

Rotary role: Exploring QEC's LPH utility

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With HMS *Ocean* scheduled to leave service next year, the Royal Navy is set to press the QEC class into service in its place, Giles Ebbutt reports

In 2018, HMS *Ocean*, the Royal Navy's (RN's) only dedicated helicopter carrier, will go out of service, despite a routine refit completed in 2014 at a cost of GBP65 million (USD86 million).

This decision has been taken principally because the navy's manpower challenges are so acute that without her ship's company it will not be possible to run both the new Queen Elizabeth-class (QEC) aircraft carriers with one always available, as announced in the UK 2015 Strategic Defence and Security Review (SDSR).

HMS *Ocean*, a Landing Platform Helicopter (LPH) vessel, joined the fleet in 1998. Since then it has provided a significant part of the UK's amphibious shipping capability with its six-spot flight deck; organic landing craft; ability to unload heavy vehicles and equipment down a stern ramp for surface lift; landing force command-and-control (C2) facilities; and sufficient bunk spaces to carry an embarked force of over 800.



The Queen Elizabeth class in the LPH role will not replace HMS Ocean's combined air and surface assault capability. (IHS Markit/Patrick Allen)

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In order to compensate for the lack of a dedicated LPH and the associated multihelicopter capability the UK government announced in the SDSR that, "We will invest in developing an

amphibious capability for the Queen Elizabeth-class aircraft carriers”. In practical terms this means the development of an LPH capability for a platform, which has been principally designed as a fixed-wing strike carrier, with associated embarked force facilities and amphibious C2 in order to conduct Littoral Manoeuvre (LitM).

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The size and shape of the LitM element of CEPP is starting to emerge and is based on two stages of capability. Initial Operational Capability (IOC) for the LPH role, which is aimed for August 2018, is for the QEC to be able “to embark, sustain, and project a scalable EMF [embarked military force] – landing force [LF] and air group – for deployed periods of up to three months duration. The LF can be projected ashore by Ship to Objective Manoeuvre [STOM] using air group rotary wing [RW] assets, operating from appropriately cleared helicopter operating spots, in support of a range of tasks including Humanitarian Assistance and Disaster Relief /Non-combatant Evacuation Operations [HADR/NEO], and Defence Engagement, conducted in up to an ‘Uncertain’ environment”.



An artist's rendering of a Queen Elizabeth-class carrier with both F-35B jets and Merlin helicopters embarked. (Aircraft Carrier Alliance/BAE Systems)

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An “Uncertain” environment as defined by the UK for NEO is one where a host nation government is likely to have effective control over the majority of security forces and is not expected to interfere with the operation. This austere LPH IOC capability is therefore pitched at the low end of the spectrum of military operations.

The LF for IOC will be a Special Purpose Task Group (SPTG), which will be anything from 50–300 strong depending on the likely mission, but in general it will be centred on a Royal Marines (RM) rifle company. This can then be augmented with a range of specialist enablers, according to the situation and the requirements of the task, such as intelligence capabilities; military police; medical personnel; engineers; interpreters; or additional communications.

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The LF may include a small-higher headquarters (HQ), probably drawn from the same RM Commando to provide a command element, which would remain embarked when the SPTG deployed ashore. The LPH capability will also include the provision of a specialist beyond-line-of-sight (BLOS) communications package, probably satellite communications (SATCOM), to maintain tactical communications between the LF when ashore and the ship, as distances may preclude the use of normal tactical radios.

The RW air group for the LitM role is likely to include Merlin Mk4 support helicopters, Merlin Mk2 equipped with the Crowsnest airborne surveillance and control (ASaC) system, and the Wildcat battlefield reconnaissance helicopter with a door-mounted Browning M3M .50-calibre HMG. This air group could be augmented by CH-47 Chinook support helicopters and AH-64D Apache attack helicopters from Joint Helicopter Command.



The Merlin Mk4 support helicopter, which will be the main rotary-wing asset for aviation assault from the LPH. (Leonardo Helicopters)

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An RW air group could consist of nine Merlin Mk2 with five Crowsnest, 12 Merlin Mk4, three CH-47 Chinook, eight Apache, and six Wildcat helicopters. This is an entirely flexible grouping and could be adjusted according to the likely mission or tactical situation.

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Heavy equipment for the LF will be limited to that which can be lifted by the Merlin or the Chinook. In practical terms this will probably restrict the choice of vehicles to quad bikes with trailers for moving heavier weapons, such as HMGs and mortars, ammunition, casualties, and supplies. This restriction will also preclude the use of vehicle-borne communications with the commensurate

need for manpack SATCOM to provide the BLOS links, as currently practiced in the early stages of an amphibious operation.

The QEC ship's company will include a small amphibious operations team, which will provide the permanent expertise necessary to ensure the smooth embarkation and sustainment of an LF.

HMS *Queen Elizabeth*, which sailed from Rosyth for the first time in June 2017, is programmed for acceptance in Q3 2017 with an in-service date of Q1 2018. The RN's first priority is to develop the carrier strike capability. Speaking at the Paris Air Show in June 2017 Rear Admiral Keith Blount, Assistant Chief of Naval Staff (Aviation, Amphibious Capability & Carriers) for the RN, said that *Queen Elizabeth* will deploy to the eastern United States in both 2018 and 2019, where she can embark both UK and US F-35B Lightning II aircraft to conduct trials and develop all the necessary skills and ship/aircraft interfaces.

The current plan is to embark the SPTG and an RW air group for the passage to and from the United States in 2018. This will provide an opportunity to develop the ship/EF interface and to conduct the necessary ship/aircraft qualification for the Merlin Mk IV. On arrival in the United States the EF, including the helicopters, is likely to disembark and conduct an extended training period with the US Marine Corps, re-embarking for the return to the United Kingdom. The evolution will then probably be repeated in 2019.

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An Army Air Corps AH-64D Longbow Apache and RAF Boeing CH-47 Chinook operating from HMS Ocean during operational sea training in 2014. These types and the Leonardo Wildcat could form part of a mixed rotary-wing air group in the LitM role. (UK MoD)

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Full operational capability (FOC) as an LPH is expected to be achieved by 2022/23 on only one of the class, likely to be HMS *Prince of Wales*. Although what will constitute FOC is still the subject of some debate, at present this is defined as “to embark, train, sustain, and project the aviation element of a Commando-sized group of RM. Provide a company-sized group as the aviation assault capability and tactically project a company-sized reserve element on call thereafter”. In practice this means a landing force of two rifle companies from the LPH in two waves, with a small-command element, probably some supporting arms, a larger RW air group and the use of all 10 deck landing spots.

It may also include those vehicles and equipment, which are light enough to be underslung by the Merlin Mk IV, including Land Rovers, Pinzgauers, and the 105 mm light gun. However, vehicles are getting heavier due to enhanced ballistic and blast protection, and replacements for current models are likely to be too heavy for the Merlin Mk IV to lift, so this option may not be available in the future.

The FOC requirement is likely to include some work on the ship to improve the embarked force accommodation, which at present is described as “austere” and will require upgrading if it is to be occupied for extended periods. In fact, the upper limit for the size of a long term embarked force including the air group will ultimately be driven not so much by accommodation space as by the limitations of the ship’s brown/grey water capacity.



The Merlin-mounted Crowsnest airborne surveillance and control (ASaC) system will provide long-range early warning whatever role the carrier is in. (Thales)

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By about 2023 there will therefore probably be one QEC hull at FOC (LPH) and one remaining at IOC (LPH). The likely intention will then be to seek the funding to bring the remaining hull to FOC (LPH) standard, probably during a capability insertion period in around 2026, with the aim of achieving two fully capable LPH platforms by about 2030.

Irrespective of the ship's primary role, Rear Adm Blount told *Jane's* that "My absolute belief, hope, and intent is that whenever the ship sails, no matter what role she is in, she will embark an SPTG, which will be supported by an embarked helicopter contingent of some sort."

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The RM has already begun to develop procedures for JPR. *Jane's* reported in 2016 that a Personnel Recovery Co-ordination Cell (PRCC) has been established in HQ 3 Commando Brigade. This was tested during Exercise 'Griffin Strike' in the United Kingdom during April 2016, when it successfully located an isolated pair of Royal Marines using survival radio networks and co-ordinated their extraction by helicopter.

Although the QEC role is usually represented on an either/or basis of carrier strike or LPH, Rear Admiral Blount was at pains to emphasise that this was a sliding scale of capability. "There is nothing to stop you doing littoral manoeuvre with a few jets on board or carrier strike with support helicopters on board". This raises the interesting possibility of the development of a multirole configuration, which Rear Adm Blount avoided describing as hybrid because of the term's specific meaning in warfare.

While he was not prepared to be drawn on exact aircraft numbers, Rear Adm Blount suggested that 6-8 F-35Bs was the minimum number that could be embarked, and at that end of the scale they would be more for use "in a force protection role in an uncertain environment" rather than for the strike role. He said "What we have bought is 65,000 tons of military opportunity, which can be operated in a bespoke manner. Whether a carrier would be deployed operationally in a half-and-half configuration would be entirely dependent on the situation."

The routine operating model for the QEC is likely to work on a six-year cycle, with one platform in carrier strike configuration at very-high readiness (VHR) and the other in LPH configuration at high readiness (HR), which in practice translates to 20 days notice to deploy. However, during these periods of HR the LPH will deploy as part of the UK's Amphibious Task Group (ATG) for training, exercises, and in support of the UK Defence Engagement policy.

The ATG, part of the UK Joint Expeditionary Force-Maritime (JEFM), will consist of the LPH; a Landing Platform Dock (LPD), which has extensive C2 facilities, as well as organic landing craft; and two Landing Ship Dock (Auxiliary) (LSD[A]) Royal Fleet Auxiliary-manned vessels, also with organic landing craft. This force will be able to carry the entire 1,800-strong Lead Cdo Gp (LCG) and will be capable of launching in a single wave one company by air from the LPH and one by surface craft in Viking protected mobility vehicles. This could then be followed by a second heliborne and subsequent surface waves.

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