



# Journeyman Events



**2008 FLORIDA LINEMEN'S COMPETITION**

# Journeyman Events



## 12 KV DEAD END INSULATOR CHANGE OUT

*Mean Time: 12 minutes*

### Event Summary

This event consists of replacing a dead end insulator on an energized 12kv single-phase line using rated hot sticks.

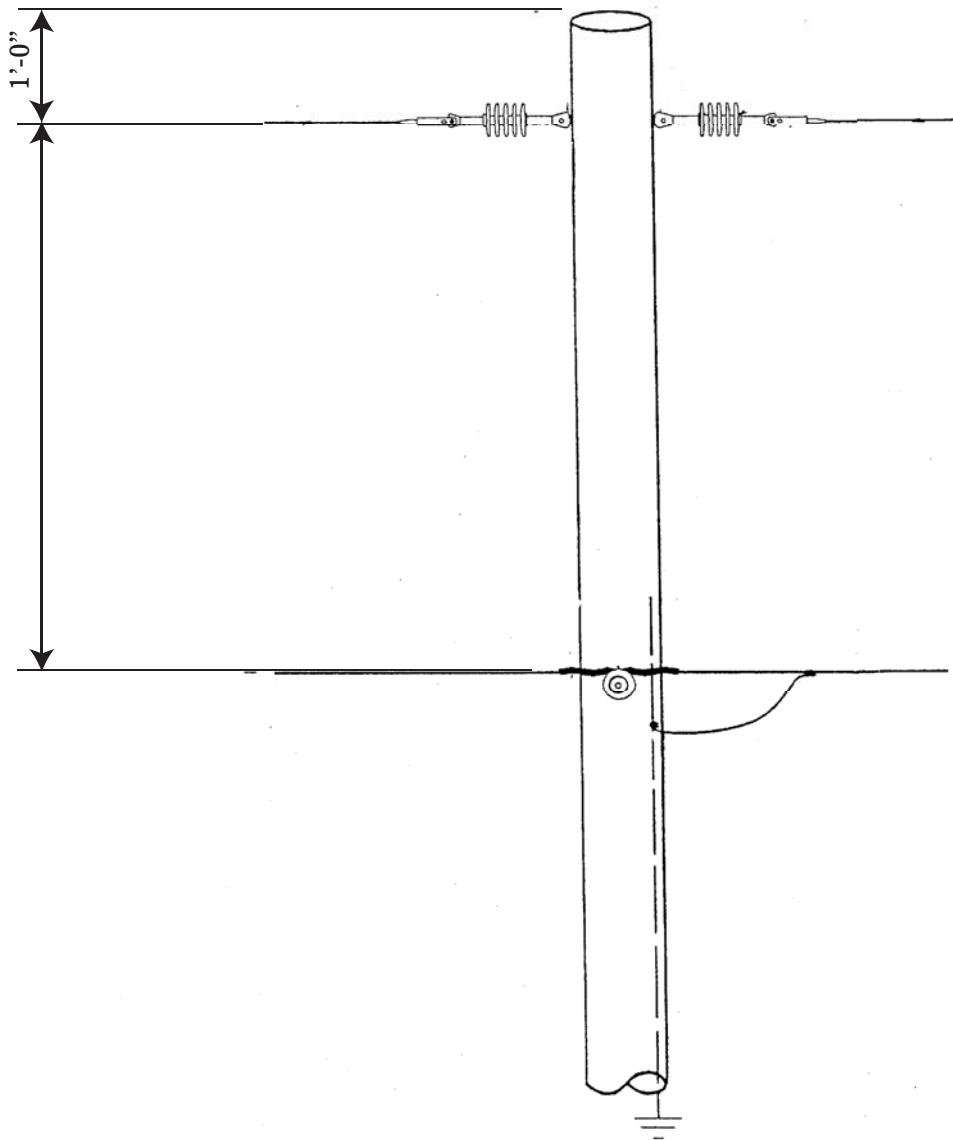
### Event Specifications

- The Conductor will be #1/0 AAAC
  - The primary will be worked with Hot-Sticks maintaining minimum approach distances as required by the National Electrical Safety Code.
  - Hard cover must be applied with rated shotgun sticks only.
  - A rated hot link stick must be utilized on the conductor hoist/blocks.
  - Two points (Both Hands) of positive control must be maintained at all times by the lineman holding the energized jumper.
- 
1. See General Rules and Additional General Rules
  2. Teams will be allowed a five-minute setup time before starting the event.
  3. Time will start when the first climber contacts the pole with his hook.
  4. Time will stop when the last climber has both feet on the ground.
  5. Climbers must wear class II or higher rubber gloves ground to ground.
  6. The neutral must be covered with rated cover.
  7. The primary must be covered with rated hard cover

## 12 KV Dead End Insulator Change out



Top View



Front View

# INS106

# Journeyman Events



## ARRESTER CHANGEOUT CAPACITOR BANK

*Mean Time: 10 minutes*

*Drop Dead Time: 15 minutes*

### Event Summary

This is a simulated 12kV event. The team is required to de-energize a 3-phase 300kVar capacitor bank with a load break device and disconnect the primary jumpers. You are also required to short out each capacitor with the grounding wire provided, after the bank has been de-energized. In the interest of completing the event in a timely manner, the normal five minute waiting period upon de-energizing the capacitors and shunting them will be waived but you must inform the judge that you are aware of this. The center phase arrester must be removed and replaced. Then the jumpers can be re-installed and the bank re-energized using the appropriate sticks. You must maintain Minimum Approach Distance at all times. You must cover up anything you will encroach.

### Event Specifications

1. See General Rules and Additional General Rules
2. Teams will be allowed a 5-minute setup time before starting the event. All tools must be laid out on a competitor-supplied tarp in the designated work area.
3. Time starts when the first climber hits the pole.
4. Team must de-energize the bank, change out the arrester, and re-energize the bank.
5. Team will receive a 10-point deduction for coming in contact with energized jumpers, not shorting out the capacitor(s), encroaching on the M.A.D., and/or not using a load break device.
6. Time stops when last climber touches the ground.

### Teams will provide their own:

12 X 12 tarp max.  
Hot sticks  
Load break device  
Handline

## Arrestor Changeout Capacitor Bank

# Journeyman Events



## CROSS ARM CHANGE OUT

*Mean Time: 8 minutes*

*Drop Dead Time: 15 minutes*

### Event Summary

In this event the three phase conductors (1/0 AAAC) are considered dead and grounded. The existing 8 ft. light cross arm, wrap-lock ties, pierce pins and insulators must be replaced. A complete set of all necessary hardware will be available on the ground at each event pole. New cross arm, pins and insulators may be assembled before time starts. Linemen will replace existing cross arm with new equipment and send old cross arm down to the ground, re-secure conductors with new wrap-lock ties. All insulators must be removed from arm with nut/square washer back on pierce pins and separated from insulators before event is considered complete.

### Event Specifications

1. See General Rules and Additional General Rules
2. Teams will be allowed a 5-minute setup time before starting the event. All tools must be laid out on a competitor-supplied tarp in the designated work area.
3. Time starts at the judge's signal.
4. The new cross arm may be made up before the event starts.
5. Linemen may assist the groundman with rigging the new cross arm but will not be allowed to wear climbing tools while assisting.
6. Conductors can be floated.
7. Conductors are secured on a pierce pin and porcelain insulator (see photo) with 1/0 AAAC wrap lock ties. (Screwdriver may be used to remove wrap lock ties, no knives or pliers)
8. After new cross arm is installed, conductors must be re-secured with wrap-lock ties. (Screwdriver may be used to install wrap lock ties, no knives or pliers)
9. The old rubber grommet may not fall to the ground, nor can the new one.
10. Time stops when both Linemen are back on the ground and handline is made up.

### Teams will provide their own:

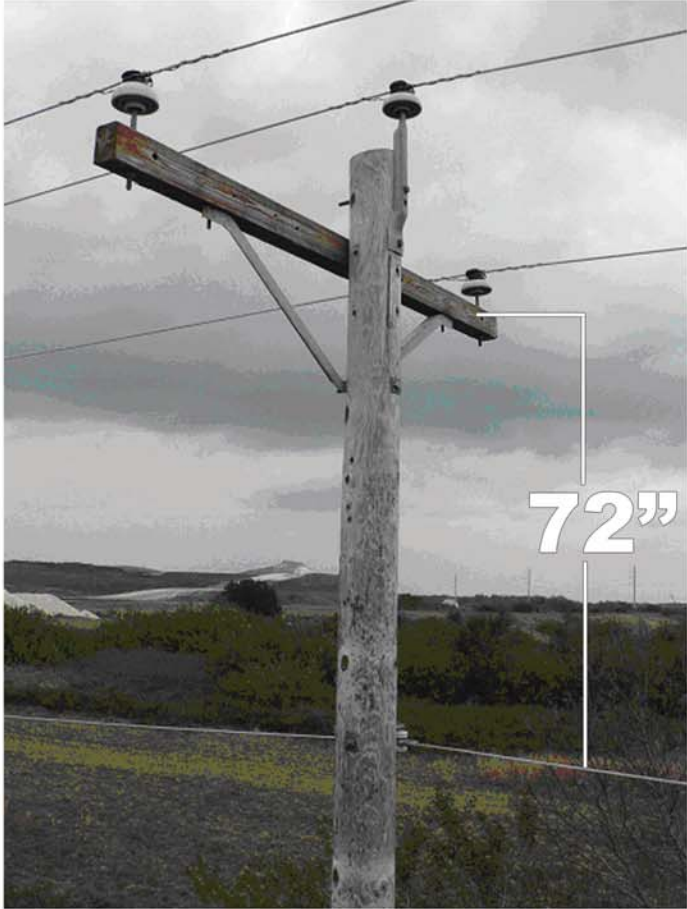
12 X 12 tarp max.

Handline

Climbing tools

Hand tools

## Cross Arm Change Out



# Journeyman Events



## HURT MAN RESCUE

*Mean Time: 2 minutes*

*Drop Dead Time: 4 minutes*

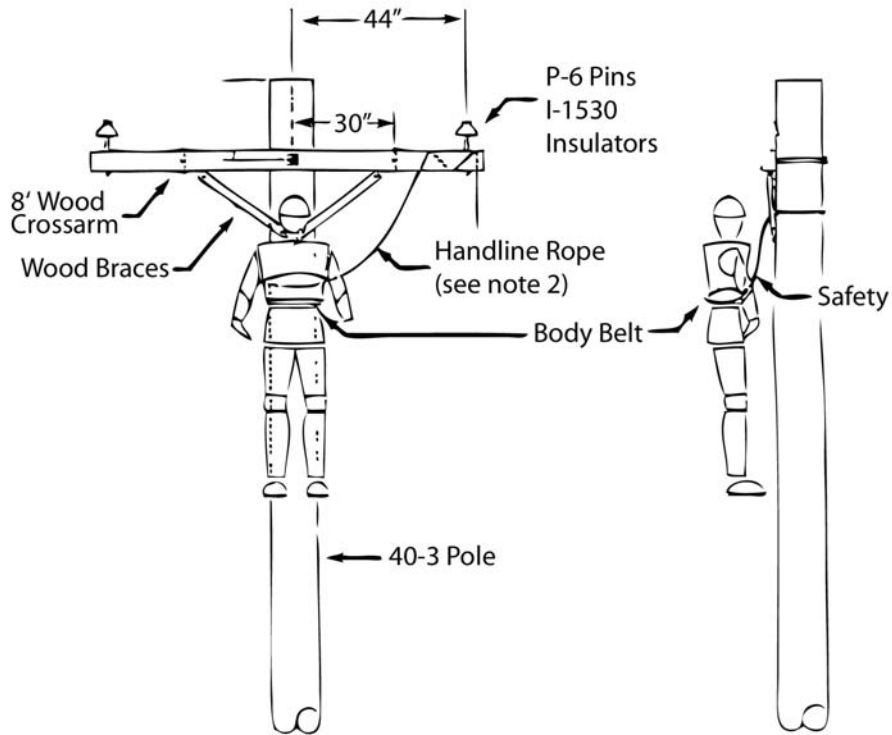
### Event Specifications

*Simulated Hot from a 40-ft Pole*

1. Time starts at the judge's signal with the lineman standing at least an arm's length from pole in any direction.  
*Note: The lineman's belt and hooks will be lying on the ground at arms length. Rubber gloves will be inside the glove bag cuffs down and fingers up at he start of the event. If fingers protrude outside the bag the flap must be snapped. Rubber gloves are required ground to ground.*
2. Looking at the pole from the cross arm side, the hand line will be hung on the right side simulating an injury to a right-handed person. The hurt man will hang on the cross arm side of the pole with both ends of the safety straps through the braces.  
*Note: Always take a minimum of one complete wrap around the cross arm before lowering the hurt man.*
3. Mannequin should be tied under arms with three half hitches.  
*Note: (Eye splice should not be used as part of the hitches.) The half hitch is the only acceptable knot. A 3" conduit will be used to measure tightness of knot.*
4. Be sure to call out "headache" loudly when you drop your hand-line sheave. The sheave shall be dropped in the 5' circle radius at the base of the pole.
5. A Bashlin belt 57-N will be used on the mannequin. You must cut the Bashlin 57-A insert. There will be a 10 point deduction for cutting the belt in the wrong place.
6. Mannequin must be lowered smoothly to the ground without coming into contact with the pole. Time will stop when the mannequin is on the ground.
7. Lineman must climb down the pole smoothly and safely. Lineman must not come in contact with handline during decent.  
*Note: There must be one gaff in the pole at all times when climbing down the pole. Lineman will be judged during this time.*
8. Contestants must use the hand-line provided.
9. Times will be averaged.
10. Deductions will be subtracted from 100, resulting in the final score.
11. The ground-man will assist in hanging the mannequin for the next team.

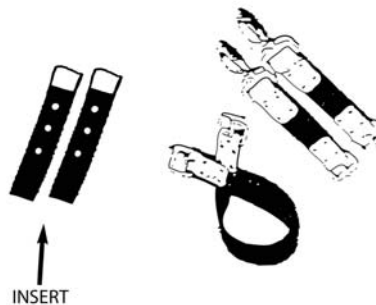
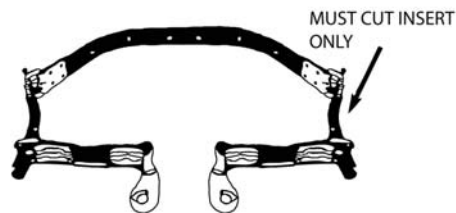


## Hurtman Rescue Pole



### Notes:

1. Do not use locknuts anywhere.
2. Lineman is to use one complete loop of rope over crossarm with rope going from inside the pin to outside the pin. Use three half hitches on dummy, under the arm pit. (Splice cannot be part of the half hitches.)



# Journeyman Mystery Events



## 88 KV INSULATOR TRANSFER

*Mean Time: 20minutes*

*Drop Dead Time: 25 minutes*

### Event Summary

Teams will transfer an 88 kV post type insulator on the center phase of the energized 46kV line using hotsticks to support the conductor. The bottom phases must be covered before climbing above them. The center phase must be raised high enough to be out of the minimum approach distance of 2'- 9" while insulator is being transferred from existing pole to the other pole. Insulator may not be handed from pole to pole; hand lines and insulator sling must be used to pass insulator between poles. Both wire tongs may be rigged with a block and a straight line so that the groundman can control the phase from the ground while raising and lowering. Time will stop when both Linemen are back on the ground. Judging will continue until all tools and material have been put back in original order on the tarp.

### The following tools will be provided:

- |                               |                        |
|-------------------------------|------------------------|
| 1- Tarp                       | 1- Insulator sling     |
| 2- 1 ½' Wire Tongs            | 2- Straight lines      |
| 2- 1 ½" Saddles               | 2- Single blocks       |
| 1- Handline                   | 2- Collar ropes        |
| 1- Universal stick            | 2- Shot gun sticks     |
| 1- Hotstick ratchet w/ socket | 4- Stove pipes         |
| 1- Universal Attachment       | 2- Stove pipe couplers |

### Teams will provide there own:

- Hand line
- Climbing tools
- Hand tools

- Climbing tools
- Handline or tagline
- Nose bag

# Journeyman Mutual Aid Mystery Event



## INSTALL & DISASSEMBLE A SIDEWALK GUY

*Mean Time: 3 Minutes*

*Drop Dead Time: 5 Minutes*

*Setup Time: 5 Minutes*

### Event Summary

This will be the first event of the day. Each Mutual Aid team will consist of three Apprentice Linemen from different Journeymen teams selected by a random drawing prior to competition and announced during the teams Q & A meeting. This Event will demonstrate teamwork in installing a sidewalk guy from the ground. Each team will attach a 5' by 2" diameter rigid galvanized pipe to a wood pole, then attaching an existing 5/16-alumoweld-guy wire to the galvanized pipe and existing anchor.

### Event Specifications

1. The time will start at the command of the chief judge of this event
2. During setup all teams will be allowed to gather and lay out all material and tools.
3. Teams will not be allowed to assemble any material during setup time.
4. Each team will assemble and attach a 5' by 2" diameter rigid galvanized steel pipe to pole.
5. All material must be properly assembled and snugged using proper hand tools

*Teams will attach the existing guy wire to the 5' by 2" rigid galvanized steel pipe; attach a 2' helix anchor adapter to anchor and deadend the existing guy wire to the anchor using a guy anchor attachment, guy grip, chain hoist and a preformed guy deadend.*

6. The guy wire preformed deadend shall be wrapped completely onto the guy wire, Do Not Cut tails of guy wire.
7. The guy wire shall be pulled to tension; no slack shall be left in the guy wire.
8. The 5' by 2" rigid galvanized pipe should be level after guy wire is pull to tension.
9. Teams shall install the guy guard on the guy wire.

*Time shall stop when the team member attaching the guy guard completes the attachment and calls time.*

*Though the time has stopped the team will continue to be judged until all material is disassemble.*



# Apprentice Events



# Apprentice Events



## CHANGE OUT LAMP & PHOTOCELL

*Mean Time: 3 minutes*

*Drop Dead Time: 5 minutes*

### Event Summary

This event will test the apprentices climbing skill, dexterity and speed. The apprentice will climb a 30' wood pole and change out a lamp and photocell on a cutoff type street light with a 4' streetlight arm (*see photo below*).

***Personal Protective Equipment including Hard Hats, Work gloves and Safety glasses are required for this event.***

### Event Specifications

1. See General Rules and Additional General Rules
2. Apprentice will be allowed a 5-minute setup time before starting the event.
3. Time starts at the judge's signal.
4. The apprentice will have a handline connected to a tool or nose bag, with a lamp and photocell in it.
5. Once the apprentice has ascended the pole he will pull the bag up to him with the handline and tie it off to secure the bag .
6. He then will proceed to remove the photocell and then the lamp in that order.
7. He will take the new lamp from the bag and install it into the head and then install photocell completing the task.
8. He then must lower the tool or nose bag to the ground and descend the pole.
9. Once on the ground apprentice must make up handline and call time.

### **Apprentices will provide their own:**

Climbing tools

Handline or tagline

Nose bag



# Apprentice Events



## HURTMAN RESCUE

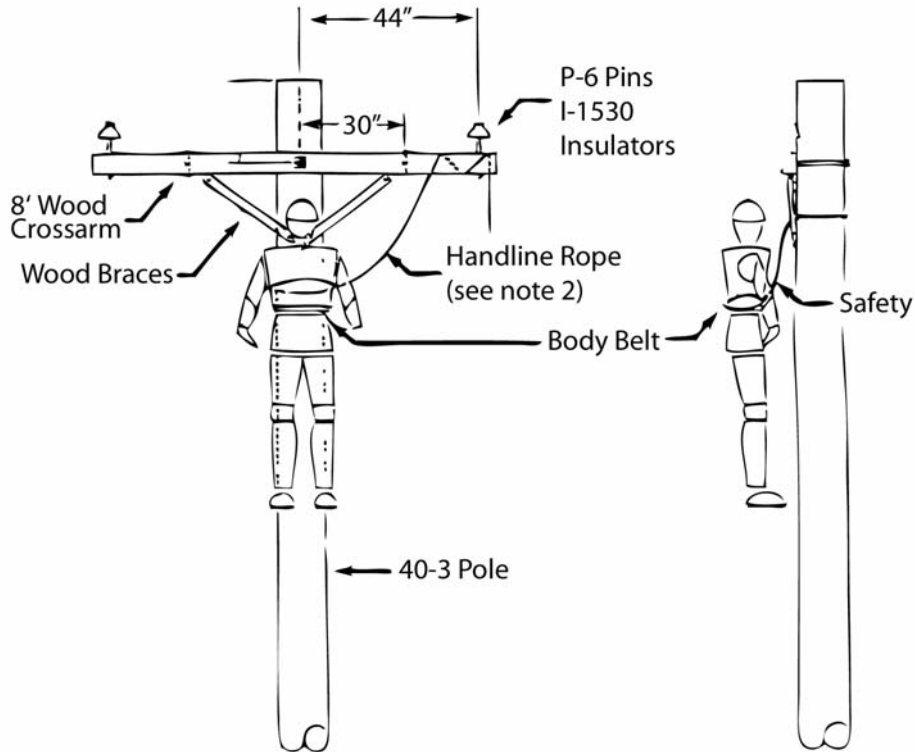
*Mean Time: 2 minutes*

*Drop Dead Time: 4 minutes*

### Event Specifications

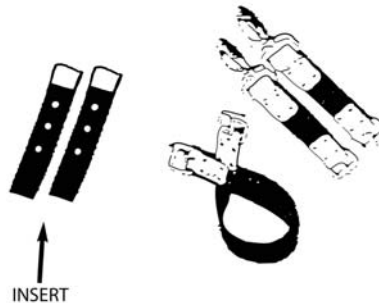
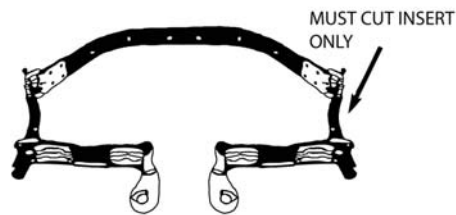
1. Time starts at the judge's signal with Apprentice standing at least an arm's length from pole in any direction.  
*Note: The Apprentice's belt, hooks, and rubber gloves will be lying on the ground at arms length.*
2. Looking at the pole from the cross arm side, the hand line will be hung on the right side simulating an injury to a right-handed person. The hurt man will hang on the cross arm side of the pole with both ends of the safety straps through the braces.  
*Note: Always take a minimum of one complete wrap around the cross arm before lowering the hurt man.*
3. Mannequin should be tied under arms with three half hitches.  
*Note: (Eye splice should not be used as part of the hitches.) The half hitch is the only acceptable knot. A 3" conduit will be used to measure tightness of knot.*
4. Be sure to call out "headache" loudly when you drop your hand-line sheave. The sheave shall be dropped in the 5' circle radius at the base of the pole.
5. A Bashlin belt 57-N will be used on the mannequin. You must cut the Bashlin 57-A insert. There will be a 10 point deduction for cutting the belt in the wrong place.
6. Mannequin must be lowered smoothly to the ground without coming into contact with the pole. Time will stop when the mannequin is on the ground.
7. Apprentice must climb down the pole smoothly and safely. Apprentice must not come in contact with handline during decent.  
*Note: There must be one gaff in the pole at all times when climbing down the pole. Apprentice will be judged during this time.*
8. Contestants must use the hand-line provided.
9. Rubber gloves will be required for this event.
10. Deductions will be subtracted from 100, resulting in the final score.

## Hurtman Rescue Pole



### Notes:

1. Do not use locknuts anywhere.
2. Lineman is to use one complete loop of rope over crossarm with rope going from inside the pin to outside the pin. Use three half hitches on dummy, under the arm pit. (Splice cannot be part of the half hitches.)



# Apprentice Events



## INSULATOR CHANGE OUT

*Mean Time: 4 minutes*

*Drop Dead Time: 6 minutes*

### Event Summary

In this event the three phase conductors (1/0 AAAC) are considered dead and grounded. The existing 8 ft. wood cross arm has a damaged insulator on one end and must be changed out. Wrap-lock tie, pierce pin with square washer, and insulator must be replaced. A complete set of all necessary hardware will be available on the ground at each event pole. The material may be rigged during set up time. The apprentice will take a hand line up the pole. A nose bag with the insulator and tie wire must be attached to the hand line. The apprentice must raise the new hardware in the bag by himself. The apprentice must lower the old hardware in the bag safely to the ground. The apprentice must notify judge before railroading block and dropping out the handline. Time will stop when apprentice returns to the ground and has made up the handline.

### Event Specifications

1. See General Rules
2. Apprentice will be allowed a 5-minute setup time before starting the event.
3. Time starts at the judge's signal.
4. The new insulator will already be rigged.
5. The apprentice will not be allowed to wear climbing tools while setting up.
6. Conductor can be floated.
7. Conductors are secured on a pierce pin and porcelain insulator with 1/0 AAAC wrap lock ties. (A screwdriver may be used to remove wrap lock tie, no knives or pliers.)
8. After new insulator is installed, the conductor must be re-secured with wrap-lock tie. (A screwdriver may be used to install wrap lock ties, no knives or pliers.)
9. The old rubber grommet may not fall to the ground, nor can the new one.

### Apprentices will provide their own:

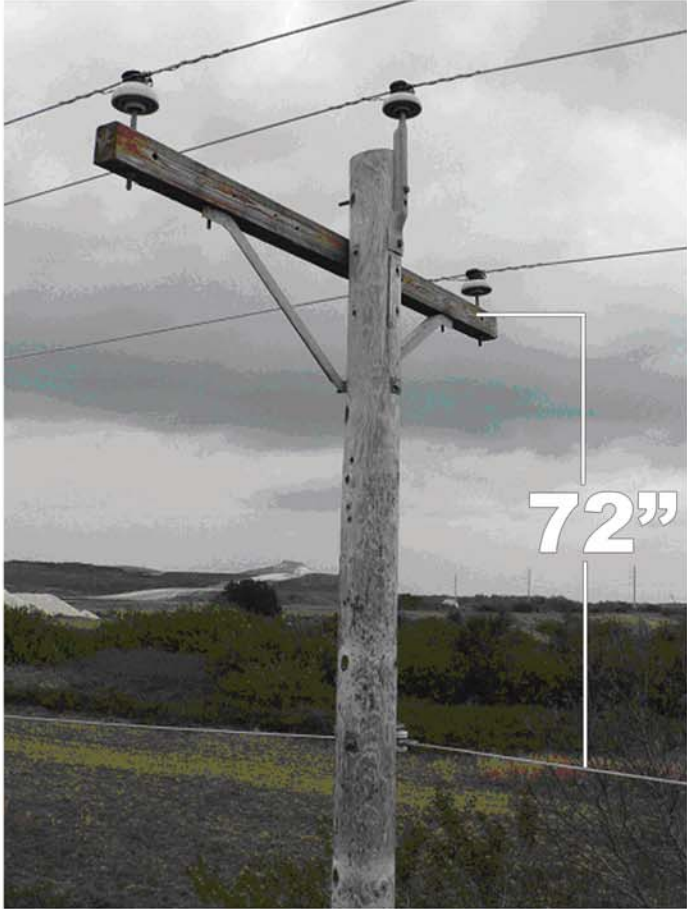
Handline

Nose bag

Climbing tools



## Insulator Change Out



# Apprentice Events



## SINGLE PHASE TIE IN

*Mean Time: 8 minutes*

*Drop Dead Time: 12 minutes*

### Event Summary

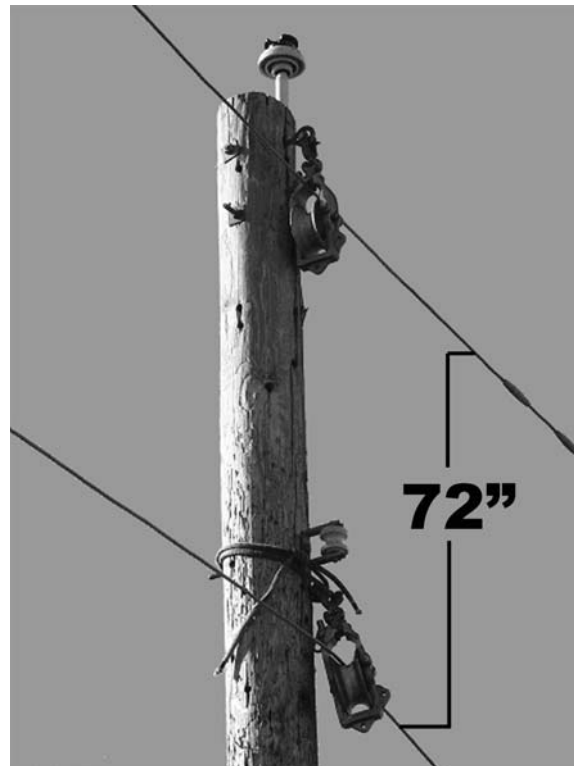
In this event the apprentice must tie in (per Linemen's Handbook) the single phase 1/0 AAAC primary and neutral. Travelers will remain on the pole.

### Event Specifications

1. See General Rules
2. The apprentice will be allowed a 5-minute setup time before starting the event.
3. Hardhat, safety glasses, and leather gauntlet gloves are required (Rubber gloves are not required.)
4. Time starts at the judge's signal
5. The apprentice will have to provide his own handline.
6. Install line guards on neutral.
7. Put neutral in clevis and tie in with a #4 aluminum cold tie.
8. Install line guards on primary
9. Put primary on pole top insulator and tie in with a #4 aluminum cold tie.
10. Time will stop after the last tie is complete.
11. Judging will continue until the apprentice has removed the line guards and tie wires, installed conductors back in the travelers and safely climbed to the ground.

### Apprentices must provide their own:

Handline  
Nose bag  
Climbing tools



# Apprentice Mystery Event



## OBSTACLE COURSE

*Mean Time: 15 minutes*

*Drop Dead Time: 20 minutes*

### Event Summary

The Apprentice will climb a 35 ft. pole and perform specific tasks on three different cross arms. All hardware will be mounted on 8ft. light cross arms with flat steel braces. The cross arms will be mounted 90 degrees of each other and spaced 5 ft. apart.

### Event Specifications

1. Time starts at the judge's signal with the Apprentice standing an arm's length from pole.
2. Apprentice must start work at top of pole and work down.
3. Work gloves with a gauntlet must be worn at all times.
4. Climb to top of pole, remove switch and install on opposite side of cross arm.
5. Descend to next cross arm remove insulator and install on opposite side of cross arm.
6. Descend to double cross arms, remove bells and install on opposite side of cross arm.
7. The switch will be a 15kV Chance type.
8. The insulator will be 35kV post type.
9. The bells on the double arms will three - 4" porcelain.
10. Apprentice must have a handline at all times.
11. Any tools or hardware dropped will be sent back up by the judge.
12. The time stops when Apprentice is down and has handline made up.

### Apprentices will provide their own:

Handline

Climbing tools

Hand tools

# Apprentice Mutual Aid Mystery Event



## INSTALL & DISASSEMBLE A SIDEWALK GUY

*Mean Time: 3 Minutes*

*Drop Dead Time: 5 Minutes*

*Setup Time: 5 Minutes*

### Event Summary

This will be the first event of the day. Each Mutual Aid team will consist of three Apprentice Linemen from different Journeymen teams selected by a random drawing prior to competition and announced during the teams Q & A meeting. This Event will demonstrate teamwork in installing a sidewalk guy from the ground. Each team will attach a 5' by 2" diameter rigid galvanized pipe to a wood pole, then attaching an existing 5/16-alumoweld-guy wire to the galvanized pipe and existing anchor.

### Event Specifications

1. The time will start at the command of the chief judge of this event
2. During setup all teams will be allowed to gather and lay out all material and tools.
3. Teams will not be allowed to assemble any material during setup time.
4. Each team will assemble and attach a 5' by 2" diameter rigid galvanized steel pipe to pole.
5. All material must be properly assembled and snuged using proper hand tools

*Teams will attach the existing guy wire to the 5' by 2" rigid galvanized steel pipe; attach a 2' helix anchor adapter to anchor and deadend the existing guy wire to the anchor using a guy anchor attachment, guy grip, chain hoist and a preformed guy deadend.*

6. The guy wire preformed deadend shall be wrapped completely onto the guy wire, Do Not Cut tails of guy wire.
7. The guy wire shall be pulled to tension; no slack shall be left in the guy wire.
8. The 5' by 2" rigid galvanized pipe should be level after guy wire is pull to tension.
9. Teams shall install the guy guard on the guy wire.

*Time shall stop when the team member attaching the guy guard completes the attachment and calls time.*

*Though the time has stopped the team will continue to be judged until all material is disassemble.*