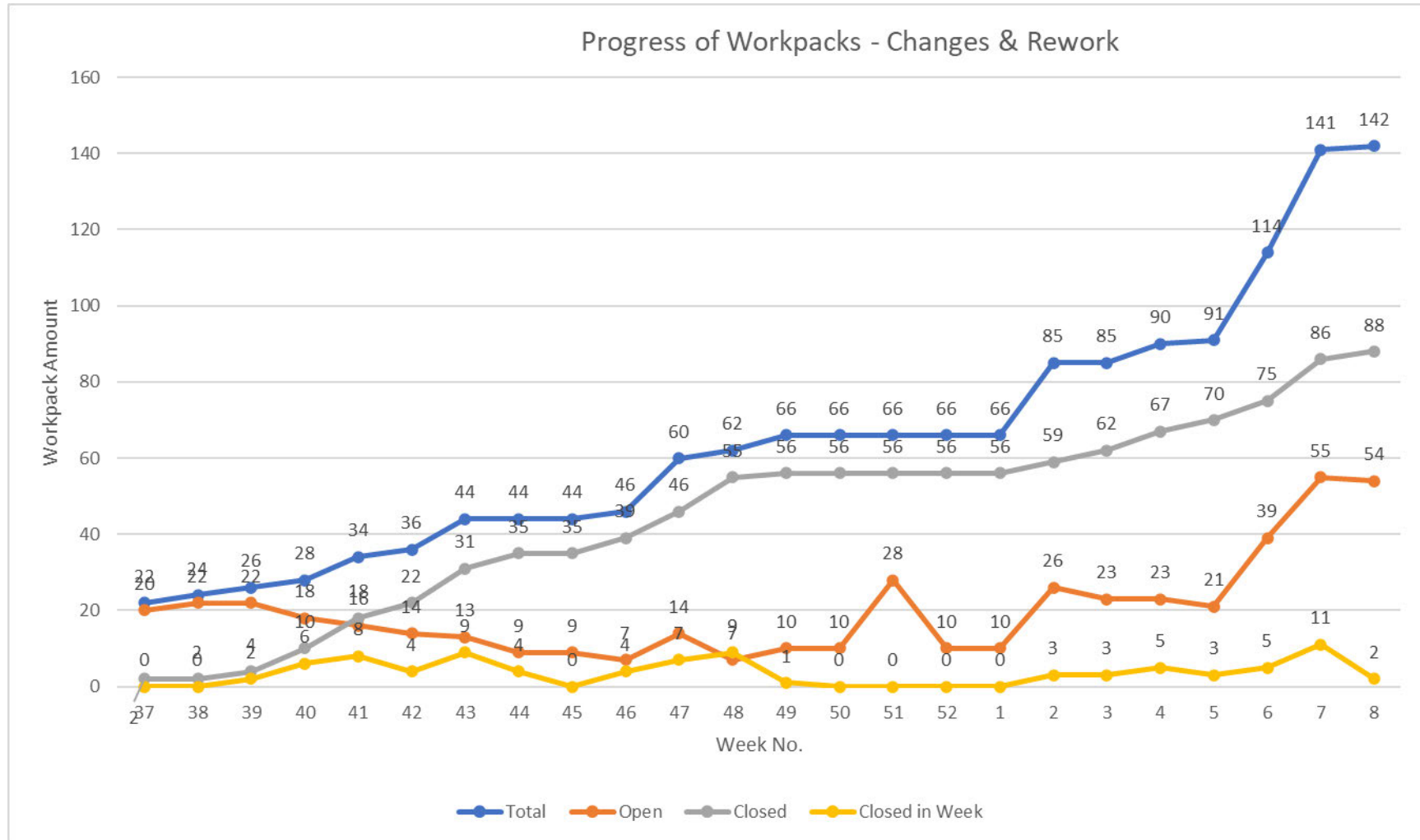


801 Hotwork Work Packs



- 47 Hotwork workpacks to complete
- Main focus in Week 7 & 8 ramping down for dry dock and making sure everything required was ready

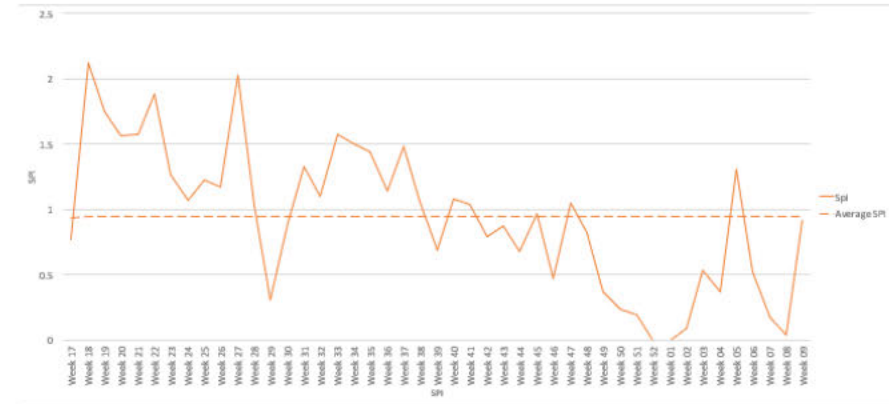
801 Hotwork Changes & Rework



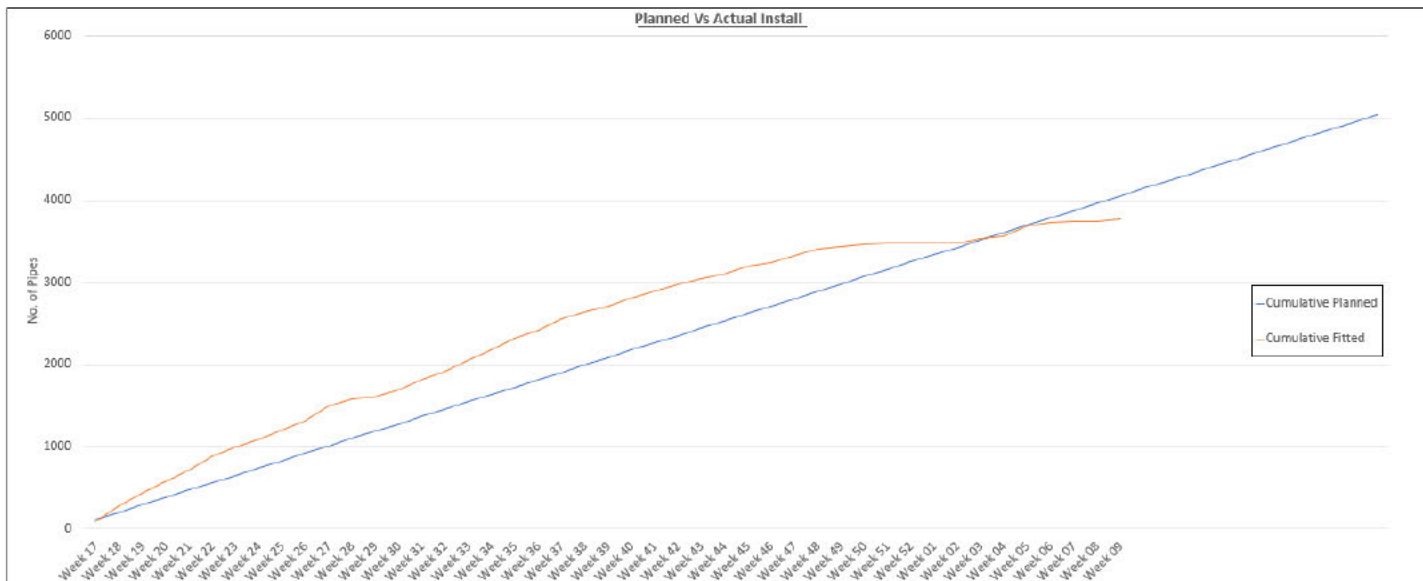
801 [REDACTED] - Pipework Installation

Activities week 9:

- QC inspection and pressure test of fuel oil transfer system
- QC and inspection and pressure test of heeling system
- QC inspection and pressure test of waste oil system
- QC inspection of freshwater system-lines to hydrophore tanks
- Installation of Black Water valves in service spaces

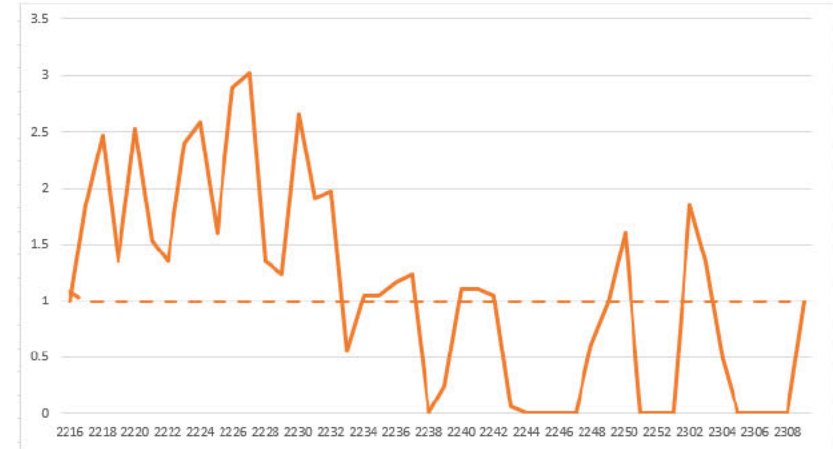


- Total spools to completion: 5038
- Cumulative installed: 3771 (75%)
- Cumulative planned: 4053 (80%)
- Average SPI: 0.95

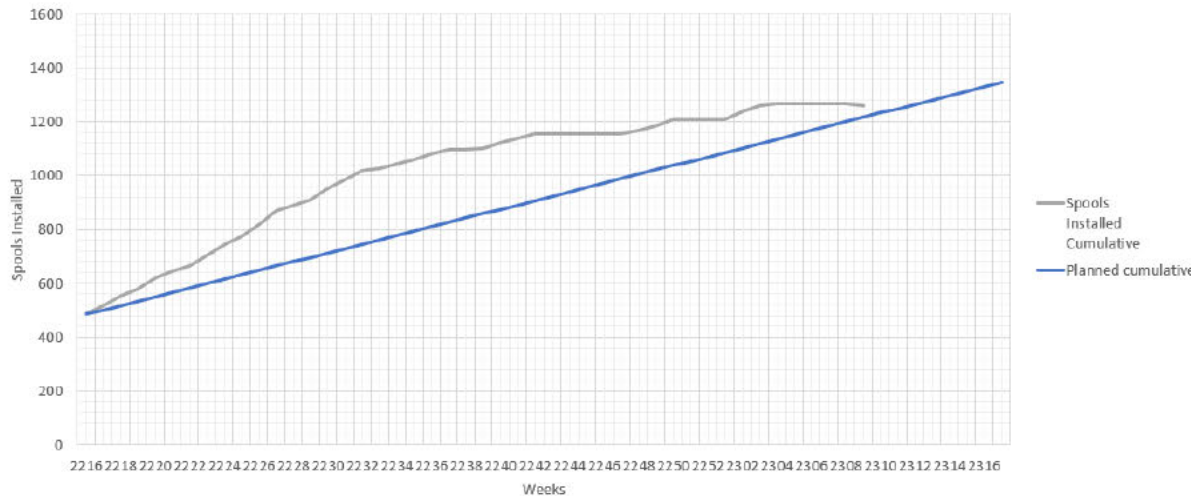


801[REDACTED] - Hydraulic Pipework Installation

- Change has reduced total spool/pipe count of hydraulic system from 1346 to 1339 hence reduction of installed spools in S-curve.
- Week 9 consisted of progressing change in Cold stores and AMS areas again seeing no new spools installed
- SPI has been based on spools installed as part of change.



[REDACTED]
Install S-curve

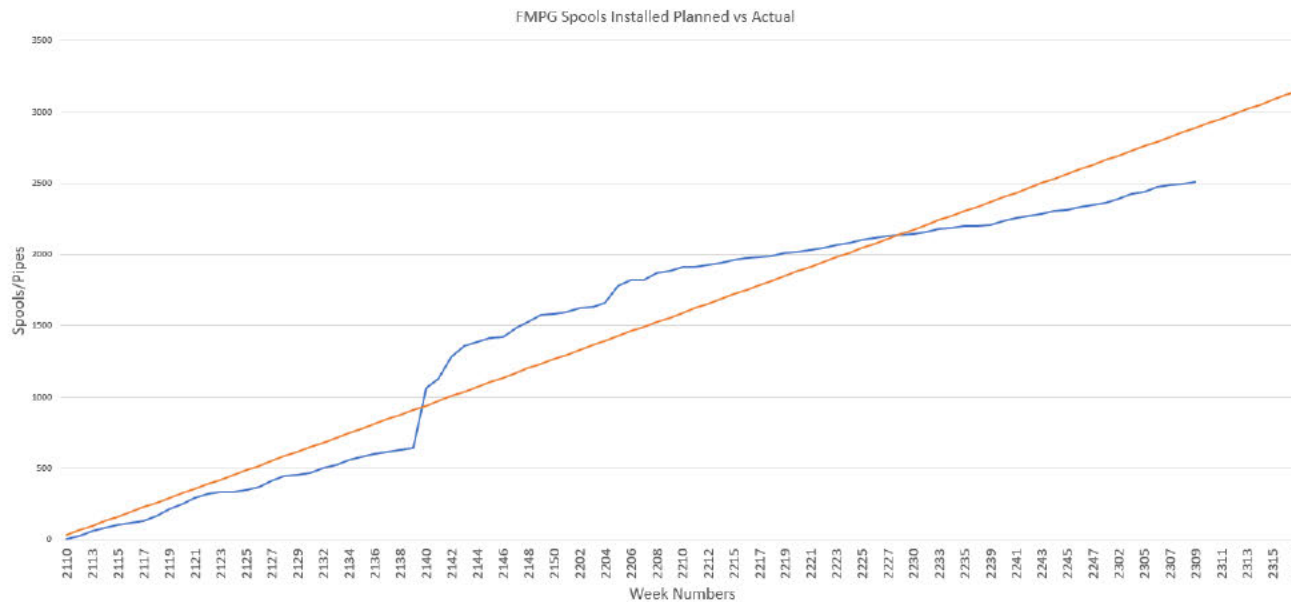
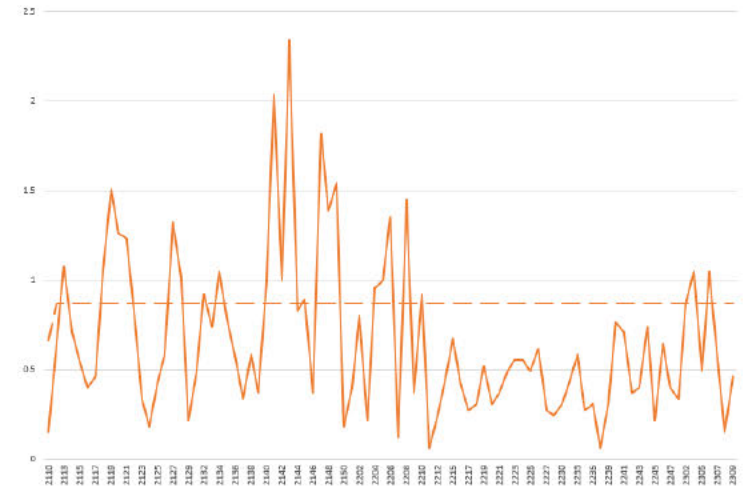


- Total planned spools to completion: 1339
- New spools Installed in week 9: 0
- Cumulative installed 1257 (94%)
- Cumulative planned 1199 (91%)
- Average SPI: 1.1

801 FMPG - Pipework Installation

Recent activities:

- LNG shell penetration installation-port and stbd side casings
- Install domestic fresh lines in 0701 stbd casing
- install Domestic fresh connections to zone 4
- Install FF system in both stbd & port casing
- Install LNG pipework in LNG tank space
- Install CW/HW in Stbd ECR stairwell



- Total spools to completion: 3147
- Installed in week 9: 15
- Cumulative planned : 2901 (92%)
- Cumulative installed 2509 (80%)
- Average SPI: 0.87

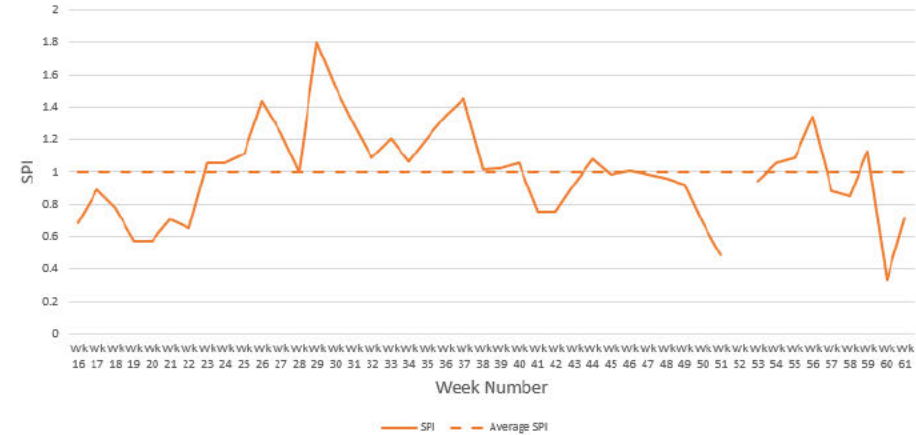
801[REDACTED] - Cable Install



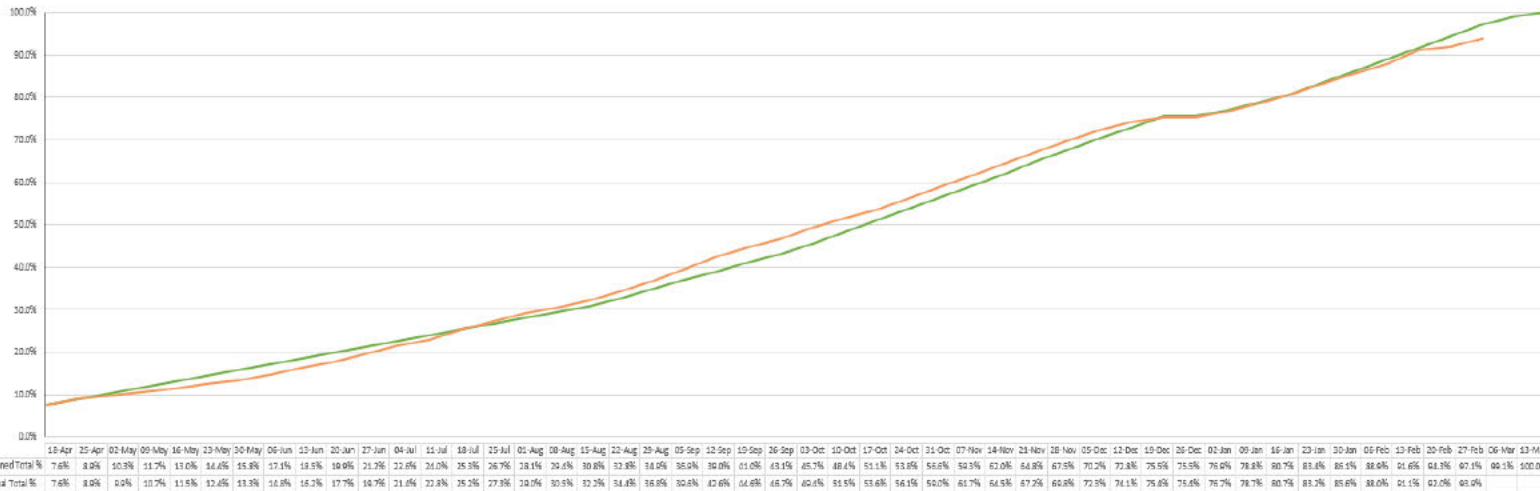
Installation of Priority Cabling for Systems, Gland/Terminate and Test Cables:

- Propulsion, Auxilliary Engine
- Propulsion & Thruster Control
- Main Engine & Shaft Generators
- Tunnel Thruster, Radar
- Nav Light
- Alarm & Monitoring
- Wheelhouse
- Server Room
- Instrument Room

[REDACTED] Cable Installation SPI



[REDACTED] Ship 801 Cable Pulling

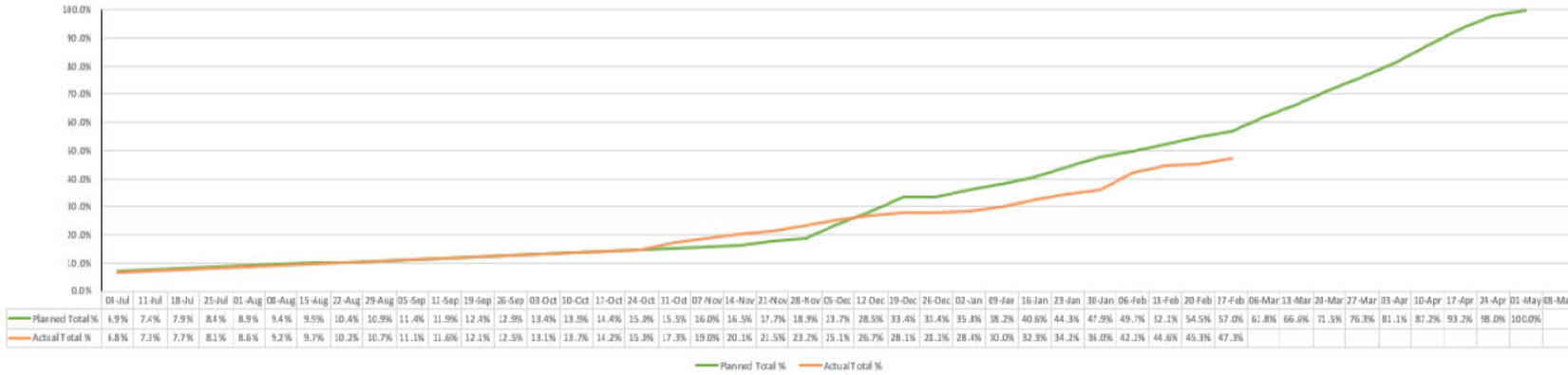


- Total cable to install: 292,772m
- Cumulative actual: 274,776m (93.9%)
- Cumulative Planned: 269,284,151m (97.1%)
- Average SPI: 1

801 [REDACTED]- Glanding/Terminating and Testing



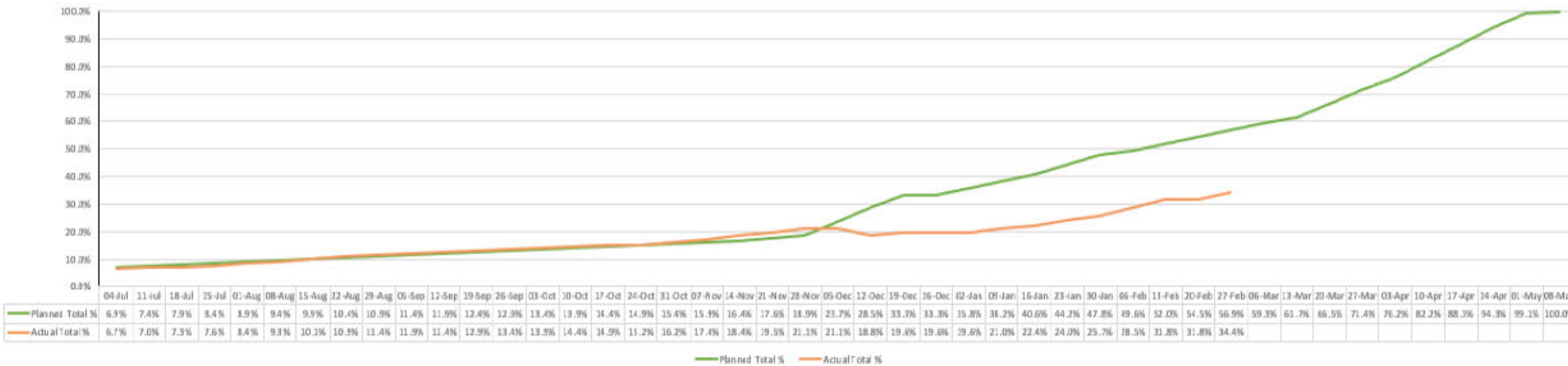
[REDACTED] Ship 801 G&T



Planned G and T:
57%

Actual G and T:
47.3%

[REDACTED] Ship 801 Testing

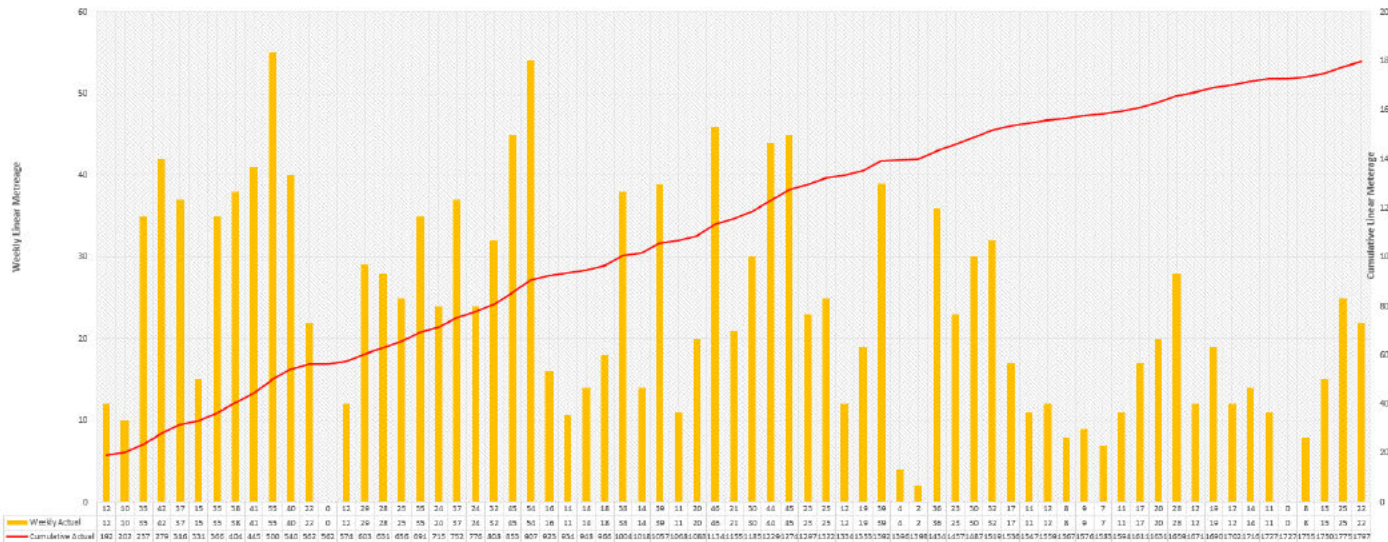


Activities in week 9:

- Installing Shaft Ducting, 6 Deck Aft
- Installing Ducting, Unit Room 7 Deck Aft
- Installing Ducting, Unit Room 6 Deck Fwd

Zone	Total Metreage	Installed Metreage	%age Complete
1	32	29	90.6%
2	35	26	74.3%
3	113	87	77.0%
4	94	73	77.7%
5	14	14	100.0%
6	378	204	54.0%
7	0	0	#DIV/0!
8	280	277	98.9%
9	1096	891	81.3%
10	198	198	100.0%
11	115	115	100.0%
Totals	2355	1914	81.3%

HVAC Installation Progress 'S' Curve



- Total ducting metrage installed week 8: 25 Meters

801 Status

Engineering & Steelwork

[REDACTED] Scope

Installation will commence mid-March on Mezzanine decks and ramp.

Steelwork

- All work to be done before dry dock for the clamshell doors and removal of scaffold was completed
- Dry Dock scope underway at [REDACTED]
 - Clam Shell doors
 - Jalousie Insert
 - Watertight BHD in shaft
 - New manhole integration
 - LNG vent lines
 - Freeing Ports
- Shelving progressed throughout 3 and 4 deck
- Work completion packs ready to be actioned once ship returns from dry dock (engine room walkways, engineers' workshop, stabilizers)
- Rope laydowns/baskets being installed across the ship
- Quick turnaround on insert to complete galley lift
- Quick completion of new modifications to battery lock foundation, wind sensor junction on mast and wheelhouse top add-ons

Specialist Subcontractors

- [REDACTED]/Lift Installation: Port and STB aft lifts both now have rails and moving base. Next step is to arrange temporary power and check alignment. Galley and Forward hydraulic lift in similar condition also with motor or hydraulic powerpack fitted. Recent progress compensating for lost time due to covid sickness.
- [REDACTED] Due on site in the next fortnight to carry on installation of gas phase alongside our steelwork team installing the new [REDACTED] throughout zones 2 and 3. Awaiting [REDACTED] confirmation of gas phase pipework radiography before installing pipework in zone 3 & sizing up zone 2 pipe spools. Express – Arrived back on site to start working on TCS upgrade in line with [REDACTED]

Electrical

Priorities remain the same as previous week.

Installation of Priority Cabling for Systems, Gland, Terminate and Test cables:

- Propulsion
- Auxiliary Engine
- Propulsion & Thruster Control
- Main Engine & Shaft Generators
- Tunnel Thruster
- Radar
- Nav Light
- Alarm & Monitoring
- General G&T&T

Pipework

[REDACTED]

- Engineering ship systems observations
- P&ID installation checks
- Fridge space material change and installation
- Oily bilge system progressed
- Blucher valve change

FMPG

- Port casing LNG installation
- LNG installation tank void
- Casings firefighting system pipework
- Progressed grey/black water system
- Progressed install in of [REDACTED] line in port casing

801 Status – Engineering

Structural:

- Preparation of [REDACTED] final as built drawings under way.
- 43 drawings required, these have all been previously submitted and approved, some at earlier versions to be quantified.
- 19 drawings to go to MCA, 15 already submitted for info 4 pending MCA response.
- **Ongoing Engineering Structural work for 801 is now adhoc only.**
- Pending final [REDACTED] and MCA stamps structural design considered complete. Papership and Liaison tasks will continue until handover.

Electrical:

- [REDACTED] TQs: of 61 raised since mid-January 47 have been closed out 14 are in work.
- [REDACTED] and MCA submissions are currently in work. There are 87 in total [REDACTED] submissions to be confirmed by [REDACTED] All 87 have been submitted previously, however a number are at earlier revisions. This will be quantified eo Wk09.
- There are 43 MCA submissions, 25 have yet to be submitted, 4 awaiting response. Further 10 submissions to go in wk09.
- SES beginning to commission NAV and Coms Systems.
- Ongoing Engineering Electrical work for 801 is expected to be complete Wk14
- Partnership and Liaison tasks will continue until handover.

Risk [REDACTED] have acknowledged that the flood detection system was currently missed. This is currently in work and does not pose a significant risk.

Risk related to class approval of electrical basic design drawings: this is not related to errors identified in design but could be a risk because we don't have an overall picture of the status of [REDACTED] approval for electrical basic design drawings.

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Mechanical & Piping:

- Of 64 P&IDs – 49 have been fully reviewed, modification sheets are in work.
- 13 [REDACTED] drawings have been received during the course of the month and have been submitted to the MCA these were modified to incorporate previous MCA comments.
- 59 MCA submissions in total, 11 remaining to be submitted.
- 2 further [REDACTED] drawings are pending.
- All pump simulations have now been performed and issues fully quantified.
- 1 Vacuumator pump purchased. Foundation drawings in progress. Piping connections have been finalised.
- 4 Clean Bilge pumps agreed with [REDACTED] with no mods to the pumps, instead [REDACTED] have agreed to a change in a modification to the pipework. The implications of the change to pipework
- Further verification of the LNG bunkering lines is pending from [REDACTED] [REDACTED]
- Following OEM rejection of Main and Auxiliary Engines exhaust connections, these have been reviewed and mods proposed, this was a significant impact to design and will also be difficult for production to install. Further support modifications are also required.
- Exhaust supports updated following previous review by [REDACTED] These modifications are separate to those mentioned above. This information has been released to production.
- System walk rounds initiated with [REDACTED] to perform as built review of all piping and mechanical systems.
- Ongoing Mechanical and Piping Engineering work for 801 is expected to be complete Wk14.
- Risks:
 - Inclusion of heeling tank cross connection and supply of GRP pipework and valve.
 - As built verification on ship, inconsistencies may result in rework.
 - Completion of mod sheets.
 - Use of Galvanised pipework for Domestic Water.

801 Status – Engineering

LNG

- FMPG Installing vent lines in the LNG tank space.
- Express pipe will return 01/03/23 to begin the gas phase pipework.
- Materials for the TCS upgrade have been approved by [REDACTED]
- [REDACTED] transition pieces due wk10.
- [REDACTED] to return for completion of the liquid phase 13/03/23.
- Risk: Delivery on time and to quality of subcontractor [REDACTED]

Outfitting

- 16 MCA submissions in total, 3 remaining to be submitted.
- [REDACTED]'s submissions being reviewed, 24 expected. These have previously been submitted but the current revision may be different.
- Floating floor installation details completed to conform to A60 requirement – Piping informed of changes to pens IWO A60 deck, Production issued with drawing to install floor, [REDACTED] asked to raise VO to screed deck.
- Workbenches for bosun store and carpenter/rope store ordered.
- Curtain layout for the wheelhouse designed and sent to [REDACTED] to incorporate into the ceiling layout.
- Deck 6 lining finishes designed for the bonded windows – linings details sent to [REDACTED] for fabrication.
- Deck 7 lining finishes designed for the wheelhouse windows – linings details sent to [REDACTED] for fabrication.
- Structural fire protection plan updated IAW MCA comments and reissued. Drawing for bulkheads and deckheads now approved.
- Draughtstops drawing re-sent to MCA for approval.
- Insulation plan updated IAW structural fire protection plan comments.
- Car deck SWT door control panels located and finalised with [REDACTED] Foundations issued for these through Structures.
- Lifejacket storage solutions agreed with CMAL – one locker removed, and therefore one roller shutter no longer required.
- Access to valves created below Stair 12, with new insert lofted and issued prior to drydock. Hotwork on the port shell is required for this.
- Stabiliser room PS and SB walkways issued for 802 to provide work for Production.
- Confirmation sent to Planning for all ladders in double bottoms to be fabricated and installed for 802, to provide work for Production.
- Risks:
 - Sliding doors for Deck 7 lift shafts have been sent in for quotation. Discussions are ongoing with the supplier, and they are checking for UK certification costs prior to final PO being placed.
 - Outfit drawings that require MCA/[REDACTED] approval are being collated and will be sent in batches to the respective body.

Commissioning Update



The following has been achieved in the last 3 weeks:

- Gearboxes flushed.
- Fuel supply to Aux/Main engines to pressure test and flushed.
- First run of Auxiliary Engines
- Stbd Main engine Alignment to checked.
- [REDACTED] set to work.
- Aft Capstans operational.
- 90% of main engine and auxiliary generator alarms signed off.
- Aux Generator Shutdown demonstrated to CMA [REDACTED]
- Harbour Generator has been run on 110% load.

Planned activities for the next 3 weeks.

- First run of Main Engines (10th March).
- Load test auxiliary and harbour generators.
- Clutch in propellers.
- Nav & Comms commissioning ongoing.

[REDACTED]
MCA submission update



Under Review with [REDACTED]	Date sent to [REDACTED]	Note
Cargo Securing Manual	01/02/2022	Draft copy submitted to RED on 17Feb2023 excluding CMAL equipment certificates (not received)
Damage Control Plan	20/04/2022	Part of Stability book. To be released after stability book approval. Coop with Tritec

MCA outstanding status

Count of Approval Status	Outfit		Elec.		Naval Arch.		CMAL Deliverable		Grand Total
	Yes	Co.	Yes	Co.	Yes	Co.	Yes	Co.	
1. Awaiting Submission	3	3	9	9	16	1	1	4	45
11. Structural Fire Protection Plan	2	2							2
13. Marpol								1	3
15. Lifting Plant/ Use of Work Equipment	1	1							1
16. LNG			6				1		7
17. Other						1			1
3. Boilers and Machinery			3						3
4. Electrical Equipment & Installations				3	16				19
7. LSA and Navigation								3	3
8. Radio				2					2
9. Passenger and Crew Accommodation				4					4
Grand Total	3	3	9	9	16	1	1	4	45

MCA Approval status

Count of Approval Status	Outfit		Struct. Mech.		Elec.		Naval Arch.		CMAL Deliverable		Grand Total
	Yes	Co.	Yes	Co.	Yes	Co.	Yes	Co.	Yes	Co.	
1. Awaiting Submission	3	3	2	2	9	9	16	1	1	4	45
11. Structural Fire Protection Plan	2										2
13. Marpol				2						1	3
15. Lifting Plant/ Use of Work Equipment	1										1
16. LNG					6				1		7
17. Other								1			1
3. Boilers and Machinery					3						3
4. Electrical Equipment & Installations						3	16				19
7. LSA and Navigation										3	3
8. Radio						2					2
9. Passenger and Crew Accommodation						4					4
2. Resubmission required (rejected)	1			1				3			5
11. Structural Fire Protection Plan	1										1
12. Fire Extinguishing				1							1
7. LSA and Navigation								2			2
9. Passenger and Crew Accommodation								1			1
3. Conditionally Approved	7		1	2	4			1			15
12. Fire Extinguishing	1			8	1						8
3. Boilers and Machinery					1						1
4. Electrical Equipment & Installations						2					2
6. Bilge Pumping Arrangements				1	1						2
6. Anchor Handling Equipment, Anchors & Chain Cable	2										2
7. LSA and Navigation	1							1			2
9. Passenger and Crew Accommodation	3			4	1			1			8
4. P&ID submitted to MCA & seeking feedback	5	1	4	22	4	4	8	1			19
1. Hall				2							2
10. Stability								5			5
11. Structural Fire Protection Plan	2							2			4
12. Fire Extinguishing				19	4						23
13. Marpol				2							2
16. LNG					2						2
2. Load Line				1							1
4. Electrical Equipment & Installations								4			4
6. Anchor Handling Equipment, Anchors & Chain Cable	1										1
7. LSA and Navigation								1			1
9. Passenger and Crew Accommodation	2							1			3
Blank				1					1		2
3. Revised				2				1			3
12. Fire Extinguishing				2							2
7. LSA and Navigation								1			1
9. Passenger and Crew Accommodation					1						1
8. Moved as Supporting Info			15	8	2	3		5	5		38
1. Hall				14							14
10. Stability								1			1
11. Structural Fire Protection Plan					1			1			2
12. Fire Extinguishing					4			1			5
13. Marpol					1						1
16. LNG						1					1
6. Bilge Pumping Arrangements					1	1					2
6. Anchor Handling Equipment, Anchors & Chain Cable					1	1				5	6
7. LSA and Navigation								1	3		4
9. Passenger and Crew Accommodation									1		1
7. N/A								5			5
7. LSA and Navigation								3			3
Grand Total	16	1	19	47	13	23	20	19	7	4	169

- LNG pipework chemical analysis for upscale equivalence to 3.2 certification completed with successful results and now approved to installation onboard
- Escape routes plan requires resubmission due to arrangement of secondary escape route from 6dk Observation lounge area. MSF 1261 – Assessment of equivalence/Exemption based on evacuation analysis now drafted and will be submitted to MCA for formal consideration
- Structural fire protection now submitted in line with MCA comments
- [REDACTED] Fire suppression systems – 13 of 15 P&ID now submitted to MCA for approval

CMAL Top Priority OOR's	Cat 1	Cat 2	Cat 3	Overall
Committed	4	1	0	5
Close when work complete	5	1	0	6
Still to resolve	1	0	1	2
CMAL Priority OOR's Totals	10	2	1	13

All other OOR's	Cat 1	Cat 2	Cat 3	Overall
Total Committed	17	6	0	23
Close when work complete	21	8	1	30
Still to resolve	0	3	0	3
All other OOR's Totals	38	17	1	56

Totals	48	19	2	69
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Submit to CMAL for closure

	Cat 1	Cat 2	Cat 3	Overall
Total Committed	0	0	0	0
Close when work complete	1	1	0	2
Still to resolve	0	0	0	0
Submitted to CMAL to close Totals	1	1	0	2

Overall Total	71
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Category 1 - Must be done before handover

Category 2 - General / Specification Issues to be done - may carry over to warranty period

Category 3 – Snagging

Focus on CMAL Top priority

- Review with ^{REDAC} concluded (after proposed remedials onboard are completed) 4 OORs have a class or statutory impact and require further modification and are associated with clean and oily bilge wells and critical Vv access within ER/GB. Now with Engineering for modification
- The remaining 9 after rectification completed onboard require to be assessed by CMAL/FMPG to assess and document the through life impact on Maintenance activities (if any).

Moving forward

- **For 801** the client defect register will be reintroduced to give CMAL mechanism to capture as built defects and to facilitate timely remedials as we move into the critical Commissioning activities post Dry dock
- CMAL have now been added to the Technical Query (TQ) database allowing queries/clarification to be raised, measured and tracked to completion
- **For 802** we are exploring defect management within [REDACTED] to bring client defects on-system

Weight & Stability

Stability

- Stability book was submitted on 9th Dec to the MCA. MCA`s review is ongoing.
- Damage calculation data were partially submitted on 2nd–7th –16th–20th–27th Feb 2023. MCA`s review is ongoing.
- All cross-connection details (No: 1-2-3-4-5-6-7-8) were agreed in principle by the MCA including Heeling Tank 1 Port and Heeling Tank 1 Stbd pipe connection on 20th Feb 2023.
- Damage Control Book is in progress and to be submitted after preliminary approval of the stability book (incl intact and damage)
- NAPA loading computer will be integrated after MCA`s preliminary book approval.
- Bespoke WT buffer door[REDACTED] is WIP with candidate manufacturers. One company has met the technical requirements and integration works are ongoing with [REDACTED] along with as-built checks. Subsequently, they will submit an official offer. [REDACTED] per door and 6-8 weeks lead time including shipping. It is not a blocker for the programme.

Weight

- Final inclining will be undertaken before sea trials

CMAL Drawing Approval update

- NO CHANGE due to other priorities as these drawings will be covered when as built drawings are produced for the final sign off.
- CMAL Outfit Drawing Approval update - List now provided to CMAL and reviews undertaken on weekly basis
- P&IDs
 - 9 Systems Approved (P&IDs)
 - 23 Systems (P&IDs) to be approved by CMAL, currently these are being reviewed separately and then both parties. Details of the 4 Systems to be resubmitted to Southampton provided separately to this meeting.

Contract Specification

- There are various updates within the document which require to be internally reviewed and then presented to CMAL for agreement.

Other docs to deliver

- CMAL & FMPG have agreed (13/05/22) that FMEA is not required as a final deliverable document however a test pack will be created to show how the system recovers after failures. FMPG to propose a test pack format to CMAL.
- Machinery list (including serial numbers) is WIP. The commissioning team are producing and will also record last maintenance date where appropriate. This shall also cover the requirements for producing tallies. PO currently being raised.
- Operations Manual – This will be reviewed on an ongoing basis during commissioning and training of equipment.
- As built drawings for P&IDs and technical compartment arrangements have been agreed with CMAL. Other as built drawings to be agreed with CMAL
- OEM Manuals etc will be shared on FMPG-CMAL SharePoint site to allow CMAL-CALMAC access for crew training/familiarization prior to delivery of document pack.

Crew Training

Training schedule (802 soft booking confirmed by [REDACTED])

1st vessel in Q1/2023

- [REDACTED] final session underway this week and will conclude 10th March

2nd vessel in Q1/2024

- **Week 8:** 19th until 23rd February 2024 (Propulsion at [REDACTED] or on board)
- **Weeks 9-10:** 26th February until 8th March 2024 (Engines at [REDACTED])
- **Week 11:** 11th until 15^h March 2024 (Engine Control at [REDACTED])
- **Week 12:** 18th until 22nd March 2024 (LNG Pac at [REDACTED])

PMS and Alarm and Monitoring system timings to be arranged with [REDACTED] in line with agreement below

- Classroom Training onsite then practical demonstration onboard and time afforded on board for following:
 - Nav and comms
 - Internal comms ~(i.e Entertainment CCTV etc)
 - [REDACTED] Alarm and Monitoring
 - Power Management System
- For retrofit switchboards, [REDACTED] to provide O&M manuals for their modifications FMPG will then train the Ships staff onsite.
- Please request the EDICS online License log in details (10 off) so we can pass directly to Ships staff to complete online training in own time with CalMac

Hull 802 – Monthly Report

Reporting Period: February 2023

802 Status

Manufacturing Sheds

- Fabrication complete for units A10/6, A11/6, A8/7, A9/7, U99, U100, awaiting erection.
- Following 7 deck units in progress: A7/7, A10/7, AFT & FWD Masts. These are the last units remaining for fabrication completion.

Erection and Consolidation

- Unit A4/7 erected on board in February.
- Consolidation of several units in progress: A4/6, A5/6, A6/6, A7/6, UA8/6, U97, U98.
- Consolidation complete, awaiting dry survey: A7/5, A8/5, A9/5, A10/5, A11/5, U85, U86, U89, U90.

Outfitting

In February, the main focus was continuing installation of major seats for the engine room and generator room, sub-zone 0202. Manufacturing of major seats in 0203 complete, installation ongoing. Fabrication and painting of [REDACTED] platforms ongoing in starboard side. Outstanding structural modifications in zone 4, in progress. Installation of manholes ship wide in progress. Installation of outstanding major seats in sub-zone 0402 ongoing. Installation of platforms in the LNG space ongoing. Welding of link up windows in deck 5 ongoing. Continuing installation of 48 lashing pots, all FF-8 complete; FF-9 installation in progress - 22 complete, 8 in progress; LE-8F (6 of) installation finished, further 4 of awaiting start. Major seats in 0303, 0309, 0304, 0305 complete.

Pipework Installation

- Checking of manufactured spools in stores ongoing:
 - Total spools checked – 1532
 - Spools fit for purpose – 668 (43.6%)
 - Spools that can be modified – 187 (12.2%)
 - Spools to be scrapped – 677 (44.2%)

Continuing with QC sign-off of over boards:

- Total amount of spools ship wide: 12021.
- Total amount of spools manufactured/procured: 4003.
- Total amount of spools installed on ship: 347.

Launch

- Launch date TBC. November launch being considered.

Electrical

- Nothing to Report.

HVAC

- Nothing to Report.

Specialist Contractors

- Currently reviewing opportunities and finalizing plan with specialist contractors.

802 Issues, Challenges & Successes



Issues

- Unit outfit in manufacturing sheds is minimal due to the lack of clean drawings.
- Lack of process for [REDACTED] workpack delivery and execution. Drafts in progress. [REDACTED] on site in week 9.

Key Challenges

Key known challenges for Hull 802 to meet the programme:

- Material availability. A Min/Max process is proposed to be implemented which will reduce bottlenecking of work due to unavailable material.
- Identification of available equipment in Greenock stores proving challenging due to factory master stock list inaccuracies.
- Lack of tracking information from 801 to 802 due to new set of clean drawings.
- Scaffolding support shipwide.

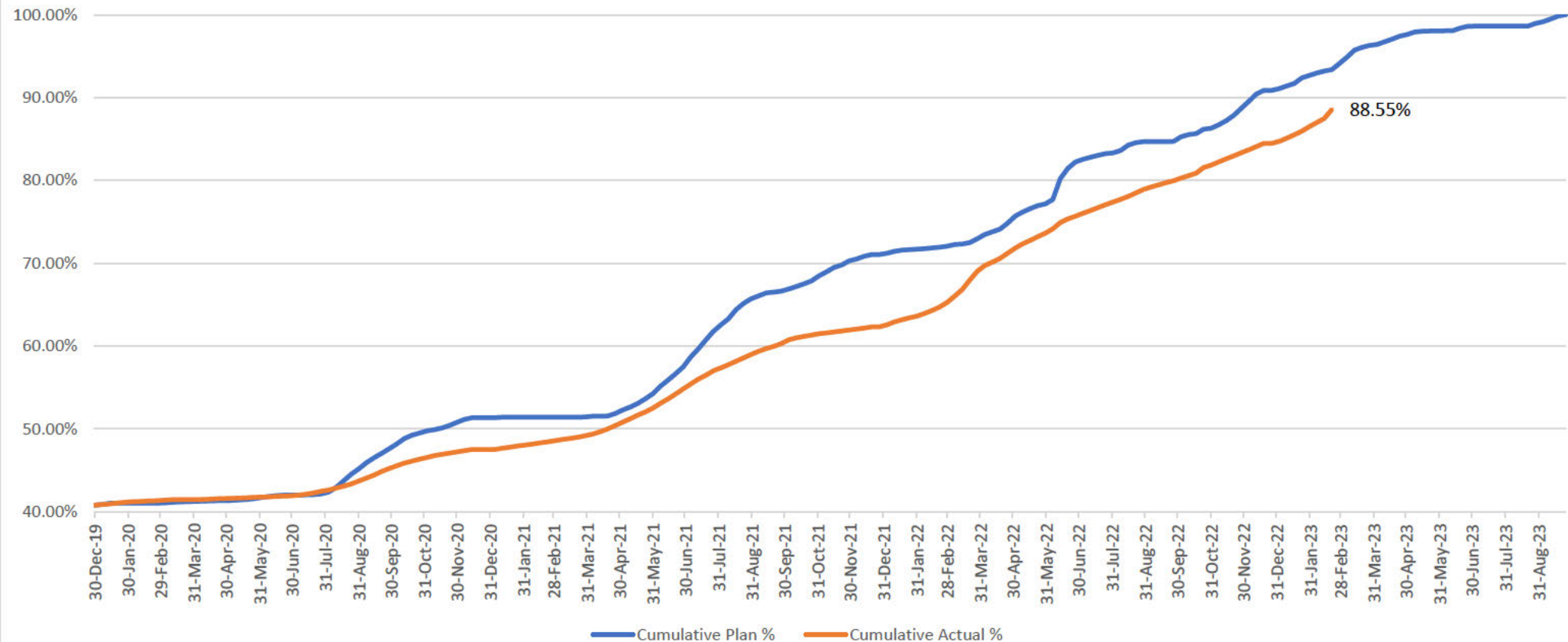
Successes

- Effective workforce – good progress for the limited manpower available.
- Unit fabrication on track with plan.
- [REDACTED] delivery of Workpacks and new BOMs is ongoing with minimal delay.

802 Primary Structure

- Unit Fabrication completion rescheduled to end of May 2023 due to limited manpower and bad weather.
- Unit Erection completion rescheduled for end of June 2023 due to fabrication plan changing.
- Unit consolidation completion rescheduled to end of September 2023.
- 30,110 remaining hours as of 24th Feb 2023.

802 Primary Structure Progress



801

Insulation Survey's – Behind Linings

- DK 7 Wheelhouse / WC / Archive Store
- DK 6 Aft door / Passage lobby area

Pre-Insulation Surveys complete with MCA

- DK 5 Around windows Port and Stbd Casings
- DK 5 Fwd Stairway, Port and Stbd at glass screen
- DK 3 – DK 6 Stbd Aft Lift Shaft
- DK 2 – DK 6 Port Fwd Lift Shaft
- DK 3 – DK 5 Stbd Fwd Lift Shaft

Pipework

- 19 surveys with [REDACT] test paths
 - OB x4
 - SP x2
 - CA x2
 - FF x3
 - CB x3
 - LO x3
 - SD x2

802

802 NDT Activity

- 4 MPI
- 2 DPI

802 Fabrication Surveys with [REDACTED]

- L11 Bhd Mez. Deck Lock and Back ups – Dry Survey
- Port Stairs and Stbd Stairs - Dry Survey
- x2 Winch Bollards, Port and Std – Dry Survey
- Units 80/81, Port and Stbd bollards - Dry Survey

802 Fabrication Surveys

- Units A10/7 Wheelhouse void (Partial survey)
- Unit A8/7 plus Lifting Lugs

- Comments
- AOB