No. 182

PENNSYLVANIA RAILROAD CO.
LINES EAST OF PITTSBURGH

RESUSCITATION
FROM
ELECTRIC SHOCK

ALTOONA, PENNSYLVANIA
1913
PENNSYLVANIA RAILROAD CO.
LINES EAST OF PITTSBURGH

RESUSCITATION
FROM
ELECTRIC SHOCK

INSTRUCTIONS

Altoona, Pennsylvania
1913
ACKNOWLEDGMENT.

These instructions are based upon the booklet issued by the "Commission on Resuscitation from Electric Shock" for the National Electric Light Association, and copyrighted and printed by that Association. Acknowledgment is made for permission granted to reprint, in whole or in part.
GENERAL NOTICE.

These instructions, relating to the release of persons from contact with live wires or third rails, to the Schafer or "prone pressure" method of resuscitating those apparently dead from electric shock, and to the care of the victim after natural respiration has been restored, supersede all existing printed instructions relating to the Sylvester method of resuscitation. To avoid confusion, all placards relating to the Sylvester method should be destroyed and all printed matter in instruction books, employees time tables, etc., should be marked "Void, See Instruction Book No. 182."

All employees whose duties are in any way connected with electric service, whether electric light, power, or train service, or who may be called to assist in case of accident, must be supplied with a copy of this book and must be instructed, by demonstration, in the methods described herein.

J. T. WALLIS,
General Sup't Motive Power.

Approved:
S. C. LONG,
General Manager.

OFFICE GEN'L SUPT. MOTIVE POWER,
ALTOONA, PA., JULY 18th, 1913.
## INDEX

<table>
<thead>
<tr>
<th>Subject</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>5</td>
</tr>
<tr>
<td>Promptness and perseverance</td>
<td>6</td>
</tr>
<tr>
<td>Release of Victim from Contact with Live Wire</td>
<td>7</td>
</tr>
<tr>
<td>Resuscitation</td>
<td>9</td>
</tr>
<tr>
<td>Care of the Victim</td>
<td>12</td>
</tr>
</tbody>
</table>
RESUSCITATION FROM APPARENT DEATH FROM ELECTRIC SHOCK.

General.

The increasing use of electricity about the shops, stations and all other property of the Pennsylvania Railroad, makes it necessary that employees be qualified to render intelligent assistance in case of electrical accident. To this end employees must be instructed in the methods to be followed and the precautions to be observed. First, in the safe removal of the victim from contact with live wires and third rails; second, in the approved method of resuscitating persons apparently dead from electric shock, and third, in the care of the victim when natural respiration has been restored.

It is highly important that some one, thoroughly familiar with the methods to be followed and the precautions to be observed, take charge and direct operations when an accident happens. The person in charge should select as assistants only those who are most likely to remain cool in such an emergency, and who may be depended upon to give the most intelligent assistance.
Promptness and Perseverence.

Accidental electric shock does not always kill, it may only stun the victim and stop his breathing for a while. The shock is not likely to be immediately fatal, because

The live conductor may make only a brief and imperfect contact with the victim’s body.
The skin, unless wet, offers high resistance to the current.

Prompt and intelligently directed efforts in removing the victim from contact with live conductors, and prompt, intelligently directed and continued efforts in restoring natural respiration, are necessary for successful results. While promptness is essential, undue haste is to be condemned. The failure of the victim to respond quickly to resuscitation should not cause discouragement: the effort should be continued, because

The body depends upon a continuous exchange of air, as shown by the fact that we must breathe in and out about fifteen times per minute.
If the body is not thus repeatedly supplied with air, suffocation occurs.
Persons whose breathing has been stopped by electric shock, have been restored after artificial respiration has been continued three hours or more.
Release of Victim From Contact With Live Conductor.

Extreme care must be exercised in releasing the victim from contact with a live conductor, to avoid receiving a shock yourself. A piece of dry non-conducting material, such as a piece of wood, a coat, piece of rope, rubber hose, etc., may safely be used in handling the live conductor, or the victim while in contact with the live conductor. The use of conducting materials, such as metal, moist or damp cloth, etc., is extremely dangerous to you. Many persons, by their carelessness in such matters, have been severely shocked or burned.

Break contact between the victim and live conductor as quickly as possible. Open the nearest switch, cut the wires, or do any other thing that appears to be the quickest, safest and surest method of opening the circuit.

When the circuit has been opened it is safe for you to handle the victim with your bare hands.

A dry piece of wood, such as a shoe paddle, broom handle, etc., may safely be used to break contact between the victim and live conductor, by prying the live conductor free from the
victim and holding it while the victim is removed.

If the live conductor lays on the victim, or on the ground in a dangerous position, a dry coat, rope or other flexible dry non-conductor may safely be wrapped around the live conductor to pick it up, carry it to a place of safety, or to hold it in a safe position. The coat, etc., should be grasped several feet from the conductor to avoid receiving a shock.

If the victim is clutching a live wire, or if he is so entangled in live wires as to render the removal of either the victim or the live wire difficult or dangerous, either to him or to you, the live wire may safely be cut by an axe or cutting pliers having insulated handles.

In cutting or handling a live conductor, or in handling the victim, be careful to see that the free end of the live conductor does not come in contact with either the victim, yourself, or bystanders.

If the victim must be touched while in contact with a live conductor, cover your hands with rubber gloves, several thicknesses of dry cloth or paper, or stand on a dry board or other dry insulating surface. If possible, use only one hand.
Send for a physician promptly, preferably a Company surgeon, and put the case in his hands upon his arrival.

**Resuscitation.**

If the victim can be made to breathe and to continue to breathe, the major part of resuscitation has been accomplished, and recovery is practically assured. Having freed the victim from contact with the live conductor, start artificial respiration immediately, do not wait for the physician. Resuscitation may be delayed or discontinued only long enough to carry the victim to a convenient spot where fresh air is abundant, or to remove him to or from a train, and then only for the shortest possible time. Bystanders must not be permitted to collect closely about the victim; this prevents his getting fresh air.

If the accident happens on the train, remove the victim to the baggage car, or if it happens on the right-of-way between stations, flag a train and place the victim in the baggage car. Open the doors and ventilators to admit fresh air. Upon the arrival of the train at the first station, where a physician is at hand, turn the case over to
him together with whatever assistance he may require to continue artificial respiration.

Quickly feel with your fingers and remove from the victim’s mouth and throat any foreign body, such as tobacco, false teeth, etc.

Do not stop to loosen the victim’s clothing at this time; every moment of delay is serious.

Lay the victim on his belly, with arms extended forward, as shown in Figure No. 1. The face should be turned to one side in such manner that the nose and mouth will be free for breathing. An assistant should draw the victim’s tongue forward.

Kneel, straddling the victim’s thighs, and facing his head. Put the palms of your hands on the muscles of his back over the lower ribs. Your thumbs should parallel his back bone, and your fingers should spread over the lower ribs as shown in Figure No. 1.

Hold your arms straight and swing your body forward slowly, bringing your weight to bear gradually upon the victim as shown in Figure No. 2. Pressure is thus applied over the lower ribs by the heels of your hands, compressing the lower part of the chest.
and the abdomen, and forcing the air out of the victim's lungs. This movement should take from two to three seconds, and pressure must be applied gradually and firmly—not violently. Excessive pressure may injure the internal organs and sudden thrusts do not resemble natural respiration.

Immediately swing backward to quickly remove the pressure. Keep your hands in place, thus returning to the position shown in Figure No. 1. Through their elasticity the chest walls expand and draw fresh air into the lungs.

After two seconds repeat the double movement of compression and release; a complete respiration in four or five seconds or twelve to fifteen respirations per minute. If a watch or clock is not visible, follow the natural rate of your own deep breathing, swing your body forward with each exhalation, and backward with each inhalation. While doing this an assistant should loosen any tight clothing about the victim's neck, chest or waist.

Continue artificial respiration, without interruption, for at least three hours, or until natural breathing is restored. Continue the movement for
some time after natural breathing has begun. In continuing the movement be careful to keep your movements in step with the natural breathing of the victim. In stopping the movement see that the victim continues to breathe; if he stops, start artificial respiration again.

Do not give any liquids by mouth until the victim is fully conscious. A physician only may administer stimulants; this should not be attempted by any other persons.

**Care of the Victim.**

In handling the victim, do not touch or irritate burned parts if possible, and during artificial respiration see that pressure is not brought to bear upon burns.

During the period of restoring natural respiration, an assistant should keep the victim warm by applying a cover and by laying bottles or rubber bags filled with warm—**NOT HOT**—water beside the body as shown in Figure No. 3.

When natural respiration has been restored, burns, if serious, should be cared for until the physician arrives.

Do not open blisters.

A raw or blistered surface should
be protected from the air. If the clothing sticks, cut around it; do not peel it off. A dressing of soft material should be applied to the burn, and this, or the cloth adhering to the wound, should be saturated with picric acid (0.5 per cent.) or a solution of baking soda (one teaspoonful to a pint of water) or the wound may be coated with a paste of flour and water.

Cover the dressing with cotton, gauze, lint, clean waste, clean handkerchiefs, or other soft cloth, and hold lightly in place by a bandage.

Similar coverings should be lightly bandaged over dry, charred burns, but without applying oil or other liquid dressing.

After regaining consciousness, the victim should be watched carefully to see that he does not exert himself except in moderation. Violent exertion is liable to cause a cessation of breathing, recovery from which is doubtful.