

VICTORIAN RAILWAYS.

INSTRUCTIONS

TO

Telegraph and Telephone
Line Supervising Officers,
Linemen in Charge, Line-
men and Others.

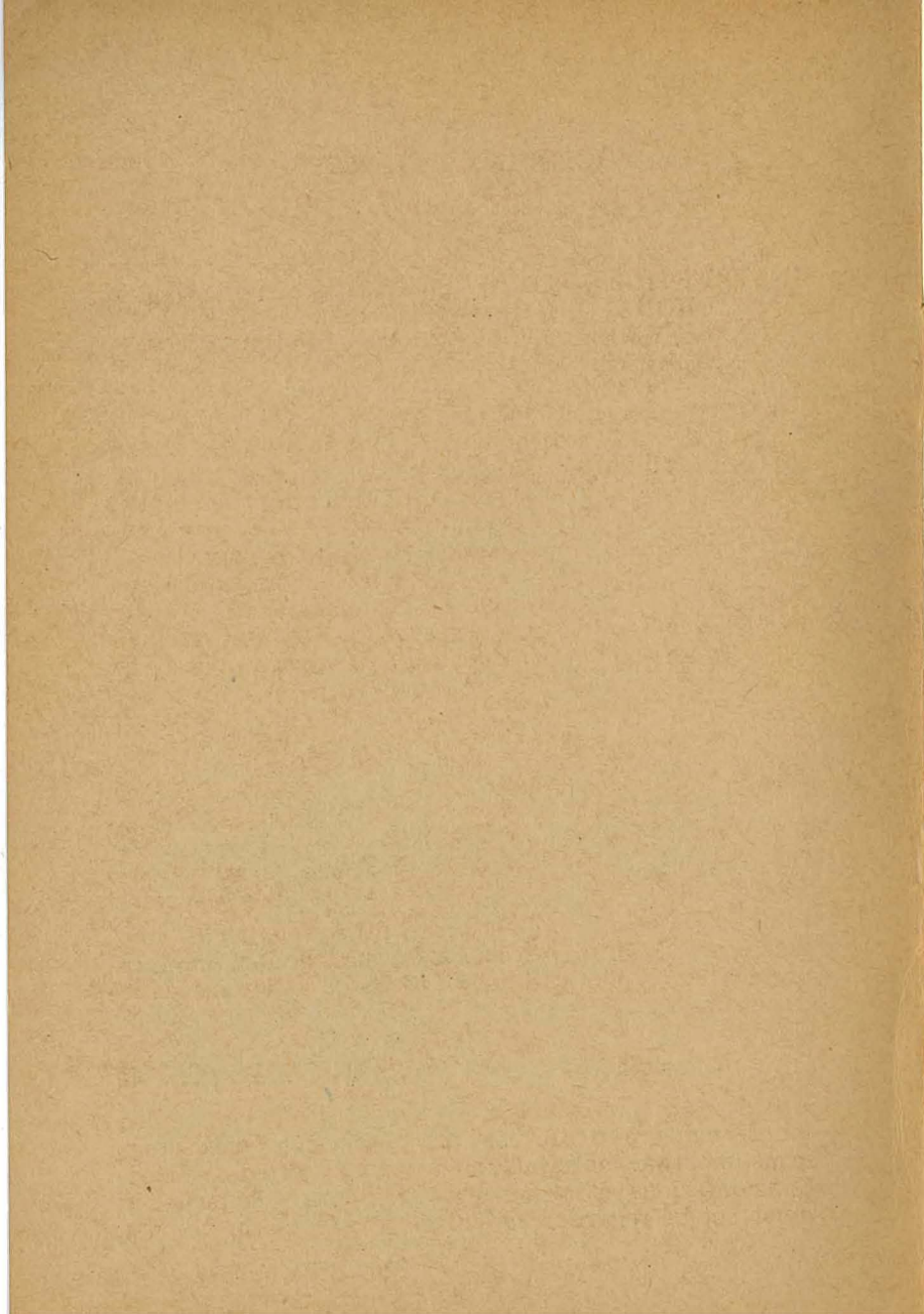
F. M. CALCUTT,

Chief Engineer of Signals and Telegraphs.

Signal and Telegraph Branch,

Melbourne, October 6, 1926

6031-26



VICTORIAN RAILWAYS.

INSTRUCTIONS TO TELEGRAPH AND TELEPHONE LINE SUPERVISING OFFICERS, LINEMEN IN CHARGE, LINEMEN AND OTHERS.

1. **GENERAL.** — The following instructions are issued for the protection of workmen engaged on the erection and maintenance of Telegraph and Telephone Lines, and for the guidance of Supervising Officers in Charge of such work. Every Line Supervising Officer, Lineman-in-Charge, Lineman, or other employe engaged on line work, must be supplied with a copy, and Supervising Officers concerned must see that each employe under their control is so furnished, and signs receipt for same. Employes supplied with the instructions must have them in their possession while on duty, and must produce them when called upon to do so by a Supervising Officer.

Any employe who has not been supplied with, or who has lost his copy of the instructions, must at once report the fact to his immediate Superior, who must take the necessary steps to have him supplied.

Every employe concerned must acquire an intimate knowledge of each and every instruction, and lack of such knowledge will not be accepted as an excuse in case of accident.

2. **UN SOUND MATERIALS NOT TO BE USED.**—All materials must be carefully examined before being put into service. Defective poles, cross arms, or other materials must not be erected or fitted. Considerations of urgency or temporary expediency must not be regarded as sufficient reasons for the use

of unsound materials, or for the adoption of methods of construction which may prove a danger to person or property.

3. POLES TO BE MADE SECURE BEFORE BEING CLIMBED.—Employes must not ascend any pole in course of erection until it has been properly set in the ground, and the whole of the earth filled in and thoroughly rammed.

When temporary poles are erected in connection with any work, they must be adequately and securely stayed before employes are permitted to work on them.

When substituting a new pole for an old one, the new pole must be first erected, and, where practicable, the old pole must be lashed to the new one a few feet from the top. If this cannot be done, the old pole must be efficiently stayed on four sides, and made absolutely safe for an employe to ascend and work on it.

4. DIGGING OUT OF, AND ALTERATIONS TO, POLES.—The digging out of a pole carrying wires must not, under any circumstances, be commenced until all wires have been removed, and the man or men engaged thereon have descended to the ground. In any case in which there is the least risk of danger to person or property, the pole must be securely roped, and carefully lowered to the ground.

The erection, alteration, or removal of poles must not be undertaken unless an adequate number of men is available. The number required to handle a pole varies according to local conditions, but at least four men must be employed in elevating a pole which is 30 feet in length, unless it is obvious that the pole is a light one and within the capacity of a less number of men. Where poles are of a greater length than 30 feet, or are of a heavier nature than usual, the number of men required to handle them must be relatively increased.

Poles considered dangerous and unfit to be climbed must be marked with one cross—"X"—cut into the wood, and employes are forbidden to climb any pole bearing this mark, unless under the direct supervision of a responsible Supervising Officer or Lineman-in-Charge, and then only after the pole has been properly secured and rendered safe for climbing. Failure to comply with this instruction will be regarded as a serious dereliction of duty, and will be dealt with accordingly.

Poles requiring renewal within one or two years must be marked by two cuts made diagonally in the wood, thus, //, and employes must take great care to observe these marks, and, in climbing poles so marked, must take special precautions to ensure their own safety.

The renewing, adequately shoring, or strengthening of any pole which is in a dangerous condition must be regarded as specially urgent, and the work must be undertaken at once, no consideration being allowed to cause it to be deferred.

5. POLES TO BE TESTED BEFORE BEING CLIMBED.—Every pole must be thoroughly tested before an employe attempts to climb it. Where a line gang is employed, the responsibility for such test rests on the Lineman-in-Charge, who must, before instructing employes to climb a pole, inform them that it has already been thoroughly tested. Where a gang is not employed, and it is necessary for an employe to climb a pole, the responsibility for thoroughly testing its condition as to safety rests upon the employe concerned. The test is to be made by sounding the pole with a tomahawk, and by an effort to force it out of position by pushing against it across the line of the wires. Should any doubt then exist as to the condition of the pole, further tests should be made:—

- (a) By opening up the ground around the pole to a depth of 12 to 15 inches, and trying the condition of the timber by

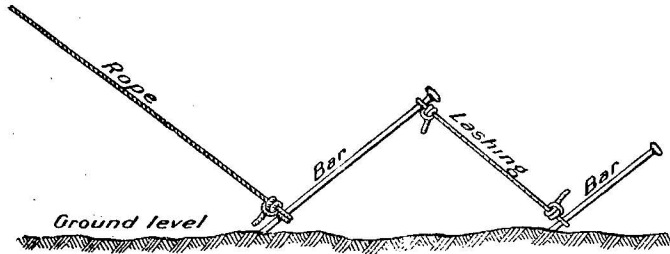
means of a bar or tomahawk. Indications of rot, or the presence of white ants, will suggest that the pole is in a dangerous condition.

- (b) By applying pressure at or near the top of the pole. This can be done by two employes using a long pike and giving a swing to the pole, or by placing a long ladder against it, and applying a push as near the top as possible. In doing this the employes must not ascend the ladder, but must remain on the ground.

6. PRECAUTIONS TO BE TAKEN BEFORE COMMENCING WORK ON CONDEMNED OR UNSAFE POLES.—When it is necessary for an Officer or Employe to climb a pole which has been condemned, or which he considers to be unsafe, the following precautions must be taken:—

- (a) The pole must be firmly supported by means of ladders, pikes or stay ropes. Where the latter are used they must be attached without climbing the pole. This may be done by making a slip knot loop around the base of the pole, pushing the loop up with a ladder or pike, and when in the proper position, hauling the rope taut. If no convenient means, such as trees, secure fence posts, or sound tree stumps be available to which to fasten the lower end of stay rope, a bar or stout stake must be driven well and securely into the ground, and the rope attached to it at the ground level. This fastening stake should then be secured by means of a rope lashing to a second bar or stake also driven well into the ground

behind the first stake, as shown in figure below:—



- (b) In cases where an employe is required to ascend and work on a pole carrying only one wire, or to remove wires, three ropes, pole pikes, or ladders (independent of the ladder to be used by the employe) must be utilised for staying purposes. These stays must be equally spaced around the pole, and, where ropes are used, secured to the ground as directed in the previous paragraph. Where pikes or ladders are used, an employe must firmly hold each pike or ladder, so as to prevent it moving, particularly in sandy soil, or on slippery or uneven ground. Every precaution must be taken to keep the top ends of stay ladders in position, either by means of lashings or by driving nails or spikes into the pole.
- (c) When a pole carries several wires, and an employe is required to work on it for any purpose except the removal of the wires, two stay ladders, pikes or ropes must be utilised. These supports or stays must be placed on opposite sides of the pole, and across the direction of the line wires.

7. PRECAUTIONS IN USE OF LADDERS.—

When ladders are used with which to ascend a pole, care must be taken that the bottom of the ladder is secured from slipping. The distance from the base of the pole to the foot of the ladder should not exceed three-eighths of the length of the ladder, which must also be securely lashed to the pole at its top end, and in any case where there is a risk of slipping, owing to unevenness or hardness of the surface of the ground, or to unusual spread of the ladder, it must be secured by tying to the pole at or near the foot. Employes must not stand on the upper ends of the side pieces of a ladder.

Should it be found necessary to fasten two ladders together to carry out work on poles of special length, they must be securely fastened together with lashings of hemp rope, and they must, wherever practicable, overlap one-fifth of their length, but, in no case, must the overlap be less than four feet. The placing of the end of one ladder on the end of another one against a pole is prohibited.

Unless under very exceptional circumstances, it is not permissible for more than one man to stand upon the same ladder at the same time. Should it be necessary to send aloft additional tools or materials, it must be done by the employe on the ladder lowering a rope, to which the article must be securely affixed, and then hauled up.

Before a ladder is used it must be carefully examined by the Lineman-in-Charge, or, in his absence, by the employe proposing to use it, to ensure that it is in a safe condition.

All ladders must be properly fitted with tie-bolts, and when in use must be protected by an employe in all cases in which there is any risk of trollies, or other vehicles, and also animals running against them.

8. TESTING OF CROSS ARMS.—Before an employe is allowed to rest a ladder against a cross arm,

the pole must be tested and secured in the manner set out in the above instructions. The ladder may then be placed against the pole on the cross arm side. The employe will then ascend and examine the cross arm for any unsoundness due to rot, splits, shakes, or weakening by the action of white ants, and to ascertain whether the holding bolts are in good condition. If the examination proves the cross arm to be sound, a ladder may then, if necessary be placed against it, but only on the side of the arm farthest from the pole.

9. GENERAL PRECAUTIONS.—Body belts must always be used by employes when working aloft on poles; and when so engaged, an employe must never place himself on the inside of an angle, but always on the outside, so that, in the event of a wire becoming detached, there will be no danger of his being pulled off the pole. Serious injuries have been sustained by linemen and others, when working on the inside of an angle, through being thrown to the ground by a wire which has accidentally pulled away from an insulator.

Every employe must assure himself of the soundness and stability of all fittings and material on a pole on which he is working. Reliance for safety must not be placed on anything which may be unsound, or which might give way under a pull or strain. The practice of holding on to, or standing upon, an insulator is prohibited, owing to its liability to break, and, in the case of insulators carried on wooden pins, the tendency of the latter to snap.

10. PRECAUTIONS AGAINST RISK OF FIRE.—Particular care must be taken, especially in dry, hot or windy weather, to prevent coals or sparks falling or being blown from any fire pot or open fire, thus causing risk of surrounding grass, scrub, or other inflammable material being ignited. When it is necessary to light a fire in the open, or to use a fire pot, a clear space must be selected at a safe distance from any material which might readily take fire, and in every case in which there is any possibility of danger

the fire or fire pot must be carefully shielded or covered.

11. PUBLIC AND OTHERS TO BE PROTECTED.—Every possible precaution must be taken to ensure the safety of the public and others in connection with works in progress. Should it be necessary to leave work unfinished overnight adequate protection must be provided to prevent injury to anyone, and if the work be in the vicinity of a Station, Signal Box, or Depot, the Officer-in-Charge must be notified of the locality and nature of the work, so that all concerned may be advised.

12. PRECAUTIONS TO BE TAKEN WHEN WORKING NEAR LIVE WIRES OR CABLES.—Employes are warned that, under no circumstances, are they to touch with any part of the body, or clothing, or with any tool which they may be carrying, any Railway or Tramway Trolley or Contact Wires, or wires and cables used in connection with Electric Power or Lighting. Wires in Power or Lighting systems which are termed low or medium tension conductors must in all cases be regarded as very dangerous. Telegraph or Telephone Lines which come into contact with such Power or Lighting conductors are equally dangerous, and extreme care must be taken in handling the Telegraph or Telephone lines if they are in contact with Power or Lighting Wires. No work must be done in connection with such wires except under the direct and personal supervision of a responsible Line Supervising Officer or Lineman-in-Charge.

13. DIRECTIONS TO BE OBSERVED IN CASES OF ELECTRIC SHOCK.—Full directions are given on pages 55, 56 and 57 of the General Appendix to the Book of Rules and Regulations regarding treatment in cases of Electric Shock. Every Lineman-in-Charge must have a copy of these directions, in chart form, mounted in a frame, and hung in the Workmen's Sleeping Car, for the information of each Member of

his Gang, and for ready reference in cases of injury from Electric Shock.

These directions must be followed, and special attention must be given to Direction 3, i.e., "Send for the nearest doctor as soon as an accident due to shock is discovered."

14. RESPONSIBILITY OF LINEMEN-IN-CHARGE AND OTHER EMPLOYES.—Linemen-in-Charge are personally responsible for seeing that every possible precaution is taken to prevent accidents; that all gear is in good order; that any pole or timber used as a derrick is sound; that the hooks of all slings are securely closed with a binding of galvanised iron wire, so fitted as not to permit of the hook becoming disengaged from its load; and that, during the lifting of any pole, orders are issued by him only.

In cases of employes working individually, or in a small party, without a Lineman-in-Charge, the responsibility for the observance of such safety precautions herein stated as may be applicable devolves upon the individual employe concerned, or the senior lineman in the party.

15. DON'TS FOR LINEMEN-IN-CHARGE, LINEMEN AND OTHER EMPLOYES:—

- (a) Don't leave ends of wire lying about station grounds or property, as they are liable to be thrown across the working wires, thus causing faults. Such short ends have been known to be the cause of the death of cattle. When working aloft use the tool bag in which to place all ends. Iron wire ends must be buried, and all copper scraps returned to the Line Foreman.
- (b) Don't climb or work amongst wires with tapes, binders or pieces of wire in belt or leggings. Use a canvas or leather wallet.

- (c) Don't neglect to remove every temporary binding wire.
- (d) Don't allow tails of jointing or binding wire to touch working wires, and don't fail to remove all tails when Joints have been completed.
- (e) Don't, under any consideration, leave Joints in galvanised iron wire unsoldered.
- (f) Don't leave unused material on platforms, in goods sheds, etc. Return all surplus material to the Line Foreman.
- (g) Don't leave unserviceable poles strewn about Railway property, particularly within the precincts of stations. Cut them into two equal pieces, and place them on stacks of other unserviceable timber, if available. If not, stack them neatly in a convenient place inside the Railway fence.
- (h) Don't coil rope closely when wet, as it might become mildewed. Open out the coil, and allow it to be dried by the circulation of air. Dry rope is more reliable than wet rope.
- (i) Don't risk your life on an unsafe ladder, or by working too near or touching Live Power or Lighting Wires.
- (j) Don't fail to secure your Ladder by lashing it to the end of pole.
- (k) Don't leave unattended Ladders raised against walls of buildings in Station grounds, or where they are liable to be interfered with.
- (l) Don't use spirits of salts, or acid of any kind, for jointing galvanised iron or copper wires. Use a reliable non-corrosive Flux.

- (m) Don't make joints at or near the centre of a span; cut the wire off, and make the joint not more than 10 yards from a Pole.
- (n) Don't make a joint in wires without first thoroughly cleansing the end of each wire.
- (o) Don't fail to realise that faults arising from your work, or your manner of carrying it out, will not be a recommendation when promotions are considered. They show want of knowledge of your business, carelessness, or lack of interest. Be interested in your work and always do your best.
- (p) Don't fail to read and observe the above instructions, as well as the Book of Rules and Regulations and General Appendix.

16. RULES AND REGULATIONS AND GENERAL APPENDIX.—The issue of these instructions does not supersede in any way the Rules and Regulations—April, 1919—General Appendix to Rules and Regulations and Working Time Table, 1919.

1. The first part of the document is a list of names and titles.

2. The second part of the document is a list of names and titles.

3. The third part of the document is a list of names and titles.

4. The fourth part of the document is a list of names and titles.

5. The fifth part of the document is a list of names and titles.

6. The sixth part of the document is a list of names and titles.

7. The seventh part of the document is a list of names and titles.

8. The eighth part of the document is a list of names and titles.

9. The ninth part of the document is a list of names and titles.

10. The tenth part of the document is a list of names and titles.

11. The eleventh part of the document is a list of names and titles.

12. The twelfth part of the document is a list of names and titles.

13. The thirteenth part of the document is a list of names and titles.

14. The fourteenth part of the document is a list of names and titles.

15. The fifteenth part of the document is a list of names and titles.

16. The sixteenth part of the document is a list of names and titles.

17. The seventeenth part of the document is a list of names and titles.

18. The eighteenth part of the document is a list of names and titles.

19. The nineteenth part of the document is a list of names and titles.

20. The twentieth part of the document is a list of names and titles.

21. The twenty-first part of the document is a list of names and titles.

22. The twenty-second part of the document is a list of names and titles.

23. The twenty-third part of the document is a list of names and titles.

24. The twenty-fourth part of the document is a list of names and titles.

25. The twenty-fifth part of the document is a list of names and titles.

26. The twenty-sixth part of the document is a list of names and titles.

27. The twenty-seventh part of the document is a list of names and titles.

28. The twenty-eighth part of the document is a list of names and titles.

29. The twenty-ninth part of the document is a list of names and titles.

30. The thirtieth part of the document is a list of names and titles.

