



MPE
Quality, Reliability, Performance

Company Bulletin

for EMC, EMP, HEMP & TEMPEST Protection

Issue 19



HMS Queen Elizabeth



MPE power line filters

Sea trials for Queen Elizabeth aircraft carrier

In Issue 8 of the Company Bulletin we described the assembly of the HMS Queen Elizabeth aircraft carrier at Rosyth dockyard in Scotland, and now this huge vessel has left Rosyth in June for sea trials around the coast of Britain. With nine decks below a flight deck 280 metres long by 70 metres wide, the 65,000-tonne vessel can carry up to 40 fighter aircraft and helicopters, British and American.

The HMS Queen Elizabeth is in fact the largest aircraft carrier in the world outside the United States Navy, and the first designed from the outset to operate a fifth-generation aircraft. The Royal Navy regards her and her sister ship, the HMS Prince of Wales, as adaptable and powerful maritime platforms, ready to deliver carrier strike missions, enforce no-fly zones, deploy Royal Marine Commandos, deliver humanitarian aid, and build international partnerships.

The initial six weeks of trials are for testing her engines and propulsion systems, plus her ability to produce fresh water, cope with sewage, feed the 700 crew members and 200 contractors onboard, and supply them with electricity. She will then prepare for a second set of sea trials to test the mission systems, sailing from her permanent base at Portsmouth. The full crew complement when aircraft and helicopters are embarked will be 1,600.

Construction of the £3.1bn warship has been in the hands of the Aircraft Carrier Alliance (ACA), a partnership of BAE Systems, Thales UK, Babcock and the UK Ministry of Defence. Amongst the subcontract partners, electrical solutions providers McGeoch Technology completed £7 million worth of contracts, ranging from all the lighting (24,000 light fittings), distribution panels, control and instrumentation panels, and junction boxes.

The vessel's design also demanded that EMC filter units were installed to filter the power supplies entering Black leakage path equipment within onboard TEMPEST compartments. Accordingly McGeoch Technology selected MPE as their preferred supplier, based upon a sound and successful working relationship on previous projects. Close collaboration ensured that fully proven designs and products were delivered on time and to budget to the aircraft carrier project teams.

In total, MPE has supplied 66 EMC power line installation filters of ten different designs to match the applications. These filters have ranged from 6A through to 63A and included both single-phase and three-phase variants from MPE's standard and low-leakage performance ranges. Each filter has also been mechanically customised with a bespoke earth stud design to suit the application.

There will be follow-on requirements for spares and support, continuing the strong working partnership between MPE and McGeoch. The next QE Class aircraft carrier of similar proportions, already in an advanced stage of completion, is the HMS Prince of Wales.

For further information on MPE's high-performance EMC power line filters, visit www.mpe.co.uk/category/installation-filters or to download a product overview brochure click [here](#).