

# **TEREX TELELECT**



## **Safety Alert Bulletin**

SAB003

### ***Prevent electrocution when using Aerial Devices and Digger Derricks***

#### **Electrocution occurs when a person's body is a path for electric current.**

The body becomes a path by touching, or getting too close to, two objects at different potential (voltage). The voltage difference causes the current flow. You do not have to touch an object to be a path. The electric current can jump through air if the distance, voltage and weather conditions qualify. The path is not always from a hot wire in your hand to the ground under your feet. It can be:

- From a phase or hot wire, through you, to a pole or any of it's hardware
- From a phase wire, through you, to a neutral or static wire
- From a phase wire, through you, to a different phase wire
- From a lineman, working on one potential, through you, working on a different potential
- From an end of a ground wire, through you, to the other end of a ground wire, when splicing.
- From a ground wire, you are holding, through you, to the controls you are operating when any part of the boom tip touches an energized phase
- From a phase wire in contact with, or too close to, a non-insulated portion of a boom, through you, while standing on the ground touching the truck or attached trailer
- From one foot, through you, to the other foot if near an energized vehicle or a live wire lying on the ground: Note: this is known as *Step Potential*
- From the ground you are standing on, through you, to a pole. When the pole you are helping to set or remove (with a digger derrick) comes in contact with, or too close to, an energized phase and you are touching the pole with an unprotected part of your body.

This list gives examples of possible hazards. It is not complete. There are many possible combinations where a person's body can become a path for electric current.

Whenever any two parts of your body are at a different potential, current will flow through your body between the two points that make contact.

There is no warning when electricity decides the body is a suitable path. You cannot see electricity before it chooses its path or outrun electricity once it decides on its path.

**Aerial devices and digger derricks with insulated booms prevent current flow from the boom tip to ground through the boom only, provided the insulated section is clean, dry, tested and certified for the voltage.**

Boom insulation does not protect a person in the basket from touching two different potentials in his work area. Components that may be at different potentials are:

- Controls
- Any part of the boom tip including jib and winch
- Guy wires
- All pole hardware
- Any conductors, wires or cables.

## **Non-Conductive does not mean Insulation**

Aerial Devices and Digger Derricks use what is commonly called “non-conductive” material in their construction. Just because a material is called “non-conductive” does not mean it provides the necessary insulation. Insulation provided in an Aerial Device or Digger Derrick is a combination of insulating **materials**, sufficient **separation** of conductive materials, cleanliness, **condition**, and **testing** to verify that the insulation will provide protection. Covers and guards are made from non-conductive or insulating material. They may not provide sufficient separation or be maintained in a clean undamaged condition. They are not tested to verify insulation. The platform liner and the insulated booms between the bands of arrows are the only areas tested to verify insulation.

## **Protect Yourself from Electrocutation While using Aerial Devices and Digger Derricks.**

Insulated Aerial Devices and Insulated Digger Derricks eliminate only one path to ground, through the boom structure. It provides no protection if there are two contact points at the boom tip, where the lineman is in the path of electric current. The only way you can ensure your safety is by following OSHA, NESC, and ANSI rules:

- Unqualified person per OSHA 1910:
  - **Maintain clearance from all lines.** Ten feet for voltages less than 50kV or ten feet plus four inches for every 10 kV above 50kV. A “rule of thumb” is ten feet plus two insulator lengths clearance from all lines or conductors. **NOTE:** This rule includes personnel and equipment.
- Qualified person per OSHA 1910 or 1926:
  - **Maintain Minimum Clearance Distance** from any object to the entire boom tip, platform occupants, and boom structure to provide protection between two potentials in the work area. Clearance distance also protects people on the ground.
  - **Wear Personal Protective Equipment**, including insulating gloves, sleeves, and hard hats.
  - **Use Line Covers** such as rubber line hose and blankets rated for the voltage.