

This Issue: non-intrusive surveys, SIP grenades, and the SOE

SIPs: the Home Guard's go-to grenades

One of the munitions supplied to the Home Guard for use in the event of invasion in WWII was the Self-Igniting Phosphorus (SIP) grenade. These were half-pint glasses filled with a mix of phosphorous, benzene, water and rubber, designed to shatter on impact and immediately catch fire when exposed to the air.

At the end of the war, some caches of SIP grenades were discarded or

buried (easily mistaken for dusty milk bottles, often in crates of dozens).



A self-igniting phosphorous grenade.

The paper trail left by the Home Guard was limited, though SIP grenades can sometimes be encountered on former patrol routes, such as around the perimeters of former military airfields or for-

mer anti-invasion defences. In recent years, several large caches of SIP grenades have been uncovered, including one instance in 2017 when 194No. SIP grenades were removed from a building site in Cambridge.

Given the propensity of phosphorus to ignite when exposed to air, such finds can be particularly hazardous and require careful attention on encounter.

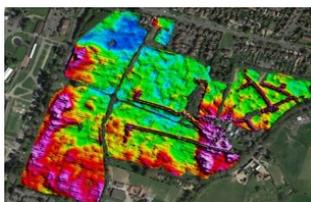
Integrated surveys for mapping UXO and other hazards

Where a potential UXO hazard has been identified at shallow depths by a detailed risk assessment, the most proactive approach to address the hazard is by undertaking a non-intrusive geophysical survey.

This approach allows for back office data processing and analysis to create a map of potential shallow-buried UXO targets, which can then be investigated in a safe and systematic manner by experienced staff.

An additional benefit of such surveys is that they

can be integrated to map a variety of other subsurface features and ground conditions.



This survey combined electromagnetic and 0.5m separation total alkali vapour magnetometers to map UXO, as well as cross-cutting services and buried pits (above) and archaeology (below).



By using a mobile survey platform, you can map a range of features simultaneously (not just UXO), without the need for multiple surveys.

This allows you to collect complementary information, and save time and money while doing so. The combined data also always shows more features than a single data-set, giving a complete picture of the Site.

Not sure what lies beneath your feet? See our website at zeticauxo.com, or call us on 01993 886682 to find out more.

Recent UXO finds

- 16/11/2021: Part of a North Norfolk beach was closed when an unexploded shell was found washed up on the high tide line. An Explosive Ordnance Disposal (EOD) team from Colchester removed the shell for disposal.



- 13/10/2021: Weymouth Beach was evacuated after an 'unknown object' was found in the sea. Police put in place a security cordon, and an EOD team later destroyed the object in a controlled explosion.



- 27/09/2021: A Royal Navy (RN) EOD team undertook a controlled explosion after a 500kg German Unexploded Bomb (UXB) was brought aboard a fishing vessel in the Solent, off the Isle of Wight. UXO is regularly found by UK fishing crews, though the discovery of air-dropped UXB is less common.



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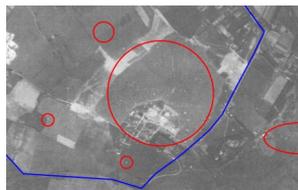
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Case study: UXO support for garden town development

Zetica continues to provide support at a proposed garden town development, which partly occupies a WWII-era military airfield.

Zetica's desk study identified several potential sources of UXO hazard on the Site, including from defensive pipe mines designed to destroy the airfield in the event of an enemy invasion, and from air-dropped bombs from heavy German raids dur-



A historical aerial photograph dating from 1942 shows areas of heavy cratering and possible bomb damage on the Site, outlined in red.

ing the Battle of Britain.

To support an initial ground investigation, Zetica undertook a non-intrusive geophysical survey across the Site, using a combination of magnet-

ic and electromagnetic techniques to map a wide range of features.

This allowed the client to place their exploratory points in areas clear of potential UXO. The survey identified numerous buried features, including potential UXO targets, archaeology, ground conditions, and utilities. The results of the survey will further inform the UXO risk mitigation in the construction phase.

This issue's spotlight: the Special Operations Executive (SOE)

The Special Operations Executive (SOE) was formed on the 22nd July 1940 as an amalgamation of 3No. existing secret intelligence and research organisations. Its purpose was to undertake espionage, sabotage, and reconnaissance in countries across Europe, Africa, and Southeast Asia with the aim of subverting Axis control.



Members of the French Resistance standing with two SOE operatives, August 1944.

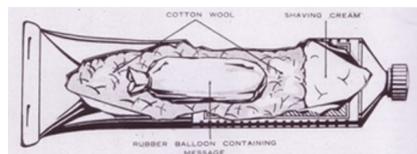
Networks of SOE agents were established in over 15No. countries throughout WWII, working in conjunction with local resistance groups. Operations were demanding, and often dangerous; the average life expectancy of an SOE wireless operator in occupied France was only six weeks.

Country homes across Britain were requisitioned by the SOE as specialist training schools, for use in a wide variety of classroom-based subjects and practical training.

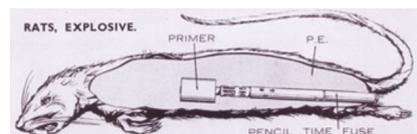
Training, including paramilitary warfare, demolition techniques, and commando combat skills, often took place in more isolated locations such as the

Scottish Highlands or the New Forest. This allowed the secrecy of the activities to prevail, as well as providing adequate space for training activities often involving explosives and live munitions.

Specialist stations for wireless radio operations, forgery, camouflage, and weapons research were generally located closer to the SOE's London HQ. Country homes in Hertfordshire, Buckinghamshire, and Essex undertook the production of forged documents and currency, authentic local clothing, and equipment including radios, booby traps, and explosive weapons.



Hidden-compartment tubes were filled with real shaving cream to avoid suspicion...



...While these unfortunate rats were rigged with an

The arsenal of SOE agents included some weird and wonderful gadgets, many of which would not be out of place in a Hollywood props department. These included shoes adapted to leave false footprints, shaving cream tubes with a secret chamber for

hiding messages, and the infamous—though never used—exploding rat.



A group take a class on demolition at Milton Hall.

Towards the end of the war, the need for an additional peacetime clandestine organisation was under debate. By 1945, many of the SOE training schools and stations were dismantled and returned to their previous owners. When their final operation concluded on 30th June 1946, the SOE ceased to exist, and its remaining agents were incorporated into the Secret Intelligence Service (SIS).

When undertaking a detailed risk assessment for a site known to have been occupied or used by the SOE, it is important to get an intimate understanding of the specific operations undertaken. The wide variety of military training and experimentation undertaken by the SOE means that a diverse range of sources should be consulted to confirm whether a significant UXO hazard is likely to remain.