SECTION 010-100-013CA
Issue B, February, 1970
Bell Canada
Standard

FIRST AID

RESCUE OF PERSON FROM LIVE WIRE ON GROUND

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1. GENERAL

1.01 This Section specifies methods of rescuing a person who is in contact with a live wire that is on the ground or at any location other than on a pole.

1.02 This section is reissued to remove the reference to a specific page in First Aid Text Book which does not apply in the new book Fundamentals of First Aid and to add reference to Insulating Gloves.

1.03 In an electric shock accident, ***quick rescue and the prompt application of artificial respiration,*** if normal breathing has stopped, are extremely important. In some cases the injured person may remain in contact with the wire because of his inability to let go of the line conductor or due to his being unconscious.

1.04 An attempt to rescue a person from contact with a live wire is dangerous for anyone who does not understand how to proceed, because of the fact that the electric current may be carried through the body of the victim to the rescuer, or the live wire may come in contact with the rescuer or other person and shock him, unless proper precautions are taken.

1.05 If an unconscious person is in contact with a wire and it is not definitely known that the wire has been de-energized, ***assume that it is a live circuit*** in proceeding to clear him from contact with the wire. A broken live wire, when in contact with the ground may whip about until it obtains a good ground connection. Hence, it is always dangerous to move it even when all precautions are taken to prevent further whipping. Without loss of time and before removing either the person from the wire or the wire from the person, approach the wire from the side and drop a wooden object such as a crossarm, pike pole or tree pruner handle across the wire about 6 ft from the unconscious person, so as to hold the wire down. In approaching the wire, hold the wooden object vertically in front of the body and with the lower end close to the ground as protection against the wire coming in contact with the body due to unexpected whipping. Also, in removing the wire from the unconscious person it is definitely preferable to drag it from him with a wooden object over the wire than to lift it with a wooden object under it, so as to control movement of the wire to better advantage.

1.06 In all cases where the victim is unconscious, call a physician to the location as soon as practicable, without delaying the rescue. After the victim has been removed from the contact, apply such first aid treatment as may be necessary in accordance with the recommendations of the St. John's Ambulance First Aid Text Book.

1.07 Notify as soon as practicable the power company which operates the equipment involved in the accident.

1.08 Review this practice and also the St. John's Ambulance First Aid Text Book at intervals, so that if it should become necessary to

rescue a person in contact with a live wire on the ground, the rescue work will be handled promptly and safely.

1.09 For each power line operating voltage there is a corresponding smaller voltage between wires and ground. The likelihood of a telephone employee touching two wires of a power circuit is remote. Therefore, in case of personal contact, the voltage against which protection needs to be provided is the voltage to ground. In the following pages references are made to circuit voltage of 15,000 volts, corresponding to which the voltage to ground is 8,700 volts, against which Insulating Gloves in good condition provide positive protection.

2. PLANNING THE RESCUE

2.01 Before starting the rescue, consider quickly but carefully, how the operation can best be carried out. The most important details to be considered are as follows:

(a) Position of the injured person with respect to the conductor. His position will influence the method to be employed in clearing the contract, that is, whether to cut the wire, pull the wire clear of the victim, roll him off the wire or lift him clear of the wire.

(b) Presence of a nearby switch by means of which the wire may be de-energized.

(c) Rescue equipment available, such as Insulating Gloves, rubber footwear, pliers, dry rope, tree pruner handle, long-handled shovel, dry board, dry ladder, triangular bandage, or other non-conducting material that could be used for cutting or moving the wire or moving the victim.

(d) Dependable assistants.

(e) Probable voltage of circuit. (See Para. 4.01)

(f) Presence of bystanders. It may be necessary to modify the rescue methods so that bystanders will not be injured by the energized wire while it is being handled.

2.02 Men handling the rescue must keep cool, think clearly and avoid impulsive and unsafe operations. Keep in mind the fact that wet ropes, wet wood and wet clothing are not good insulators and severe shocks can be transmitted by them. Avoid standing on wet ground and in water.

2.03 Employees should become generally familiar with the types of construction used by the electric companies that operate in the localities where rescue work may be necessary, so that they may be able to estimate the voltages of different types of circuits.

3. FREEING PERSON FROM CONTACT WITH LIVE WIRE OF LESS THAN 15000 VOLTS

3.01 In rescuing a person who is in contact with a live wire, always wear Insulating Gloves, if available. If rubber footwear is available, wear it, also.

3.02 ***If Insulating Gloves are available,*** with or without rubber footwear, proceed in accordance with one of the following methods which are listed in their order of preference:

(1) Pull the wire clear of the victim by means of a rope, or drag it clear with a tree pruner, board or ladder.

(2) Cut the live wire on both sides of the victim by means of pliers or a tree pruner handle or on the remaining side if it is broken. In cutting the wire, close the eyes or turn the head away so that the eyes will not be exposed to the flash. ***Warn bystanders to keep clear*** so that they will not be injured by the ends of the wire after it has been cut. In many kinds of electric circuits, such as series street lighting circuits, voltage may remain on the wires after they have been cut at one place. If practicable, and if it will not delay the rescue operations, hold the wire down by means of a board or wooden tool handle before it is cut so that the wire ends will be under control.

(3) Roll the victim off the wire. Observe the wire closely so as to avoid accidental contacts with it and prevent the ends from hitting bystanders.

3.03 ***If Insulating Gloves are not available,*** extreme care must be exercised to avoid direct contact with the body of the person or with the live circuit. Use one of the following methods which are listed in their order of preference:

(1) Pull the wire clear of the victim by means of a ***dry*** rope, provided that it appears that the wire can easily be freed. A dry tree pruner handle may also be used in pulling the wire or cutting it clear. Do not under any circumstances use a wet rope or other wet materials that may come in contact with the live wire or the body of the victim.

(2) If the live wire cannot be freed readily by pulling it clear, slip a dry rope or other dry material under the shoulder or other part of the victim's body and roll him or lift him off the wire. A dry board, ladder, or dry stick may be used to assist in pushing the rope under his body, and then for dragging the wire clear.

(3) If the victim's clothing is wet, do not touch it under any circumstances unless Insulating Gloves are being worn. If his clothing is dry, it may be touched only if other dry insulating material is not available. In such a case, fold the dry insulating material before use so as to have a number of thicknesses between the hand and the clothing of the victim. Before grasping any part of the victim's clothing, touch it lightly with the back of the fingers to make sure there is no voltage on it. Preferably stand on a dry board or other insulating material while in contact with the clothing. Remember that under wet weather conditions extreme care must be used to avoid shocks unless Insulating Gloves and rubber footwear or the equivalent are used.

4. FREEING PERSON FROM CONTACT WITH LIVE WIRE OF MORE THAN 15000 VOLTS

4.01 If the victim is in contact with a live wire and in the best judgment of the rescuer, the voltage is in excess of 15000 volts, the rescuer should, for his own protection, secure the assistance of a qualified employee of the power company to break the contact before proceeding with the rescue. This precaution is necessary since the Insulating Gloves are not designed to withstand these higher voltages and the rescuer cannot be sure that ropes, tree pruner handles, ladders and such equipment that might be used with Insulating Gloves are always dry enough to provide the degree of protection required.

5. ARTIFICIAL RESPIRATION AND OTHER FIRST AID

5.01 If normal breathing has stopped, ***apply artificial respiration immediately*** after the rescue. Follow the methods of applying artificial respiration, treating burns, treating physical shock, or giving other first aid recommended in the St. John's Ambulance First Aid Text Book.