

**Programme:** 801 Glen Sannox  
 100m LNG Dual-fuel Ro-Ro Passenger Ferry

**Review Period:** July 2023

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

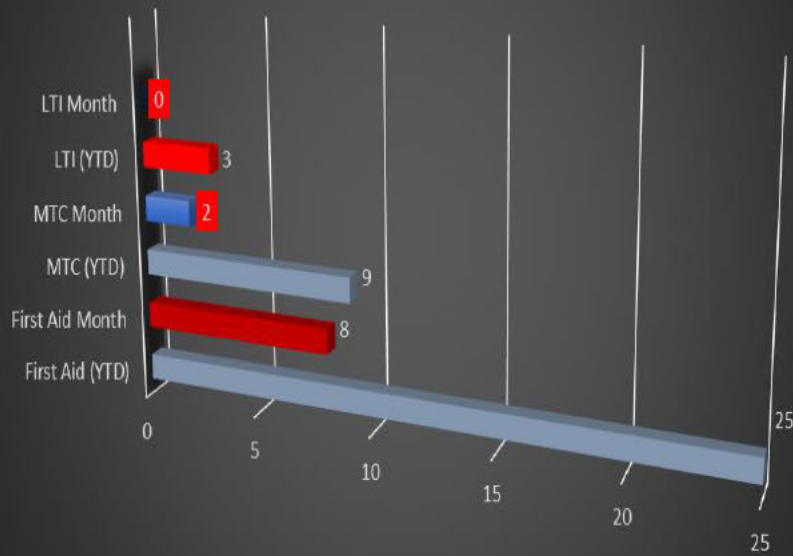


# HSE Dashboard July 2023

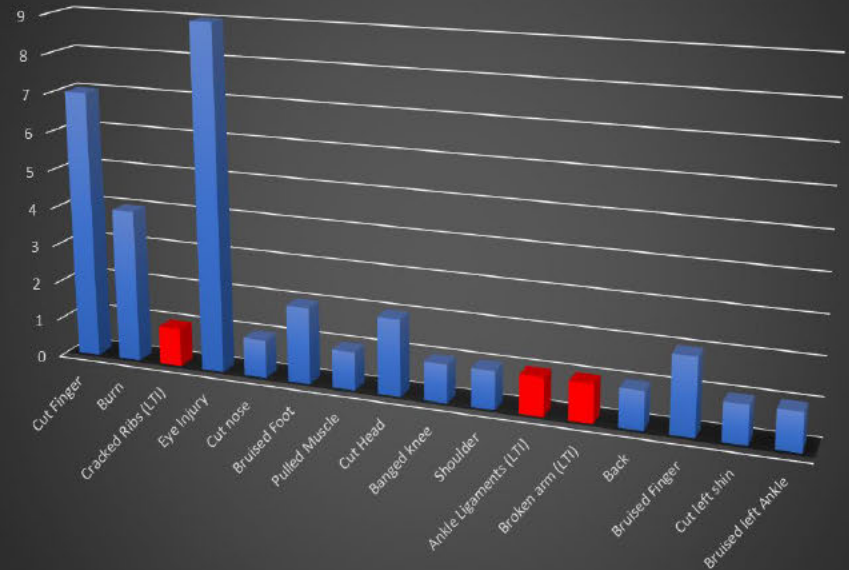
\* Per 1,000,000 working hours  
\*\* Estimated no. of hours worked

Incident Statistics	Target	Actual		Fatal	0	Fire	1	Proactive Statistics		Target	Actual	
	2023	Month	YTD					Month	2023	Month	YTD	
Number of Hours Worked**	858029	78137	312548	RIDDOR	0	Damage	0	Number of YSD Cards	>50	>600	52	206
Number of Lost Time Incidents (> 3 Days)	< 9	0	3	LTI (> 3days)	0	Environmental	0	Toolbox Talks Issued	2	24	1	5
Lost Time Incident Freq Rate*	< 10.14	0	3.60	Medical Treatment (MTC)	2	Serious Near Miss	1	Housekeeping Inspections	4	48	4	16
Number of Recordable Injury Incidents	< 30	12.80	38.39	First Aid	8	YSYD	52	Emergency Drills Completed	>4	>48	1	5
Total Recordable Injury Incident Rate*	< 35.0	51.19	111.98	Total Injuries	10	TOTAL Incidents	4	Vessel Compliance Checks	30	420	30	120

### Reported Incidents YTD 2023 / 2024



### Injury Type YTD 2023/2024



# Agenda

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- Report Cover Page: 1
- Agenda: 2
- Health & Safety: 3-4
- Programme: 5
- 801 RAG Status: 6
- Hotwork Workpacks: 7-8
- Installation progress:9-11
- Engineering Status: 12
- Risk: 13
- OOR Progress: 14
- Weight and Stability: 15
- Ship Support Activities:16
- AOB: 17

# HSE Summary July 2023

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## Progress Update:

PPE Compliance site wide standdown.

We have pulled together a YSYD spreadsheet to allow for analysis – can pick up on specific trends to help drive continual improvement throughout the business. (see later slide)

We are carrying out a full review of the FMPG induction process with a view to have visitor and office staff inductions relayed at the main reception on arrival through PowerPoint or video footage, this will help drive the positive safety culture from the offset.

To enhance improved communications throughout we are also looking at potentially installing a TV monitor within the amenities. This would be used to highlight recent incidents, safety alerts and improvements we are wanting to implement.

We have developed a HSE improvement plan within the main/module shed for BAE work moving forward. Yard and vessel heat map to be established which will effectively identify clear responsibilities throughout the shipyard.

Looking to re-implement HAVs controls – following initial meeting, costs have been received and now in discussions internally to move forward.

**[REDACTED]** n1 Quality filtration system in the main fabrication sheds within the yard – Main/Module shed survey to took place 5th July and follow up visit penciled in for early August.

New Monthly Health and Safety Subcontractor forum to be set up with each Subcontractor nominating person to attend on their behalf.

Business Admin has been assisting with risk assessments – moving to an improved format.

# 801 Level 0 Programme



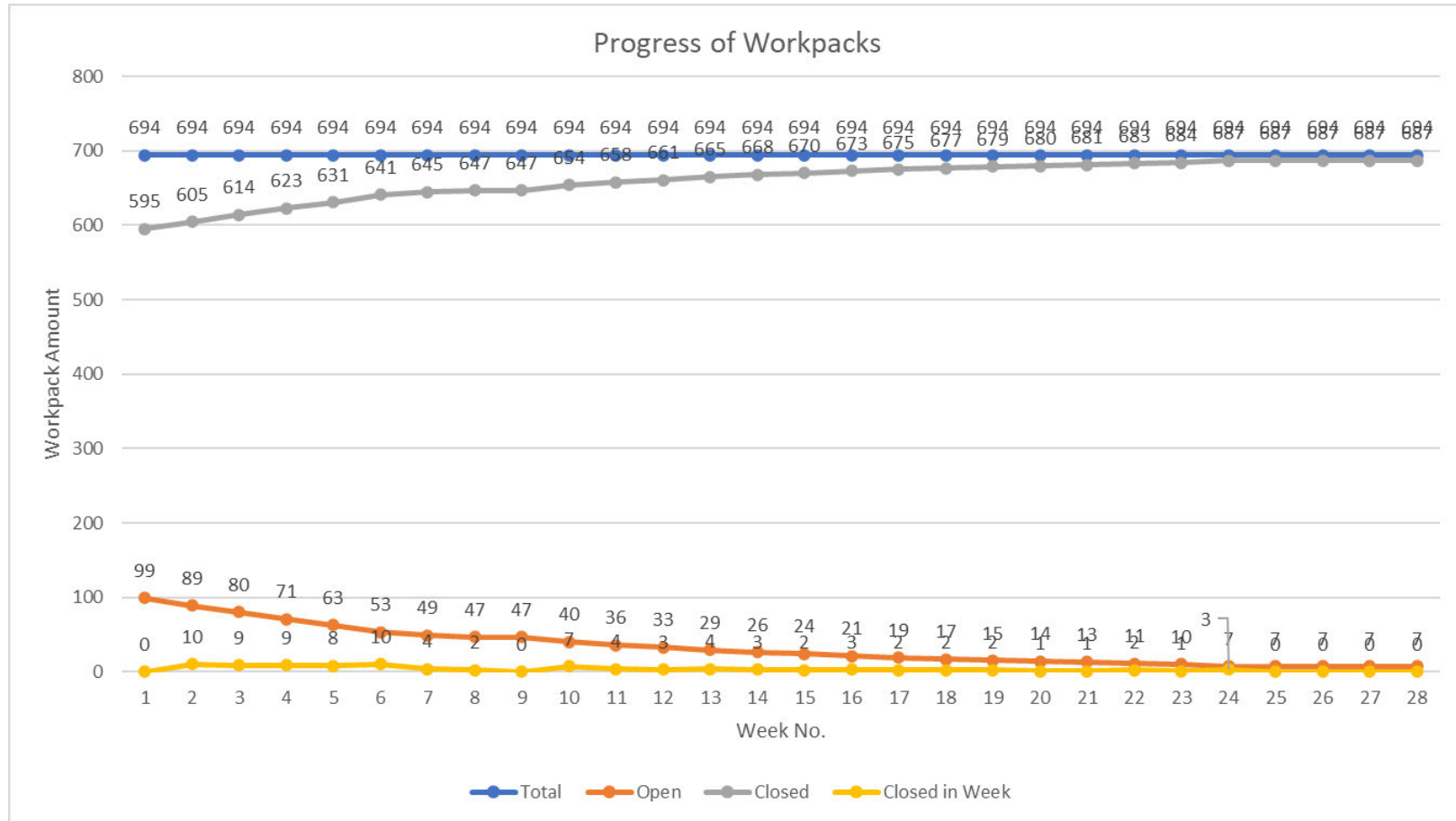
Level 0 - Programme Glen Sannox (July 2023) This Programme does not address any additional works associated with review of Evacuation Analysis.

Year	2023						24			
	Month	July	Aug	Sep	Oct	Nov	Dec	Jan		
801	Engineering/Design	[Bar]							Extended from March Addressing MS	
	Manuals/Certification	[Bar]							Remains on Track	
	Hot work Installation	[Bar]							Extended to align MS / Changes	
	Painting	[Bar]							Painting realigned to meet Delivery Date	
	Clam Shell Doors/Ramps	[Bar]	[Bar]						Slippage due to availability of SME (Holiday Period)	
	Mezzanine Decks & Ramps	[Bar]							Mezz Deck Load Testing Achieved by end of July	
	Lift Instal [REDACTED]	[Bar]	[Bar]						Slippage due to availability of SME (Holiday Period)	
	Wheelhouse completion	[Bar]							Remains on Track	
	Accommodation/Outfit	[Bar]							Extended to align MS / Changes	
	Pipework Installation	[Bar]							Extended to align MS / Changes	
	HVAC	[Bar]					[Bar]			Extended to align with Accommodation Outfit
	Electrical Installation	[Bar]								Extended to align MS / Changes
	Harbour Trials (Condensed)			[Bar]						Moves, Aug to end Sept due to MS / Change to primary piping systems
	Commissioning	[Bar]								Extended to Align with MS Alteration Programme
	Crew Training (PMS/FMEA)					[Bar]	[Bar]			Ongoing
	Move Vessel to Inchgreen				[Bar]					Vessel Mo [REDACTED] w Launch of 802
	MES Deployment						[Bar]			Alongside
	Dry Dock [REDACTED]							[Bar]		Moves to December to justify Passenger Cert
	Builders Sea Trials							[Bar]		Aligned with Overall Programme
	LNG Install/ Commissioning			[Bar]	[Bar]	[Bar]	[Bar]			Programme Dependent on Technical Support
LNG Trials [REDACTED]							[Bar]		LNG Trials dependant on CalMac Crew & Follows Drydocking	
Owners Trial							[Bar]		Owners Trials to follow Builders	
LNG Bunkering							[Bar]		LNG Bunkering cannot precede Drydocking	
Snagging				[Bar]	[Bar]	[Bar]			General Activity	
Handover									To be Agreed with Client	

# 801 RAG Status

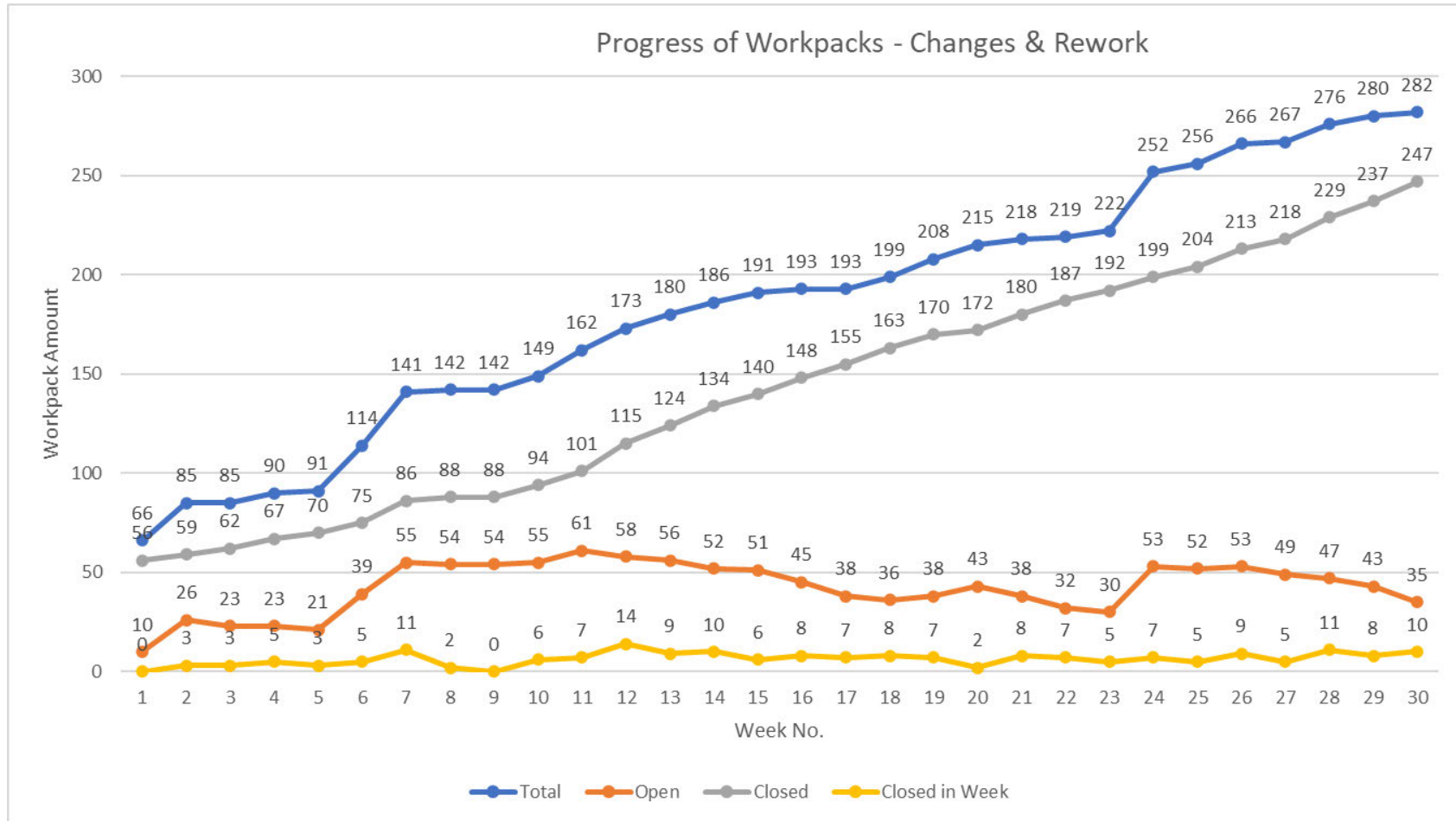
Discipline	Overall Status					Concerns	Actions	Comments
	Feb-23	Mar-23	Apr-23	May-23	Jun-23			
Overall Status	A	G	G	G	R	Passenger routes evacuation	Solution being worked up by Engineering for MCA approval	
Safety	A	G	G	G	G			
Engineering- Design	R	G	G	G	G			
Procurement	G	G	G	G	G			
Hot-Work	A	G	G	G	G			
Piping - FMPG	A	G	G	G	G			
Pipin [REDACTED]	A	G	G	G	R			
Pipin	A	G	G	G	G			
Mechanical	A	G	G	G	G			
Electrical [REDACTED]	R	G	G	G	R			
HVA [REDACTED]	A	G	G	G	G			
Commissioning	A	G	G	G	R			
LNG	R	G	G	G	G			
Lift Install	A	G	G	G	G			
RO-RO Equipment	A	G	G	G	G			

# 801 Hotwork Work Packs



**Focusing on Changes & Rework, Original scope workpacks need to be reviewed also to verify which items are still relevant within the workpack**

# 801 Hotwork Changes & Rework



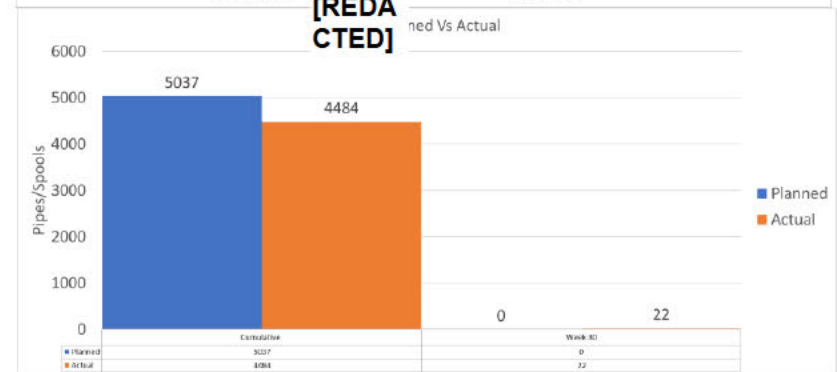
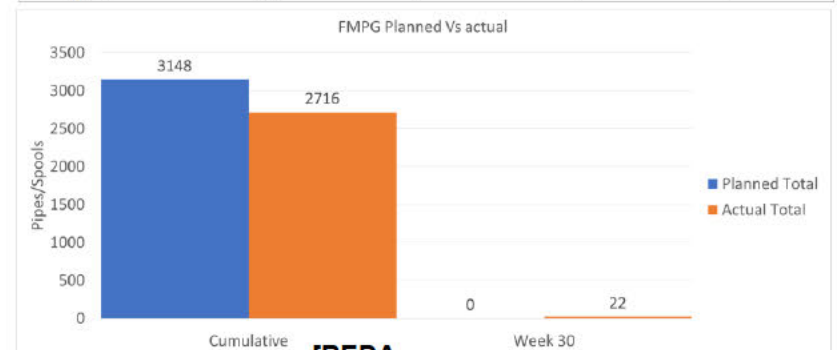
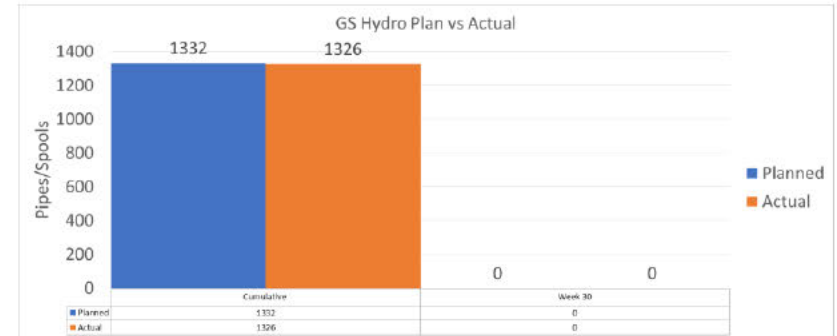


# 801 Pipework Installation

- [REDACTED] Total pipes/spools to install: 1332 (increased by 5 due to modifications)

- FMPG total pipes/spools to install: 3148

- [REDACTED] Total pipes/spools to install: 5037 (excluding modifications)

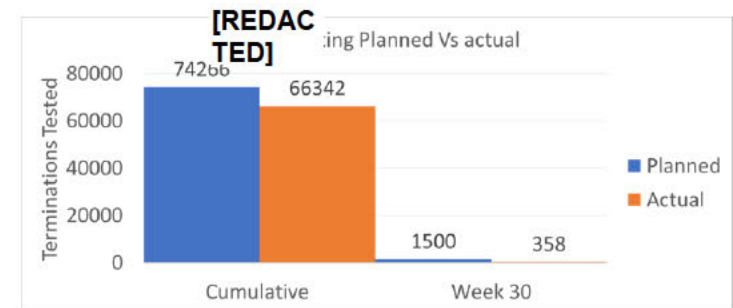
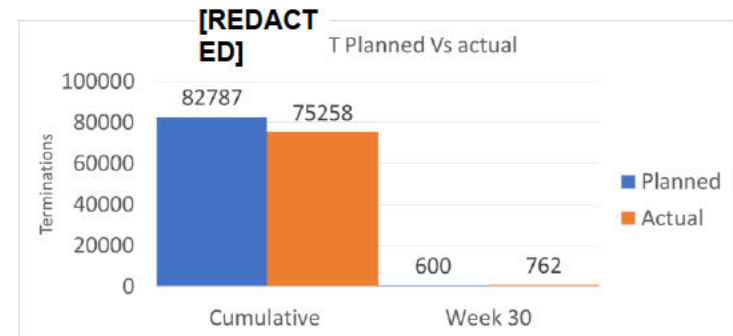
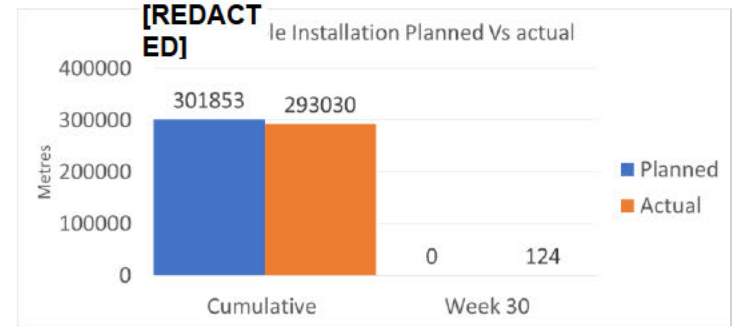


# 801 [REDACTED] - Cable Progress

- **Total meterage to install: 301,853**  
Week 30

- **Total to gland and terminate: 85670 (nr)**  
Week 30

- **Total meterage to test: 85268 (nr)**  
Week 30



[REDACTED]

# HVAC Install

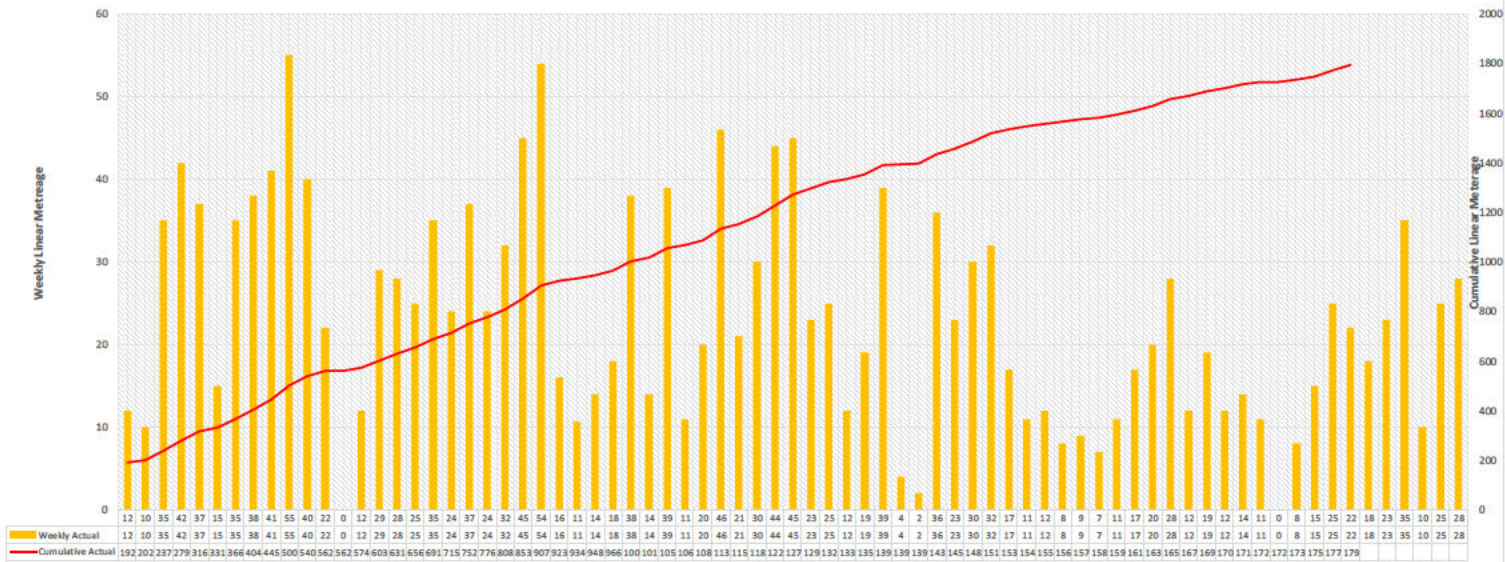


Week No. :	3123	
Total Estimate of Linear Metreage :	2380	
Estimate of Installed Metreage to Date & %age :	2262	95.0%
Total Metreage yet to be installed & %age :	118	5.0%
Current Date & Week No. :	02/08/2023	week 31
Completion of Installation :		
No of Weeks to complete <sup>(1)</sup> :		
Required Duct Metreage Instal Rate per week to complete by Stipulated Date :		

Zone	Total Metreage	Installed Metreage	%age Complete
1	32	32	100.0%
2	35	26	74.3%
3	113	109	96.5%
4	94	92	97.9%
5	14	14	100.0%
6	378	294	77.8%
7	1	1	100.0%
8	304	298	98.0%
9	1096	1083	98.8%
10	198	198	100.0%
11	115	115	100.0%
<b>Totals</b>	<b>2380</b>	<b>2262</b>	<b>95.0%</b>

(1) Allowing 1 week for Easter & other stats

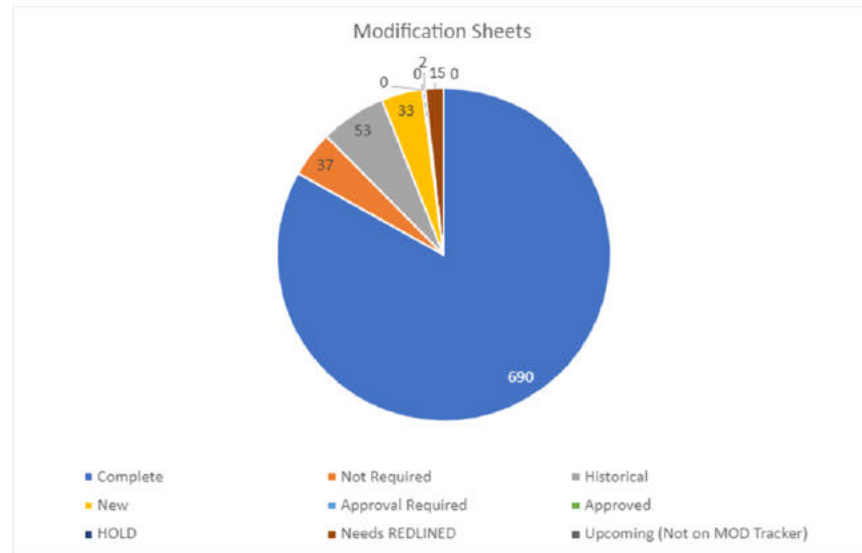
HVAC Installation Progress 'S' Curve



# Engineering Status

- Lloyds Submissions – Final approval of LNG System Pending, submitted by Cryo Diffusion. All Engineering drawings for Lloyds updated and submitted, local approval is ongoing.
- MCA Submissions – 3 submissions still remainin
- Engineering have no outstanding OORs or TQs and continue to support production with Patrol remarks.
- Production of the Operations Manual is ongoing, format has been agreed with CMAL and CalMac.
- Production of final As Built Drawings is ongoing and due for completion end of July.
- All Engineering Modification sheets are complete, have been reviewed with Production and have been submitted for implementation at ship. See status below.

	Status Column / SMT Column	Total
Status Column	Complete	690
	Not Required	37
	Historical	53
	New	33
Approval Required Column	Approval Required	0
	Approved	0
	HOLD	2
	Needs REDLINED	15
	Upcoming (Not on MOD Tracker)	0
	Total Modifications	813



# Risk

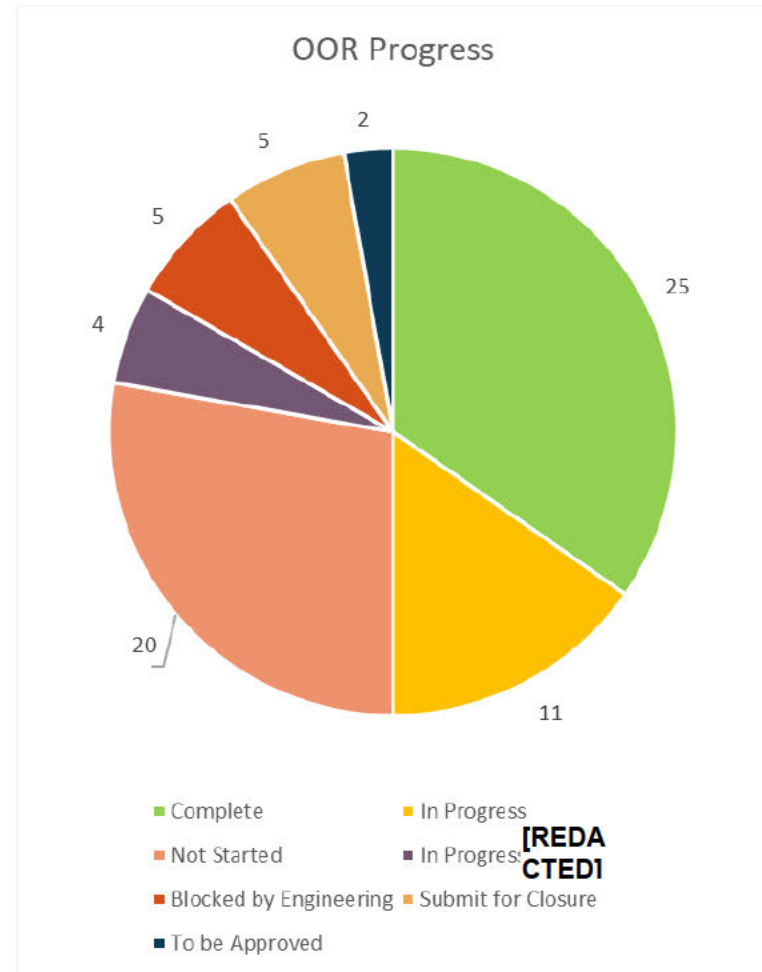
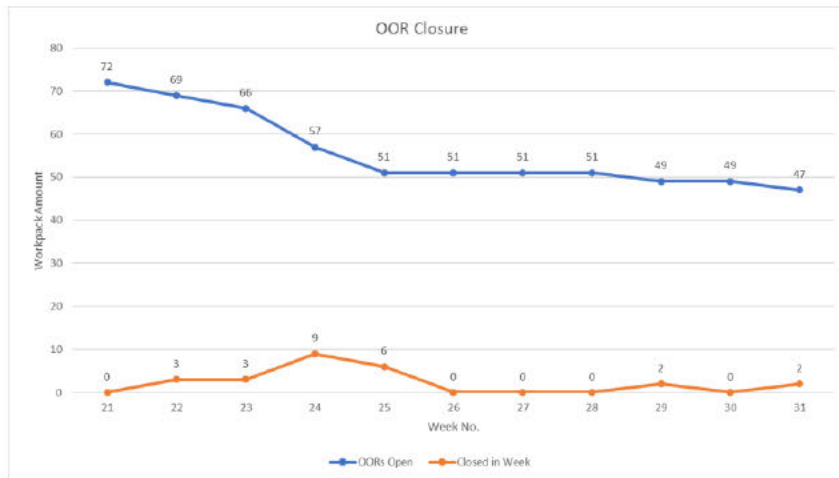
Current top 5 risks on risk register:

[REDACTED]

Risk ID	Risk Category	Risk Name	Risk Identified by	Risk Owner	Risk Description	Pre-mit. Imp.	Pre-mit. Likelihood	Pre-mit. Risk Score	Pre-mit. Rank	Mit/Action Planned	Action Owner
C6-801	Compliance	[REDACTED]	[REDACTED]	[REDACTED]	An alternative Design arrangement submission (MSF 1261) relating to Secondary escape routes from passenger Observation lounge has been submitted to MCA for Equivalence to FFS Code of Practice. Updated supporting information submitted to MCA following initial review prior to Glasgow for MCA review. MCA Glasgow office confirmed by MCA Glasgow office that MSF 1261 now authorised by local office for HQ Southampton final approval.	50	3	150	7	1. LR Escape Analysis conducted confirming AS built arrangement escape meets the statutory escape times. 2. Robust design justification paper submitted 3. Site survey by MCA completed 4. New solution currently being worked up by Engineering for submission to MCA.	[REDACTED]
P2-801	Production	[REDACTED]	[REDACTED]	[REDACTED]	Sub-Contractor Performance - 35% progress vs 65% not aligned to commissioning	50	5	250	1	1. Recovery Plan now reviewed and monitor Cable install now on track. G&T and testing behind plan.	[REDACTED]
C2-801	Compliance	Project	[REDACTED]	[REDACTED]	There is a risk of delay (cost and schedule) due to OOR rectification, CMAL class or statutory findings as the build program matures. Residual risk from OORs relates now to impact on through life maintenance and its tolerability to CMLA/Calmac. Until this exercise is concluded by CMAL the Risk premium remains at this time	25	5	125	9	1. All remaining Open CAT 1 and OORs discussed and actioned at weekly meeting w CMAL. All WIP OORs to be managed through project/planning as WIP 2. Regular engagement with CMAL/LR/MCA derisk and identify potential issues. 3. OORs now in production and being progressed	[REDACTED]
SC5-801	Supply Chain	Material Management	[REDACTED]	[REDACTED]	Minimal fixed pricing/Minimal Pricing	25	4	100	12	1. Full stock check currently underway 2. BOM/SOW required 3. Engineering team assessing condition of material to BOM/SOW 4. Order materials ensuring lead times are aligned with the programme schedule. 5. More PINs and frameworks being implemented with reviews of existing SG and other frameworks that can be used	[REDACTED]
E2-801	Engineering	Engineering	[REDACTED]	[REDACTED]	Design Maturity, consolidation of design and management of change poses a risk to the delivery plan	10	5	50	19	1. Realign Engineering team structure 2. Strict control and ownership structure for change control processes 3. Restructure of Liaison, and QC teams to	[REDACTED]

# OOR Progress (Production)

- OOR 301 – Awaiting signature
- OOR 375 [RE in progress
- OOR 524 – Reworked, to be approved by CMAL
- OOR 566 – Investigating original comments
- OOR 433 [REDACTED] solution outside of mod sheet
- OOR 594 – Clearing up the solution, CMAL to sign off
- OOR 503 & 547 – [R working new solution outside of mod sheet



# Weight & Stability

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## Stability

- Intact Stability book was submitted on 9th Dec 2022. MCA's feedback received and intact section agreed on 31May2023.
- Damage Stability book was submitted on 9th Mar 2023. Although calcs are ongoing, MCA informed on 31May2023 that FMPG's methodology is correct. Final values subject to inclining experiment and to be updated.
- Lightship weight distributed and still water bending moments and shear forces calculated. The longitudinal [REDACTE] submitted to [REDACTED] limit curves on 23 Mar 2023 and related figures reflected to the longitudinal strength calcs and submitted [REDA] 5 Apr 2023. [REDACTE] received for the risk of buckling in the upper structure of the ship under compressive stresses on 23May2023. Under investigation with load conditions as advised by [R]. Approved SWBM limits (30000 kNm – 95000 kNm) in DAD document has forwarded to [REDA] evaluate and adjust the loading conditions to address comments by [R]
- [REDACTE] fed with stability database on 17Mar 2023. [REDACTE] computer will be integrated after MCA's preliminary book approval.
- Damage control plan and book templates are ready, to be released after stability book's approval by MCA.
- Regarding bespoke semi-WT aft lift doors, [REDACTED] agreed on the technical boundaries of the integration as of 05 Apr 2023. [REDA] confirmed FAT date as of 18 Aug 2023. CMAL and Principal Naval Architect will attend the test along with BV rep in the factory. MCA confirmed not requirement of [REDACT] due to non-fire rating of these doors.
- 802's stability information booklet was awarded on 24May2023.

## Weight

- Calibrated weights were used for both inclining experiment and [REDACT] ' load tests.
- Final inclining will be undertaken before sea trials.
- Usage of [REDACT] screeding compounds as caused additional increase from planned estimates. Details being reviewed.

## Escape Routes

- New MSF 1261 with relevant GA changes were submitted on 26 July 2023, MCA Glasgow office confirmed pre-approval of the documents, and now under consideration by MCA HQ.
- Escape trunk details are under investigation and a new MSF 1261 form will be submitted.

# Ship support activities

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## Manuals - No further update this period

- Site survey of as built equipment concluded (excluding ER/GB space which will be complete during commissioning activity)
- Operations Manual – This will be reviewed on an ongoing basis during commissioning of equipment. and training - FMPG will update the Operations Manual
- OEM Manuals ongoing and shared via shared FMPG-CMAL SharePoint CALMAC feedback positive. The site teams are working closely to identify the remaining elements –watching brief

## Spares

- CalMac Gourock stores readying for next inventory from 5th June – Anchors, propeller Blades, FO purification Fenders. This activity will continue up to handover
- Consolidated master spares list now created and Procurement engaging vendors for identified delinquencies. Engineering team validating original spares list to current design.

## Training – No further update this period

- 801 [REDACT] propulsion platform **now completed** [REDACTED]
- **802** [REDACTED]
- PMS and Alarm and Monitoring system timings to be arranged with [REDACTE] 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)
  - Praxis Alarm and Monitoring
  - Power Management System
- For retrofit switchboards, [REDACT] provide O&M manuals for their modifications FMPG will then train the Ships staff onsite.
- EDICS online training



- Comments
- AOB