

Ordnance, Munitions and Explosives (OME)



Discover Frazer-Nash

Frazer-Nash is a leading systems, engineering and technology company. We help organisations deliver innovative engineering and technology solutions to make lives safe, secure, sustainable, and affordable.

At Frazer-Nash, we listen to our customers to understand their challenges and provide solutions to their complex problems. We are proud to work with the defence supply chain, non-traditional defence organisations, SMEs and academia to bring world-leading capabilities to support the front line.

We work across the land, air, sea, cyber and space domains at the strategic, operational and tactical level. Our diverse and broad portfolio of work means we have developed a unique insight and deep understanding of the multi-domain integration challenge.

We work across all five warfighting domains, at all levels – offering a truly considered understanding of the environment in which defence operates. Utilising our dynamic and original thinkers, we challenge the boundaries to develop bespoke solutions fit for the future. We are at the forefront of modernising technology for defence.

“We deliver support to the defence sector in the UK and internationally.”



Our services to you

FNGUN internal ballistics software

The FNGUN software suite has been developed by us to support internal ballistics design. Combining state of the art numerical solvers with easy-to-use interfaces that are suitable for novices and experts, ballisticians and systems engineers, the software is used worldwide and has been proven to help you reduce trial costs and time to market for new products.

The FNGUN suite comprises 1D and 2D software to cover a wide range of gun systems, including cased telescoped ammunition, mortars, modular charges, and bayonet primers. It has been validated on many different systems, including small arms, large calibre direct and indirect fire, and mortars. Full training and support packages are available.

Weapon effects modelling

At Frazer-Nash, we're continuing the development and enhancement of PALETTE – a versatile software suite that comprises of a number of vulnerability and lethality modules. These provide you with a comprehensive modelling strategy for the response of fixed ground-based targets to air-launched weapons.

PALETTE provides an engineering-level modelling capability for the rapid assessment of highly-bespoke engagement scenarios, and is used in support of several programmes undertaken by the Ministry of Defence (MOD) and industry partners.

Design services

Blast damage to urban structures

With a deep understanding of critical national assets, such as national transportation networks and power and energy systems, we conduct comprehensive risk assessments for clients at every level. We examine the resilience of your complete organisation to market, environmental and security threats: and we examine the vulnerability of your individual equipment, backed up with detailed modelling of particular threat scenarios. Using our evaluation of your system's resilience helps inform your strategic decisions on the future of your projects and continued safety of your operations.



Our comprehensive technical understanding of blast and CBRN means we can examine the vulnerability of your buildings, facilities, systems and personnel, and support you to determine the ongoing security measures necessary to protect your projects through life.

Environmentally sustainable disposal

Our experts have an extensive track-record of supporting projects exploring the safe, environmentally-sustainable disposal of materials, and can help you ensure your projects meet key environmental standards and regulations.

We are providing cost modelling support to Radioactive Waste Management (RWM), the UK government organisation responsible for planning and delivering the geological disposal of radioactive waste. Undertaken in collaboration with nuclear research services consultancy, Galson Sciences Ltd, the project will deliver a long-term cost modelling capability in support of the development of the UK Geological Disposal Facility (GDF), the higher activity waste disposal solution for the UK.

The UK is committed to achieving a target of net zero emissions for greenhouse gases by 2050 (NZ50), and MOD is determined to play its full part in helping the government address climate change head on and achieving this commitment. Defence Science and Technology Laboratory (Dstl), via the Weapons Sector Research Framework (WSRF), recently commissioned Frazer-Nash to undertake research into economically viable, sustainable, solutions for weapons, ordnance, munitions and explosives (WOME) disposal. Working with Cranfield University, our study recommended a number of actions that can be implemented to support transitioning to more sustainable disposal of WOME. A roadmap was also developed to advise on steps to be taken to improve WOME disposal activities, to help towards achieving NZ50 targets.

“ We work with government and industry clients, nationally and internationally. ”



We work with government and industry clients, nationally and internationally, to support the development of advanced weapons systems. Using our specialist technical capabilities we collaborate with Defence Safety Authorities, interpreting their policies and procedures to provide expert advice to the wider weapons community on safety and environmental management.

We can support the design, development, production and through-life management of your small arms, naval guns, complex weapons, artillery systems and military and law enforcement products. Our expertise in weapon systems safety assurance means we can undertake research on weapon effects and protection systems for your organisation.

“ Our experts have an extensive track-record of supporting projects exploring the safe, environmentally-sustainable disposal of materials. ”

Discover how our expertise can support your programmes

Technical Assurance

At Frazer-Nash, we have considerable expertise and proven experience in the development of timely, high quality independent OME safety advice and system safety and suitability for service (S3) support. With our in-depth knowledge of the S3 process, associated policy, standards and AAS3P-1 guidance; the development of OME safety documentation, and our operation of the Weapons Operating Centre OME Safety Review Panel (OSRP) assurance process, we understand the need to produce timely independent OME safety advice with clear conclusions and recommendations to inform your weapon system safety case.

“Our industry expertise means we deliver work that helps you achieve your organisational goals.”

Electronic and electrical engineering

Our experts help you understand and address your electrical engineering needs across your project life cycle. With electrical engineering experience that not only covers traditional electrical design work, but also addresses a broad range of support to plant and system including modification, design assurance, safety assessment, commissioning and operability, and through life management (including obsolescence), our industry expertise means we deliver work that helps you achieve your organisational goals.



Engineering management

We provide technically-focussed project, programme and engineering management services that help you understand, plan and overcome your project, programme, engineering and commercial challenges. Working collaboratively with you, we help you to develop your programme governance and use our technical, commercial and programme skills to reduce common sources of programme failure. Our people work with your people, helping them to develop the skills needed to identify, diagnose and address issues before they impact on your business.

Design services

Capitalising on the latest advances in technology we support you to develop innovative assets that can be operated safely and effectively; and an enhanced level of capability. Using our knowledge of engineering, science and technology, we design effective real-world solutions to your challenging problems. We always make sure you have the right people and the right blend of skills and industry expertise working with you.



Security and resilience

We help organisations assure their resilience against increasing security threats, supporting government and business to protect their critical assets. Our specialist knowledge and engineering techniques, and wide-ranging expertise in security and resilience include: commercial, national defence, organisational resilience, critical national infrastructure and insider threat.

“Using our knowledge of engineering, science and technology, we design effective real-world solutions to your challenging problems.”





To find out more about our work and
how we can add value to your business,
email defenceweapons@fnc.co.uk
or visit our website at:

www.fnc.co.uk