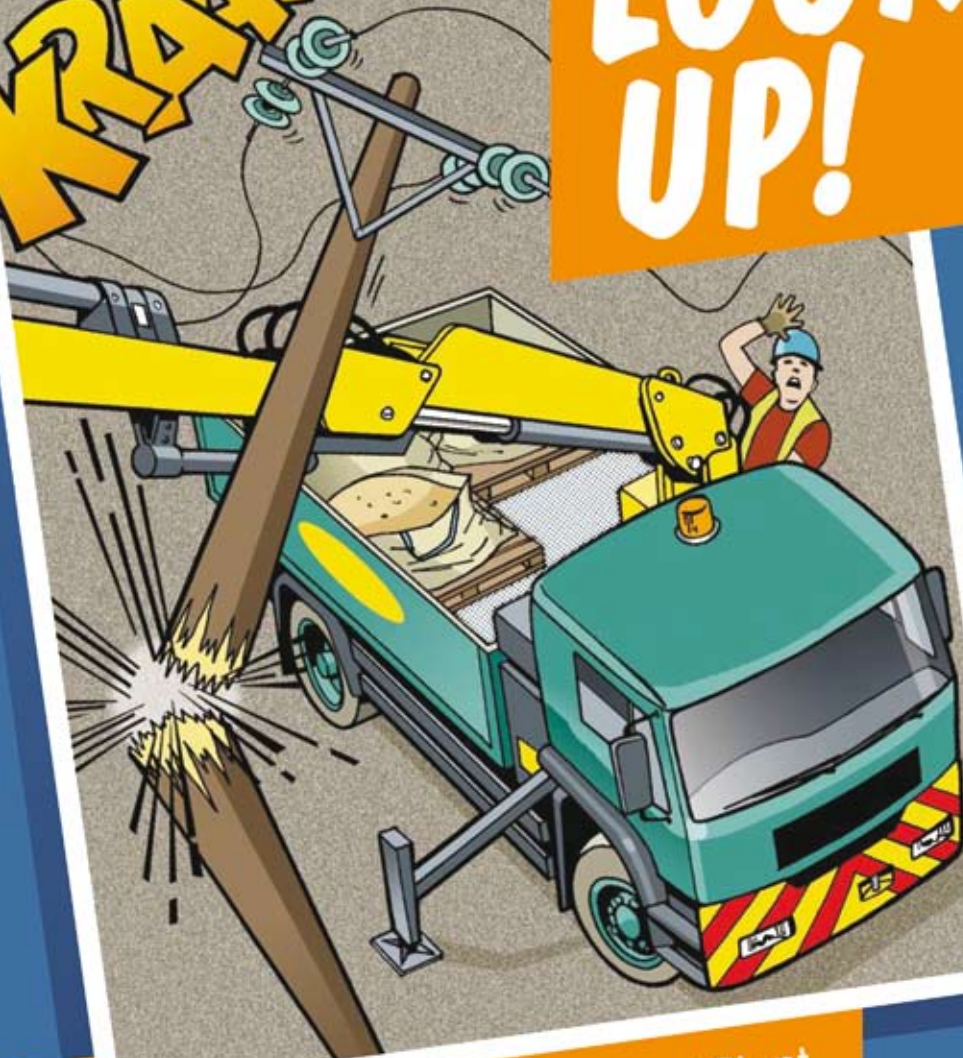


LOOK OUT.

LOOK UP!

KRAAK!



**A Guide to the Safe Use of Mechanical Plant
in the Vicinity of Electricity Overhead Lines**



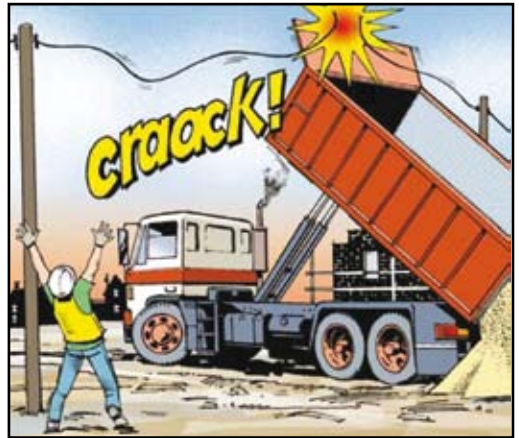
**energy networks
association**

The Safe Use of Mechanical Plant in the Vicinity of Electricity Overhead Lines

Introduction

Every year in the UK on average, two people are killed and many more are injured when mechanical plant and machinery comes into contact or close proximity to overhead electricity lines.

This booklet has been produced for anyone who uses mobile plant, (such as Hiabs, MEWPs, Tipper Lorries and Trailers, Grab Lorries, Concrete Conveyors and Excavators) for short duration work and provides general guidance on how to avoid becoming part of these statistics.



1 BEFORE STARTING WORK

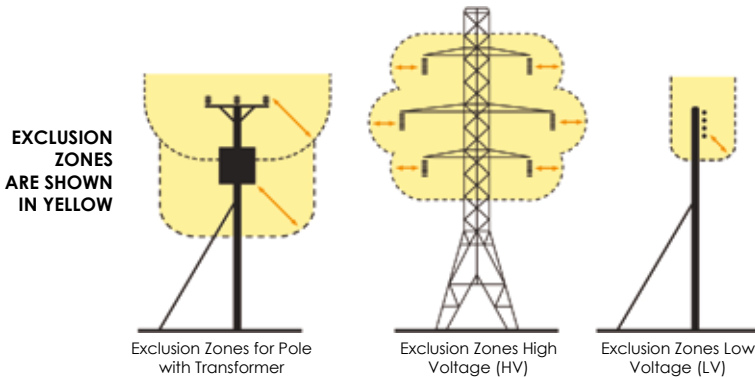
- Overhead lines have the advantage that they can easily be seen, so before you set up your vehicle or plant always:

STOP AND LOOK UP!

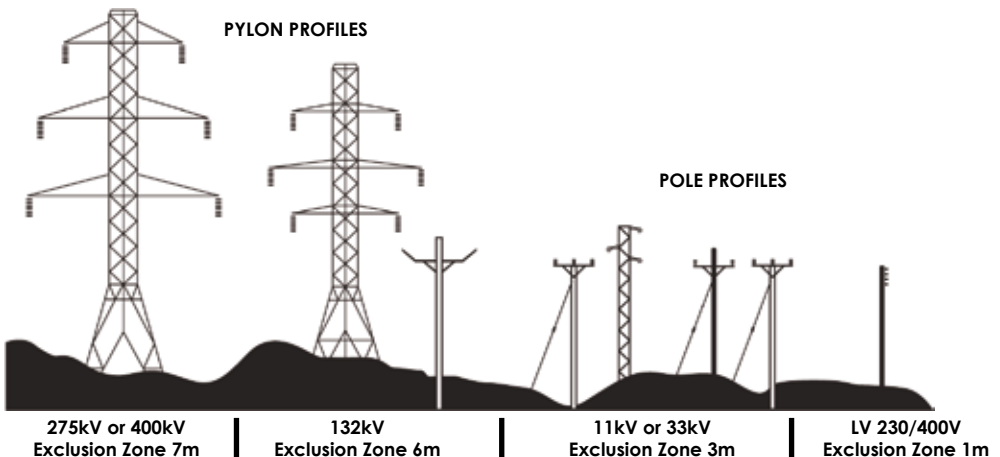
- If you are working at night, or in conditions of poor visibility, you should use spotlights or a torch to carefully check that there are no overhead lines within your vehicle's reach.
- Always assume that overhead lines are live unless informed otherwise in writing by your local electricity company.
- If you are in any doubt about whether the lines in question are power or telephone (this is a very common mistake) – always assume that they are power lines and are live.
- It is not normally practical for electricity companies to shroud high voltage conductors and even when low voltage conductors are shrouded, the shrouding is not designed to protect against contact by mechanical plant – again, always assume the lines are live.

2 EXCLUSION ZONES

- Overhead power lines are not normally insulated and so any contact can result in serious or fatal injuries.
- Electricity at high voltages can also jump gaps with no warning whatsoever, so it is also dangerous to let your plant approach too close to a line.
- The distance that electricity can jump depends on the voltage of the line. The higher the voltage, the further you must stay away from the line and any other equipment that may be fitted to the pole or pylon. This distance is called the **EXCLUSION ZONE**. Examples of this are shown highlighted in the diagram below.



- You must not allow any part of your plant to enter the **EXCLUSION ZONE**.
- The diagram below shows typical types of overhead lines and provides a guide to help assess the line voltage of lines on wooden poles or steel pylons. The minimum **EXCLUSION ZONE DISTANCE** is shown for each example.

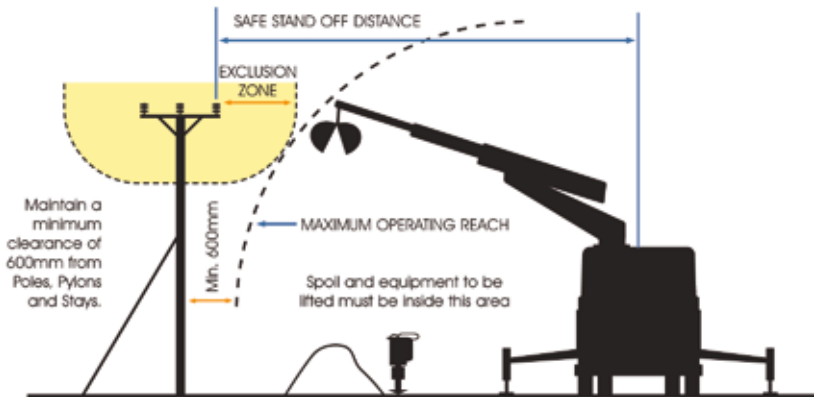


- Please note that these are absolute minimum distances that should under no circumstances be infringed. **If you do - it could prove fatal.**

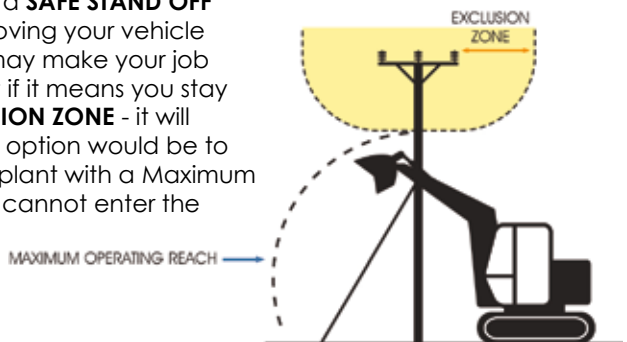
- As well as staying away from the lines or equipment, you should also stay at least 600mm away from any part of poles, pylons and stay wires.
- Please remember that is for guidance only, and if you are in any doubt, please call your local electricity company for advice before setting up your plant or starting work.

3 STAND OFF DISTANCES

- If there are power lines in the vicinity of your work the best way to make sure you stay out of the **EXCLUSION ZONE** is to position your vehicle at a **SAFE STAND OFF DISTANCE** so that, even when fully extended, no part of it can accidentally reach inside the **EXCLUSION ZONE**.
- This **SAFE STAND OFF DISTANCE** can be calculated by adding the **EXCLUSION ZONE** distance for the appropriate voltage of the line to the Maximum Operating Reach of your vehicle. This is shown in the diagram below.



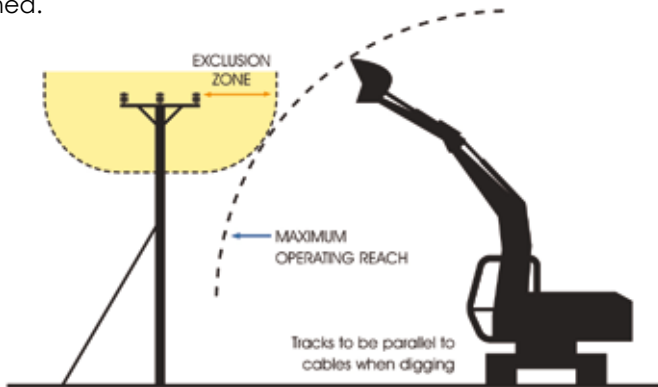
- If you position your vehicle outside of the **SAFE STAND OFF DISTANCE**, there is no risk of accidental contact with the lines and no danger of electricity jumping from the line to your vehicle.
- If you cannot achieve a **SAFE STAND OFF DISTANCE**, consider moving your vehicle to a safer location. It may make your job a bit more difficult, but if it means you stay away from the **EXCLUSION ZONE** - it will be safer. The next best option would be to consider using smaller plant with a Maximum Operating Reach that cannot enter the **EXCLUSION ZONE**.



- You may not be able to achieve either of these options, so, as a last resort, if you cannot avoid operating large items of plant in the vicinity of lines, you **MUST** make sure that the plant is fitted with restraints to ensure that the **EXCLUSION ZONE** cannot be entered. These restraints may be electrical or hydraulic systems fitted to the plant, or mechanical devices such as chains.

Please seek advice from the plant manufacturer for more information on choices available for your particular item of plant.

- If you are using a mechanical excavator to dig parallel to the line, it is good practice to position the excavator with the tracks or wheels parallel to the line, so as you move along the excavation the **SAFE STAND OFF DISTANCE** is easily maintained.



- Care must also be taken to avoid non-mechanical equipment, (e.g. scaffold poles, ladders and long loads such as lengths of steel or timber) from entering the **EXCLUSION ZONE**.
- Always maintain at least 600mm clearance from your plant to any of our poles, stay wires or pylons. Any contact with these by your plant could cause the line to break and fall to the ground.

4 EMERGENCY PROCEDURES

If contact is made with an overhead line, you must immediately clear the area and suspend all work within 50m of the damage because the line could still be live, or become live again.

The operator of a machine that is in contact with an overhead line should take the following steps:

- If the machine is still operable:**
 - lower any raised parts that are controlled from the driving position and/or drive the vehicle clear of the line, as long as neither of these actions risk breaking the line or dragging it to the ground.

- **If the machine is not operable or cannot be driven clear of the line:**
 - stay in the cab.
 - contact your site manager immediately by radio or mobile phone or as soon as possible by any other method and ask them to inform the electricity company.
 - instruct everyone outside the vehicle not to approach it.
 - do not exit the cab until given confirmation BY ELECTRICITY COMPANY PERSONNEL that it is safe to do so.

- **If the machine is inoperable or cannot be driven free and there is risk of fire or other immediate hazard:**
 - jump clear of the vehicle, avoiding simultaneous contact with any part of the machine and the ground.
 - try to land with your feet as close together as possible.-where possible, continue to move away from the vehicle using "bunny hops" with your feet together until at least 15m from the vehicle.
 - instruct other people in the vicinity not to approach the vehicle.
 - do not return to the vehicle until given confirmation BY ELECTRICITY COMPANY PERSONNEL that it is safe to do so.

Whatever the circumstances please contact your local electricity company immediately and tell them what has happened.

Please be ready to provide them with a contact telephone number and an accurate location or set of directions – this will help them in getting staff to site quickly to minimise any danger and to reduce any disruption to your work.

Please report any damage or contact no matter how minor they may seem to you at the time. Whilst the damage may not cause a serious problem at the time of contact it could fail later, causing danger to electricity company staff and members of the public, disruption to supplies, and – if the damage is traced back to you – a larger repair bill!

5 MORE INFORMATION

- Proximity Warning Systems (such as Wire Watcher – see wirewatcher.co.uk for information) may be fitted to your vehicle. Never turn these devices off or disable them in any way.
- Take note of any warnings these proximity warning systems may provide but do not use the presence of such devices as a reason not to follow the advice provided in this leaflet

6 FURTHER READING

More detailed general information on this subject is available in the following publications from the Health and Safety Executive (HSE):

GS6 – Avoidance of Danger from Overhead Lines.

HS(G) 47 – Avoiding Danger from Underground Services.

AFAG 804 – Electricity at Work: Forestry and Arboriculture.

This information can also be obtained at hsebooks.com.

FINALLY.... Please, always remember that electricity overhead lines can be very dangerous – **the general rule is *STAY AWAY and STAY SAFE!***

For the Safe Use of Mechanical Plant in the Vicinity of Electricity Overhead Lines ALWAYS FOLLOW THESE SIMPLE RULES – THEY COULD SAVE YOUR LIFE!

- **Treat all overhead lines as live and dangerous**
- **Any contact may be fatal or cause very serious injuries**
- **Electricity can jump gaps**
- **Before you set up or use plant near to lines – STOP and LOOK UP**
- **Take special care and use lights in the dark or poor light conditions**
- **If there are lines in the vicinity of your work – stay well away**
- **Set up your plant with care to reduce the chance of contact**

Communication Information

For advice, telephone your local electricity company. The telephone number is in the telephone book under 'Electricity'.

Alternatively log on to the Energy Networks Association website
www.energynetworks.org



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