## Safety & Environmental Management



- **Safety Management & Plans**
- **Safety & Environmental Cases**
- **Hazard Identification & Analysis**



SDE provides safety and environmental management services for **Ordnance Munitions and Explosives at equipment.** system and platform level.

This is achieved by adopting a realistic and practical approach to Hazard Identification, Hazard Analysis and Risk Assessment.

This business area brings together the skills of our innovative engineers and scientists together with the experienced staff with backgrounds in Ordnance, Munitions and Explosives and Safety and Environmental Management covering Land. Sea and Air domains.

Critically, the operational context within which many of the equipments are used can be fully appreciated, thus allowing the formation of strong and dynamic project teams, providing a rational and pragmatic approach to safety and environmental assessment. SDE has also been actively involved in the formulation

of many safety related standards and has assisted in the development of safety and environmental management processes and procedures.



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SDE has extensive capabilities in:

- Development of safety policy and procedures.
- Safety Management Plans.
- Development of Safety Cases including Ship Explosive Safety Cases (SESC).
- Safety & Environmental Case Reports (SECR) for new and legacy equipment.
- Hazard identification & analysis including FTA and FMECA.
- Support on safety panels.
- Independent auditing of safety reviews (ISA).
- General safety advice & training.
- Explosive licensing.
- Mitigation modelling.
- Safety & Suitability for Service (S³) trials.



For the identification and management of hazards, the Company has developed its own software tool, known as the "SDE Hazard Identification & Management System", (SHIMS). This tool comprises generic accident and hazard checklists and an Excel spreadsheet, to identify, record, link and assess hazards, accidents, controls and references. SHIMS is currently in use with a number of UK MoD Project Teams (PTs) and is, if required, compatible with Cassandra.

SDE has worked extensively on the provision of Safety Cases for land, sea and air systems, including

- Legacy munitions for DGM PT.
- Infantry weapons, ammunition and sighting systems for DSS PT & CSE PT.
- Weapon and sighting systems for IGMR PT.
- Missile systems for SA(M)PT, SHORAD PT, MODSAP & MRAD PT.
- New munitions & explosive devices for SPSCM PT.
- ISA for CBRN Protection PT & IGMR PT.
- Vehicles and weapons mounting systems for PMT PT.
- Ship Explosive Safety Cases for CVF ACA, T45 PT, Capital Ships PT, Astute PT, BAE Systems & Lloyds Register.
- Revision & formulation of Ship Explosives Store Safety Instruction (SEXSSIs).
- Design Safety Justifications for the location of magazines in CVF.
- Naval Environment Assessment Statement (NEAS) forms on behalf of NAEXP for all munitions that may be carried in MOD ships.
- Integration of munitions into CVF, T45, CVS and LPH.
- Explosive mitigation studies including RATTAM.
- Calculation of ship magazine overpressure vent sizes.
- Safety assessment of magazine structural protection arrangements and internal mitigation solutions.
- Vulnerability of ship hulls to terrorist attack.
- > Emergency docking.



SDE has extensive experience in producing environmental risk assessments for Ordnance, Munitions and Explosives (OME) and other non OME military equipments in order to satisfy the requirements of Environmental Standards and Legislation and the MOD Project Oriented Environmental Management System (POEMS).