

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

**Programme Director:** [Redacted]

**Review Period:** November 2021

<u>Name</u>	<u>Job Title</u>	
[Redacted]	Programme Director	
[Redacted]	CFO	
[Redacted]	Head of Planning	



## Contract Summary

<b>Customer</b>	Scottish Government	<b>Contract Start</b>	Contract Effective Date - 1st April 2020
<b>Agreed Contract value</b>	£110.3M - £114M	<b>Contract Finish</b>	801: 25 July 2022 – 25 September 2022 802: 3 April 2023 - 3 July 2023
<b>Project Type</b>	Design and Build	<b>Forecast Finish</b>	801: 25 July 2022 – 25 September 2022 802: 3 April 2023 - 3 July 2023
<b>Programme Director</b>	[Redacted]	<b>Contract Type</b>	Fixed Price

<b>Project Scope</b>	Design, build and commission 2 off LNG dual fuel ferries, including training and provision of spares and handbooks. The scope of this project is to complete the design and build etc. from the date of 16 <sup>th</sup> August 2019, being the date of Administration of FMEL
<b>Significant Project Changes</b>	None (in this phase).
<b>Acceptance Criteria</b>	As per the specification.
<b>Payment Terms</b>	Monthly payment application for Actual costs incurred in the previous calendar month
<b>Warranty</b>	The warranty for both vessels is 12 months from delivery. No allowance has been made financially for either shipyard support or suppliers' warranties that have lapsed during this period.
<b>Liquidated Damages</b>	No allowance has been made for late delivery. Performance penalty for weight – the maximum allowance of £250k per vessel has been included, if the allowance is exceeded the buyer has a contractual right to terminate. Performance penalty for speed - the maximum allowance of £150k per vessel has been included, if the allowance is exceeded the buyer has a contractual right to terminate. Performance penalty for fuel consumption – no allowance has been made.
<b>Special Conditions</b>	

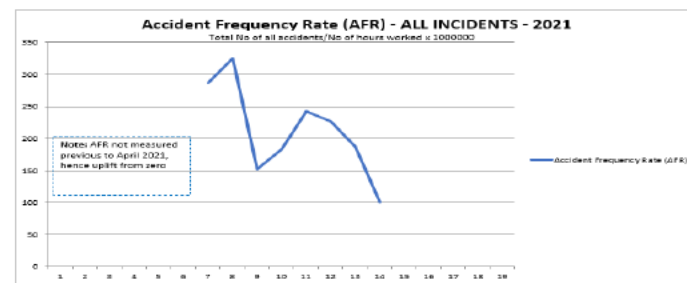
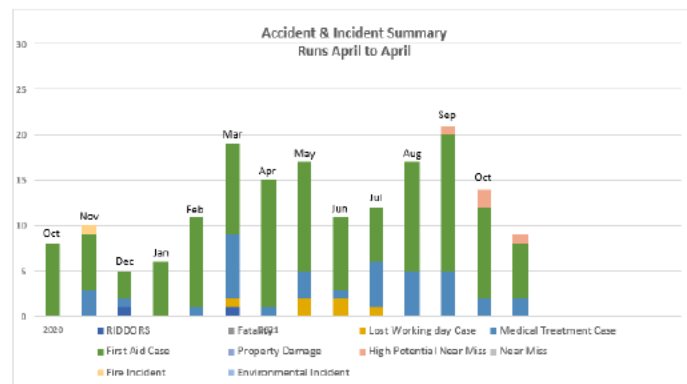
# Health & Safety



## Highlights

- External candidate, due to take on the role of Lifting Manager, withdrew in the week they were due to start. Interviews recommenced 8th Dec.
- Following safety stand down in October for lifting activities, following three high potential near misses, we have brought in additional lifting support
- [Redacted] will complete his Interim Health & Safety Director role end of December 2021. [Redacted], Compliance Director, will now take overall responsibility for Health & Safety. [Redacted] will join Ferguson on January 5th, as Head of Health and Safety reporting directly to [Redacted]
- Covid-19 cases starting to increase towards end of period. Whilst we remain at two cases transmitted via the yard, during pandemic period, potential impact of Omicron and subsequent government guideline changes being monitored.
- Further reduction in First Aid Cases, is encouraging, reflected in continued reduction in AFR. 2021 Accident analysis confirms following trends: -
- Source of Injury: Manual Handling, Dust, Impact
- Trade: Plater, Welder, Ancil/Painter
- Body part affected: Eyes, Fingers, Hands
- Work location: Fabrication, 801, 802

Title	This Month	Cumulative
RIDDORS	0	0
Fatality	0	0
Lost Working day Case	0	5
Medical Treatment Case	2	24
First Aid Case	8	84
Property Damage	0	0
High Potential Near Miss	1	4
Near Miss	0	0
Fire Incident	0	0
Environmental Incident	0	0
<b>Total Number of Recordable Injuries</b>	<b>0</b>	<b>1</b>
<b>Total Number of Days Lost</b>	<b>0</b>	<b>48</b>



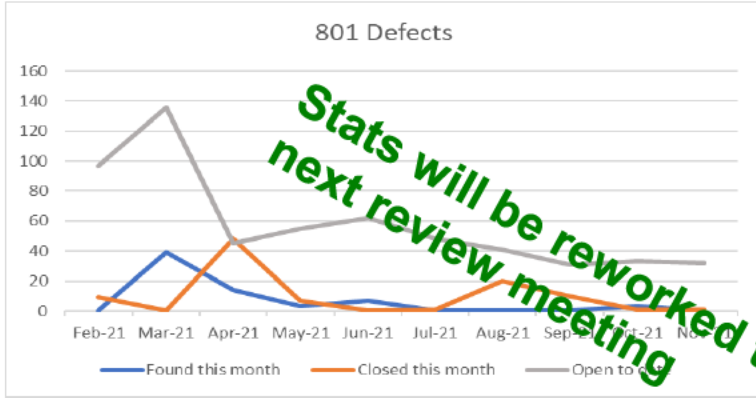
# Traffic Light Report

	Overall Status				Future Trend	Comments
	Aug 21	Sept 21	Oct 21	Nov 21		
Overall Status	A	A	A	A	↔	• [Redacted] is now live with parts for penetrations being processed for 802 and 801 BOM is under review.
Safety	G	G	G	G	↔	• Permanent Head of HSE agreed and commences week 1, 2022. Lifting Manager recruitment re-commenced. Priority H&S actions continue to receive attention.
Cost	G	G	G	G	↔	• Project Cost EAC remains within target at £110m - 114m. Cost forecast is being continuously monitored and we are still within the window 110M – 114M.
Schedule	A	A	A	A	↔	• Revised 801 Project Master Schedule has been issued with ship delivery 30 August 2022. • 802 Project Master Schedule is under review.
Quality	G	G	G	A	↓	• QMS tool, QPulse, implementation started. Target implementation completion by 21/Dec. Still on track • Formal Defect rate following Calling notice of inspection is remaining at a low level now that legacy defects are being reviewed and closed weekly. • Increased incident rate of Work in Progress quality concerns, number of site visits with client jointly reviewing and currently being investigated. This moves Quality to amber until process improvement realized
Customer Relationship	A	G	G	G	↔	• Rules of Engagement, renamed "Terms of Reference" have been agreed. Document to be finalized with points of contact and an Organisation Chart. • A thorough review of the OOR's has been undertaken and the output of this is being processed. • Formal appointment of CMAL as Buyer's Representative is still to be confirmed.
Technical	A	A	A	A	↔	• P&ID internal review of changes between CMAL approved docs and current status to support resubmission to CMAL • Stair width risk remains and will require concession. • Stability results will require concession from CMAL. • Crank case breather location to be determined and agreed.
Supply Chain	G	G	G	G	↔	• Senior level meeting with [Redacted] UK reset the working relationship and both parties working well together.
Operations	A	A	A	A	↑	• Additional [Redacted] employees now on site (c.80 total) further additions being progressed for post Christmas - making a positive impact on progress of hotwork packages. • Focus is on completing 801 hotwork packages
Commissioning		G	G	G	↔	• Commissioning will start in January • Test forms are in progress, no test forms have been approved by CMAL.
Risk Management	R	R	A	A	↔	• The Risk Register has been refreshed and an internal review completed, a review will be scheduled with CMAL in January.

Successes	Opportunities
<ul style="list-style-type: none"> <li>• Revised Programme issued.</li> <li>• [Redacted] MRP now started to be used in the business.</li> <li>• Units 45 &amp; 46 erected on 802.</li> <li>• [redacted] - 801 installation progressing</li> <li>• Additional QC resource added (Pipe, Outfit) Lead DC started on 29/11/21.</li> </ul>	<ul style="list-style-type: none"> <li>• Build strategy review for 802 to build as blocks for wheelhouse and bow units prior to erection at ship</li> <li>• Completion of 802 clam shell doors on slip before launch</li> <li>• Continuous employee improvement up-skill by coding of several apprentices throughout the business.</li> <li>• Supervision engagement and capability requirements defined to allow for effective performance management. – commence mid Jan</li> <li>• Establish multifunctional hub onboard the ship for speedy management.</li> <li>• Progress reporting metrics rolling out to ship is in progress and being monitored</li> <li>• Q-Pulse QMS kick off for project starts 10/11/21. Programming and installation complete by 21<sup>st</sup> Dec.</li> <li>• Transition of planning capability to FMPG team as [redacted] contract closes in October</li> <li>• Risk Management process has just been re-established and brought up to date and a refreshed risk register is available.</li> <li>• Quality – Electrical Cable glands within the accommodations raised as a concern. These all have been inspected and closed out (1 was highlighted for repair). This is backed up by a Workshop Guideline Document for installation and Toolbox Talk. Hold Point has also been introduced via the Calling Log process to arrange inspection of all new installed Cable Glands prior to welding.</li> <li>• Quality-Increased focus through CMAL and FM QC engagement with on-board vessel patrols.</li> <li>• CMAL are unhappy with access to valves and pumps and the installation of the platforms in zone 2. We are working with CMAL to identify opportunities to modify the design.</li> <li>• Quality-Increased focus on OOR review and closure with a introduction of a tracking board within QC to allocate tasks and track closure with support from CMAL.</li> </ul>
Failures	Threats
<ul style="list-style-type: none"> <li>• Stability – load cases when carrying 16 HGVs does not pass stability requirements with full passenger complement. Will require concession from CMAL.</li> </ul>	<ul style="list-style-type: none"> <li>• COVID 19 impact to programme– remains a threat to the programme.</li> <li>• Level of change is being processed and managed on a daily basis.</li> <li>• 801 valve &amp; instrumentation delivery forecast threat to completion of some pipe systems.</li> <li>• Stair widths from car deck to passenger areas are too narrow and require a concession from [redacted] – meeting arranged for 26th Nov identified some actions we need support from CMAL to close.</li> <li>• Crank case breather location is a threat. This is a key system for commissioning and must be resolved to the customer's satisfaction. Location is critical as this creates a zone 1 hazard.</li> </ul>

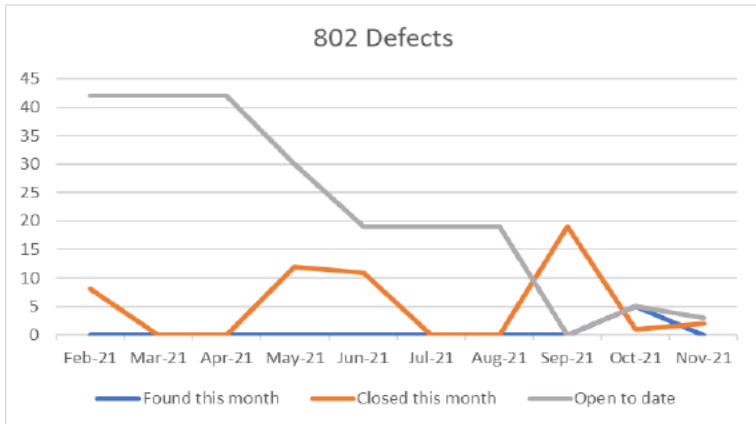
# Quality

## 5. Quality - 801 & 802 Formal Internal QC Surveys



801 - This month's report shows 0 new defects open from last month on 801, 1 defect was closed out this being A 5/5 Underdeck Stiffening Frm 43 - 47 Additional underdeck Bkts as per DWG 801-2-200/A55-1.

801 surveys have included Panama eyes refitting where multiple cracks were found around the parent material due to poor workmanship which has since been dealt with repaired OK. Clam shell doors have been progressing well with TTS components welded in place with 100% MPI carried out.

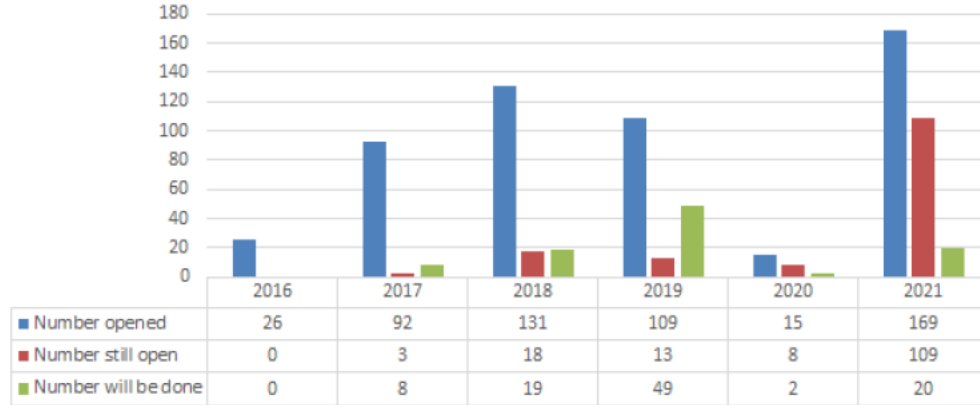


802 - There has been 0 new defects added this month and 2 closed out being a lack of fusion defect frame 307 Port Side Deck 2 UT Point 101.

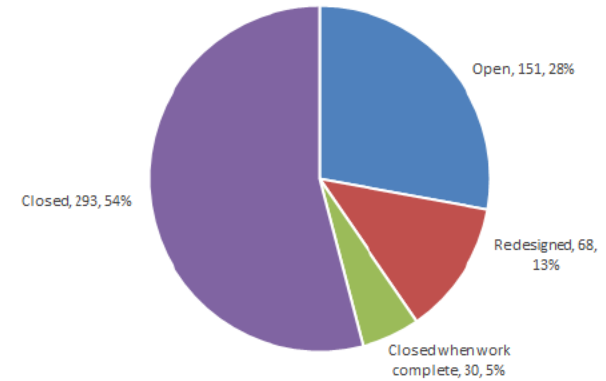
802 surveys have included Unit A 6/5, Units 49,50,51 part survey's, Units 85,86, Unit A 6/5, Unit A7/5, Unit A 8/5 part survey, Unit A 9/5.

# OOR Reviews

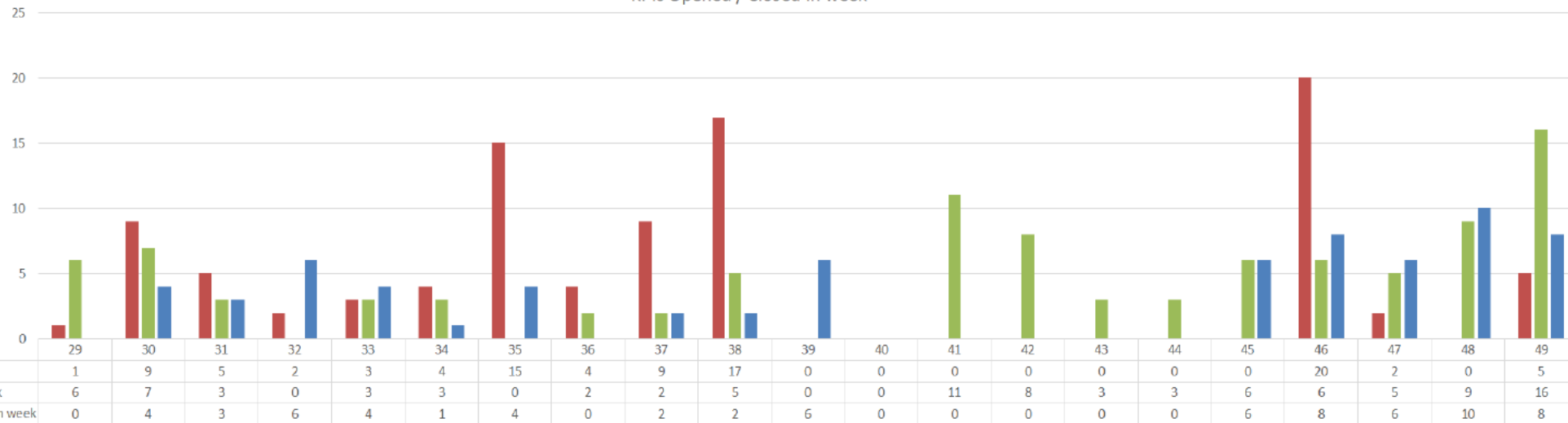
Number Opened



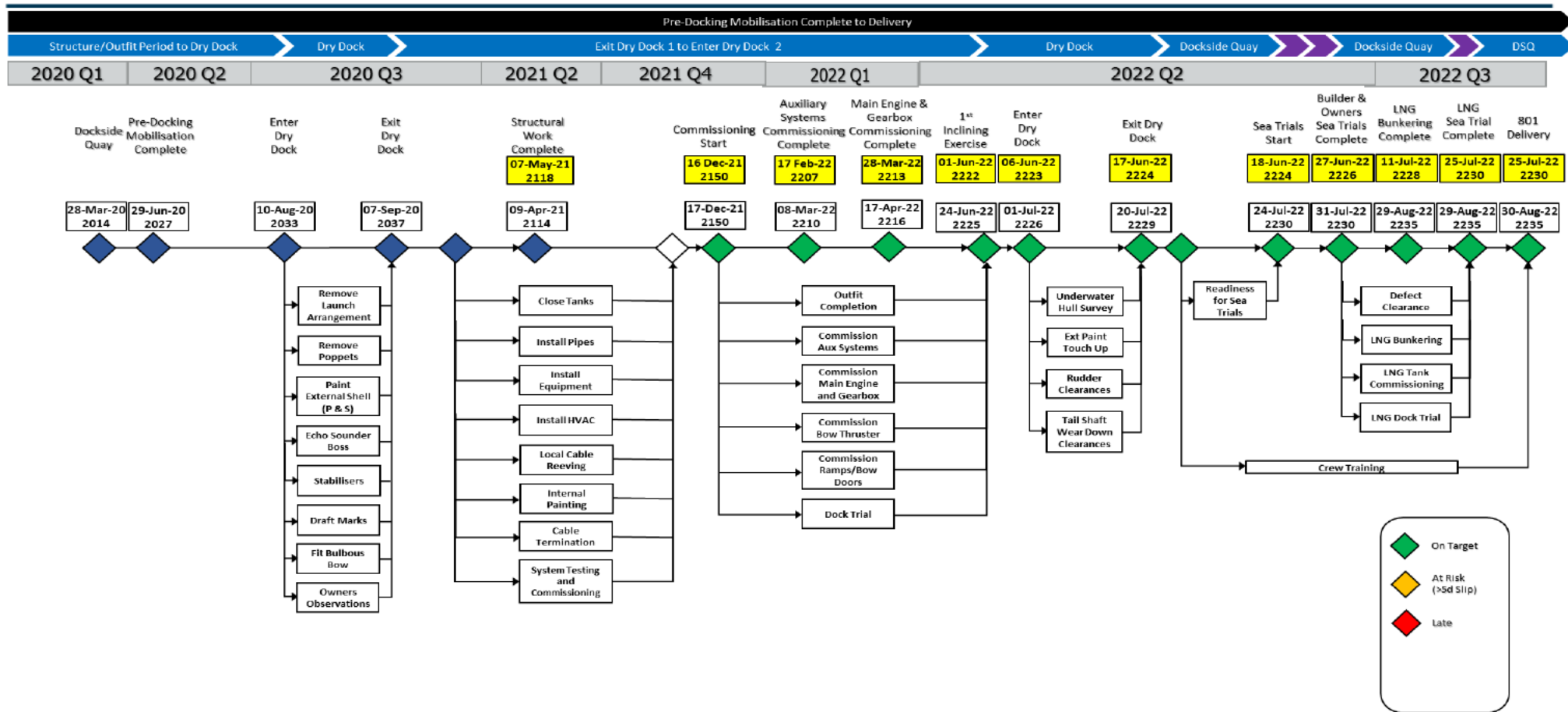
Distribution by Category



KPIs Opened / Closed in week



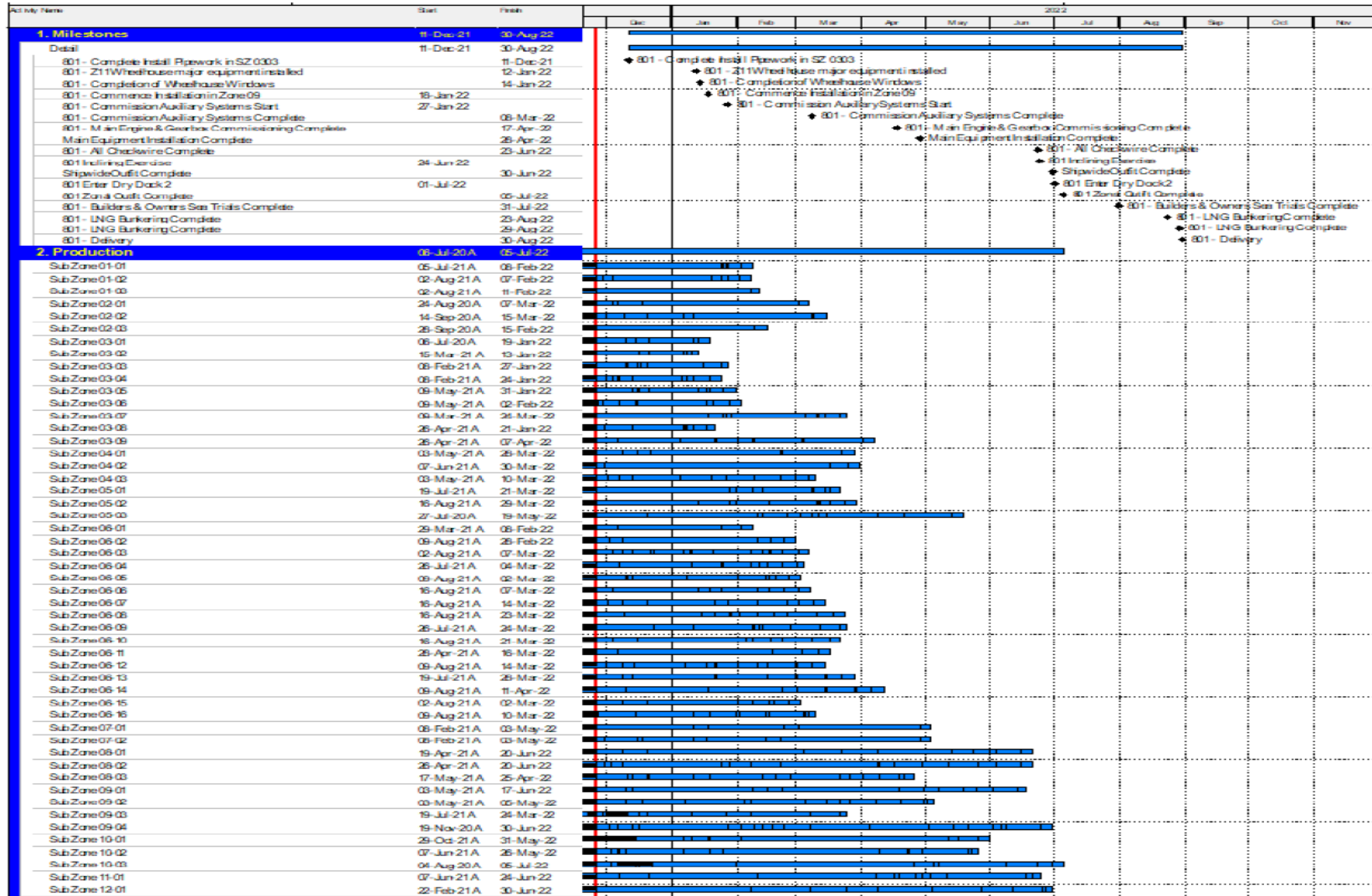
# 801 Milestones



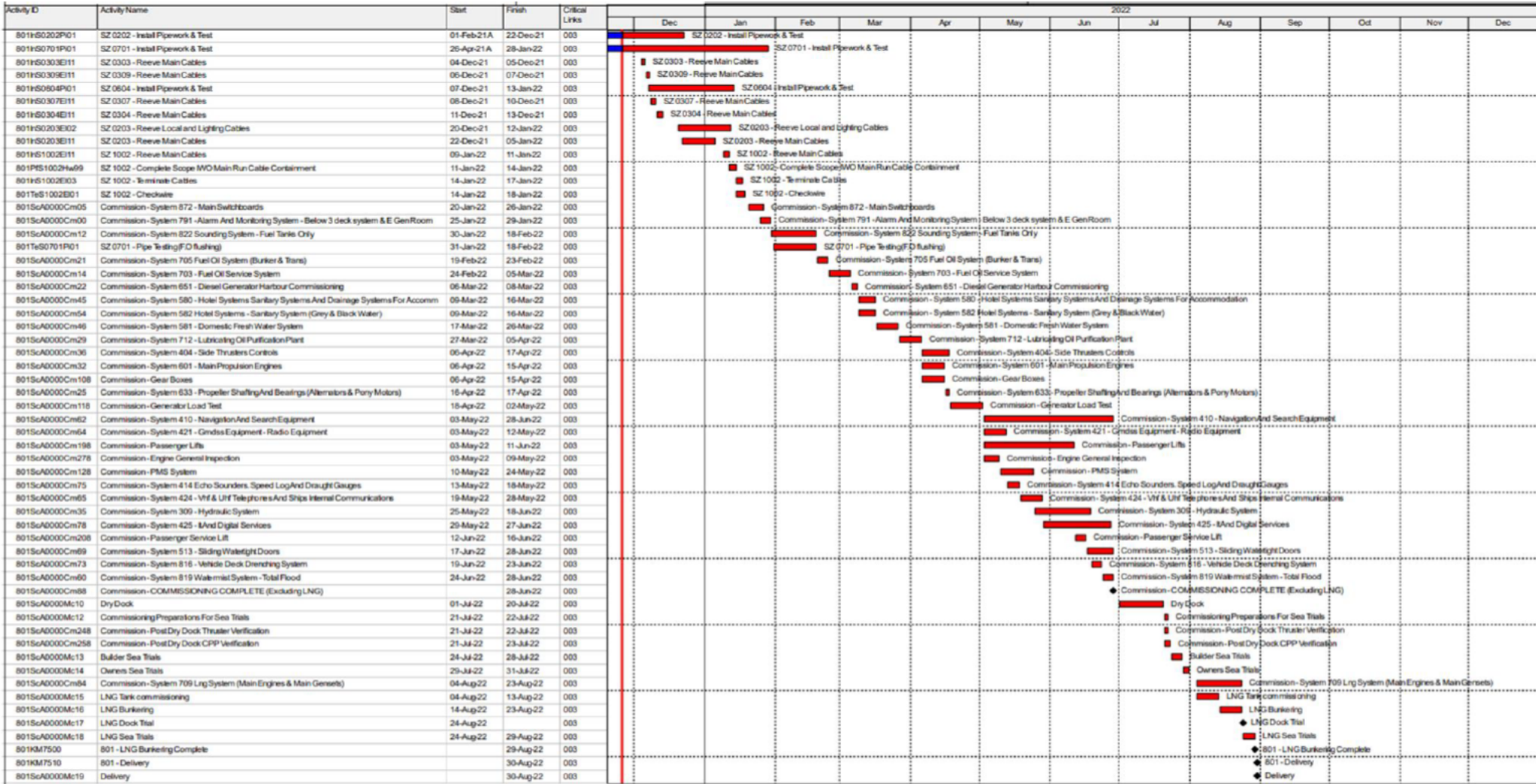
Updated November 2021



# 801 L2 Schedule – Sub Zone Level



# 801 Critical Path



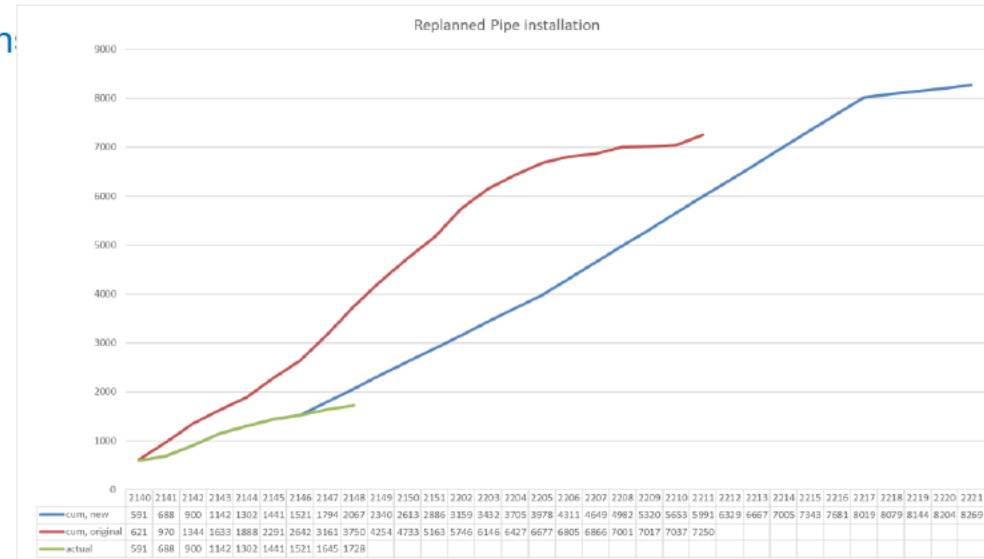
## 801 Trades

	Status		Comments
	Quality	Schedule	
Steelwork	G	A	<ul style="list-style-type: none"> <li>Hull Outfit (HO) steelwork &amp; Pipe spool manufacture being progressed through Manufacturing &amp; Subcontract facilities</li> <li>HO steelwork plan in place to complete priority zones by end November</li> <li>ESAB breakdown is being managed with additional subcontract profiling</li> </ul>
Pipe Installation	G	A	<ul style="list-style-type: none"> <li>Volume of change from Zone 2 modifications sheets understood and modifications underway, materials available.</li> <li>Same exercise underway in all zones, to date 286 new spools to be manufactured / bought in of 1015 identified on recent modification sheets</li> <li>Plan for system completion for commissioning is in place</li> <li>Weekly review in place on key commissioning systems completion</li> <li>PO placed for chemical clean of LO / FO systems</li> <li>Installation progressing in Zones 1,2,3,4,5,7,8,10</li> </ul>
Electrical Installation	G	A	<p>[redacted]</p> <ul style="list-style-type: none"> <li>More workfaces opened to [redacted]</li> <li>Deck 5 penetrations in place to allow main cable runs to commence to bridge and emergency generator</li> <li>Switchboard clean planned &amp; PO placed [redacted]</li> <li>Access dates agreed with [redacted]</li> </ul>
Upper Decks Insulation & Outfit	G	G	<ul style="list-style-type: none"> <li>AHU room pinning &amp; insulation progressing</li> <li>Bonding of windows Deck 6 windows under review with subcontractors</li> </ul>
HVAC installation	G	A	<ul style="list-style-type: none"> <li>Deck 5 installation continues, await additional tapping straps</li> </ul>
Hydraulic Pipe manufacture & install	G	G	<ul style="list-style-type: none"> <li>[Redacted] progressing installation</li> <li>Additional materials now on order with [Redacted]</li> </ul>
Structural Insulation	G	A	<ul style="list-style-type: none"> <li>[Redacted] have commenced work</li> <li>Access to areas improving as hotwork packages complete</li> </ul>
LNG Installation	G	A	<ul style="list-style-type: none"> <li>Installation underway</li> <li>[redacted] due back on site</li> <li>Rankie in philosophy being developed with [Redacted] to construct RAMS.</li> <li>System flushing / cleaning procedures and SOW in development</li> </ul>

# 801 Pipe Installation

## Overall

- Pipe Installation in Zone 01, 02, 03, 04, 05, 07 & 10 is underway using FMPG & [Redacted] resource
- [Redacted] installation of SFI 309 system continues primarily in Zone 3 / 4
- Cryodiffusion back on site to complete installation of 801, 802 following completion on 801
- Overall pipe installation curve shown for 801 for remaining spools S-Curves amended to align with programme / mod sheets
- Pipe penetrations have slowed progress for pipe installation teams
- [Redacted]/FMPG have focus on FO / LO / SW system completion
- Additional valves now on order
- Instrumentation lists being confirmed
- Additional resource requirements under review
- For next month we will report spools / site runs seperately



# 801 Pipe Installation

Subzone \ SFI	309	414	571	577	581	582	666	701	704	705	708	709	711	712	713	721	722	725	731	743	801	802	803	803.1	803.2	804	813	815	816	819	821	822	Grand Total	
Zone 1	0%				60%	33%			0%		38%		8%		0%		0%		63%		36%			23%	72%	71%	41%			36%	35%	38%	33%	
Zone 2	26%			70%	87%	100%	0%	92%	50%	98%	70%	0%	95%	52%	68%	96%	91%	87%	72%	53%	86%	94%	0%	96%	97%	63%	95%			72%	95%	90%	82%	
Zone 3	56%	50%		100%	58%	59%		100%	0%	99%	0%	26%	58%		45%		90%	63%	73%	100%	97%	92%		85%	92%	81%	100%	51%		51%	96%	80%	72%	
Zone 4	7%	100%	26%	70%	64%	56%			0%				100%			100%	86%		58%		86%			84%	82%	48%	26%	15%	7%	70%	95%	73%	62%	
Zone 5	0%			0%	0%				0%						0%			0%	0%		38%			21%	37%	55%	0%	0%	0%	0%	68%	0%	23%	
Zone 6	0%		0%	0%	0%	0%	0%	100%	0%	38%	0%	0%	67%		0%		0%	0%	0%			0%		0%	0%	3%	5%	0%	2%	0%	0%	0%	2%	
Zone 7		0%		0%	3%			55%	0%				0%				20%	0%	0%	42%						67%	27%			0%	50%		29%	
Zone 8	0%		10%	0%	0%	0%							0%						0%							0%	0%	0%	0%	0%			1%	
Zone 9			0%	0%	0%	0%			0%	80%			0%						0%	0%						0%	0%			0%			2%	
Zone 10			0%	0%	0%	0%		0%	0%	37%		53%							0%	25%						8%	0%	0%		10%	0%		11%	
Zone 11					0%	0%																				0%				0%			0%	0%
Grand Total	21%	57%	12%	26%	19%	35%	0%	93%	31%	93%	43%	17%	82%	52%	34%	96%	81%	66%	59%	50%	81%	84%	0%	80%	82%	21%	28%	25%	2%	25%	77%	64%	49%	

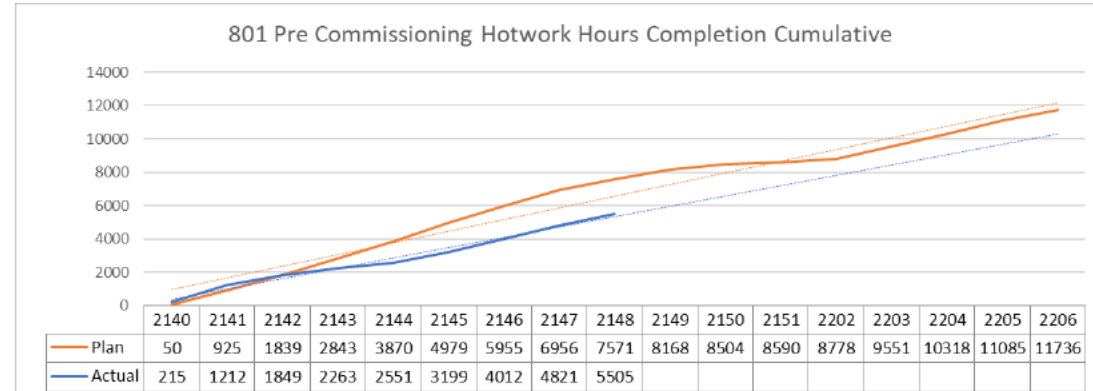
309 - Hydraulic System for Cargo Handling Equipment	704 - Machinery & Save-All Drains	722 - Fresh Water LT-HT Cooling System	803.2 - Bilge System (Oily)
414 - Echo Sounders, Speed Log and Draught Gauges	705 - Fuel Oil System (Bunker & Trans)	725 - Glycol Heating System	804 - Exposed Deck Scupper & Drains Arrangement
571 - Chilled Water System	708 - Nitrogen System	731 - Compressed Air and Instrumentation System	813 - Fire and Deckwash System
577 - Heating System	709 - LNG System (Main Engines & Main Gensets)	743 - Exhaust Gas & Crankcase Breather System	815 - Novac 1230 Fixed Fire Extinguishing System
581 - Technical & Dom. Fresh Water System	711 - L.O. Transfer System	801 - Trim & Heel Ballast Water System	816 - Vehicle Deck Drenching System
582 - Sanitary System (Grey & Black Water)	712 - L.O. Purification System	802 - Sludge and Waste Oil System	819 - Watermist System / Manual Water / Foam System
666 - Quick Closing Valve System	713 - L.O. System for Thrusters, HPU's & Steering Gen	803 - Bilge System (Clean)	821 - Air & Sounding Diagram
701 - F.O. System for Main Engines, Aux & Emergency Gen.	721 - Sea Water Cooling System	803.1 - Bilge System (Clean)	822 - Sounding System

To complete	309	414	571	577	581	582	666	701	704	705	708	709	711	712	713	721	722	725	731	743	801	802	803	803.1	803.2	804	813	815	816	819	821	822	Grand Total
Zone 1	72				8	2			13		21		22		14		4		15		18			47	10	6	20			14	42	8	336
Zone 2	119			21	6	0	13	24	39	4	29	49	10	13	6	5	55	6	77	64	12	6	1	10	3	9	2			30	8	1	622
Zone 3	115	8		0	21	87		1	19	1	2	84	11		59		14	18	17	0	2	2		20	6	7	0	19		51	4	2	570
Zone 4	103	0	64	7	73	18			2				0			0	22		30		6			30	7	11	34	35	14	21	4	3	484
Zone 5	43				4				6						20				9		5			15	24	5	11	11	2	9	13	3	180
Zone 6	251		8	10	166	143	4	0	4	5	54	52	3		21		27		36			15		5	2	155	146		166	146	31		1450
Zone 7		1		11	28			10	1				38						66	13	7	32				16	8			22	22		275
Zone 8	10		56	60	242	70							12						13							91	42	3	7	99			705
Zone 9			51	85	228	31			2	3		1							6	1						73	33			132			646
Zone 10			32	38	97	20		2	2	12		21							5	3						24	4	8		45	3		316
Zone 11					55	1																				38				11			105
Grand Total	713	9	211	232	928	372	17	37	88	25	106	257	46	13	120	5	188	37	215	100	43	23	1	127	52	435	300	76	189	580	127	17	5689

# 801 Hotwork

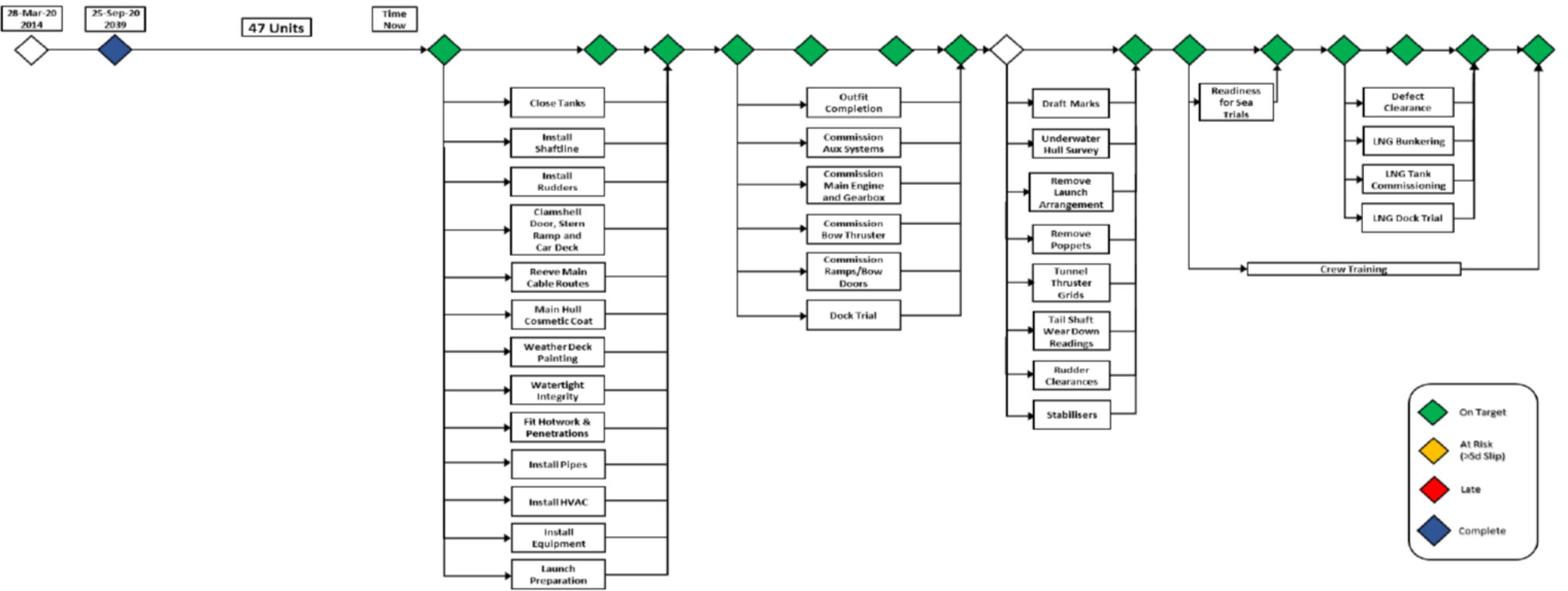
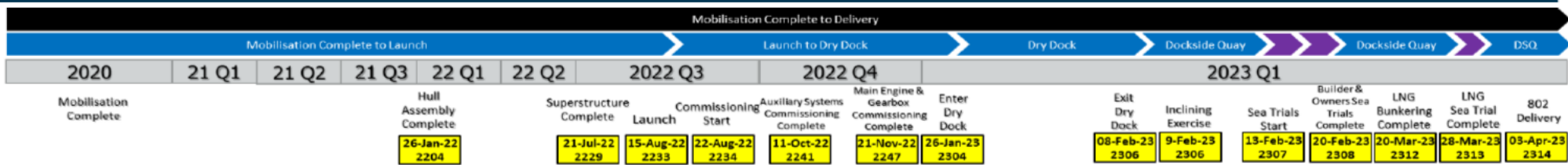
## Overall

- Hotwork schedule to completion in place
- Additional [Redacted] resource now in place to support this.
- Additional subcontract manufacture has been used to accelerate provision of major and electrical seats.
- Additional subcontract being used to offset ESAB breakdown



%age progress overall								
Zone	Major Seats	Elect Seats	Lift Eyes/ M.Rails	PipePens (Cut)	Elec Pens (Cut)	HVAC Pens (Cut)	WW/Stairs/ Pltfms Ldrs/Rails	Struct/ Sketches
1	97%	100%	100%	35%	100%	100%		100%
2	100%	100%	100%	92%	100%		57%	100%
3	94%	99%	83%	73%	80%	89%	14%	80%
4	86%	88%	100%	31%	33%	50%	46%	100%
5	100%	37%	49%	25%	0%	50%	21%	0%
6	64%	49%	2%	9%	7%	32%	5%	46%
7	71%	19%	0%	62%	48%	0%	0%	73%
8	25%	0%	100%	0%	80%	81%		10%
9	0%	45%	100%	0%	92%	80%		0%
10	17%	17%	100%	20%	61%	57%	0%	0%
11	91%	0%		0%	21%	100%		0%
76%	57%	82%	29%	45%	55%	28%	34%	

# 802 Milestones



Updated 30th Sept 2021

## 802 Trades

	Status		Comments
	Quality	Schedule	
Steelwork	G	A	<ul style="list-style-type: none"> <li>• HO steelwork being progressed through Manufacturing &amp; Subcontract facilities.</li> <li>• Units 45 &amp; 46 now erected to ship.</li> <li>• Ducktail - Lloyds have provisionally approved the proposal for the Chime Bar. Change request has been submitted.</li> <li>• Resource has been constraint.</li> </ul>
Pipe Installation	G	A	<ul style="list-style-type: none"> <li>• [Redacted] have commenced marking out pens to be cut in zone 2.</li> </ul>
Electrical Installation	G	G	<ul style="list-style-type: none"> <li>• No current issues impacting cost, schedule or quality.</li> </ul>
Upper Decks Insulation & Outfit	G	G	<ul style="list-style-type: none"> <li>• No current issues impacting cost, schedule or quality.</li> </ul>
HVAC installation	G	G	<ul style="list-style-type: none"> <li>• No current issues impacting cost, schedule or quality</li> </ul>
Hydraulic Pipe manufacture & install	G	G	<ul style="list-style-type: none"> <li>• No current issues impacting cost, schedule or quality</li> </ul>
Structural Insulation	G	G	<ul style="list-style-type: none"> <li>• Initial pinning has commenced</li> </ul>
LNG Installation	G	G	<ul style="list-style-type: none"> <li>• All materials now onsite.</li> <li>• Installation to commence after hot work completion, plan being reviewed.</li> </ul>



## Learning from Experience

We are holding weekly meetings looking at how we Learn from Experience from 801 and opportunities improving 802 moving forward. Some issues/opportunities raised to date:

Ref	Subject	Raised by	Date Raised	801	802	Action
11	Outfit	AC	03/12/2021	Scuppers not fitted before launch causing rework	Order in and look to fit before launch (Zone 6 priority)	Drawings to be released/Order scuppers
12	Outfit	AC	03/12/2021	Watertight doors and hatches not fitted	Plan in to fit before launch (Prioritise)	Verify drawings, Hatches/Doors to be ordered in
13	Build Sequence	AC	06/12/2021	15 spaces with no access through life or to complete scope	Change request in place	update required on CR
14	Lock Out	AC	06/12/2021	Issue with flooring in bottom of chain locker	Build sequence to be reviewed	Review build sequence
15	Lock Out	AC	07/12/2021	Fan bellow MES doesn't fit through recess	Review build strategy	Review build strategy
16	Lock Out	AC	07/12/2021	MES frames damaged	Review build strategy	Review build strategy
17	Outfit	AC	07/12/2021	Plenums not fitted	Review outfit build strategy & sequence	Review outfit build strategy & sequence
18	Outfit	AC	07/12/2021	Access issues in funnel area	Review build strategy	Review build strategy
19	Outfit	AC	07/12/2021	No floorplates fitted in walkways	Is there an opportunity to fit earlier in the outfit sequence?	Review outfit build strategy
20	Care & Protection	AC	07/12/2021	Belows damaged (OOR raised)	Correct protection process in place	Review current process, implement necessary improvements

## Weight

	Oct Rev 29	Nov Rev 30	Difference	Margin remaining	Remaining to validate	Comments/Highlights
Group 1-1 Hull Steel	1537.38	1537.38	0			
Group 1-2 Misc. Steel	124.7	124.7	0			
<b>Total Steel</b>	<b>1662.09</b>	<b>1662.09</b>	<b>0</b>	18	25	
Group 2 S/S Aluminium	158.81	158.81	0			
<b>Total S/S Aluminium</b>	<b>158.81</b>	<b>158.81</b>	<b>0</b>			
<b>2-4 Paint</b>	<b>35.34</b>	<b>35.34</b>	<b>0</b>			
Group 3 Cargo Equipment	201.46	201.46	0		4	
Group 4 Ship Equipment	187.67	167.67	-20		13	20t of items validated last month
Group 5 Accom. Outfit	565.59	554.73	-11	28.37	51	10t of items validated in month
<b>Total Outfit</b>	<b>954.72</b>	<b>923.86</b>				
Group 6 Main Machinery	295.34	295.34	0	14.06	25	
Group 7 Machinery Systems	210.08	204.64	-6	6.11	19	17t validated in month
Group 8 Ships Common Systems	262.31	278.42	+16	9.87	4	48t validated in month
<b>Total Machinery &amp; Electrical</b>	<b>767.74</b>	<b>778.4</b>				
<b>Predicted Lightship</b>	<b>3578.7</b>	<b>3558.5</b>				
Excess weight	25.35	5.15				95 tonnes validated since last month, 140 tonnes remaining to validate.
Target Weight of the Lightship	3553.35	3553.35		<b>76.41</b>	141 (4% of total)	76 tonnes of margin remain <b>Ship is predicted to be 5t overweight assuming that the 76t margin is consumed.</b>

Green is at least 90% validated

Yellow is at least 80% validated

Orange is at least 60% validated

## Engineering – Basic Design Status - Lloyds

Under review at Lloyds		Date Sent to LR	note
Technical & Domestic Fresh Water System		05/11/2021	
Nitrogen System		28/09/2021	
LNG System For ME & DF Gen Sets (Superseded M-519-797-3101-01 to 03)	[Redacted]		waiting on CryoD output
Heating System		03/08/2021	
Glycol System		28/09/2021	
Freeboard / External Watertight Integrity Plan		27/07/2021	
Foc'sle Deck Additional Steel to Accommodate Mooring Equipment/Machinery (sheets1-6)		28/09/2021	
Exposed Deck Scupper & Drains Arrgt		25/10/2021	
Exposed Deck Scupper & Drains Arrgt		25/10/2021	
Anti Fouling Plan		15/09/2021	
To be submitted to Lloyds (in work)		Expect to complete	note
Tank & Capacity Plan	Complete		submitted w/c 6/12
Damage control plan	End Jan		After stability work concludes
Cargo Securing Manual	End Nov		waiting info from CMAL

## Engineering – Basic Design Status - MCA

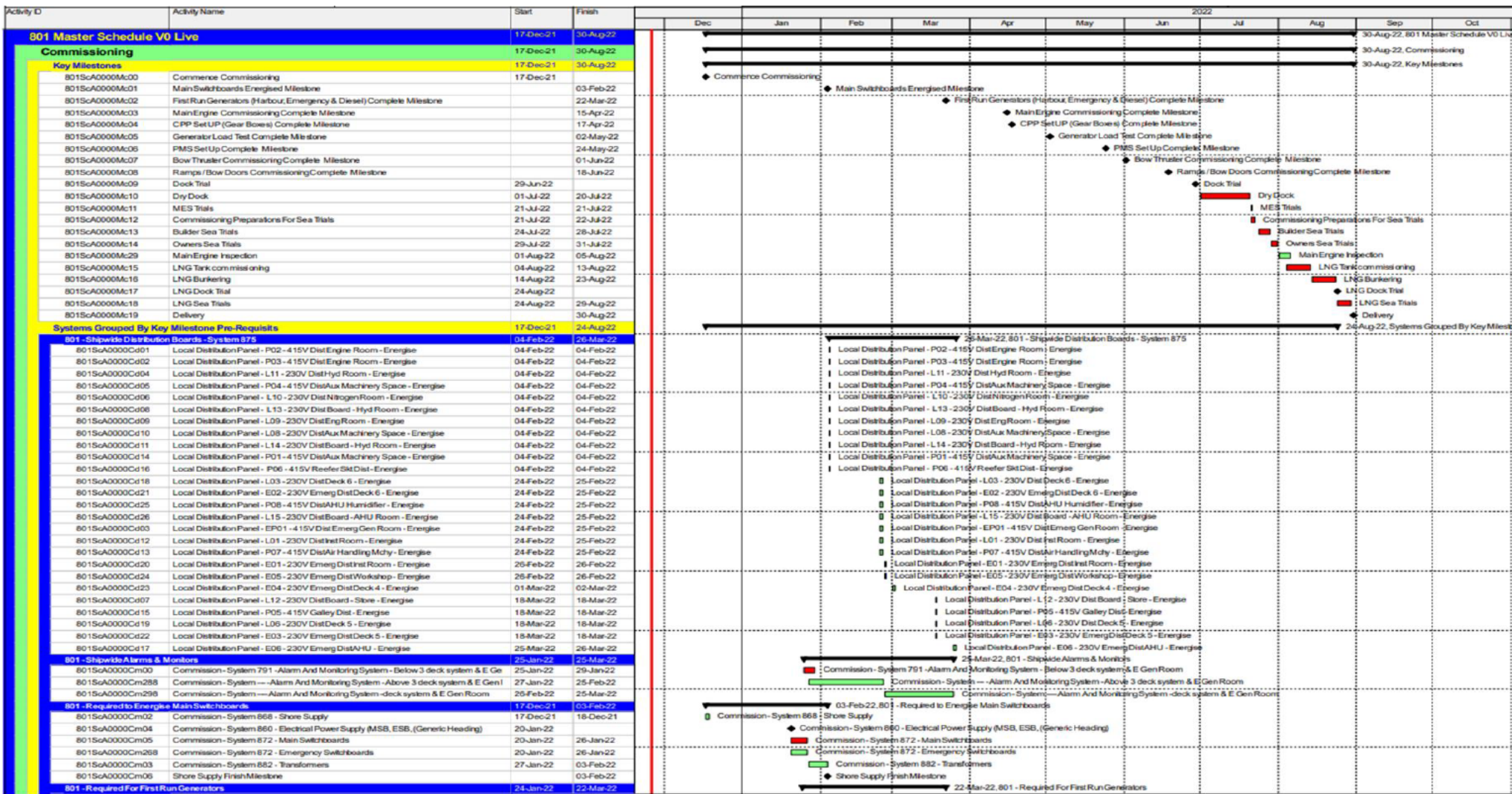
Under review at MCA	Date sent to MCA	
Structural Fire Protection Plan	04/10/2021	
Fixed Fire Extinguishing Syst. ECR & Pipes, Cables Transformer Room	04/11/2021	
Fixed Fire Extinguishing Syst. Server Equip. Rm - Deck 7	04/11/2021	
Fixed Fire Extinguishing Syst. Emergency Diesel Generator room	04/11/2021	
Layout Drawing - Bridge Wheelhouse console	04/11/2021	
Insulation Plan	Waiting on updated GA	
Fire Detection General Arrangement	04/11/2021	
Escape Route Plan	On hold (stair width)	
Fire Door, Damper & Patrol Point Monitoring Dk.7 to Dk. 1 Gen. Arrgt	26/10/2021	
To be submitted to MCA (in work)	Expect to complete	Note
Tank & Capacity Plan	Complete	submitted w/c 6/12
Stability book	Early 2022	
Location Drawing Emergency Light System	Returned with comments	delayed by escape route plan
Life Saving arrangement	Early Jan 2022	to be updated after GA issue
Fire Control Plan	Before end Dec	delayed by escape route plan
Fire & Deck Wash System	requires approval of a change	
CALMAC SAR Plan	CMAL	
CALMAC Muster Lists (Mode 1-4)	CMAL	
Accommodation Layouts	End Nov	
801&802-LNGPac Operating & Maintenance Manual LNGPac-H149-D9	Adam to confirm	
Emergency Low level lighting	Will submit after escape route plan approved	delayed by escape route plan

## Commissioning

---

- Test Packs are being created and sent to CMAL/LR when they are ready for review and approval.
  - 58% submitted for approval
  - 11% have CMAL comments
  - 9% have LR comments
  - 0% Approved
- The T&C team will remind CMAL and LR to send comments back to allow us to complete the open test agendas.
- Sign off of the plan allows the commissioning team to engage the relevant OEMs to support commissioning.
- A senior electrical commissioning engineer will join the team in January.
- A detailed commissioning plan has been created by the commissioning team and the next step is to create this in Primavera as a level 4 plan for commissioning that can be linked to production activities.
- Commissioning activities that will be delivered by OEMs need to be highlighted in the plan.
- OEM commissioning scopes of work and pre-requisites need to be confirmed.

# 801 System Commissioning



# 801 System Commissioning (cont)



Activity ID	Activity Name	Start	Finish	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
801ScA0000Cm24	FirstRunAuxiliary Generators Finish Milestone		22-Mar-22													
801 - System 704 Machinery & Save-All Drains	Commission - System 704 Machinery & Save-All Drains	24-Jan-22	25-Jan-22													
801ScA0000Cm55	Commission - System 704 Machinery & Save-All Drains	24-Jan-22	25-Jan-22													
801 - Bunkering Fuel	Commission - System 821 Tank/Air Vent System - Fuel Tanks	30-Jan-22	23-Feb-22													
801ScA0000Cm10	Commission - System 821 Tank/Air Vent System - Fuel Tanks	31-Jan-22	31-Jan-22													
801ScA0000Cm09	Commission - System 666 Quick Closing Valve System	01-Feb-22	02-Feb-22													
801ScA0000Cm12	Commission - System 822 Sounding System - Fuel Tanks Only	30-Jan-22	18-Feb-22													
801ScA0000Cm21	Commission - System 705 Fuel Oil System (Bunker & Trans)	19-Feb-22	23-Feb-22													
801 - Required for first Run Harbour Generator	Commission - System 743 Exhaust Gas & Crankcase Breather System	01-Feb-22	02-Feb-22													
801ScA0000Cm07	Commission - System 721 - Sea Water Cooling System	27-Jan-22	04-Feb-22													
801ScA0000Cm15	Commission - System 722 - Fresh Water L/H Cooling System	03-Feb-22	12-Feb-22													
801ScA0000Cm16	Commission - System 731 - Compressed Air Start & Instrumentation System	13-Feb-22	17-Feb-22													
801ScA0000Cm17	Commission - System 701 - F.O. System For Main Engines Aux & Emergency Gen.	24-Feb-22	02-Mar-22													
801ScA0000Cm20	Commission - System 883 - Battery Charger And Ups - Machinery & Automation	24-Feb-22	03-Mar-22													
801ScA0000Cm14	Commission - System 703 - Fuel Oil Service System	24-Feb-22	05-Mar-22													
801ScA0000Cm22	Commission - System 651 - Diesel Generator Harbour Commissioning	08-Mar-22	08-Mar-22													
801 - Required for first Run Emergency Generator	Commission - System 665 - Emergency Generator	09-Mar-22	10-Mar-22													
801ScA0000Cm23	Commission - System 651 - Diesel Generator Auxiliary	09-Mar-22	18-Mar-22													
801 - Required for First Run Aux Generator	Commission - System 711 - Lubricating Oil Transfer System	26-Jan-22	17-Apr-22													
801ScA0000Cm08	Commission - System 637 - Main Reduction Gears	22-Mar-22	13-Mar-22													
801ScA0000Cm26	Commission - System 795 - Remote Control Of Main Engines And Propulsion	18-Mar-22	27-Mar-22													
801ScA0000Cm30	Commission - System 702 - Fuel Oil Purification Plant	27-Mar-22	29-Mar-22													
801ScA0000Cm27	Commission - System 712 - Lubricating Oil Purification Plant	27-Mar-22	05-Apr-22													
801ScA0000Cm29	Commission - System 601 - Main Propulsion Engines	06-Apr-22	15-Apr-22													
801ScA0000Cm32	Commission - System 633 - Propeller Shafting And Bearings (Alternators & Pony Motors)	16-Apr-22	17-Apr-22													
801ScA0000Cm25	Main Engine and Prop Shaft Commissioning Finish Milestone		17-Apr-22													
801ScA0000Cm33	Commission - System 713 Lubricating Oil System for Gearbox	28-Jan-22	15-Apr-22													
801 - Required For CPP Set Up	Commission - Gear Boxes	06-Apr-22	15-Apr-22													
801ScA0000Cm34	Commission - System 713 Lubricating Oil System for Gearbox	28-Jan-22	01-Feb-22													
801 - Required For Generator Load Test	Commission - Generator Load Test	18-Apr-22	09-May-22													
801ScA0000Cm118	Commission - Engine General Inspection	03-May-22	09-May-22													
801ScA0000Cm278	Commission - PMS System	10-May-22	24-May-22													
801 - Required For PMS Set Up	Commission - PMS System	10-May-22	24-May-22													
801ScA0000Cm128	Commission - System 309 - Hydraulic System	25-May-22	18-Jun-22													
801 - Required For Ramp/Bow Doors Commissioning	Commission - System 713 Lubricating Oil System for Thrusters	25-May-22	01-Jun-22													
801ScA0000Cm35	Commission - System 404 - Side Thrusters Controls	25-May-22	01-Jun-22													
801 - Required For Bow Thruster Commissioning	Commission - System 404 - Side Thrusters Motors	25-May-22	01-Jun-22													
801ScA0000Cm37	Commission - System 404 - Side Thrusters Controls	25-May-22	01-Jun-22													
801ScA0000Cm36	Commission - System 404 - Side Thrusters Controls	25-May-22	01-Jun-22													
801ScA0000Cm138	Commission - System 404 - Side Thrusters Motors	25-May-22	01-Jun-22													
801 - Required System Completion	System Completion Commissioning Finish Milestone	02-Feb-22	28-Jun-22													
801ScA0000Cm61	Commission - General Service Pumps	17-Mar-22	18-Mar-22													
801 - General Service Pumps	Commission - General Service Pumps	17-Mar-22	18-Mar-22													
801ScA0000Cm15	Commission - Domestic Systems	09-Mar-22	28-Mar-22													
801 - Domestic Systems	Commission - System 580 - Hotel Systems Sanitary Systems And Drainage Systems For Accommodation	09-Mar-22	16-Mar-22													
801ScA0000Cm45	Commission - System 582 Hotel Systems - Sanitary Systems (Grey & Black Water)	09-Mar-22	16-Mar-22													
801ScA0000Cm54	Commission - System 581 - Domestic Fresh Water System	17-Mar-22	26-Mar-22													
801ScA0000Cm46	Commission - System 641 - Auxiliary Boilers	27-Mar-22	28-Mar-22													
801ScA0000Cm47	Commission - System 577 Heating System	09-Mar-22	22-May-22													
801 - Shipwide HVAC	Commission - System 571 Chilled Water System	19-Mar-22	17-Apr-22													
801ScA0000Cm53	Commission - System 570 - Heating, Ventilation And Air Conditioning Systems	03-May-22	12-May-22													
801ScA0000Cm52	Commission - System 732 / 733 - Service Air	09-Mar-22	22-May-22													
801 - Bilge & Ballast	Commission - System 732 / 733 - Service Air	18-Feb-22	10-Jun-22													
801ScA0000Cm18	Commission - System 803 - Sludge, Waste And Dirty Bilge System (Medical only)	09-Mar-22	18-Mar-22													
801ScA0000Cm50	Commission - System 802 - Sludge And Waste Oil System	19-Mar-22	28-Mar-22													
801 - General Service Pumps	Commission - System 801 - Trim & Heel Ballast Water System	23-May-22	10-Jun-22													
801ScA0000Cm56	Commission - System 815 - Novac 1230 Fixed Fire Extinguishing System	29-Mar-22	07-Apr-22													
801ScA0000Cm59	Commission - System 803.1 Bilge System (Clean)	03-May-22	12-May-22													
801ScA0000Cm49	Commission - System 802 - Sludge And Waste Oil System	13-May-22	22-May-22													
801ScA0000Cm48	Commission - System 801 - Trim & Heel Ballast Water System	23-May-22	10-Jun-22													
801 - Fire Fighting & Detection Systems	Commission - System 815 - Novac 1230 Fixed Fire Extinguishing System	29-Mar-22	07-Apr-22													
801ScA0000Cm72	Commission - System 815 - Novac 1230 Fixed Fire Extinguishing System	29-Mar-22	07-Apr-22													

# 801 System Commissioning (cont)



Activity ID	Activity Name	Start	Finish	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
801ScA0000Cm51	Commission - System 811 - Fire Detection System	13-May-22	23-May-22							Commission - System 811 - Fire Detection System						
801ScA0000Cm56	Commission - System 813 Fire and Wash Deck System	23-May-22	28-May-22							Commission - System 813 Fire and Wash Deck System						
801ScA0000Cm73	Commission - System 816 - Vehicle Deck Drenching System	19-Jun-22	23-Jun-22							Commission - System 816 - Vehicle Deck Drenching System						
801ScA0000Cm60	Commission - System 819 Wash mist System - Total Flood	24-Jun-22	28-Jun-22							Commission - System 819 Wash mist System - Total Flood						
801ScA0000Cm21	Commission - System XXX Gas Detecdon	29-Jun-22	03-Jul-22							Commission - System XXX Gas Detecdon						
<b>801 - Galleys &amp; Laundry</b>		<b>09-Mar-22</b>	<b>05-Apr-22</b>													
801ScA0000Cm43	Commission - System 554 - Cold And Cool Rooms	09-Mar-22	19-Mar-22				Commission - System 554 - Cold And Cool Rooms									
801ScA0000Cm16	Commission - Galley Equipment	19-Mar-22	26-Mar-22				Commission - Galley Equipment									
801ScA0000Cm18	Commission - Galley Food Lifts	27-Mar-22	31-Mar-22				Commission - Galley Food Lifts									
801ScA0000Cm17	Commission - Laundry Equipment	01-Apr-22	05-Apr-22				Commission - Laundry Equipment									
<b>801 - Lifts &amp; Watertight Sliding Doors</b>		<b>03-May-22</b>	<b>26-Jun-22</b>													
801ScA0000Cm19	Commission - Passenger Lifts	03-May-22	11-Jun-22							Commission - Passenger Lifts						
801ScA0000Cm20	Commission - Passenger Service Lift	12-Jun-22	16-Jun-22							Commission - Passenger Service Lift						
801ScA0000Cm9	Commission - System 513 - Sliding Watertight Doors	17-Jun-22	28-Jun-22							Commission - System 513 - Sliding Watertight Doors						
<b>801 - Navigation Aids &amp; External Communications</b>		<b>03-May-22</b>	<b>26-Jun-22</b>													
801ScA0000Cm41	Commission - System 279 - Impressed Current Cathodic Protection System	03-May-22	05-May-22							Commission - System 279 - Impressed Current Cathodic Protection System						
801ScA0000Cm64	Commission - System 421 - Gmdss Equipment - Radio Equipment	03-May-22	12-May-22							Commission - System 421 - Gmdss Equipment - Radio Equipment						
801ScA0000Cm75	Commission - System 414 Echo Sounders, Speed Log And Draught Gauges	13-May-22	18-May-22							Commission - System 414 Echo Sounders, Speed Log And Draught Gauges						
801ScA0000Cm66	Commission - System 427 - Light And Signal Equipment	21-May-22	27-May-22							Commission - System 427 - Light And Signal Equipment						
801ScA0000Cm62	Commission - System 410 - Navigation And Search Equipment	03-May-22	28-Jun-22							Commission - System 410 - Navigation And Search Equipment						
<b>801 - Internal Communications &amp; Data</b>		<b>19-May-22</b>	<b>27-Jun-22</b>													
801ScA0000Cm65	Commission - System 424 - VHF & UHF Telephones And Ships Internal Communications	19-May-22	28-May-22							Commission - System 424 - VHF & UHF Telephones And Ships Internal Communications						
801ScA0000Cm79	Commission - System 426 - Entertainment System	29-May-22	02-Jun-22							Commission - System 426 - Entertainment System						
801ScA0000Cm77	Commission - System 417 - Loose Equipment	30-May-22	03-Jun-22							Commission - System 417 - Loose Equipment						
801ScA0000Cm78	Commission - System 425 - I And Digital Services	29-May-22	27-Jun-22							Commission - System 425 - I And Digital Services						
<b>801 - Deck Machinery / Davits &amp; Winches</b>		<b>02-Feb-22</b>	<b>20-May-22</b>													
801ScA0000Cm57	Commission - System 804 Suppers & Drains System	02-Feb-22	06-Feb-22			Commission - System 804 Suppers & Drains System										
801ScA0000Cm67	Commission - System 430 - Anchoring, Mooring And Deck Equipment	02-Apr-22	21-Apr-22					Commission - System 430 - Anchoring, Mooring And Deck Equipment								
801ScA0000Cm68	Commission - System 503 - Fast Rescue Boats (Frb's) & Davits	03-May-22	12-May-22					Commission - System 503 - Fast Rescue Boats (Frb's) & Davits								
801ScA0000Cm70	Commission - System 515 - Sidelights And Windows	13-May-22	15-May-22					Commission - System 515 - Sidelights And Windows								
801ScA0000Cm71	Commission - System 536 - Gangway Davits	16-May-22	20-May-22					Commission - System 536 - Gangway Davits								
<b>801 - Steering Equipment</b>		<b>25-May-22</b>	<b>03-Jun-22</b>													
801ScA0000Cm74	Commission - System 403 - Steering Gear, Emergency Steering	25-May-22	31-May-22							Commission - System 403 - Steering Gear, Emergency Steering						
801ScA0000Cm42	Commission - System 405 - Stabilisers & Ar6-Heeling Tanks	01-Jun-22	03-Jun-22							Commission - System 405 - Stabilisers & Ar6-Heeling Tanks						
<b>801 - Required For MES Trials</b>		<b>21-Jul-22</b>	<b>24-Jul-22</b>													
801ScA0000Cm228	Commission - MES Trials	21-Jul-22	24-Jul-22							Commission - MES Trials						
<b>801 - Required For Builders Sea Trials</b>		<b>21-Jul-22</b>	<b>23-Jul-22</b>													
801ScA0000Cm248	Commission - Post Dry Dock Thruster Verification	21-Jul-22	22-Jul-22							Commission - Post Dry Dock Thruster Verification						
801ScA0000Cm258	Commission - Post Dry Dock CPP Verification	21-Jul-22	23-Jul-22							Commission - Post Dry Dock CPP Verification						
<b>801 - Required For LNG Tank Commissioning</b>		<b>03-Feb-22</b>	<b>24-Aug-22</b>													
801ScA0000Cm85	Commission - System 725 Glycol Heating System	03-Feb-22	05-Feb-22						Commission - System 725 Glycol Heating System							
801ScA0000Cm83	Commission - System 706 - Nitrogen System	03-Feb-22	08-Feb-22						Commission - System 706 - Nitrogen System							
801ScA0000Cm238	Commission - System XXX Cryogenic System	09-Feb-22	23-Feb-22						Commission - System XXX Cryogenic System							
801ScA0000Cm82	Commission - System 707 - LNG Fuel Storage Tanks & Associated Systems	01-Mar-22	11-Mar-22						Commission - System 707 - LNG Fuel Storage Tanks & Associated Systems							
801ScA0000Cm86	LNG Tank Commissioning Trial Start Milestone	01-Aug-22														
801ScA0000Cm84	Commission - System 709 LNG System (Main Engines & Main Gensets)	04-Aug-22	23-Aug-22							Commission - System 709 LNG System (Main Engines & Main Gensets)						
801ScA0000Cm87	LNG Tank Commissioning Trial Finish Milestone	24-Aug-22														
<b>801 - Required For Delivery</b>		<b>28-Jun-22</b>	<b>28-Jun-22</b>													
801ScA0000Cm88	Commission - COMMISSIONING COMPLETE (Excluding LNG)	28-Jun-22	28-Jun-22							Commission - COMMISSIONING COMPLETE (Excluding LNG)						



## Top Risks

---

### Top Risks to be included after Risk Meeting with CMAL

## Variations to Contract

Description	Additional Cost 801	Additional Cost 802	Programme Allowance 801	Programme Allowance 802	Weight Allowance 801	Weight Allowance 802	Status
Removal of Oily Water Separator	-	-	-	-	-1.88 T	-1.88 T	Closed
Removal of 1 air compressor, 1 air receiver, and 1 air dryer	-	-	-	-	-1.1 T	-1.1 T	Closed
Removal of 2 LO purifiers for Diesel Gen	-	-	-	-	-1 T	-1 T	Closed
Removal of Vapour Return Line	-	-	-	-	-	-	Closed
Supply of Window Washing Equipment	[Redacted]	[Redacted]	-	-	-	-	Closed
Removal of Condition Monitoring System	-	-	-	-	-	-	Closed
[redacted]	-	-	-	-	-	-	Closed
Removal of 24V AC system	-	-	-	-	-	-	Closed
Raindrop Ventilation Change	-	-	-	-	-	-	Closed
Panama Eye Removal	-	-	-	-	-	-	Closed
802 Thermostatic Valves	[Redacted]	[Redacted]	-	-	-	-	Closed
Provision of Workshop Tools	[Redacted]	[Redacted]	-	-	-	-	Postponed
Accommodation Fresh Water Fire Main							FM to send VTC
Sliding Weathertight Doors Deck 7							FM to send VTC
Additional Shore Supply Connection 802							FM to send VTC

[Redacted]



## CMAL Comments to the Monthly Report

---

### CMAL Comments: