

FREDERICK APPOH CEng CMRP ASQ-CRE MIET

Address: 113 Monument Court, Stevenage.

Mobile: +447534501714; +447824656160

freddie.appoh@reamc.com

SENIOR RAMS Engineering & Asset Management Consultant

Solutions-oriented Senior Reliability, Availability, Maintainability, Safety (RAMS) and Asset Management Engineer, with qualitative experiences in the Railway industry and Defence. Dynamic, competent and dedicated team player with extensive knowledge of Electrical engineering, Mechanical engineering, Risk assessment and modelling, Reliability engineering and System engineering. Also, possesses experience in the implementation of asset management strategies including; Reliability Centred Maintenance, Maintenance optimisation, Product development, Performance evaluation and Operational Engineering.

Highlights

- Quantitative risk analysis (FTA, RBD, SIL, Simulation modelling)
- Hazards review (HAZOP, FMEA, FMECA)
- Reliability data collection and analysis
- Top down and Bottom up reliability analysis
- Reliability, Availability and Maintainability (RAM) modelling
- Process system RAM analysis and capability analysis
- Requirement management
- Verification and validation of product development
- Product reliability testing and acceptance
- FRACAS and reliability improvement projects
- Maintenance Optimisation and Exam extension
- Reliability Centred Maintenance and Maintenance development
- Root cause analysis

Software

- Isograph, MATLAB, Visio, Python for data analysis, SQL, Reliasoft , DOORS

Accomplishments

Leading RAMS and Operational reliability engineer who participated in the RAMS modelling of IEP trains as well as assisted with the new HS2 bid on behalf of Hitachi Rail Europe. Further, led the 100% maintenance and reliability extension programme of the Jubilee line fleets for all B & C Exams on behalf of Alstom transportation and currently leading RAMS analysis for maintenance extension on the Northern Line fleets. Also, implemented FRACAS and Train reliability improvement across Bombardier fleets both Electrical and Diesel Multiple Units.

Projects

1. High Speed Two (HS2) bid support - RAMS studies and concept
2. Intercity Express Trains IEP Class 800 (Bi-mode) - RAMS analysis and management
3. Class 378 project Electrostar (EMU) – Reliability, Performance and safety management
4. Class 222 Meridian fleets (DMU) – Reliability and Maintenance Engineering Support
5. Class 221 Super voyagers (DMU) - Reliability and Performance improvement
6. Class 375 Stansted Express (EMU) – Reliability and Performance improvement
7. Class 357 Electrostar (EMU) – Train reliability and performance improvement
8. Augusta Westland Apache AH MK 1
9. Westland Lynx helicopter

(A) ALSTOM TRANSPORT Jubilee and Northern Line Projects (02/2017 to Present)

Position: Senior RAMS Consultant

- Directed the Smart Maintenance project (Maintenance Optimisation) for Jubilee and Northern Line fleets by carrying out detailed risk analysis and justification for maintenance extensions reducing annual Opex cost by 16% on both projects respectively.

- Developed and applied statistical reliability assessments to enable full Reliability, Availability and Maintainability evaluation of all relevant tasks for extensions. Applied degradation analysis in the form of cumulative density function to all consumable items to make informed decisions regarding wear patterns.
- Applied Failure Mode Effects Analysis FMEA, Failure Mode Effects and Criticality Analysis FMECA and Hazard and Operability Study (HAZOP) to assess system failures and impact train safety and performance.
- Led RAMS requirement management for existing and new fleets modification and design respectively.
- Led the implementation of the new balanced maintenance regime for Jubilee Line fleets in a coordinated and controlled manner.

(B) HITACHI RAIL EUROPE (03/2017 TO 05/2017)

Position: Senior RAMS Consultant

- Led and directed the RAMS modelling for Hitachi Rail Europe bid for British Rail High Speed 2 (HS2)

(C) HITACHI RAIL EUROPE (08/2016 to 02/2017)

Position: Senior RAMS Engineer

- Design and built Hitachi Europe HRE Limited global RAMLCC model for capturing requirement and design specifications of rolling stock design. This included but not limited to; current and future bids specifications and compliance across the supply chain, engineering and procurement departments.

Built and implemented a RAMS capability department in Hitachi Europe Limited to support the development and management of new rolling stock RAMS requirements of existing and future train projects.

- Directed the RAMS specifications and requirement management projects for design and maintenance of existing HRE fleets.
- Designed and developed the revised RAMS model and report for the Department for Transport DfT UK to ascertain the impact of “diesel-only operation” due to delays incurred with the electrification of the Great Western Mainline (GWML) infrastructure network. The report provided the platform for DfT and HRE to agree on the revised operational regime, performance targets and revised contractual terms for the new Intercity Express Project IEP. Also, the report ensured HRE RAMS specification, design, and engineering teams to develop the necessary software and hardware modifications needed to meet the revised agreed performance of the diesel-only operation.

(D) BOMBARDIER TRANSPORTATION BT UK LIMITED (08/2015 to 08/2016)

Position: RAMS, Systems and Performance Improvement Engineer

- Developed and implemented integrated strategic failure and decision analysis model which led to 40% increase (i.e., 10,000 to 14,000 Mean Distance Between Service-Affecting Failure, MDBSAF) in the performance of Class 378 fleets from over a period of 13 months. Also, three selected BT depots that implemented the model recorded an increase in fleet availability by an average of 25%.
- Successfully achieved an increase in 20% availability for the Driver Only Operation Closed Circuit Television DOO CCTV improvement project with a budget of (£ 500K). The project included fifty (50) member team and strong stakeholder management between the Train Operating Company TOC, Bombardier Transportation BT and Transport for London, TFL to meet and exceed the targeted (i.e. 15%) improvement objective of the CCTV system.

- Designed and Implemented Train Reliability Improvement Projects (TRIP) for Class 357, Class 378 and Class 379 fleets to improve BT Electrical Multiple Units EMU's performances ensuring a reduction in the operational expenditure by estimated 20% per year (i.e. £20M).
- Successfully developed and implemented the strategic integration of various business databases including Maximo CMMS, Oracle, PDM and Intraxis reducing waste and increasing the productivity of the workforce. The strategy increased productivity and ensured project milestones were reached within agreed budget and resources.

(C) BOMBARDIER TRANSPORTATION BT WESTERN EUROPE, MIDDLE EAST AND AFRICA (06/2013 to 08/2015)

Position: RAMS Engineer

- Provided leadership and management controls for all Bombardier fleets in Western Europe, Middle East and Africa on matters relating to Reliability, Maintenance, Availability and Safety.
- Developed and implemented Design for Maintainability DfM process for the design of new build fleets to lower and optimise the overall life-cycle cost.
- Led Prognostics Health Maintenance Management System PHMMS on the legacy and new build fleets using BT wayside communication system.
- Directed verification and validation of newly built fleets via reliability growth programme using Duane & Crow-AMSAA techniques.

(D) BOMBARDIER TRANSPORTATION WESTERN EUROPE, MIDDLE EAST AND AFRICA (10/2012 to 06/2013)

Position: Maintenance Development Engineer

- Developed efficient maintenance and operational management strategy for the Class 379, Class 378 and existing legacy fleets.
- Developed and implemented Bombardier Transportation Bespoke tool for the capture of rolling stock requirement, operational cycle and performance parameters with the leading suppliers for the manufacture of Class 372 fleets.
- Led assessments of original equipment manufacturer OEM's products and contractual arrangements for the supply of rolling stock vehicles (white book specification).
- Responsible for adherence to BT maintenance policy to the European directive for the entity in charge of maintenance (ECM).

(E) MINISTRY OF DEFENCE

British Army (06/2008 to 10/2012)

Position: Avionics System Engineer

- Led numerous workshops to tackle maintenance errors caused by human factors. This included identifying the root cause of maintenance errors through 8D, and problem-solving techniques and proposing an alternative approach to lessen and where necessary eliminate the potential source of the error.
- Managed various maintenance activities of different military aircraft to protect human lives on the battlefield in Afghanistan
- Developed and mentored junior military engineers on engineering best practices such as quality assurance and quality control of maintenance

activities ensuring a reduction in maintenance errors and hence increase in aircraft availability for operational tasks

- Led and managed various reviews via new amendments from Joint Aircraft Publications JAP, Ministry of Defence MOD, and Civil Air Authority CAA, etc. to existing maintenance procedures as proposed by the standards

SUMMARY OF QUALIFICATIONS

MSc. Reliability Engineering and Asset Management

(University of Manchester)

BSc (Hon) Mechanical Engineering

(Kwame Nkrumah University of Science and Technology)

HNC Electrical and Electronic Engineering

(University of Teesside)

Aircraft Maintenance Engineering Diploma

(Royal Electrical and Aerospace Engineering, UK Ministry of Defence)

SUMMARY OF CERTIFICATIONS

Certified Maintenance and Reliability Professional (CMRP 172875)

Chartered Engineer CEng United Kingdom

Certified Reliability Engineer -American Society of Quality (ASQ-CRE)

Publications: Main author

- Practical application of integrated failure and decision analysis for maintenance and reliability improvement. Journal of Maintenance Engineering, **Shield Crest** Publishing. August 2016.
- A proposed model for Design for Maintainability DFM Strategy to enhance railway systems availability. Journal of Maintenance Engineering 2017.
- Development of an integrated prognostics maintenance management model for rolling stock vehicles. Journal of Maintenance Engineering 2017

References:

Will be provided on request.