



# ACA Monthly News

## QNLZ coming online in Rosyth



HMS Queen Elizabeth is now operating fully on High Voltage from the shore-side following 11 of the 13 ship service transformers up and running. These transformers are now supplying Low Voltage power throughout the ship to support the commissioning of the mission systems.

Following on from the Ops Room being handed over (see 9 February edition) to mission systems after achieving CRL3, the latest Node room has also been handed over. This important milestone means that half of all 10 Node rooms have been completed. The Node rooms are the internet switch rooms for the ship, allowing all the systems to communicate with each other securely.

And with the forward part of the ship now having all blown fibre work completed, mission system commissioning is progressing well.

Strike rates continue to be a focus on HMS Queen Elizabeth, with pipe installation for week six sitting at 557, pipe testing at 736, cable pull at 23,131 and terminations at 5,273. Checkwire was at 11,540.

Last but not least, we've seen a number of high-profile visits onboard, including Mr Paul Skinner, Non-Executive Chairman of DE&S, who was visiting the Alliance to receive an update on progress of the build of both ships.

# HMS Queen Elizabeth

## Spotlight: Compartment Completion Inspections

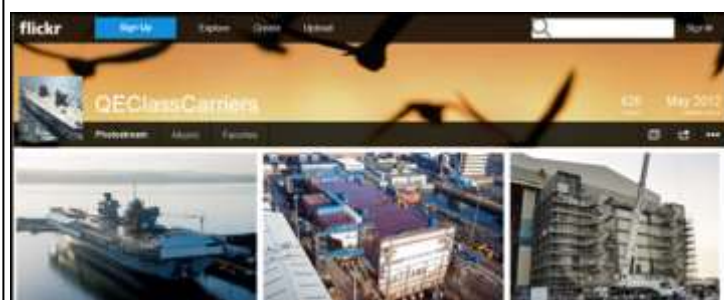
As we quickly begin to move out of the final outfitting stages of QNLZ and into Commissioning activities, Compartment Completion Inspections (CCIs) are beginning to gather focus and momentum in the year ahead. A CCI is the final inspection activity for each compartment and confirms that the compartment has been completed in accordance with the approved design. CCIs are an important element of the project as they represent the final close out of work to the client at a compartment level.

The CCI program has been recently built up using the latest Ship 01 Integrated Master Plan, where Compartment Completion Dates (CCs) occur after all mechanical, electrical and commissioning work is complete in a compartment. The compartment is then handed over to QC who conduct the formal inspection (i.e. a CCI) with the client and if all goes well to give the compartment a tick in the box.

By the end of 2015 the current plan has us set to achieve 1,545 CCIs (more than half of our goal of 3,014 inspections) and a staggering 1,911 Compartment Completions (CCDs) handed over to QC. This demonstrates the incredible achievement to date, which has enabled us to get to this stage. However as always there is still a lot of work to go in order to achieve these goals.

## ACA Flickr Updated

The ACA Flickr page has been updated. Check out the latest pictures of HMS Queen Elizabeth and HMS Prince of Wales at [www.flickr.com/photos/geclasscarriers](http://www.flickr.com/photos/geclasscarriers).



## Damage Control Demonstration Exercise



On 15 January 2015, the Power and Propulsion Integrated Platform Management System (IPMS) team hosted a significant event involving fourteen Royal Navy personnel from the Queen Elizabeth Ship's Staff. This was conducted at the Mission System Integration Facility (MSIF) in Portsmouth, in order to stress test the Damage Surveillance and Control (DSAC) application that is a key component of IPMS.

This included crew interaction at all of the main IPMS operator control positions from Fire and Repair Party Posts to Section Bases through to the Ship Control Centre. This provided a unique training experience for the Royal Navy and also validated that not only the DSAC design itself was sound, but all levels of the IPMS architectural design operated as expected.

The test represented the most complete loading for the IPMS system yet attempted, utilising full operator interaction, IPMS software loading, and network loading. This was only achievable via an exceptional level of teamwork between the Royal Navy, BAE Systems (Mission Systems), Thales and L-3.

The system performed to expectations and remained functional during states of extreme network loading. Usefully, the exercise highlighted some issues arising out of operator interaction, which will lead to future software improvements. IPMS as a whole will now move towards full performance testing for acceptance later this year at the MSIF, whilst commissioning on-board continues in earnest.

Commander Jules Lowe RN (QE Commander ME) said "This activity provided an excellent vehicle to re-risk DSACs introduction into service, and a fantastic opportunity to begin to characterise its utility in terms of using the system at sea. This has enabled us to gain very useful early experience of the system and refine our Standard Operating Procedures."

## Spotlight : 'What is the ops room?'

The Operations Room is the compartment from which tactical command of the aircraft carrier will be exercised by the ship's warfare team. They will ensure that the platform is in the right place at the right time to deploy its aircraft in support of maritime operations.

In order to achieve this the compartment supports operational teams engaged in: platform command and control; picture compilation; situational awareness; air traffic control; weapon direction, including point defence and tactical control of aircraft; support (e.g. Command Adviser, Communications Director and Information Managers).

It is a complex space that requires a high degree of connectivity to other operational areas within the ship and to external agencies. Achievement of CDRL3 allows the fitting of the equipment that delivers this functionality. It is therefore a major milestone on the road to delivering the operational capability required by the Royal Navy.



## Achievement of the CRL03

Achieving CRL3 in the ops room involves a great deal of team work from all subcontractors, operations, quality, design & Mission Systems teams. We started off with the compartment at CHOI (compartment hand over inspection) meaning that the base line scope of the build yard had been delivered. We then worked with Mission Systems to understand what they were expecting to be delivered from the operations team to allow them to take ownership of the compartment. There were a number of changes at the start and during the building of the compartment other challenges were identified. This required changes that no one had imagined. The compartment has a false floor, which required to have a BLI (behind linings inspection), so that when the consoles were built there was no need to unbolt them and lift the floor. This was done with the cooperation of both Mission Systems and Quality and was documented by means of photos showing cable segregation and the state of the deck paintwork.

A great deal of un-scoped work was also taken on by the operations team to ensure we delivered the compartment to Mission Systems, enabling them to set to work.

## 115 years of long service celebrated



*Pictured left to right: Ian Booth, Robert Carlin, Anthony Kerr, Henry Hunter, Allan Dalzell and Paul Rafferty*

Celebrating a lifetime of service was the order of the day recently, when five BAE Systems employees – Robert Carlin, Anthony Kerr, Henry Hunter and Allan Dalzell – met with Ian Booth ACA Managing Director and Paul Rafferty, ACA Director, Shipbuilding Specialist.

With the recipients all working on the QEC Programme, the awards were handed out during a lunch hosted by Ian Booth and Paul Rafferty in Rosyth. The assembled guests had 115 years of long service between them – with Henry Hunter so far serving 40 years and the others 25 years each.

To mark the occasion, a certificate and gift was provided by BAE Systems, along with lunch in the boardroom of Building 100.

Congratulations gentlemen!



# HMS Prince of Wales

## Rosyth

Block Assembly has had a successful week in terms of safety with there being no recordable incidents.

Sponson 01b has been transported to the hardstand laydown area for the fitting of lockout items and cutting of green material. SP01b will be lifted into place (scheduled March'15) following this successful installation of the GTA which is scheduled for lifting at end of February. This sponson will complete the superstructure which houses the GTA.

This week Ship 02 received a visit from Paul Skinner CBE who is the Chair of [Defence Equipment and Support](#); which is the trading entity responsible for defence procurement and related support activities within the MOD. The visit involved a tour of HMS Prince of Wales (PWLS), showcasing the excellent progress made to date, followed by a presentation from the Delivery Director, Angus Holt, in the on-board War Room. The presentation covered a number of project aspects including progress to date, supply chain strategy and planning structure."

## Clyde UB07



On the Forward Island there were no accidents but one incident was recorded this week. A staging gate in a high traffic area detached from the structure. No-one was injured and further emphasis has been placed on hazard spotting.

The second coat of paint, the grey undercoat, has been applied. Following this the external scaffolding superstructure will be removed, clearing the path for the lifting beams to be installed. These lifting beams will be utilised in lifting the block into position once it arrives in Rosyth.

Internally, the painting, insulating, cable reeving and HVAC is progressing rapidly. With this level of resource on the block, good communication and teamwork is essential, and the various trades have pulled together to support each other to deliver in these challenging conditions.

## Clyde LB04

There were zero recordable accidents or incidents last week on the block. This week there has been one incident where an IP had a welding flash in one of the Bay 2 workshops. Action has now been taken to minimise this type of incident with installation of additional welding curtains in the area.

There has been a continued focus on paint in the build programme, with several large areas concurrently progressing, and four compartments completed in the week, as the project drives paint completion as a key enabler to other trades.

As the project continues to progress multi trade discipline activities, the focus on plan of the day, and the benefits that brings in terms of co-ordination of priorities is being re-iterated to stakeholders as we work together during this busy period.

Some of the other priority activities just now include HVAC vent installation, which is opening up compartments for behind linings inspections, and the subsequent installation of the linings, as compartments are progressed towards Compartment Handover Inspection (CHOI) status.

Alliance Partner Imtech is continuing to install significant volumes of vent, as they move towards completion of build scope at Govan. Electrical cable installation is also being progressed well with particular focus being paid to supporting the build team to terminate cables and electrical equipment.

The CHOI programme continues to be a high priority with 15 Compartments achieved last week, with another 16 inspected this week with positive feedback so far

In Quality there was one audit by QC on adherence to the Air test process on LB04, which was assessed as Satisfactory, continuing strong performance of quality standard adherence this year.

Further to this a care and protection audit was successfully undertaken on Friday, which was assessed as satisfactory.

Last week a further 15 ECRs were closed out as LB04 continues to embody approved engineering change.

There are now 20 weeks to block roll out, with block handover to Rosyth due one week later.



# HMS Prince of Wales update continued...

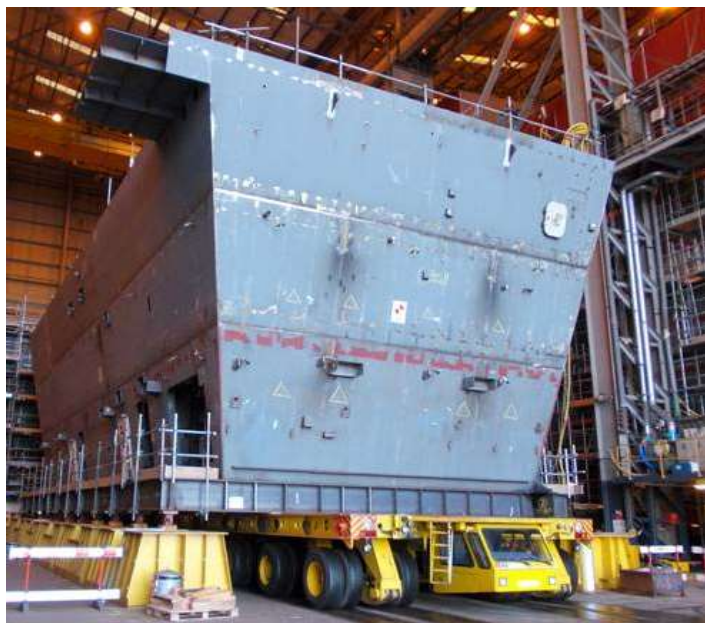
## Clyde LB05

LB05 has had a successful month in terms of safety – there were no recordable accidents or incidents.

The boring of Ring U's port side Rudder Horn continues to plan. On completion of this task the remaining units will be lifted into position and welded down; consolidating the ring.

On Ring T outfit, activities have been progressing rapidly, with the achievement of PO1 inspections ensuring a high level of quality. This will enable the painting of the lower decks in the coming weeks.

## Clyde UB14



There were no accidents or incidents recorded on the Aft Island. A unit has been erected this week, with the next following in week 10. Once lifted into position it will take around four weeks to line up and fully weld down the unit. This duration varies with the complexity of the steel structure, and meeting the erection schedule is vital in maintaining the block build programme.

## Merseyside CB04



Outfit equipment installation continues throughout A ring showing good progress ahead of CHOI (Compartment Handover Inspections). So far a total of 13 full compartments and five split compartments have been CHOI inspected. 15 achieved, of which ten have been signed off. The other five are for split compartments across rings which will only be fully achieved and signed off in once both areas have been inspected.

Progress continues within B ring with the final areas for PO1 inspection due to complete this week. Paint is complete to 18 compartments and the hangar deckhead, with five of the painted compartments completed. Insulation and metal cladding is halfway complete within one of the larger insulated compartments. Insulation pinning is now complete to all areas of B ring. Cable containment install continues, while preparations for cable install are underway.

C ring is erected at berth to 3 deck level along with flight deck units 3, 4 & 5 (2 deck). Fabrication of 2 deck unit 6 continues being the final C ring unit to be lifted, turned and placed at berth (**image above shows final C ring unit 6 on the jig**). Insulation pinning to all C ring 3 deck compartments complete, while pinning within C ring 2 deck compartments continues. Paint prepping in C ring 3 deck compartments commenced this week.

D ring unit fabrication and welding up to 2 deck complete, fabrication and welding to flight deck and preparation for 3 deck units continues (**image above shows flight deck and unit 4 of 3 deck panels being welded together**).



## PWLS Manufacturing update, Rosyth

Sponson 05 and 01 Aft Upper have now been successfully handed over to Assembly. Compartment Handover Inspections (CHOIs) and final care and protection walk rounds are due to take place for SP06 Aft.

Work on SP01 Fwd is nearing completion and CHOIs and walk rounds being planned in as this block is due for handover in March.

The installation of PO2s on SP09 continues at G'Berth with SP08 aft and Centre Block 05B now being located in the external bay of the Build Hall. SP07 is being prepared for moving to the hard standing at G'Berth where work will continue on the installation of PO1s and PO2s.

SP02 Fwd and CB05B is being erected in Build Hall 2 and SP08 Fwd and CB06B has recently commenced in Build Hall 3. Build Hall 1 is being prepared for the erection of SP10 Fwd and Ramp sections 169 & 171.

Units for SP08 Fwd, SP10 Fwd & Aft, CB05A and CB06B are being manufactured in the Heavy Fabrication Bays.

The photographs below and opposite show the level of outfit achieved on the blocks that are being transferred this month.



## Spotlight on...

### Andrew Mitchell, Document and Change Manager



#### Can you give us a brief description of your previous roles?

I started with Babcock International in 1991 as an Electrical Apprentice. On completion of my Apprenticeship I was promoted to Draughtsman, working in the Configuration Management Centre.

During my time there I was seconded to IT as a customer representative to assist in the development of a document management tool to allow the migration from drawing boards and 35mm microfilms to a CAD and electronic publishing environments.

When I moved over to QEC there was a business requirement to develop a replacement for this tool and I am now involved in the ongoing development of Virtual Bridge.

#### When did you start working on the QEC programme?

In August 2007 I joined the QEC programme as Change Manager, later taking over Document Control.

#### What does your current role involve?

As Document & Change Manager my team look after the publishing of Babcock and BAE Systems' ECR drawing packs into Virtual Bridge.

We provide site support to HMS Queen Elizabeth and HMS Prince of Wales and will shortly be returning to support the Liaison office on-board HMS Queen Elizabeth.

I continue to be involved in the development of Virtual Bridge and the governance of document control on the site.

Currently I am working as part of the collaborative team looking at the through life support of HMS Queen Elizabeth when she enters service.

We recently moved into Building 100 and I inherited the role of Building Manager, providing the day-to-day office support to those in the building.

#### What are the key challenges in your role?

We have a relatively small team providing a lot of information out to the production community so it is important that we process as quick and efficient as possible. We are often pulled in direction for both ships and externally for suppliers and build yards.

A lot of what we do is about education, show someone correctly how we do something saves us a lot of time and effort later in the project.

#### What has been the highlight of working on the QEC programme for you?

It's hard to have one highlight, a could name a few – the goliath crane being assembled and being lucky enough to go up the crane (I can see my house from there); standing under LB01 when it arrived and anticipating the sheer scale of the ship and of course launch day, something we have not been able to witness at Rosyth before. My daughter Kirsten was disappointed not to actually meet the Queen!

#### Finally, tell us more about what you do in your spare time?

With two children my spare time is spent as much as possible with them, mainly as taxi driver. My son is a keen Rugby player so most weekends are spent standing on the try line cheering on the team.

The remainder of my time is spent doing Scouting, I am a Group Scout Leader and Assistant Explorers Scout Leader for the 81<sup>st</sup> Fife (1<sup>st</sup> Broomhall) Sea Scout Group in Limekilns so spend a lot of time on the water teaching children to sail.

## Quality Vision

In line with the ACA Management Plan for 2015, the ACA Quality Vision has been released and is defined below. Over the course of the next month, this vision will be displayed across our sites.

Delivering Quality is important to the ACA and can contribute significantly to helping us meet our safety, cost and schedule requirements.

#### ACA Vision for Quality

Our vision for Quality is to deliver the Nation's Flagships to the Royal Navy by striving for excellence and continuous improvement in everything we deliver. Each of us is responsible for the Quality of whatever we deliver. Quality is all about making every day count by getting it right first time, every time, on time and being proud of what we deliver.

## Spotlight on...

### Paul Fitzpatrick, Production Manager

#### Can you give us a brief description of your previous roles?

I started working in Govan back in 1980 under the old British Shipbuilders when I served my time as a Marine Fitter. I worked on various commercial contracts such as coal ships, gas carriers, rocket launcher, P&O ferry and offshore supply ships to name but a few. I took on the role of supervisor in 1996 while we were part of Kvaerner and became an IWT Manager during the build of the Wave Ruler for the RFA.



I moved over to the Scotstoun yard in 2003 to join the Type 45 programme and remained there until completion of the sixth ship.

#### When did you start working on the QEC programme?

I joined the QEC programme in March 2013 following completion of the Type 45 build programme.

#### What does your current role involve?

As the Production Manager of PWLS LB04 in Govan, my role involves ensuring the safety of everyone onboard is the number one priority. This is alongside ensuring our iconic ship is being built to the correct quality standards.

#### What are the key challenges in your role?

Co-ordination of all the activities which take place on a day to day basis. This includes ensuring all trades and our alliance partners achieve their targets within the timescales required.

#### What has been the highlight of working on the QEC programme for you?

After completion of our very challenging PO1 programme just before the Christmas break, the look of relief on Stevie Munro, Ring P IWT manager's face was priceless.

#### Tell us about what you do in your spare time?

After hanging up my football boots a few years ago I now do a lot of walking and cycling. I have formed a walking club with a few friends and the highlight of this is our yearly training camp to Tenerife. I also participated in the Glasgow to Edinburgh cycle last year as part of the BAE Systems team here in Glasgow. As a team we managed to raise around £4,500 for the Royal Navy and Royal Marines Children's charity.

## Spotlight on...

### Tom Moffat, Project Manager

#### When did you start working on the QEC programme?

I started on the programme as the Project Manager for the build of the Portsmouth blocks back in 2008.

#### What does your current role involve?

I joined the program in 2008 based in Portsmouth as a Project Manager. This involved managing the build of lower block 02, 05, and the islands and I arrived in Rosyth with the block in May 2012. After we handed the block over from BAE Systems to the ACA I moved to the undocking team looking at completing the associated works for the tanks and shafting to allow QNLZ to undock. After this I moved to the Central ACA team to lead up the ACA central controls team.

#### What are the key challenges of your role?

To ensure that the appropriate controls are in a place, allowing the best information to be available that will assist the project decisions to be made. With the massive effort the teams are making to develop into Delivery Stream, the reporting and controls processes must reflect this position. We are currently developing this to reflect the new structure.

#### What has been your highlight of working on the programme?

The highlight for me was seeing lower block 02 arrive for HMS Queen Elizabeth in Rosyth in a safe and steady manner, having worked on her 500 miles to the South for three years!

#### Tell us about what you do in your spare time.

I am a keen power lifter and have been fortunate enough to have a good support network around me over the years while I have been competing. This has allowed me to be quite successful and over the years I have managed to win Scottish, British, European and World Titles. I have also been fortunate enough to have broken eight World Records in various lifts. I hope to continue competing as long as I can!





## Spotlight on...

### Craig Smith, Assistant Project Manager, QEC LB04



#### Can you give us a brief description of your previous roles?

I joined the company at 17 and worked as an Operations Administrator on the Landing Ship Dock auxiliary (LSD) Cardigan Bay, I then moved into a role assisting detail planning on Type 45.

In 2008 I took up the role as Operations resource co-ordinator which I enjoyed for three years before moving into project management.

Starting as a Project Engineer in Type 45 Engineering, I then progressed into a lead project engineers role as part of the Type 45 handover team, commuting between Glasgow and Portsmouth

#### When did you start working on the QEC programme?

I started on the QEC programme in May 2013 as a Lead Project Engineer on PWLS LB04 and have recently moved into the role as Assistant Project Manager.

#### What does your current role involve?

As APM my role is to liaise with all functions to identify, manage and support the resolution of project issues, to enable the achievement of programme objectives.

I also manage assigned cost accounts to ensure completion to planned targets for budget, schedule and quality and ensure that key performance indicators for the project are accurately recorded and progressed to plan.

#### What are the key challenges in your role?

On a programme this size, it's ensuring budgets are assigned accurately and progressed in line with work complete is one. The second challenge is comparing the cost performance reports against the key performance indicators (KPIs), so that we are reporting a realistic position for the build.

#### What has been the highlight of working on the QEC programme for you?

To see the BAE Systems' Employee Incentive Scheme milestone to complete all hot work (PO1) inspections achieved.

It was a great feeling to know the team will be rewarded for their efforts and to see how the block is progressing through painting, insulation, cable pull, vent and terminations, leading to the eventual compartment handover inspection (CHOI).

#### Finally, tell us more about what you do in your spare time?

I'm a big sports fan and I enjoy attending football and rugby matches when I can. I also watch a variety of sports on TV. I play five aside football regularly where I spend most of my time in goals, due to being knackered after a few minutes of running! My wife is currently expecting our first child so I expect spare time is soon to be a thing of the past!

## AIM Update – improvements over the last month

### AIM Employee Engagement Survey

The AIM team recently completed their third quarterly employment engagement survey with a fantastic response from the workforce. A total of 2207 surveys were completed which represents a total of around 80% from the Rosyth site, of which 62% were positive responses. These figures have grown exponentially since previous surveys in July & October 2014.

Joe Reilly, Enterprise Director for the ACA Programme commented "The response from the survey was fantastic and exceeded all expectations and this further highlights the importance of the improvement work and the positive impact that it is having on our Programme. The work being done is enabling the performance improvements required to deliver the programme of work that we have agreed with our customer and fully engaging the workforce in meeting those challenges is essential to our success.

I would like to add my own thanks to those of the AIM team for the support to the improvement work. "

### Supervisor Hot Desks Installed

One of the key issues raised in recent studies conducted by the AIM Team showed that many of the workforce spent time looking for their Supervisors whom were often off-ship to conduct aspects of their work from their offices. To help Supervisors stay on-ship, Supervisor Hot Desks (see below) have been trialled.

There is now a live hot-desking area available for use by all ACA Supervisors. It is equipped with computers, printer access and phones and we have encouraged all Supervisors to use this Hot Desk Area, where they can call, email, check drawings, access Intranet or various systems.



### Delivery of Magnetic Drills onto HMS Queen Elizabeth

The AIM Productivity team recently helped in the trialling, test and procurement of Magnetic Drills for use on HMS Queen Elizabeth. Davy Littlejohn, a Supervisor on-ship asked if AIM could help out with a problem his team were experiencing with drilling the angle frameworks for jalousie grills on HMS Queen Elizabeth.

Davy's team had to work from a Mobile Elevated Platform (MEWP) on the dockside and drilled various diameter holes in each grille. None, of the magnetic drills on site were found to be suitable. AIM therefore helped trial and procure the drills required after consultation with Davy and his team.

Davy commented "There seemed to be a shortage of this type of equipment on HMS Queen Elizabeth and the team often went to the store to find the magnetic drills stocked were already in use. Due to this, production at our end often suffered. It really helped us that the guys in the AIM Productivity Team listened to our issue and acted on it swiftly. The Magnetic drills provided mean we won't run into the issue of having to postpone the job due to lack of equipment.



### On-Ship Drill Battery Improvements

Following feedback from the January AIM Roadshow and analysis of AIM's on-ship studies, battery drills were identified as one of the key tools which are still causing issues for production.

To help resolve this, all batteries have now been put in to a general pool (rather than being tied to a specific drill) so that they can more flexibly meet the required demand. As such whenever a drill is required for a longer job, two batteries can be requested to minimise the number of return visits to the store for changeover. Additionally, new batteries are currently being bought with a longer charge life, reducing return visits to the store.

All tools are now available in the hangar deck tool store meaning that there is no longer any need to go off ship for them.

