



**MATTHEWS AUDIO**

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Since 1991

**ELECTRICAL & ELECTRONIC**  
Design - Installation - Service

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## **INFORMATION SHEET**

### **Lightning Strike - What it means for YOU**

Lightning Strike is a severe condition which can devastate any cabling network such as those we used for PA and Intercom systems in schools. In most cases only equipment connected to the wiring is damaged. In more severe cases the cabling itself can be damaged as well. Lightning strike is an insurable event and should be covered under "Storm and Tempest" in your insurance policy.

For damage to happen it is not necessary for the lightning to strike the cabling directly. A strike "nearby" to one building can raise the ground voltage by thousands of volts in reference to other buildings around your school. This voltage invariably appears across the cabling between the buildings and can damage equipment connected—particularly the active (main) equipment installed in your office.

Whilst it is possible to install various means of protection against lightning strike on your cabling invariably we have found the cost to be excessive—in many cases the cost exceeds the value of the equipment being protected. And in some cases (no matter what protection is installed) the risk of damage still persists.

#### **PA installations:**

Lightning strike is most likely to damage the main output amplifier which is the part of the system directly connected to the wiring that feeds the speakers around your school. If this happens we recommend that the complete PA amplifier be replaced rather than repaired. This is because even if the damage seems restricted to only part of the unit and at first appears repairable it is likely the excessive voltage has severely stressed other parts of the circuitry (particularly power supply components, capacitors and sensitive ICs). This stress often leads to another failure shortly after the initial repair or can lead to degraded performance over time even on a fully repaired unit that seemed fine when reinstalled. The result is usually further callouts and repairs which (combined) often exceed the cost of a new unit. The alternative (replacing it with a new one) usually doesn't cost much more than a repair and has the advantage that it gives you a full 12 month warranty on the new unit so you know it's going to "keep working".

Always switch off your PA unit during school holidays. Also if you know that an electrical storm event is approaching then to reduce chance of damage you can temporarily switch off (de select) all the speaker selection switches on the front of the unit for the duration of the storm. This disconnects the speakers from the amplifier and will protect the unit in the event of lightning strike.

#### **Aiphone Intercoms:**

The TCM series can sometimes be damaged by nearby lightning strikes. The usual symptom that this has happened is crossed lines—i.e. a call placed to one station is received by several others. The fault is easily fixed by replacing the affected PC1385 "Button boards" in the unit. Each board handles 10 lines and the boards cost \$50 each. The number of boards required will depend on the size of your unit and the number of boards damaged. If your system is still under warranty you only pay for the boards (the service call is covered by the warranty). If not under warranty then our standard callout service charge applies. In most cases repair charges do not exceed \$300.

Most intercoms installed by PA Matthews Audio employ multi pin connectors which connect the unit to the wiring in the office. To reduce chance of damage from lightning strike the main TCM intercom unit should be unplugged from the wall box during extended holiday periods or when a known electrical storm threat approaches.