

OFFICIAL JOURNAL OF THE INSTITUTE
OF EXPLOSIVES ENGINEERS

EXPLOSIVES ENGINEERING

Company Member Focus - System Design Evaluation (SDE)

Page 04

Fulmination Awards 2023

Page 17

Fulmination 2023

Page 19



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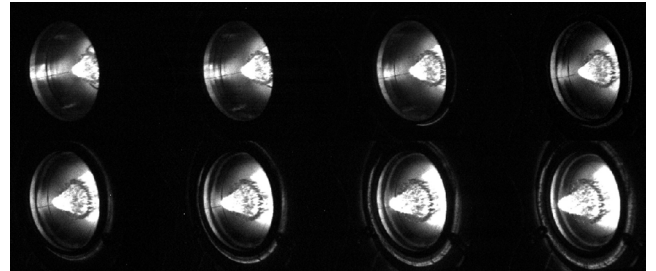
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CONTENTS

FEATURES

- 4 Company Member Focus - SDE
- 12 Spotlight on Leonie Charles, AWE
- 17 Fulmination Awards 2023
- 19 Fulmination 2023
- 27 Environmentally Sustainable Disposal of Weapons, Ordnance, Munitions and Explosives - Rebecca Yates
- 32 European Federation of Explosives Engineers (EFEE) Council Meeting - Berlin - Ruth Barber LL.B (Hons) LL.M AExpE

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Front Cover: Fulmination 2023, IExpE President , Andy Carr



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Professional Registration Update

Engineering Technician: Liam Barrett
Santosh Shrestha
Sam Phillips
Paul Daniel
Ryan Swift

Professional Registration: EngTech Application Fee Increase

From Monday 3rd July, there will be a price increase of the EngTech application fee. The EngTech application fee will increase from £100.00 to £170.00. Please find the updated Professional Registration price list table. We thank you for your continued support.

Grade	Application Fee	Engineering Council Annual Subscription Fee (2023)
CEng	£220.00	£43.85
IEng	£220.00	£37.21
EngTech	£170.00	£21.34

PROFESSIONAL REGISTRATION

ExpE offer its members the opportunity to becoming professionally registered with the Engineering Council.

The Engineering Council

The Engineering Council is the UK regulatory body for the engineering profession in the UK that holds the national register of Professional Engineers (EngTech, IEng and CEng). It sets and maintains the international recognised standards of professional competence (technical and personal) and ethics that govern the award and retention of these titles.

Benefits of Professional Registration

- The status of being part of the technological elite
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System Design Evaluation (SDE) Limited: Experts in the provision of Weapons, Ordnance, Munitions and Explosives (WOME) Systems Engineering, Safety & Environmental advice, and Safety Evaluation

System Design Evaluation Ltd (SDE) is an independent Technology Company. Our core business is the provision of impartial requirements management, assessment, design, development and safety management of platforms, munitions and weapon systems. We apply our systems engineering processes to assist our customers at any stage of product lifecycles, ranging from requirements definition to Safety and Suitability for Service (S3) trials. With a solid track record of technical excellence, SDE has become a trusted partner for organizations seeking objective and reliable assessments of, or support in the development of, their complex engineering systems. In this article, we will delve into the history of SDE, highlight its focus on quality, showcase its capabilities, and emphasize the importance of its independence.



Established in 1986, SDE has a longstanding history in the field of system design evaluation. Founded by a group of visionary engineers - many of whom came from the Royal Ordnance Factories and Ordnance Board - the company quickly gained recognition for its expertise in providing Weapons, Ordnance, Munitions and Explosives (WOME) and related expertise to various UK and overseas Government agencies and the Defence Industry. Covering land, sea and air domains SDE provides technical support and advice that ranges from assisting capability sponsors to define their capability needs, to the provision of technical assistance in R&D and procurement.

SDE has also been actively involved in the formulation of many key UK MoD design safety related standards and has assisted in the development of current safety and environmental management processes and procedures. In addition to the provision of Safety Management expertise, SDE employ trained Independent Safety Auditors and Advisors with experience in the WOME environment to provide third party safety assurance. Over the years, SDE has expanded its operations, diversifying its skills base to include robotics and autonomous systems (RAS), Special Projects and EOD, human factors integration and human machine engineering.



Photo 1 - Typhoon - SDE have provided safety and design advice for the development of Expendable Active Decoys (EAD) for use with the Typhoon aircraft countermeasure systems

At the core of SDE's operations lies a firm commitment to quality. The company places great emphasis on delivering reliable and accurate evaluations, enabling clients to make informed decisions about their system designs. SDE achieves this through a meticulous approach to peer review, quality control and maintaining a strong mix of full time and associate 'SQEP'.

What sets SDE apart is its unwavering commitment to independence; crucial in ensuring that evaluations are conducted without bias, conflicts of interest, or undue influence. By remaining independent, SDE provides its clients with the assurance that any evaluations and technical input are conducted with integrity and based on factual analysis and sound engineering evidence, leading to credible and trustworthy results.

Over the years, SDE has successfully partnered with numerous organizations, both large and small, to add either value to their bids for large Defence projects, or to provide independent analysis of compliance with regulations and standards as they apply to WOME and safety aspects. The extensive knowledge base, skills and experience of our multi-disciplined project teams enables SDE to fully support and populate the many processes that contribute to the CADMID cycle and Defence Lines of Development (DL0D) to support coherent delivery of capability to Front Line Commands.

SDE have contributed to safety and environmental case reports and provided systems engineering support for a number of significant projects including QE carriers, Type 45 Destroyers, Typhoon, Wildcat helicopters, various ammunition types, electronic and explosive counter measures and numerous Special Projects, Explosive Ordnance Disposal and Search projects. SDE also writes Defence Munitions Publications.



Photo 2 - HMS Queen Elizabeth SDE have contributed significantly to the safety design for QE class explosives magazines and provision of platform explosives safety management



Photo 3 - Drone Preparation - SDE provide engineering and Human Factors Integration advice to the development of Robotic and Autonomous Systems (RAS) to aid future Soldier Systems

Examples of SDE's current portfolio of work include:

- * Revision of Defence Standard 07-085 (Design Requirements for Weapons and Associated Systems Test Procedures) and the production of a new user guide
- * The generation and review of the WOC Legislation Database including updated, new or emergent Legislation, Regulations,

Policy and Key Standards

- * Provision of Independent WOME Safety Advice to Challenger 3 upgrade programme
- * Provision of platform safety expertise and maritime indirect fire systems integration support to Type 26 Frigates
- * Safety engineering support to Albion Class Assault ships
- * Provision of robotics and autonomous systems expertise to the British Army's SoldierWorks programme.



Photo 4 - Working with DE&S, SDE are reviewing all WOME Standards, checking for coherency and developing a user guide to aid WOME procurement and management

SDE MERIT[®]

SDE recently launched the bespoke Ships WOME safety tool: SDE Merit[®]. This tool-based solution provides commonality with comprehensive Hazard Identification and Threat Assessments and a better understanding of explosives threats and mitigation for risk assessment. It provides support to less WOME experienced safety managers, enabling them to manage explosive safety on naval platforms in a more dynamic way. It is efficient for those with limited resources available for dynamic Explosives Risk Management (it is the tool of choice in QEC, LPD and T45 platform authorities), and SDE MERIT[®] provides a common framework for the MOD 'Means of Compliance' route to Naval Ship Certification.

As technology continues to advance and systems become increasingly complex, the need for independent and high-quality system evaluation and technical engineering support becomes even more critical. SDE remains at the forefront of WOME systems and safety engineering developments, continuously adapting to meet the evolving needs of its clients. With a focus on excellence, a wide range of engineering capabilities, and an unwavering commitment to independence, SDE is well-positioned to continue its success as a leading provider of WOME systems engineering, Safety & Environmental advice, test, evaluation and acceptance ensuring the safety, reliability, and performance of complex engineering systems.

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