

## Frequently Asked Questions (FAQs)

As a contractor, a property developer or someone who is responsible for site health and safety, you should be concerned about the potential risks provided by Unexploded Ordnance (UXO).

UXO can be an emotive subject and, occasionally, unscrupulous companies will take advantage of a customer's inexperience of dealing with such issues.

This document deals with frequently asked questions and offers a realistic view of the potential risks that apply to most situations in the UK.

If you have more specific questions or details of a site, please feel free to contact us for advice.

**What's the difference between UXB and UXO?**

A UXB is an unexploded bomb, while UXO refers to any type of unexploded ordnance and so includes ammunition.

**When trying to detect WWII UXB, do I need to search for both ferrous and non-ferrous targets?**

Air-dropped ferrous bombs provide the most common risk. Smaller, non-ferrous bombs such as incendiaries (fire causing) had little ground-penetrating ability and so are unlikely to be present.

**Can I detect a buried UXB from ground level?**

The commonly found WWII 50kg bombs are detectable at depths of less than 2m, while larger bombs, such as the frequently used 250kg bomb, can be detected to depths over 4m depending on the level of geophysical noise.

**What is geophysical noise?**

This is a term applied to the interference picked up by detection equipment from other materials in the ground. The effect is to mask the signal that may arise from a UXB.

**What do I do if I don't believe the claim a UXO detection company is making?**

Ask them to prove their claim and get further advice from other companies.

**How can some companies state a higher detection capability than others?**

Some companies don't understand or consider the effect that actual site conditions may have on the detection capabilities of their equipment.

**What do I do if I find a suspicious item?**

Stop work, don't disturb it and get help.

**Has anyone ever died or been injured by digging up a WWII UXB?**

Yes. There have been numerous incidents since the war, most of them occurring on the European continent. The most infamous example occurred in September 1994 in Berlin, when a piling rig hit a UXB and killed 3 people and seriously injured 8 others. There has not been a fatality from UXB detonation in the UK for several decades.

**Why bother to address the UXO issue if no one has been killed recently?**

It is important not to get blasé about UXO issues because something may happen if you don't appropriately address the risk. Ignoring the risk from UXO is not an option and may, under certain health and safety legislation, be illegal.

**Why do you recommend using probing methods when looking for UXB?**

Compared to most drilling techniques, probing offers less shock and disturbance into the ground and so reduces the chances of a UXB detonating.

- If our site was not a direct WWII target, surely there is no risk from UXB?** Your site could still have been bombed as a result of the opportunistic 'tip and run' raids that were common during WWII. Bombing overspill from raids against major targets may also have affected your site.
- Can a UXB be found under a building?** Yes. It was quite common for bombs to penetrate the ground and then travel down and laterally until they came to rest. Bombs may also have fallen unnoticed on an area which has since been subject to development, meaning that buildings could have been constructed over UXB.
- Are historical bombing records for always reliable?** No. They are often incomplete and should be used with care and corroborated with other records where possible.
- Is there any legislation that forces me to address the UXB risk?** Yes, you are required to ensure that works are conducted in a safe manner under general health and safety legislation and the CDM Regulations.
- What if I do nothing?** You may be putting yourself, your colleagues and your contractors at risk. More commonly, the consequence could be that your company will incur expensive downtime. You don't have to conduct a comprehensive UXO detection survey for a site, but being aware of the potential risks is essential.
- Why don't all companies address the UXO risk?** A few companies still don't recognise the potential UXO risk for a site. The more responsible companies will address UXO issues as routine practice.
- What happens if you have conducted a geophysical survey and identified an anomaly with the characteristics of a UXO?** If your proposed works will not disturb the anomaly it can be left in situ. Otherwise it will require investigation and removal.
- I've heard that UXB become unstable and dangerous with age?** No. On the whole they remain as stable as on the day they were dropped.
- What is an abandoned bomb?** In the UK, abandoned bombs are UXB that are believed to exist and so appear on the official abandoned bomb list held by Central Government. These are not to be confused with UXB marked on historical maps and lists are likely to have since been removed or discredited.
- Do I need to conduct a desk study?** Only if you are unsure of the risk. Free resources, such as the UXB risk maps and pre-desk study assessments provided by ZeticaUXO, help to provide an overview of whether a UXO risk may exist on your site.
- Is it true that if a site has been developed since the war, all risk of UXO must have been removed?** No, a UXO will remain in situ until it's either dug up during construction, or found and removed as part of a UXO detection exercise. If past site excavations were not at the exact position, or did not go sufficiently deep, then the UXO will remain.
- What types of UXO should I be concerned about?** In the UK, it is generally accepted that the main UXB risk is from bombs ranging between 50 and 1000 kg. The most commonly found types are 50kg and 250 kg bombs. British ordnance relating from military installations and training areas may also be present as UXO. This can range from bullets to large bombs and should be considered in the same manner as German UXB.

**Can you tell if a buried object is a UXO or something else by using geophysics?**

Only to a limited extent. Geophysical techniques can help to give an idea of size and shape, which can allow anomalies to be compared with the detectable dimensions of an item of UXO. In general, however, something like a buried oil drum could still model as a potential UXB.

**What will happen if I disturb a UXO during excavation works?**

You might get away with it, but don't disturb it any further. Most accidents occur once ordnance has been found and people get curious.

**What are the chances of a piling or drilling rig causing a UXO to explode?**

High. There are certain circumstances where the type of UXO could mean that piling or drilling straight through it will not cause it to detonate. However, guaranteeing that the UXO you drill through is one of these types is impossible. Therefore always take precautions to avoid piling or drilling through potential UXO.

**What's the difference between EOD and EOC?**

Explosive Ordnance Clearance (EOC) involves the detection, investigation and removal of UXO and is typically carried out by commercial companies. Explosive Ordnance Disposal (EOD) involves the identification, rendering safe and final disposal of UXO and can be undertaken by the military authorities or competent commercial EOD consultants.

**What parts of the country have the greatest risk from UXB?**

Major cities, industrial centres, former military land and other areas on the bombers' flight paths.

**Can you detect bombs in made ground and fill materials?**

In principle yes, but only if there is not a high ferrous metal content in the surrounding geological materials.

**The detection radius or detection depth of your equipment seems to change. Why is this?**

If the background magnetic noise is high, it can mask the signal from a UXO so this is just a reflection of site conditions.

**The depth at which you say we need to detect UXO changes. Why?**

This relates to UXO type, changes in site conditions and changing site geology.

**Can a UXO explode without disturbance?**

This is considered unlikely. Some change in the conditions surrounding the UXO is required to cause it to detonate

**At what depths can a UXB be found?**

For most of the UK, UXB are found within 10m of ground level. In soft silts, however, they may have penetrated to depths in excess of 20m



**Have you ever considered to what extent hidden UXO may affect the safety of your site staff?**