

## 12.2 Hazards

### 12.2.1 Electric shock

Many other hazards can be seen or heard, but there is normally no audible or visual warning of danger from electricity. An average of one in thirty of all electrical accidents is fatal.

Electric shock is a major hazard to a technician and has a dangerous physiological effect brought about by the passing of current through the human body. The severity of the effect of electric shock is dependent upon several factors; these include the strength of the current flowing through the body, the surface resistance of the skin and the path taken by the current.

Fatalities occur with current flow as small as 100mA – 200mA, (0.1 – 0.2 A) especially if the electrical path taken by the current is through the heart.

The most common cause of death from electric shock is suffocation and it is recommended that people working the electrical equipment be trained in the correct procedure for the treatment of electric shock.

For details on resuscitation procedures please refer to **Section 13**.

These hints are no substitute for a thorough knowledge of first aid. St John Ambulance holds first aid courses throughout the country. Look in your local directory for details of your nearest St John Ambulance.

Minor electric shocks may not be a direct cause of injury or death but they may cause someone to lose balance due to muscle contraction. This may lead to injury due to falling from ladders or working platforms.

Burns may be experienced at the point of contact with the supply or by direct contact with an electrically heated surface. Burns require immediate medical attention.

Electricity should always be treated with the utmost care. Electrical installations should be supervised and controlled by a competent person. Installations must be installed to the requirements of the I.E.E. Regulations and other safety regulations. Should it be necessary to work on electrically powered machinery, the supply must first be completely isolated. In order to comply with BS 7671 a means of disconnecting apparatus from the supply must be provided. In most cases the machinery will have an integral labelled isolation switch.

Isolators should be designed so that they can be locked in the 'off' position in order to prevent the accidental reconnection of the supply.

If it is necessary to operate Miniature Circuit Breakers (MCB's) or draw fuses to isolate the electrical apparatus, a competent electrician should be contracted to undertake the correct procedure.

When working on isolated machinery it is important that appropriate notices be posted so that all persons are aware of personnel carrying out work.