



Chelmsford Amateur Radio Society

Foundation Course (9) Safety



Safety Philosophy

- **At Foundation level, the emphasis is on avoidance of risk, not the skills for working on live equipment.**
- **Foundation Licensees need to have an appreciation of**
 - The Dangers of High Voltages
 - The risk of Electrocution
 - Risk of RF Induction Heating on Metal Rings, Watches
 - Potential of RF Burns
 - Hearing Damage from excessive Headphone Use



Electrical Wiring

- **Items ought to be earthed, and Radio Shack's ought to be protected by RCD 'Earth Trips'**
- **Only items which have 'Double Insulation' need not be earthed**
- **Have a single well marked 'OFF' switch for all power.**
- **If you are a rescuer, do not touch a casualty unless you are sure power is off, else you will become a casualty yourself.**



Safety Earthing

- **Ensure shack equipment is run from a common mains earth to prevent earth loops**
 - use filtered mains boards and ferrite rings correctly.
 - **Modern plastic Gas & Water Pipes give high resistance earths**
 - **Beware of some House earths floating above earth potential**
 - **Do not mix:-**
 - **Mains Earth (for safety) with...**
 - **RF Earths (for Antennas)**
 - **In any case mains earths are electrically noisy**
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Protective Multiple Earthing

- Be aware that modern electrical house wiring may employ Protective Multiple Earthing - PME
- It is extremely important to check if this applies your situation
- Special care is needed on earthing arrangements to avoid risks in PME fault situations
 - an RSGB PME Leaflet is available
- Details can be sought from the electrical supply company
 - seek specialist/qualified advice!



Mains Plugs

- **Flex Colours:- Live=Brown, Neutral=Blue, Earth=Green/Yellow**
 - **Avoid whiskers, trapped wires, and ensure that Cord Grips are secure, but don't pierce the insulation.**
 - **Fuses are to protect the equipment. Low power devices must be correctly fused at 3A or 5A - not always 13Amps**
 - **Faults aren't always shorts. A fault may not blow a large fuse, but may overheat a flex and cause overheating/fires**
 - **Be alert for fraying or damaged insulation on mains leads**
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Indoors

- **Shack Tidiness: Avoid trailing mains leads on the shack floor**
 - Trip Hazards!
- **Headphones: Be aware that excessive use to pick out weak signals from background noise can damage hearing**
- **Allow time for Power Supplies to fully discharge after switching off**
- **Lightning - Disconnect your Antennas!**
 - protect your radios from static charges



Outdoors

- **Ladders - Take care when erecting antennas etc**
 - **Lightning - High antennas may need special protection**
 - **Antenna elements should not be touched when transmitting and should be mounted to avoid accidental contact**
 - **Keep clear of Overhead Power lines, and snagging or coupling in to telephone lines**
 - **Feeders/antennas must be soundly fixed in case of being accidentally being pulled, high winds, icing, bird strikes**
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