

Glen Sannox & 802 Monthly Report – [August 2021]

1.0 General

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1.0 Executive Summary

Update of planned works against the current programme is set out in paragraph 8.0.

Adhoc works performed outside of the FMPG level 1 program are set out below in paragraph 1.0.

FMPG have not provided a progress update for works performed since 28 June 2021.

FMPG have not provided any plans which underpin the very high-level programme issued 28 June 2021.

High level progress milestones detailed in the revised baseline programme issued 2 months ago, have already been missed.

FMPG management are carrying out an onboard survey to identify the remaining works to deliver hull 801. [redacted]

Despite the adjusted dates set out in the revised baseline programme, significant programme slippage is obvious and quantifiable, raising immediate concerns about the level of unrealistic baseline expectations underpinning the programme. In the experience of the CMAL team, who have decades of experience and collectively have been involved in 100s of shipbuilding projects; the high-level revised baseline programme issued 28 June 2021 cannot be considered credible. Furthermore, in the absence of detailed critical path definition, CMAL believes that the cycle of uncertainty responsible for driving the most recently agreed extension of time provision is in the process of being repeated. The speed of action in the resolution of critical activities remains insufficient to timely release work interfaces to 3rd party contractors.

FMPG have advised that they expect that 801 will be delivered in the delivery window Jun to Sep 2022 and by the end of October 2021 they will have accelerated construction and have robust data on progress.

The process for raising OORs is working well and along with then yard, we looking to make the process easier. The shipyard must prioritise and upscale its output to rectify open quality issues raised in owners' observation reports (OORs). The present closing rate of circa 4 per week is insufficient and not supportive in the process to manage area-specific hold points. As of 31 August 2021, a total of 220 OOR's remain open, FMPG have closed 20 this period, 33 new issues have been brought to the yard's attention by CMAL. These OORs must be

prioritised in the programme and addressed by the shipyard to ensure the vessel(s) are built to required standards for acceptance. Work has and continues to be carried out which is not to acceptable standards, the longer this is not actioned, the bigger the problem becomes for all.

Hull 801

Ongoing Structural Works

Structural works in the way of door openings and access hatches continue on decks 2, space 0403 (cold rooms and dry stores), and decks 3 & 4. At this point, the final scope of door supply is not yet fully identified by the Yard, consequentially doors and hatches are not yet procured. Typically, suppliers of this material require 8 – 12 weeks from signing the purchase order, it is realistic to assume this equipment will not arrive on site until December 2021 earliest.

Work to open the main vehicle deck structure between frames 54 -56 port and starboard to create service routes in support of the removal of both water damaged 690/415V, 1000kVA transformers (865ET001 T11 & 865ET002 T21) is complete. Replacement units in the sewage treatment (0304) and hydraulic power pack (0307) spaces are now in place. The deck opening is currently closed above the sewage treatment room, and it remains unclear why this work remains to be completed above the Hydraulic space.

Panama Eyes

Work to change the first three eyes on the starboard aft mooring deck commenced week 33, X 3 eyes are now welded on the internal side of bulwark, work started 31st August on the X 6 eyes positioned on the starboard side of the forward deck.

Structural Compensation

The ongoing discussion concerning the fitment of primary structure compensation pieces in way of flame cut pipe transit penetrations has yet to be acted upon by the yard production for the 6th consecutive month. The issue was first reported to FMPG on 7 April 2021 via the 'owners observation report' interface. Since then, Lloyds Register of Shipping has reviewed the same and requires the identified compensation to be fitted. The ongoing impact to the build specifically impacts but is not limited to the completion of piping systems in the main engine room, the auxiliary generator space, P&S stabiliser rooms, the cryogenic LNG bunker tank space, the pipe, cable and transformer space, the forward machinery space, the bow thruster room as well as the deck four mezzanine deck. It is not apparent why the Yard pursues a strategy that compounds delay to the completion of hot work, pipe system completion, structural fire protection completion, system pressure testing, system flushing, all of which act as hold points in the process to start commissioning vessel systems.

Piping

The Yard's approach to installing flanged pressurised pipe runs in the deckhead area above sensitive electrical equipment in the engine control room is again an issue. Despite guidelines set out by Lloyds Register, stating routing of such transits should be avoided and that screwed or flanged connections should never be used, [redacted]

LNG pipe installation has started this period but has been dogged by constant hold-ups, currently estimated to be 3 weeks of unplanned delay. The principle problem centres upon the very late point in the build when work was started. This system is virtually the last to be installed in heavily congested technical spaces, where uncontrolled modifications have been pursued to account for design model inaccuracies that have required supporting structure to be cut down and repositioned. The installation procedure will need a large number of in situ overhead positional butt welds to be performed. Each weld has to be technically perfect and subsequently satisfy 100% NDT testing before acceptance. This process is expected to be very time-consuming.

Zone 2 isometric pipe installation, one thousand pipe spools remain to be fitted across the Aux & Main engine room spaces (zones 0202 & 0203). Typical weekly installation rates would usually see 130 spools installed per week. However, out of sequence installation of the floor plating subframe in both areas has significantly reduced this figure to less than 10 per week for the whole of this reporting period. Installation rates are expected to remain low in the coming weeks because of late procurement, lack of critical spool identification, outstanding Technical Queries (TQs), long lead times to zinc coat pipes (14 days) and uncertainty of how to proceed with erroneously cut pipe transits.

Owner's Observation Reports

The process to manage owners' observation reports continues as a weekly meeting interface with FMPG. The framework of reporting and technical exchange is proved. What is now necessary is that the Yard upscales its output to close open issues as the present closing rate of circa 4 per week is insufficient and not supportive in the process to manage area-specific hold points.

As of 31 August 2021, a total of 220 OOR's remain open, FMPG have closed 20 this period, 33 new issues have been brought to the yard's attention by CMAL.

Zone 2 Walkways

Work continues in zone 2 (machinery spaces) to install the foundation supports for the numerous walkways in the area. Despite ongoing concerns, the over-engineered design introduces unnecessary levels of additional weight to the vessel deadweight computation. The Yards [redacted] to provide a workable design that satisfies the requirement to provide dismantability needed by the vessels operator to maintain equipment remains unresolved.

The results of the design review undertaken by FMPG in week 29 have yet to be distributed. Construction of walkways in the zone 3 pipe, cable and transformer space is also started, where a completely different standard (usual shipbuilding standard) of lightweight substructure design is being followed.

Structural Fire Protection

Work continues in installing thermal and structural fire protection insulation. Retaining pins are currently being installed in stairways and escape trunks. The cycle to install and remove insulation continues as the Yard moves to identify areas of unfinished/unidentified works, such as the deck five port and starboard underdeck stiffening of the fast rescue craft davit foundation and the deck five aft transit of ventilation ducting serving the aft passenger lounge.

Electrical

Work on the electrical installation continues at a slow pace. Measurable production achievement is confined to legacy cable routing checks, cable terminations to bow thruster servo units and ongoing cable insulation testing. Installation of structural penetrations supporting cableway routing on decks 5, 6 and 7 have started the first fix Unistrut installation on deck five aft. Week 34 has seen positive progress to install cable trays (2nd fix) port side (longitudinal) between frames 26 & 67 and transversely at frame 37 on deck 5. Cable tray installation has also started on deck 7 in the officer's accommodation corridor between frames 80 & 105, centre line.

At this point in the build, based on our detailed knowledge of ship's electrical systems, we would estimate circa 150 -200km of various electrical cables remain to be installed onboard the vessel. It is unlikely this work will start until the majority of 2nd fix cable tray routing is complete. The impact upon the commissioning process will need to be carefully monitored.

Poor production control has led to wasted preparation time being put into place to install new electrical junction box supports in the deck 1, zone 2 auxiliary machinery space, despite this being already complete. This level of confusion ties in with the long-overdue week 34 onboard survey by the yard project to identify the remaining works to deliver hull 801. It is not clear why this review was not carried out prior to the release of the rebaselined programme as most area hold points are not new. The majority of which are logged as ageing 'Owner Observation Report' detail.

Coating

Works have focussed efforts on stripe coating the mooring winch windlass seatings on the forward mooring deck, Stbd Aft Eng-rm vent plenum coating and the No. 13 port void space preparation before starting spraying.

Portside external hull coating adhesion tests have been carried out. This is somewhat confusing as the last applied 100-micron application (by hand roller) of topcoat was applied to the vessel as a cosmetic application. At no point was the surface preparation performed to satisfy the requirements set out within the technical specification. This work was performed

in a rush manner to coincide with the media attention given to the vessel on the claim of achieving the 7 May 2021 Milestone of 'Structural Completion'. Correct application of the coating would require surface preparation prior to overcoating in line with the manufacturer's guidelines. Surface preparation would require areas of corrosion to be either mechanically prepared to a surface finish of ST 2 or blasted to SA 2 depending on its surface area and or severity. Salt tests should have been performed and shared with all stakeholders. Overcoating of existing painted surfaces without the use of a tie coat sub coating layer has to be accepted in conjunction with the paint manufacturer if the products guarantee is to be upheld.

HVAC Installation

Work to install structural HVAC penetrations has started between decks 6 and 5 frames 36 and 38. However, progress remains very slow. Work to mark-up structural boundary penetrations before starting cut-outs is progressing.

Legacy installed mooring bits have been removed from the forward mooring area to correct the design alignment issue.

06dk Aft Crews accommodation wet units are now being positioned, ready for securing to the deck.

Vessel 802

Ongoing Structural Works

Structural Steelwork Onboard Vessel and Top Shed

Unit 93 lifted from its temporary position on 05dk and is now ready to be shipped into the blasting shed. Work continues to progress the portside shell block erection joints. Expected verification surveys in week 31 were not called by the Yard.

Units 73/4/5 are close to their final position, and seam welding is ongoing.

Work continues to progress the decks 3 & 4 vehicle deck recesses, although the procurement of non-primatised steel plates hampers progress.

Unit 48 Upper section continues to make good progress and fitting of Bulbus Bow-nose which is now in position and final welding progressed in line with the date to erect the block 1 September 2021. Fit up of the butchers-block is now underway. Work continues on the fabrication of the ducktail Jig, although work has been slow during week 31 due to late material procurement.

Structural foundation seats for rotating equipment is progressing in zone 2 now that existing bulky equipment protection is removed from the larger legacy equipment already installed.

Bottom Shed Work

Aluminium units A5/5 P&S near completion week 31, expected the shipyard has not yet called for survey. Fitment of P&S windows is now underway.

Progress to complete aluminium unit A4/5 is ongoing.
Fabrication of aluminium units A6/5 P&S is now underway.
Steel/Ally Unit A3/5 moved out of Mod-hall and turned, allowing the outfitting of the windows.
Aluminium P&S Units A4/6 is now started.
Fabrication of unit 45 is started, although work to complete unit 46 remains to be completed.
Outstanding Allu Sapa panels stored off-site are now transported (and continues still to arrive) back in the Yard.

Blasting and Coating

Blasting and coating in the bow thruster compartment is now complete. Verification inspection has yet to be performed. Unit 93 is now positioned in the blasting shed.

2.0 Changes to Site Supervision Team

No Changes this period

3.0 Design Changes Approved

(Note of changes; changes to be authorised & recorded in Design Change Register)

4.0 Agreed Changes to Delivery Date

(Note of changes; changes to be authorised & recorded in Contract Variations Register)

5.0 Agreed Changes to Price

(Note of changes; changes to be authorised & recorded in Contract Variation Register)

6.0 Changes Awaiting the Owner's Approval

(Note of changes outstanding for approval by the Owner in excess of Buyer's Representative authority as stated in Consultancy Agreement Cl. 3.4)

7.0 Surveys / Inspections

Week 33 Surveys 801/2:

801 X5 tank air vent lines mechanical installation inspected.

801 05dk Stbd Fwd Frame 25/50 had pre-insulation inspections performed.

802 Unit 48 in top-Shed jointly surveyed together with Lloyds Register.

Week 32 Surveys 801/2:

801 Hydrostatic test of port fuel oil service tank completed this week by Lloyds Register.

801 Hydrostatic pressure test of port fuel oil settling tank jointly completed with Lloyds Register.

801 05dk Stbd Fwd Frame 67/122 had numerous inspections this week, and OK was given to start the A60 Deckhead Insulation

802 Block 3/4 link-up was jointly completed together with Lloyds Register.

802 Block 2/3 link-up was completed together with Lloyds Register.

Week 31 Surveys 801/2:

802 Unit link-up survey on Blocks 4-5 jointly carried out with Lloyds Register.

8.0 Progress Against Programme

RBP = Revised Base Line Programme

MRP – Monthly Review Package (FMPG's monthly progress report)

801 Glen Sannox

Our ability to review the revised baseline programme (RBP) progress for August is severely curtailed as documented updates have not been shared since its formal release to CMAL on 28 June 2021, 56 calendar days ago. The information contained and limitations set by outdated reported actuals remain as reported to SG on 31 May 2021 (ref June 2021, MRP, page 20), some 91 days ago.

Installation of Pipe Spools in Zone 2 (Main & Aux Machinery Spaces)

Slippage of 61 calendar days is reported against the planned revised baseline completion date for installing system piping in the main and auxiliary engine rooms. This work is currently deemed to reside on the project's critical path as completed systems are the predecessor of mechanical system completion required to start the successor commissioning activity. Based on the historical rate of spool installation of 60/week, this pivotal event will likely not be met earliest until the end of October 2021 as the remaining deliverable is circa 1,000 spools (ref June MRP, page 25). It remains to be seen if the existing float supports on-time commencement of logical commissioning activities.

As of Friday, 27 August 2021, week 34, it is clear that the installation of the remaining 1,000 pipe spools needed to complete zone 2 has stalled. Our records flag that no more than 6 -10 pipe spools installed week 34. [redacted] have reduced worker numbers in this zone to six, down from 32. Resources are now redirected to fit pipe spools in zone 4. where circa 100 out of a total of 700 spools have been fitted during week 33. This delay is compounded by late procurement and forced out of sequence installation by the contractor. Attention is drawn to the method of working in this area over the past six months. Where [redacted] have, because of continual delays to the logical supply of spool pieces, been obliged to continue installation on out of sequence level 2,3 and 4 pipe spools regardless of whether or not level 1 spools were complete. The net result is that many spools now have to be removed to achieve system completion. The whole process is further complicated by the installation of the zone 2-floor plating subframe.

Pressure Testing of Pipe Spools in Zone 2 (Main & Aux Machinery Spaces)

Slippage of 50 calendar days is reported against the planned revised baseline start date for pressure testing system piping in the main and auxiliary engine rooms. The duration of 67 calendar days is planned as needed to complete the task. This duration has a foundation in the time taken to pressure test X 25 complete systems. The vital context in this discussion is that pressure testing will now be performed against partially complete systems, significantly increasing the time necessary to complete this task.

HVAC Testing - Zone 2 - Slippage of 45 calendar days is reported against the planned revised baseline start date. Zone 3 - Slippage of 54 calendar days is reported against the planned

revised baseline start date. Zone 4 completion of the installation of HVAC & Hangers is scheduled to be completed 13 August 2021, slippage now 17 calendar days.

Hot Work Completion in Zone 2 - Completion of hot work was scheduled for 30 July 2021, work to complete the hull outfitting and installation of walkway sub-framing is far from complete. Slippage is now measured at 31 calendar days.

Fabrication of the Forward Mast Structure - A slippage of 46 calendar days is reported against the revised baseline completion date. Whilst this activity is not deemed to reside on the critical path, the expectation is that the now out of sequence work to erect the mast will make demands on limited worker resources, preventing timely completion of other works.

Erection of Forward Mast - Slippage of 68 calendar days is also reported against the planned revised baseline start date to outfit, fair and weld this structure. This work is scheduled to take 35 calendar days to complete. The impact of this now out of sequence work will likely be the precursor of future delays unless manning numbers are increased. As of week 33, the mast, although delivered to the Yard, requires to be outfitted before installation, secondary stiffening is required in way of the foundation which is not yet started.

None of the principal 3rd party contractors [redacted] has increased their manning numbers over the reporting period for either vessel, despite the inference presented in the revised baseline that planned the release of sequential working interfaces.

Contractual Deadweight - Non-compliance with the contractual deadweight for Hull 801 remains an issue as the reported figure has now increased by a further 9.84 tonnes to 44.29 tonnes. No update is provided by the Yard over this reporting period.

Milestone - 16 August 2021- Pipes, Cables & Transformer Space

As of 26 August 2021, the level of performed work is insufficient to claim "Complete installation of pipework in space SZ0303", ref 801KM7602, FMPG re-baselined programme (issued 28 June 2021).

The overall level of consolidated completion across the twelve individual piping systems in this space stands at circa 60%. The situation is not set to improve in the short term as FMPG is currently removing pipe spools to complete out of sequence coating works (see below picture). The biggest issue is the late LNG piping installation that transits this space connecting end-users in the machinery and TCS spaces. Assuming 44 working days will be necessary for the installation, it may be more realistic to assume the Yard may claim completion mid-October 2021. However, the visibility surrounding re-commencement of this work is not straightforward as the contractor [redacted] has just returned to the shipyard 26 August 2021. Late procurement of heat exchanger isolation valves for the Glycol system and many missing isometric spool pieces across all systems is also a concern.

Pipe work pressure testing in zone 3 is scheduled to commence 19 August 2021, slippage is 11 days.

Installation of Electrical cables in Zone 3 is scheduled to start 12 August 2021, work has yet to start, slippage is 19 calendar days.

Milestone Status 801

Milestone' Completion of Car Deck Recesses' originally due 9 April 2021 and is now claimed as complete 7 May 2021, is now scheduled to be complete 24 May 2021 under the guidance set out in the re-baselined programme. The balance of work needed to complete the remaining 17 structural recesses remains to be started. The programme slippage currently stands at 98 calendar days. Clearly the baseline expectations underpinning the RBP is unrealistic.

Work to complete the claimed milestone of structural completion claimed 7 May 2021 remains ongoing. Many other areas need to be worked and completed to achieve 'full' Steel/Aluminium Structural Completeness. Examples are, installation of all remaining internal bulkheads, aluminium bulkheads within the accommodation areas, installation of all stairwells, completion of welding of all Panama fairleads, completion of lift shafts, installation of all windows, installation of Forward Mast and the cutting / opening of bow doors and associated major structural works.

Aft Mast: As of week 21, 2021, milestone completion claimed 7 May 2012. However, final acceptance by CMAL inspection was not possible as the build quality of vent pipe supports and poor standard of internal structure coating was insufficient to satisfy normal industry build standards or the requirements set out in the contractual specification.

Belting: Milestone completion claimed 7 May 2021; As of week 30, 2021, work remains incomplete on the starboard side of the vessel, work has been progressed this period to complete the port aft belting, this is not expected to complete until week 34, 2021. Programme slippage currently stands at 85 calendar days

Hull 802

We have asked the shipyard for a copy of the fabrication and unit erection programme for 802. This programme underpinning the proposed launch date of the vessel in August 2022.

Milestone Status 802

Commence Zone 2 Pipework Manufacturing, originally scheduled to start February 2021, is now rescheduled under the re-baselined programme to start 24 May 2021. This event is already started back in week 26. [redacted]

Complete Preparation Unit 48 – Originally scheduled for completion in December 2020, is now rescheduled within the re-baselined programme to be complete 25 May 202. As of week 32, this activity is not complete. Programme slippage currently stands at 75 calendar days. The baseline expectations underpinning the RBP are unrealistic.

Commence Zonal Hot Work Programme Zone 2, scheduled to start 21 July 2021, as of week 32, this activity is not started. Programme slippage currently stands at 40 calendar days. The baseline expectations underpinning the RBP are unrealistic.

Commence Zone 2 Pipe Work Installation, scheduled to start 12 July 2021. As of week 32, this activity is not started. Programme slippage currently stands at 49 calendar days. The baseline expectations underpinning the RBP are unrealistic.

Commence Tank Testing, originally scheduled to start January 2021, is now re-baselined to start 26 July 2021. As of week 32, this activity is not started. Programme slippage currently stands at 35 calendar days. The baseline expectations underpinning the RBP are unrealistic.

9.0 Next Stage Payment Due

n/a

10.0 Forthcoming Period Events

(Note of events, visits, holidays or other yard commitments)

11.0 Tests & Trials Due

Updated statistics not provided by FMPG for this reporting period.

12.0 Risk Register Update

Updated statistics not provided by FMPG for this reporting period.

13.0 Safety & Environmental

Updated statistics not provided by FMPG for this reporting period

Print Name: Jim Anderson

Signature:

Date: 16 September 2021

[redacted]