

## POLE DERRICKS WORK OPERATIONS

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### 1. GENERAL

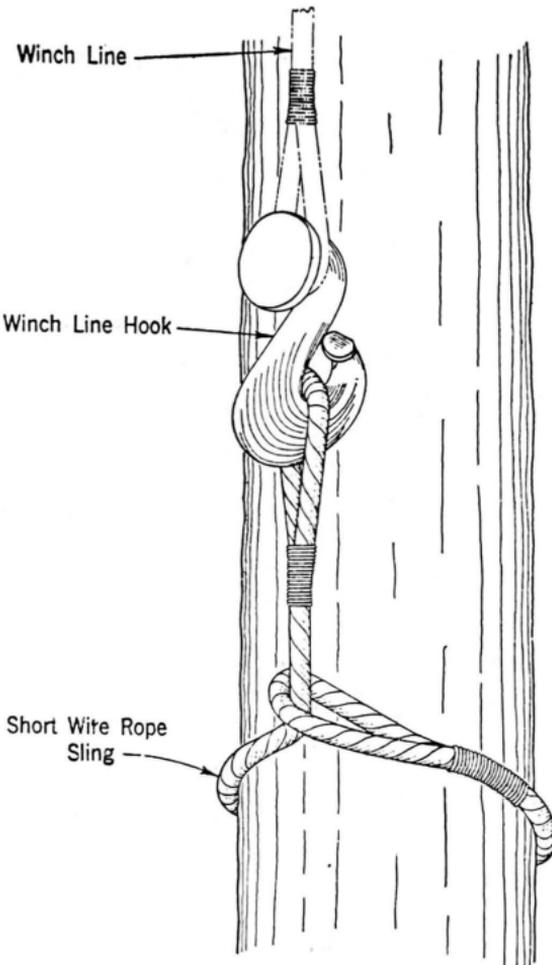
1.01 There are many work operations where use of a derrick is advantageous. The more common uses are discussed in this practice.

1.02 The procedures to be followed in operations involving the use of a derrick are very similar regardless of the type of derrick used.

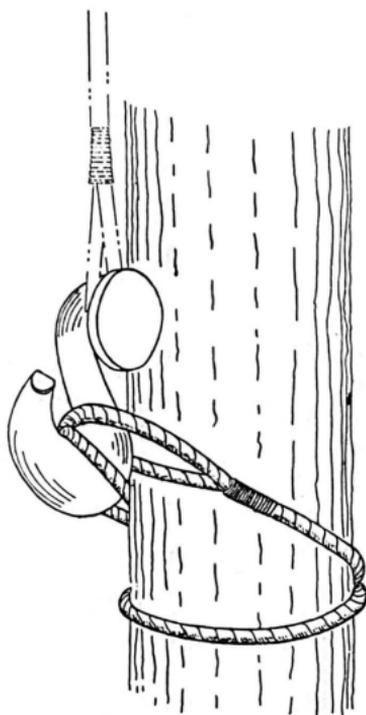
1.03 The safety precautions outlined in Section J6.130 and all precautions pertaining to the particular type of work shall be observed in all cases.

## 2. ATTACHING WINCH LINE TO POLES

2.01 A short piece of winch line with a rolled eye at each end used as a pole sling will facilitate attaching the winch line to poles and will increase the serviceable life of the winch line. The length of the line used for the sling should be about four feet exclusive of the eyes at the ends. This sling should be attached to a pole by running one eye through the other and then attaching the free eye to the winch line hook. When attaching the winch line to small poles the sling may be wrapped around the pole twice to bring the hook closer to the pole.

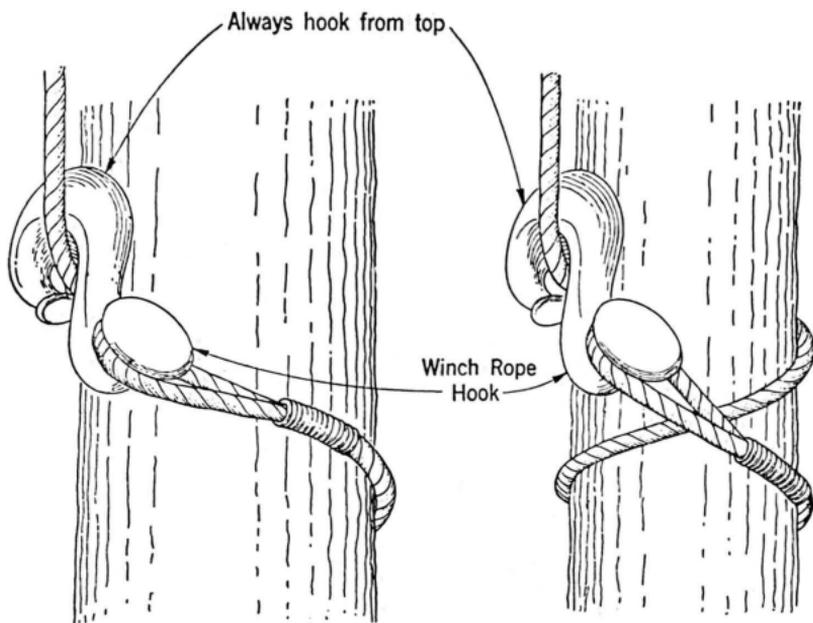


2.02 For heavier loads it may be found desirable to make<sup>7</sup> up a longer sling as shown in the following figure. Wrapping the line around the load and placing both eyes over the winch hook will greatly increase the strength of the attachment.

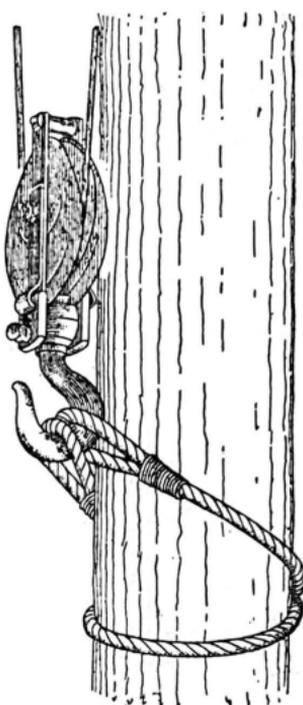
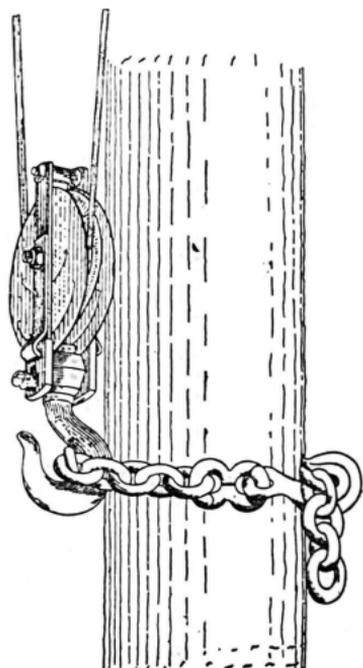


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2.03 A winch line can be attached to a pole by placing it around the pole and placing the winch line hook over the line. The hook should always be hooked down over the line as shown in the following figure so that it will not become disengaged by its own weight should the line become slack. The winch line should be wrapped around the smaller poles twice so that the tail of the eye will not come into the hook.



2.04 A snatch block can be attached to a pole, when below all wire attachments, by means of a construction chain or wire rope sling. The snatch block should be hooked into both eyes of the sling.



### 3. SNAKING POLES

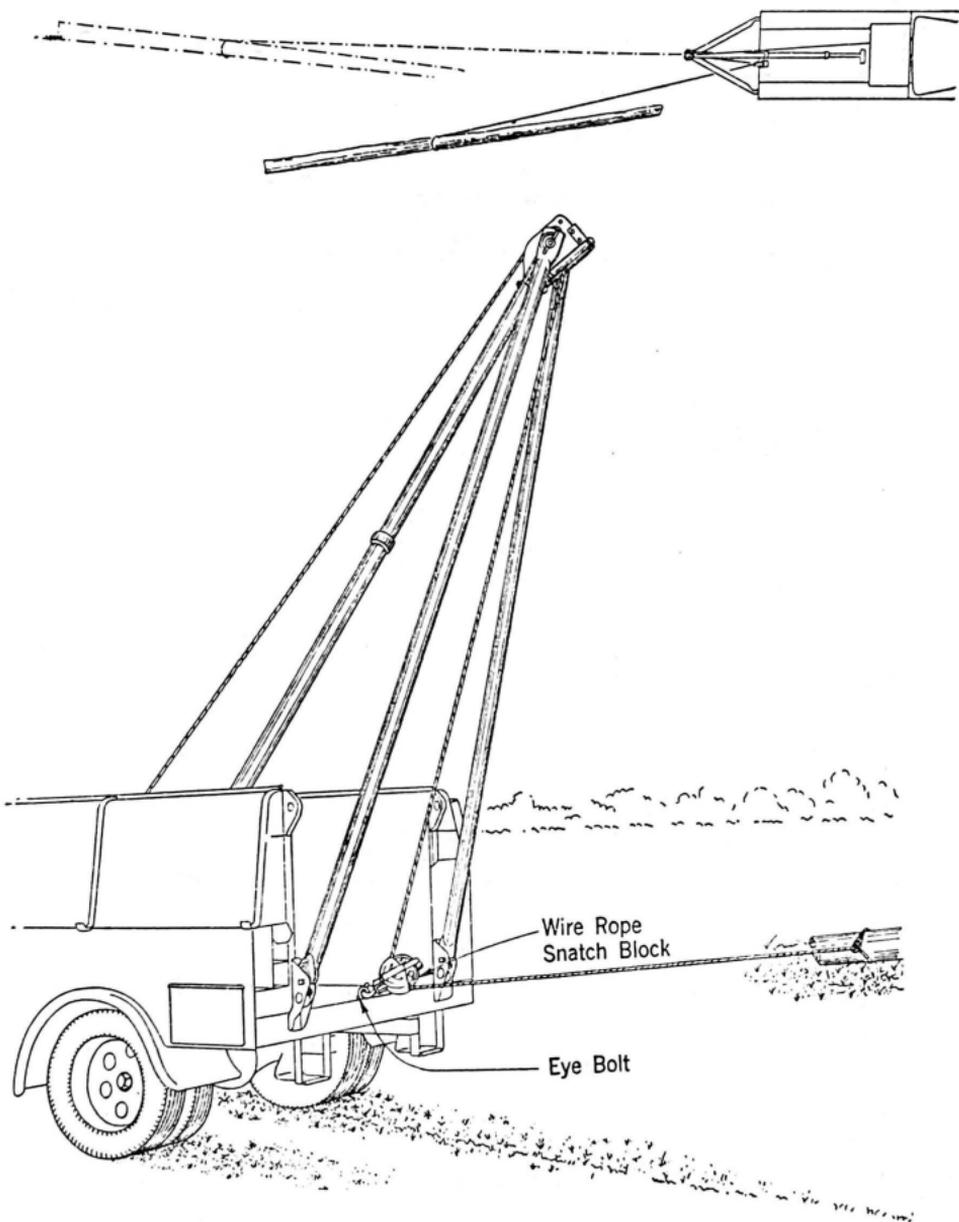
3.01 When delivering poles to a job they should be distributed to points as close to the final placing location as practicable. This will make it necessary to snake the poles only a relatively short distance to bring them to the final location. Where practicable this snaking operation should be done with the winch line before it is placed in the derrick and before the derrick is raised.

3.02 Poles should be handled in a manner that will avoid damaging the pole particularly at the ground line section.

3.03 When the derrick is in the erected position, poles may be snaked along the ground with the line running directly from the derrick's head for all derricks except the earth-boring machine derricks provided the pull is straight to the rear of the truck and provided the derrick is nearly enough

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to vertical so that the winch line will not rub against the sheave housing spacer. When the direction of the pull is at an angle and in all cases for the earth-boring machine derricks the winch line shall be run through a snatch block attached at the rear of the truck.

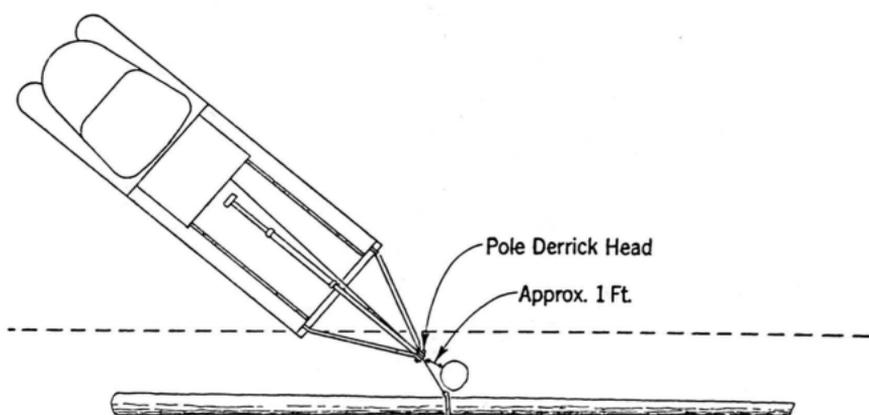


3.04 Where the pole is to be snaked only a short distance, it will often be found practicable to attach the winch line near the balance point of the pole so that when the pole is brought to the final location the line may be removed from the snatch block and the pole erected without changing the attachment to the pole. When necessary to snake the pole a considerable distance particularly over rough ground it is desirable to attach the winch line near the top so that the pole will offer minimum resistance to the drag over the ground.

#### 4. PLACING POLES

4.01 The methods used in placing poles with the derrick are practically the same regardless of the type of derrick being used.

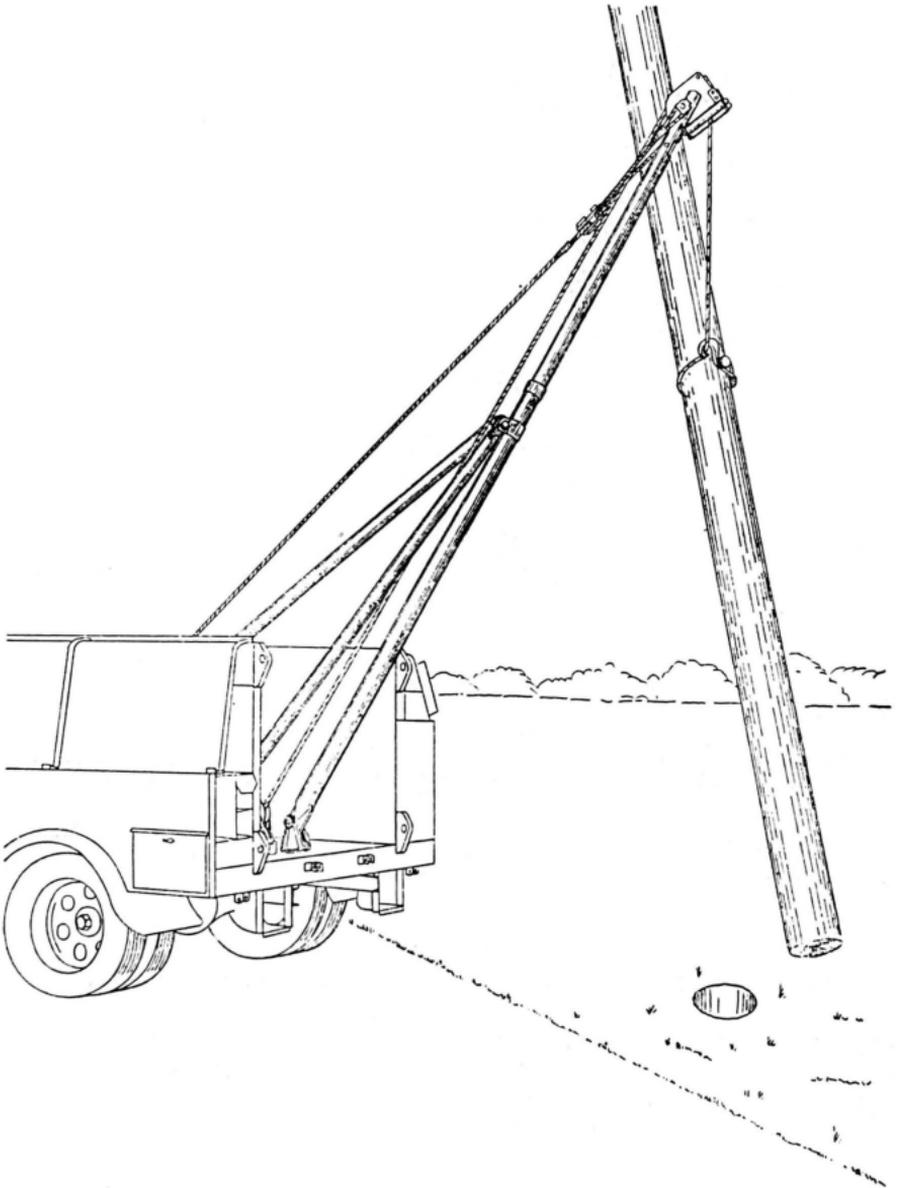
4.02 The truck should be backed in so that the derrick is properly located with respect to the hole which in general will be with the derrick head pointing to the hole and about one foot short of the hole location.



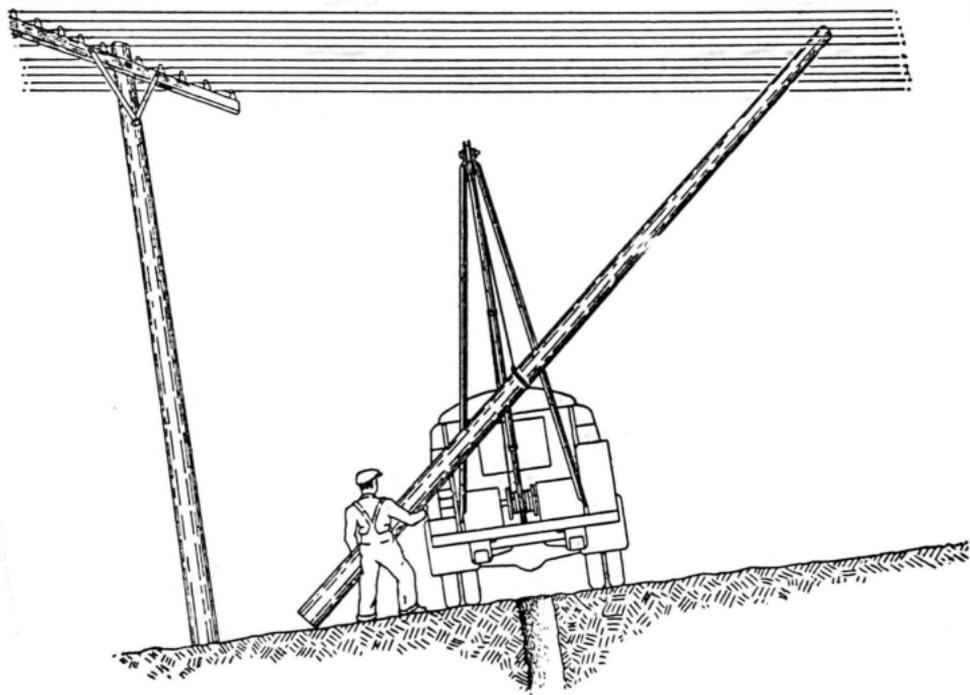
4.03 The angle at which the truck approaches the hole location will depend upon the location of ditches and highway shoulders and the traffic conditions involved. The truck should be located as nearly level as practicable and at a point where interference to traffic will be a minimum.

4.04 If the lowest wire or cable attachment on the pole line is of sufficient height above ground to clear the derrick, the derrick should be used in the truck position for placing poles. For the lower leads it may be necessary to operate the derrick telescoped or in the ground position.

4.05 The winch line shall be attached to the pole at a point slightly above the balance point of the pole so that it is slightly butt heavy. In general this point is a few feet below the mid-point of the pole.



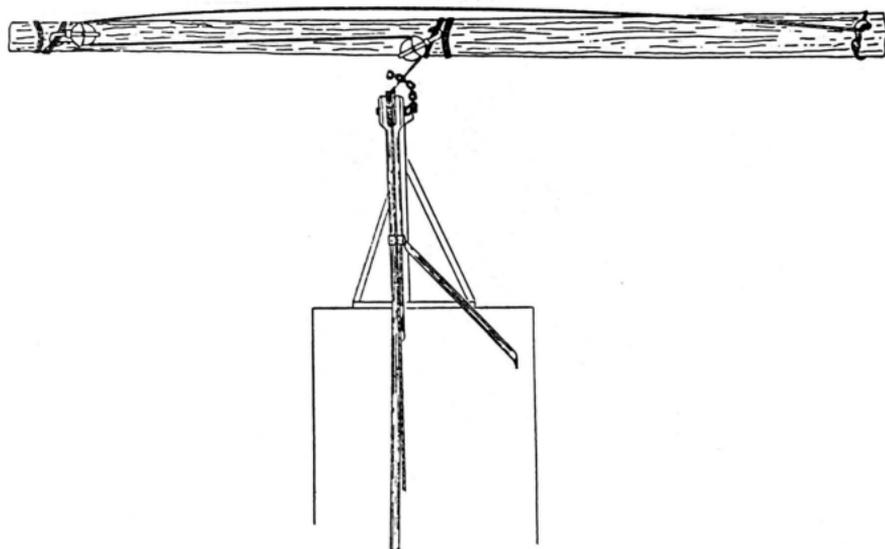
6 The pole shall be raised slowly and the butt of the pole guided by a man, or two men if the pole is heavy. Care should be taken that the pole does not make any quick bumps or bump against the truck body or derrick. Where the pole is being placed in an existing lead the top should be guided carefully up between the wires so that service interference will be avoided. If there is a possibility of the pole coming in contact with any electric supply conductors the work should be done in accordance with Section G21.141.1.



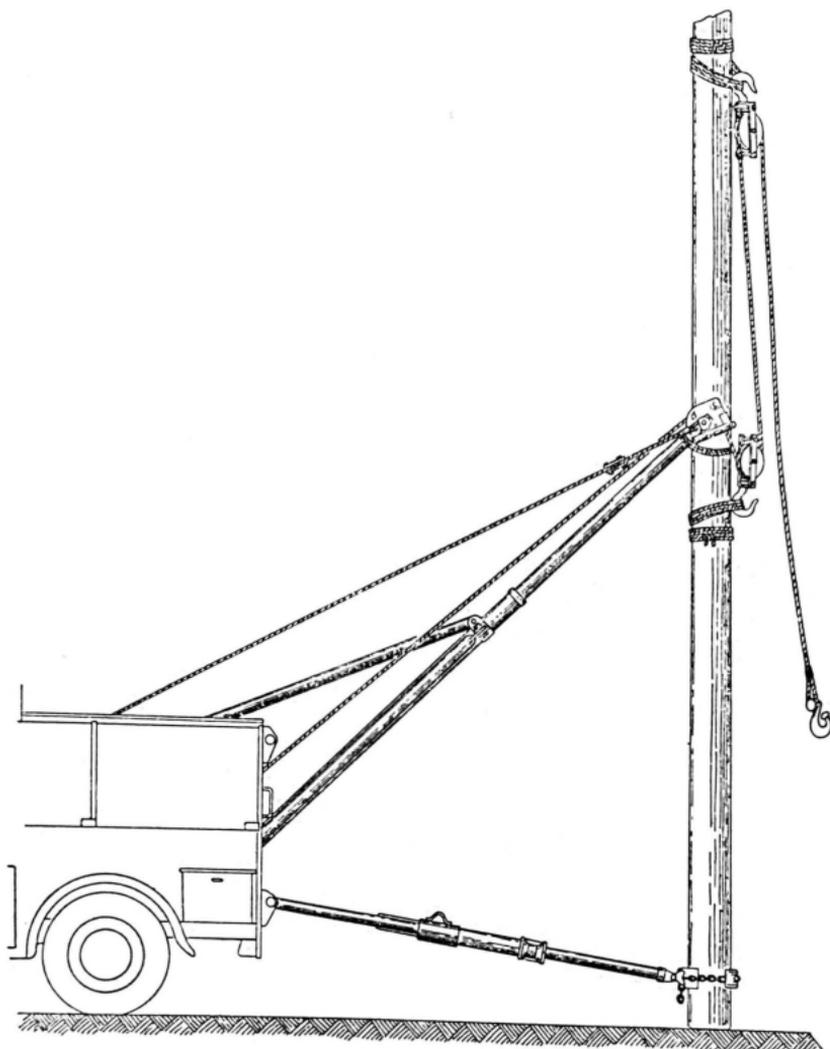
4.07 If it is difficult for a man at the butt of the pole to properly guide the top, the use of pike poles or temporary rope guys to assist in guiding the top may be found desirable.

4.08 When necessary to place poles longer than can be safely handled by the derrick, the winch line may be run directly from the truck to a gin pole and used as outlined in the practices for erecting poles and stubs.

4.09 A special gin pole arrangement using a pole and a pole moving frame as shown may be found desirable for placing some of the longer poles. The pole to be used as a gin should be rigged as shown.



The gin pole should be raised to a vertical position and the PM frame attached near the butt. The pole should be held with the winch line while it is secured to the derrick head with a rope or chain. The fall line can then be released for use in setting the long pole.

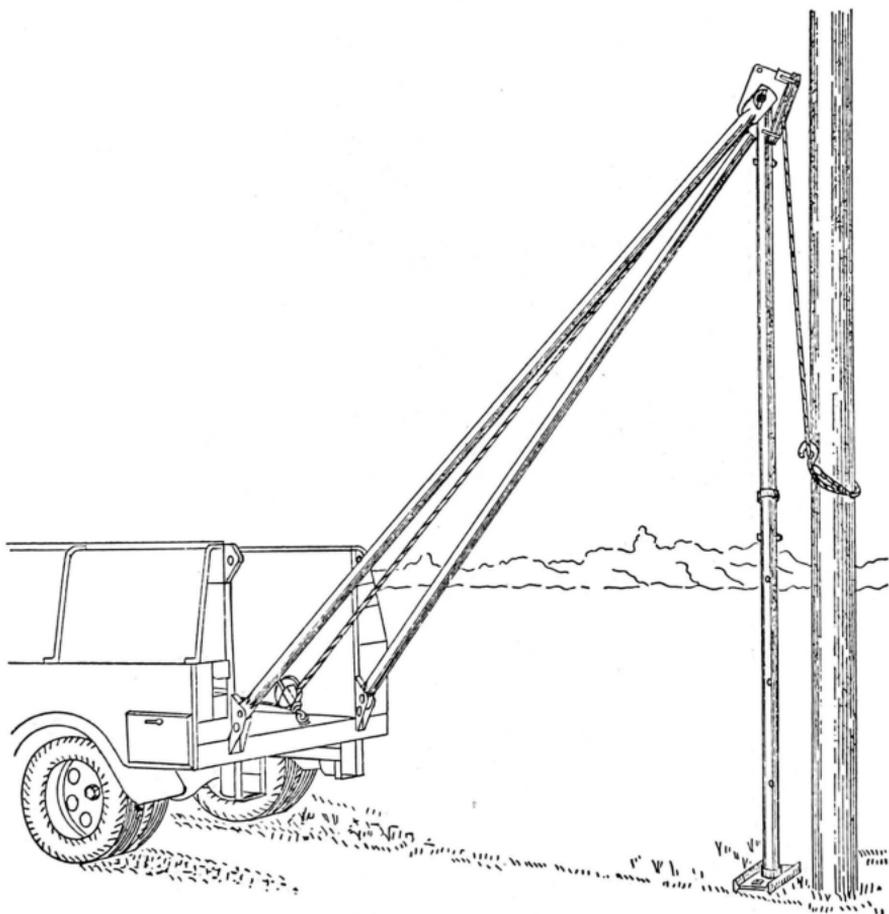


It may be desirable to set the gin pole in a shallow hole. It may also be desirable to temporarily guy the top of the gin pole or the pole being placed or to guy both poles. ↙

## 5. REMOVING POLES

5.01 The operations of removing a pole by means of a derrick are about the same regardless of the type of derrick used.

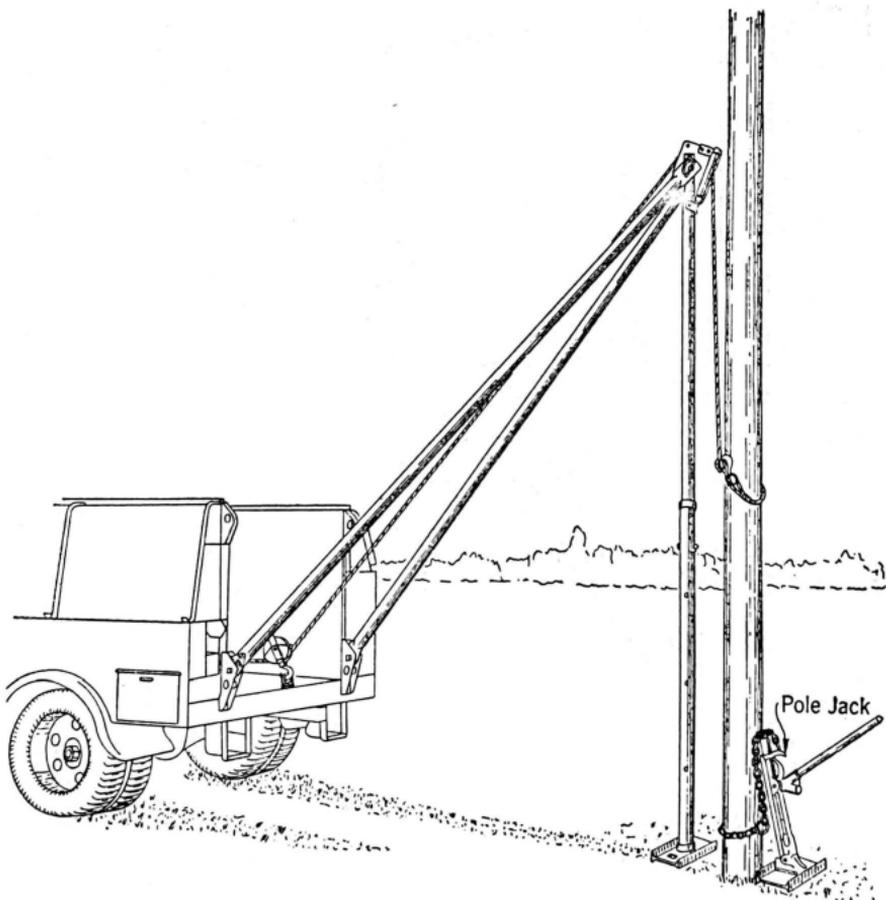
5.02 Unless the pole is to be pulled out of the ground by means of a pole jack the derrick shall always be operated in the ground position. With the middle type derricks the ground position is with the middle leg resting vertically on the ground. With the T type derrick, the ground position is with the vertical prop supporting the derrick head from the ground. With the earth-boring machine derricks, the ground position is with the boom telescoped and the auger locked in the ground position for support.

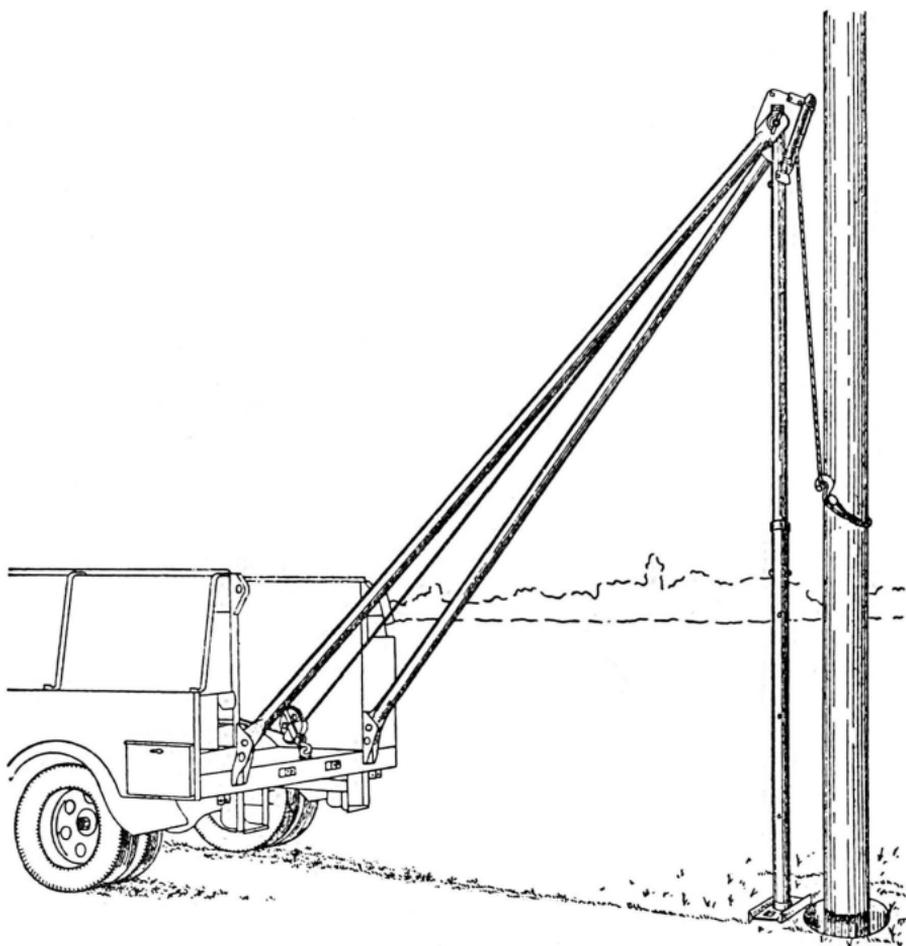


5.03 The location of the truck for removing a pole is the same as that outlined in Paragraphs 4.02 and 4.03 for placing poles.

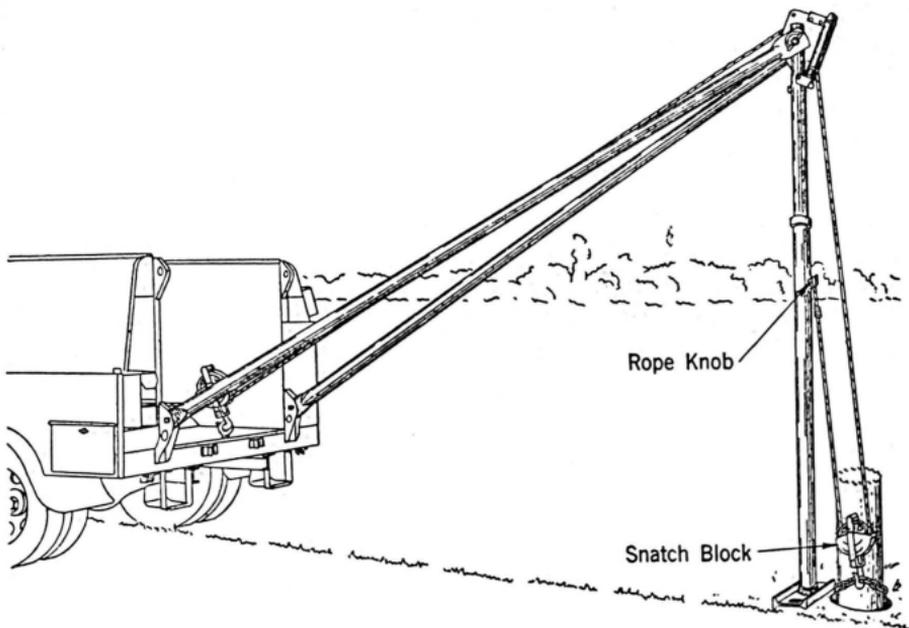
5.04 The attachment to the pole should, if possible, be at a point above the balance point of the pole with its accessories such as crossarms. If impracticable to attach above the balance point or if there is any probability of the pole breaking at the ground line the pole should be adequately guyed with temporary guys or the pole moving frame (see Paragraph 6.05) ← to insure proper control of it during the removal operation. ←

5.05 When pulling any except small poles or poles in loose ground, a pole jack should be used to start the pole, or the ground around the pole should be dug away so that the pulling operation will be less difficult. Pulling on the pole with the line shall be started very slowly so that excessive strain in the winch line and derrick is avoided.



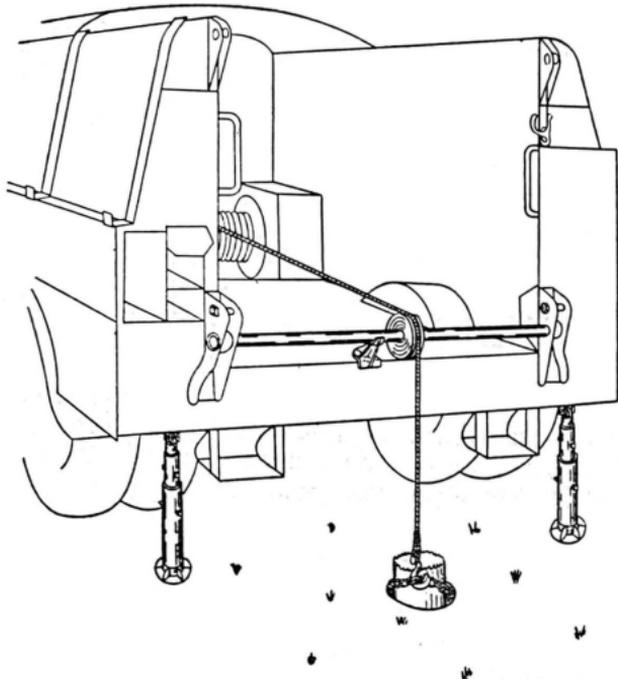


5.06 If it is expected that the pole will be difficult to pull, a double line pull using a snatch block attached to the pole and the end of the winch line attached to the rope knob on the derrick, will be found advantageous. The pole jack should be used to loosen the pole.



5.07 For some pole removal work the use of the winch line running directly to a snatch block attached to a new pole or temporary gin pole may be found more desirable than using the derrick.

5.08 For some work, such as removing short stubs or butts of poles broken or cut off near the ground line, it may be found desirable to pull the pole with the line running directly over a sheave on a spindle bar in the lower position. Where this method is used the same general precautions should be observed as when pulling poles with the derrick.



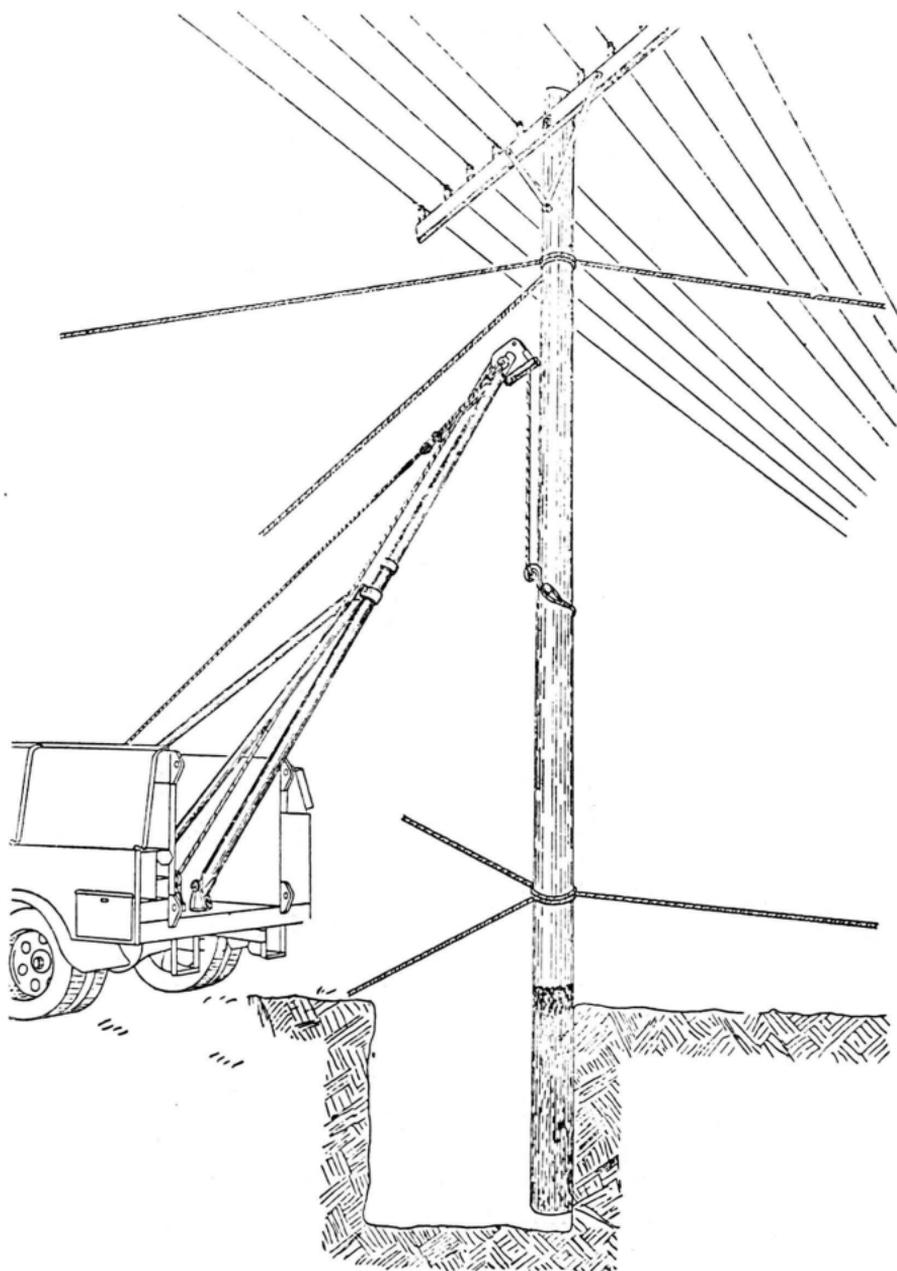
## 6. MOVING POLES

6.01 Moving poles will in general consist of a removal operation and a moving operation. The pole shall be removed in accordance with Part 5.

6.02 Several methods of moving the poles may be used depending on the size of the poles, line attachments carried, length of move and equipment available. In any method of pole moving it is important to place the necessary temporary guys or to securely hold the pole by some other method so that the pole and its load can be properly handled. Where practicable the pole move, with pole supported by the derrick, should be made with the truck moving forward and not backing, as this materially reduces stresses in the derrick members.

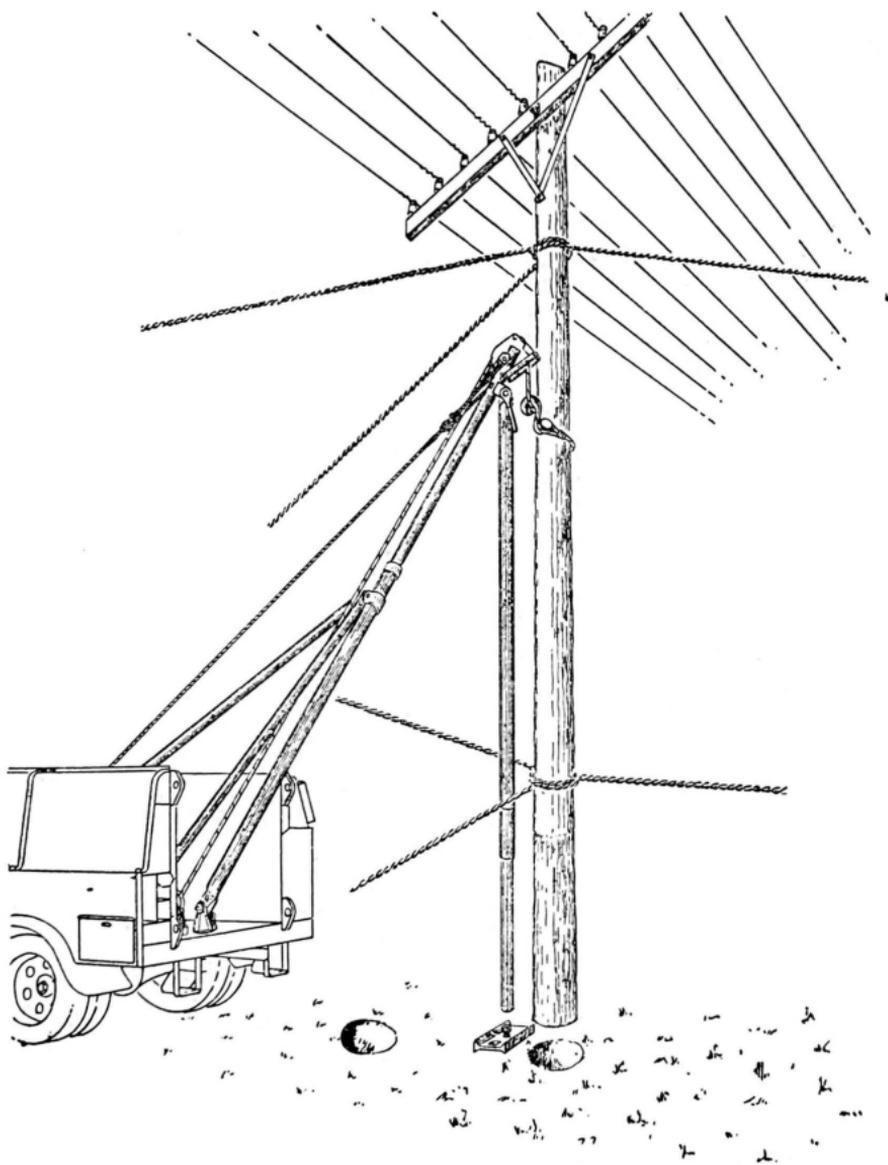
6.03 If the number of poles to be moved is relatively small and the distance of the move is relatively short, the pole can be moved in a short trench dug in the direction of

the move. The top and butt of the pole should be secured with temporary guys.

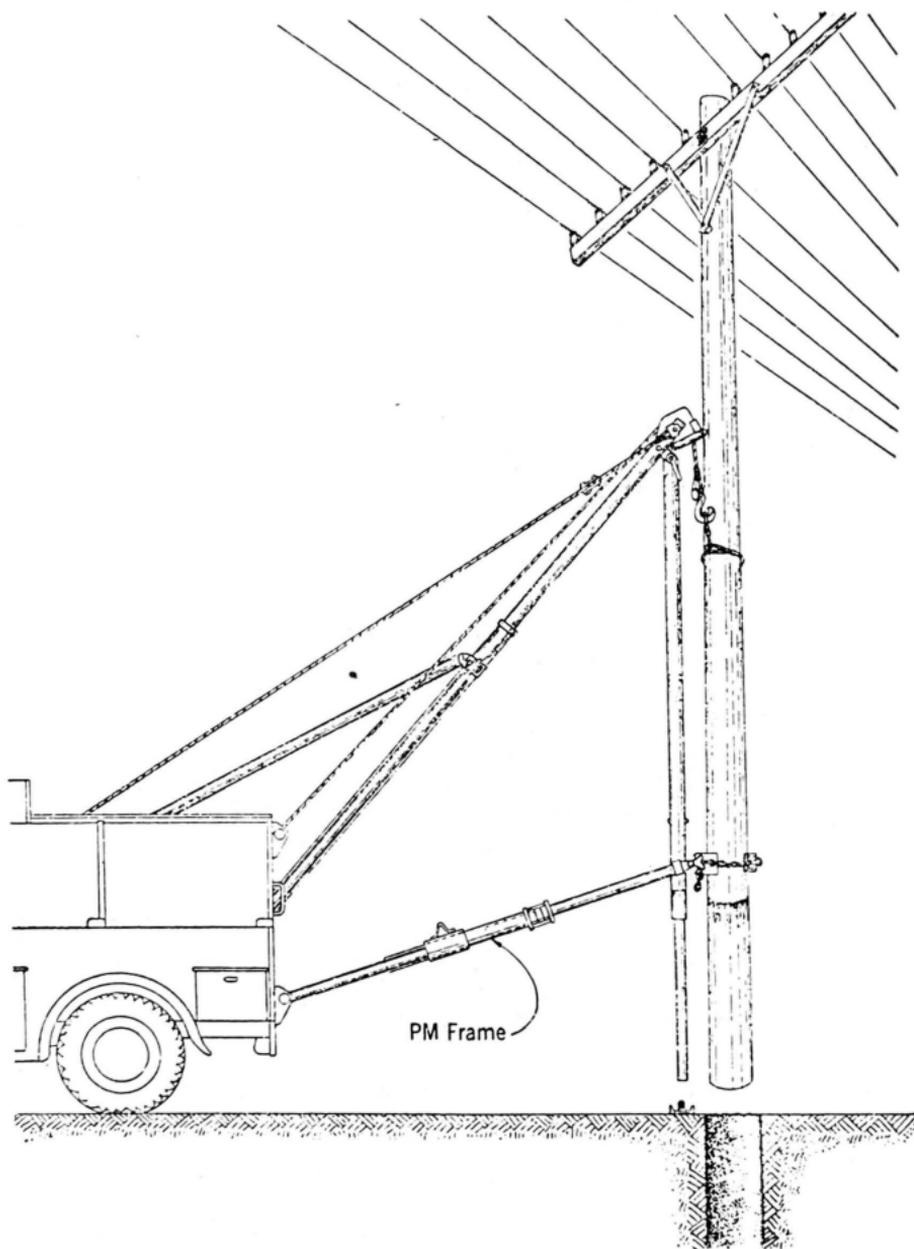


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6.04 It may be found more economical to pull the pole out of the ground and place it in a new hole. When the T type derrick is used the pole can be pulled with the ground prop on the ground and then raised a sufficient amount for the prop and the pole to clear the ground, by means of the boom line. With the middle type derricks it will be necessary to pull the pole with a pole jack. The top and butt of the pole should be secured with temporary guys.

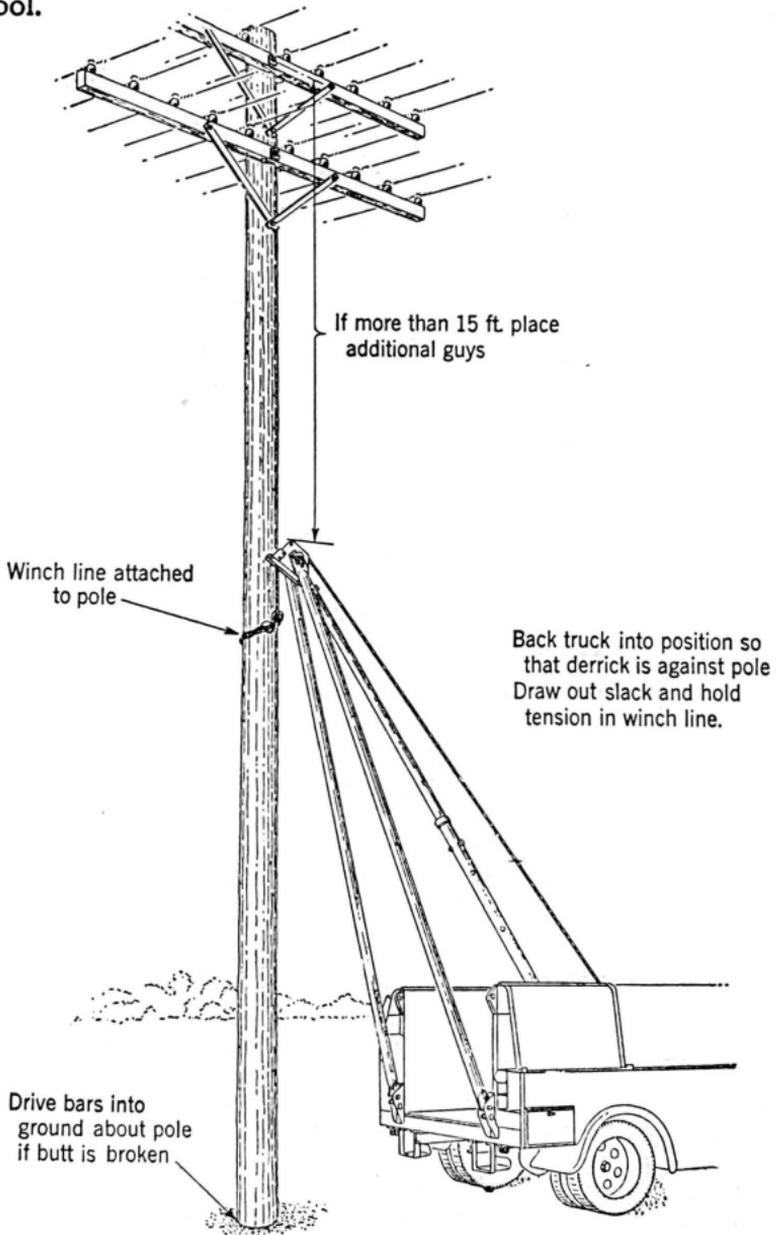


6.05 A pole moving frame attached to the back of the truck as shown in the following figure may be used. This method will eliminate the necessity for temporary guying of the pole during the moving operation. Further details on the use of the PM frame are covered in other practices.



## 7. TEMPORARY GUYING

7.01 For some cases it may be desirable to use the derrick as a means of temporarily supporting a pole. The winch line should be attached to the pole working from the ground and pushed up into position by means of a pike pole or wire raising tool.



## 8. LOADING POLES ON TRAILERS

8.01 Derricks are used to assist in loading poles on to trailers. This operation is covered in Section J6.621.

## 9. UNLOADING AND STORING POLES

9.01 When other methods can not be applied or where other more suitable equipment is not available the use of the derrick may be found advantageous in unloading poles from cars and in arranging poles in the yards for storage.

9.02 If during such work it is necessary to move the truck with a pole suspended from the derrick, the move should be made very slowly and special precautions should be taken to insure that all men stay a reasonable and safe distance from the suspended load. The ends of the suspended pole should be guided by ropes as required. ←

## 10. PLACING AERIAL CABLE LOADING COIL AND APPARATUS CASES

10.01 Placing aerial cable loading coil and apparatus cases should be done in accordance with the standard practices.

10.02 If the derrick is of sufficient height and the loads will not exceed those listed in Section J6.130, pole derricks may be found useful in placing aerial cable loading coils and fixtures. They can be raised directly by the derrick and held at the proper location for attachment.

10.03 If it is difficult to get the truck to the exact position or if other features of the work make it desirable, the winch line can be run directly from the truck to a snatch block on the pole.

## 11. PLACING LARGE CABLE TERMINALS

11.01 In certain cases if the loads will not exceed those listed in Section J6.130 the pole derrick can be used for raising or temporarily holding in place some of the larger cable terminals. When this practice is found desirable the terminal should be lifted by attaching the winch line to a rope sling properly placed around the terminal.

## 12. RAISING AND LOWERING AERIAL CABLE

12.01 When the derrick is high enough to be positioned over the aerial cable that is to be raised or lowered, the derrick can be used as a support for the raising or lowering operation, provided the loads which will be encountered are

within the capacity of the derrick. (See Section J6.130.) If the load exceeds the capacity of the derrick or if the derrick is not high enough it may be found desirable to use the gin pole arrangement outlined in Paragraph 4.09.

12.02 The use of a derrick is particularly valuable when lowering a cable from an aerial position to the ground since the length of travel of the winch line is sufficient to do this in one operation instead of several operations as required by some other types of lowering equipment.

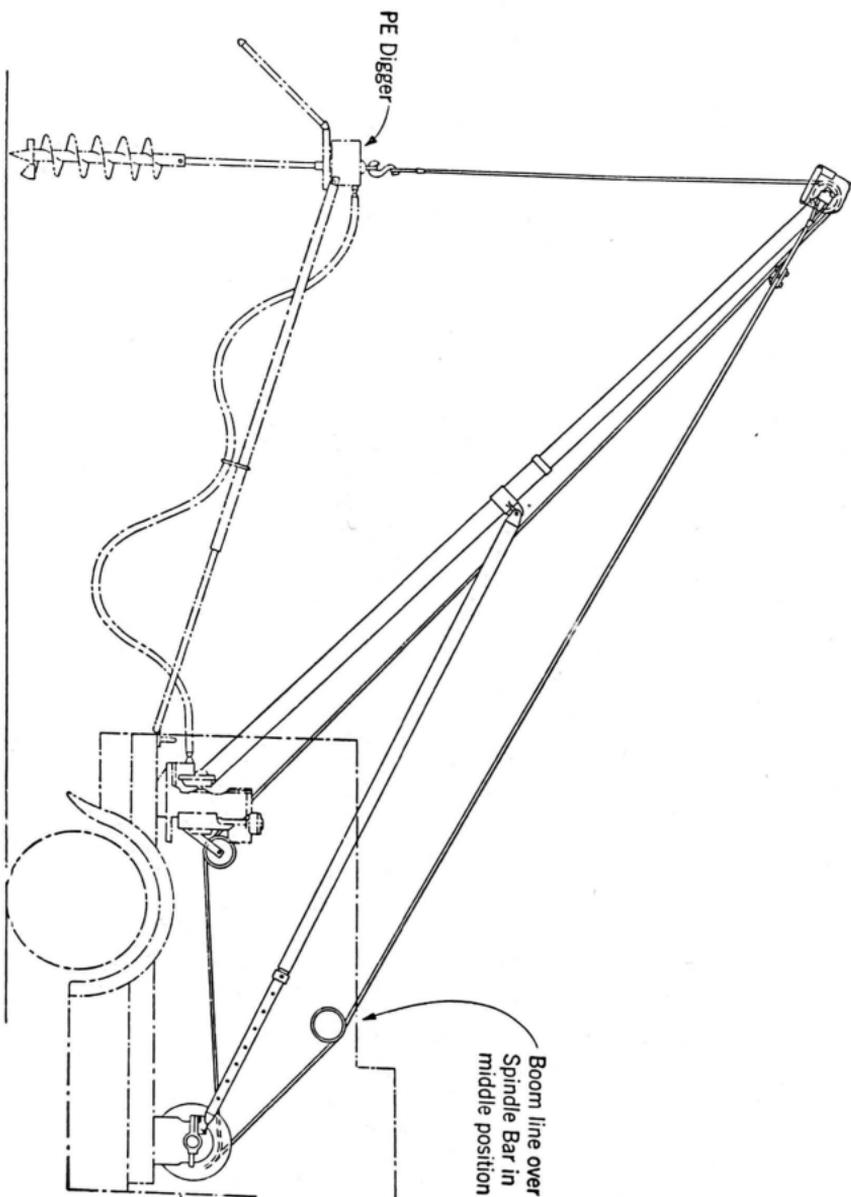
### **13. REMOVING LARGE TREE LIMBS**

13.01 The pole derrick may be of considerable assistance in removing large tree limbs particularly those which are close to an aerial wire line, over fences or other structures. When using the derrick for this purpose, care should be taken not to underestimate the weight of the limb and in all cases the attachment should be made as near to the balance point of the limb as practicable. Other features of tree pruning work should be done in accordance with the practices for this work.

### **14. OPERATION WITH SMALL EARTH-BORING MACHINES**

14.01 Pole derricks are often used as a point of support to raise and lower small earth-boring machines such as the PE digger. Care must be used in doing this type of work since, if not properly conducted, it may result in loads beyond the capacity of the derrick, as listed in Section J6.130.

14.02 In all cases where the T type derricks are used to operate a digger the boom line shall be run over the sheave on the spindle bar in the middle position.



14.03 The derrick should be operated with the minimum overhang and the steepest working angle practicable for the particular location. ↗

14.04 When starting to raise a loaded auger, a very slow winch line speed should be used and, in general, it is desirable to start this raising operation while the auger is still rotating. In normal digging this method of operation will assist in avoiding overloads due to the auger cutting under obstructions, having anchored itself in the ground or being held in wet holes by the vacuum created in removing the auger.

14.05 The operating instructions for the earth-boring machines should be carefully observed at all times. ↙