**Paul Alexander Cotton, BEng, CEng, FRAeS**

Ambergate, Derbyshire, UK, 07837344861, paul.cotton@quancho.com

A focused and pragmatic Chartered Engineering leader and Fellow of the Royal Aeronautical Society. Achieved successful results in a diverse range of disciplines across the full product life cycle. Experienced in building and sustaining high performing teams that deliver. Positive and energetic executer of innovation and continuous improvement in Engineering products, capability, processes and enterprise applications. Adept at creating strong winning relationships with customers, colleagues, suppliers and external bodies.

**Key Areas of Expertise and Experience**

**Strategy**

* Enabled the Rolls-Royce Civil Aerospace product strategy. My team generated the design data evidence that directed the strategy. We created the architectural leap for the next generation of aircraft engine. Resulting in the launch of the multi-million pound investments, “Advance 3” and “Ultrafan” whole engine demonstrators. Advance 3 has subsequently tested for hundreds of hours and delivered substantial risk reduction.
* Developed the strategy for the determination and application of new Engineering principles and processes within a £250 million change programme. Delivered organisational and behavioral change impacts roadmap to save circa 25% (£100 million per programme). The principles and processes were demonstrated to the heads of business with a very well received prototype.
* Formulated the UK Systems Engineering strategy (Design, stress, aerodynamic, electrical and controls), for the Rolls-Royce Fuel Cell Systems re-organisation. Resulting in a substantially leaner team whilst accelerating technology development through the use of novel technology acquisition methodologies.

**Engineering Leadership**

* Advised CEO’s and Programme heads on strategic direction and sustainable aerospace technology challenges in Reaction Engines, Vertical Aerospace and Airbus.
* Experienced senior Engineering leader with a BEng (Honours) in Aeronautical Engineering from Bath University. A Chartered Engineer (since 1997) and a Fellow Royal Aeronautical Society (since 2005). Held significant Chief Engineer and Chief Design Engineer roles since 2006.
* An Engineering manager since 1998 with a wide-ranging variety of roles across the full product lifecycle. Creating and growing teams. Initiating and driving continuous improvement. Coaching and mentoring outside of direct reporting lines. Producing high performing teams that were accountable and delivered.
* Led the successful root cause investigation and technical solution development for the single most significant engine event in Rolls-Royce modern history, resulting in continued safe operation of the fleet and the modification to remove the root cause, maintaining Rolls-Royces excellent reputation.

**Paul Alexander Cotton, BEng, CEng, FRAeS**

**Innovation and Technology**

* A member of the “Critical Technologies Review Team” chaired by Rolls-Royce plc. Director of Engineering. I established customer focused product family requirements for the technology roadmaps and continually assessed their validity. Enabled a robust, cost effective technology programme of many £100’s of millions.
* Led and coached design teams in systematic exploration of technologies and architectures to create standardised building blocks known as “Product System Families”. Pioneered the approach to intellectual property for the “Ultarafan” Product. Enabling £10’s of millions of Intellectual Property capture to be prioritised.
* Inspired and coached the creation of the Future Programmes structured Knowledge Management system and the creation of the innovative office environment for the 120-strong team. Improving the early simultaneous engagement survey scores by 10’s%.
* Led the design of the innovative and successful “stack block” rig test vehicle. Test cost was reduced almost 9-fold per vehicle and test turn time reduced, massively accelerating the acquisition of knowledge.

**Financial**

* Represented Rolls-Royce as a member of the Advisory Council for Aviation Research and Innovation in Europe and co-prepared chapters of the Strategic Research and Innovation Agenda volumes one and two for Horizon 2020 and subsequently Flightpath 2050. Aligning with Rolls-Royce’s £100 million European Union funding objectives.
* Recommended the most cost-effective means to verify the future Civil product ahead of requirement. Estimated the funding requirements for the Advance 3 demonstrator and formally obtained business approval and launch of this £100 million risk reduction test vehicle.
* Appointed to Assistant Chief Engineer as part of the Rolls-Royce strategy to move the V2500 Collaborative Engine Programme to Rolls-Royce Deutchland. Produced the top down costed verification plan for the “Select” technology insertion. Resulting in my promotion to Chief Engineer and a family move to Berlin. Led the team to successful execution of the $40 million programme, certifying 1% improvement in fuel consumption and 20% increased engine life on time.

**Career History**

**Non-Executive Director – Quick Release 2019 ~ present.** Most recently advising on Covid 19 strategic approach for success.

**Director – Quancho Limited 2018 ~ present.**I run a consultancy advising senior leaders in environmentally sustainable future products. I also provide coaching services to a range of their engineers.

**Paul Alexander Cotton, BEng, CEng, FRAeS**

**Rolls-Royce plc 1992 ~ 2018**

**Engineering Function Lead – Enterprise System**, Derby, **2016 ~ 2018.** Created the Engineering Vision for tomorrow.Originated and led the Engineering team to deliver a change programme for integrated enterprise business principles, processes and applications across multiple sectors. Accountable for themes of Requirements, Bills of Material, Parts & Attributes, Design Management & Collaboration, Service Data and Technical Publications. Set the goals for the integrated and multi skilled team that included Siemens, Process and IT consultants and external change managers from Deloitte, and Voyager. Delivered organisational and behavioral change impacts roadmap to save circa 25%.

**Chief Design Engineer & Assistant Chief Engineer – Future Programmes**, Derby **2011 ~ 2016** Led the design team within Civil Large Engines Future Programmes (> £10M per year). Accountable for the technology integration and product attributes for large engines, current and novel architectures optimised to meet customer requirements. Championed new ways of working, developing a novel multidisciplinary optimisation tool set, resulting in large time savings. Negotiated the technical specification with Airbus for the re-engining of their A330 NEO aircraft. Proud to have contributed to winning the contract. This enabled Airbus to extend the lifecycle of the Airbus A330 aircraft and improve engine fuel consumption by 1%.

**Chief Design Engineer - Trent 900 Engine Programme**, Derby, **2009 ~ 2011.** Responsible for the engine design team with accountability to deliver product improvements, continuously improve assembly operations and support the flying fleet. Led the engineering team that investigated and resolved the Qantas Airlines flight number “QF32” turbine disc explosion. Technical liaison lead with the on-site Civil Aviation Authority representative. Delivered of a complex Enhanced Performance package through a global team, saving £10’s millions.

**Chief Design Engineer - Rolls Royce Fuel Cell Systems**, Loughborough, **2008 ~ 2009**

Managed the team that created the “stack block” rig which continued to test sub-scale fuel cell and system assemblies in the full-scale system environment. Accountable for re-designing the UK Engineering organisation to meet budget requirements, enabling lean and accelerated Research and Development.

**Chief Engineer, V2500 Engine Programme**, Berlin, **2006 ~ 2008**

Led the Engineering team for the Rolls-Royce party company activities. Accountable for the product safety and Engineering budget on behalf of Rolls-Royce. Won the Rolls-Royce Quality Award for the “V2500” Engine Programme transfer from UK to Germany where I led for Engineering. Managed in service events from the fleet of approximately 4000 engines. Delivered on time the certification of the “Select” technology insertion upgrade that achieves 1% improvement in fuel consumption and 20% increased engine life.

**Voluntary**

**Member – Education and skills committee Royal Aeronautical Society.**

**Trainee Miller Heage Windmill.**