



# FLORIDA LINEMAN COMPETITION

# JOURNEYMEN EVENTS

## **CROSS ARM CHANGE OUT**

Mean Time: 8 minutes

Drop Dead Time: 15 minutes

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. Lineman 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.

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 ground man 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 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.

Climbing tools

Handline

Hand tools

# JOURNEYMAN EVENTS

FMEA 9<sup>th</sup> Annual Florida Lineman Competition • February 27 - 28, 2009 Orlando, FL



## ***Vertical Hurtman Rescue***

Mean Time: 4 minutes

Drop Dead Time: 8 minutes

This team event will be run one time with all three team members participating to rescue the hurtman. Teams have 5 minutes to set up and ask questions. The switch (cutout) feeding the transformer must be opened before the climber can step onto the pole. It will be opened from the ground using an extendo stick and rubber gloves. The stick must be off the ground and the body anytime it is touching anything energized. The climber must wear rubber gloves ground to ground. Lineman will split handline and loop bottom part of handline around mannequin's legs. Then take the top part and wrap around the pole a minimum of one and a half wraps, take the rope under mannequin's arms and tie three half hitches (the splice cannot be part of the knot). The mannequin can then be lowered to the ground while the third member of the team uses the bottom part of handline tied to the mannequin's legs to pull mannequin on to the tarp. You must attempt to keep the mannequin off of the pole and hardware. There will be NO gigs for incidental contact of the mannequin on the pole, neutral or service provided the tagman is making an honest attempt. The mannequin must land with all of this body on the tarp provided, and he must hit the ground gently as if it were a real person. A 10x10 tarp will be provided and placed 5' from pole centered under switch.

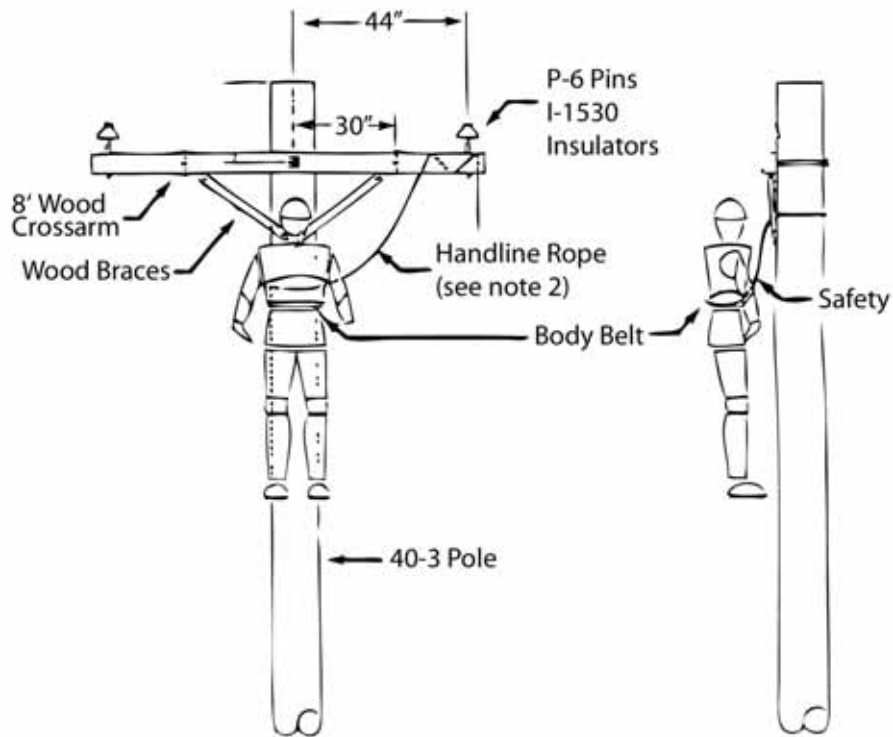
\* Video will be posted on [www.publicpower.com](http://www.publicpower.com) under the Competition section on how to do this event.  
**Event Specifications**

1. Time starts at judges signal with all team members at least an arm's length from pole and extendo stick.
2. All rubber gloves will be in glove bag cuffs down with no fingers protruding.
3. Lineman belt and hooks will be on the ground opposite the switch side of the pole.
4. Extendo stick will be lying flat on tarp fully retracted.
5. All three team members must be used. One must climb, one must open switch, and one must tag the mannequin.
6. Time will stop when mannequin is on the tarp with slack on the handline, and extendo stick is fully retracted and back on tarp.
7. Climber will stay on pole and help hang mannequin.
8. Team will close switch back after time stops. Any team member can close it back and work gloves can be used.
9. You must use the eye to open and close switch.
10. When time starts extendo stick will be lying flat on tarp and must be back on tarp fully retracted before time will stop.
11. Climber must stay in 5 foot circle while he has his gaffs on.
12. Rubber gloves or work gloves must be worn anytime you are working or handling tools and equipment.
13. You must cut the Bashlin 57-A insert. There will be a 10 point deduction for cutting the belt in the wrong place
14. The blade of the climber's knife must not be exposed while climbing.
15. Judges will use a 4" PVC conduit between the rope and the mannequin to evaluate the rope knot, the eye splice can not be in any part of the knot.
16. You may use any standard knot or hitch on the mannequin's legs that can be easily removed. (including placing the rope through the hook, but it must not come off)

***Teams will provide their own:***

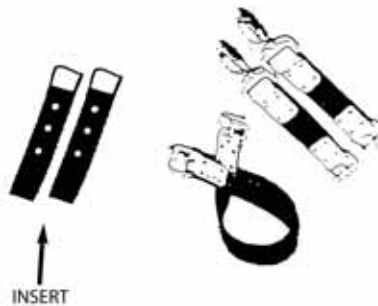
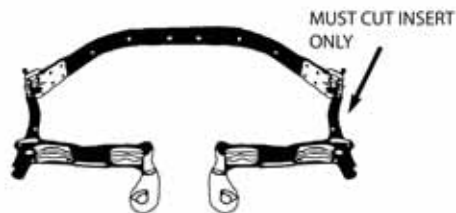
Extendo Stick

## 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 pinto outside the pin. Use three half hitches on dummy, under the arm pit. (Splice cannot be part of the half hitches.)



## ***Remove Single Phase Jumper & Insulator and Install a 27kv Cutout***

Mean Time: 8 minutes

Drop Dead Time: 12 minutes

This Event will demonstrate the task of removing a primary Jumper and insulator from a single phase double dead-end vertical construction 15kv on a 40' wood pole and replace with a 27KV Cutout and Fiber Bracket. The existing jumper and insulator will only be removed after a mechanical jumper is installed to maintain continuity and will be re-used to put the event back to normal. Hot Sticks must be used to remove and install mechanical jumper and primary jumper. At the end of the Event, it must be put back to its original state and all material must be disassembled.

### Event Specifications

1. There will be a 5 minute set up time.
2. The time will start at the command of the Event Judge
3. Climbers must wear class II rated rubber gloves from ground to ground.
4. The neutral and spool must be covered with rated cover before ascending above it.
5. Minimum approach distance must be maintained, the primary conductor must be covered with rated hard cover applied with insulated handles or hot sticks.
6. Electrical continuity must be maintained at all times, the mechanical jumper must be installed with approved hot sticks and control must be maintained at all times. No incidental contact will be allowed with the unprotected mechanical jumper. A section of hose may be placed on the mechanical jumper to prevent incidental contact with the pole or lineman.
7. Both ends of jumper must be controlled while being removed or installed using approved hot sticks.
8. Teams will be allowed to roll back the ends of existing jumpers on the insulator so it can easily be put back to its original state once event is completed
9. The cutout bracket must be installed in the predrilled holes using machine bolts provided.
10. Teams will be given 2-6ft pieces of #4 soft drawn copper to make up the cutout jumpers using hot line clamps and stirrups.
11. Before installing cutout, the door must be removed from cutout and inserted only after jumpers are installed and linemen are positioned below cutout and closed using approved hot sticks.
12. Conductor must be brushed before making any electrical connection.
13. All material must be properly assembled and snugged using proper hand tools
14. Teams will be allowed a 5-minute setup time and will not be allowed to assemble any material during setup time.
15. Time shall stop when the team has removed all material from pole and handline, both climbers are safetied off below the neutral and time is called by a designated team member.
16. Though the time has stopped the team will continue to be judged until the event is put back to its original state and all material is disassembled.

### ***Teams will provide their own:***

Tarp 12' x 12' max

Hard Cover, Must Be Able To Put On With Hot Stick Or Stick Must Be Attached To Cover

Grab-All Stick (Shot Gun)

Switch Stick

Hand Line

Rubber Insulated Blankets (Split or Solid)

By-Pass Jumpers

Conductor Brush

Extendo Stick

Hose Bag (Canvas Tool Bucket)

**MYSTERY  
?  
EVENT**



# FLORIDA LINEMAN COMPETITION

# APPRENTICE EVENTS



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## ***Insulator Change Out***

Mean Time: 5 Minutes

Drop Dead Time: 7 minutes

In this event, the apprentice will be required to ascend pole and, after belting off, hang hand line, change a spool insulator, pin type insulator and dead end insulator from one side of the crossarm to the other. Time will start upon the judge's signal and will stop when apprentice is back on the ground and the hand line is made up.

1. All general rules apply
2. 5-minute set up time
3. Time will start a judges signal
4. Hand line coil may exceed 30 inches

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

Climbing tools

Hand tools



## ***Vertical Hurtman Rescue***

Mean Time: 5 Minutes

Drop Dead Time: 9 minutes

The apprentice will be given 5 minutes to set up and ask questions. The apprentice must open the switch (cutout) before he can step onto the pole. The switch will be opened from the ground using an extendo stick and rubber gloves. The stick must be off the ground and body anytime the stick is touching anything energized. The apprentice must wear rubber gloves ground to ground. Apprentice will split handline and loop bottom part of handline around mannequin's legs. Then take the top part and wrap around the pole a minimum of one and a half wraps, take rope under mannequin's arms and tie three half hitches (the splice can not be in the knot). The mannequin can then be lowered to the ground while the groundman (he will be provided) uses the bottom part of rope tied to the mannequin's legs to pull the mannequin out away from the pole and hardware. An attempt must be made to keep the mannequin off of the pole and other hardware. However the mannequin can touch the pole, service, or the neutral on the way down and there will be no deductions. There will be no deduction for anything that the groundman does. The mannequin must hit the ground gently as if it were a real person.

\* Video will be posted on [www.publicpower.com](http://www.publicpower.com) under the Competition section on how to do this event.

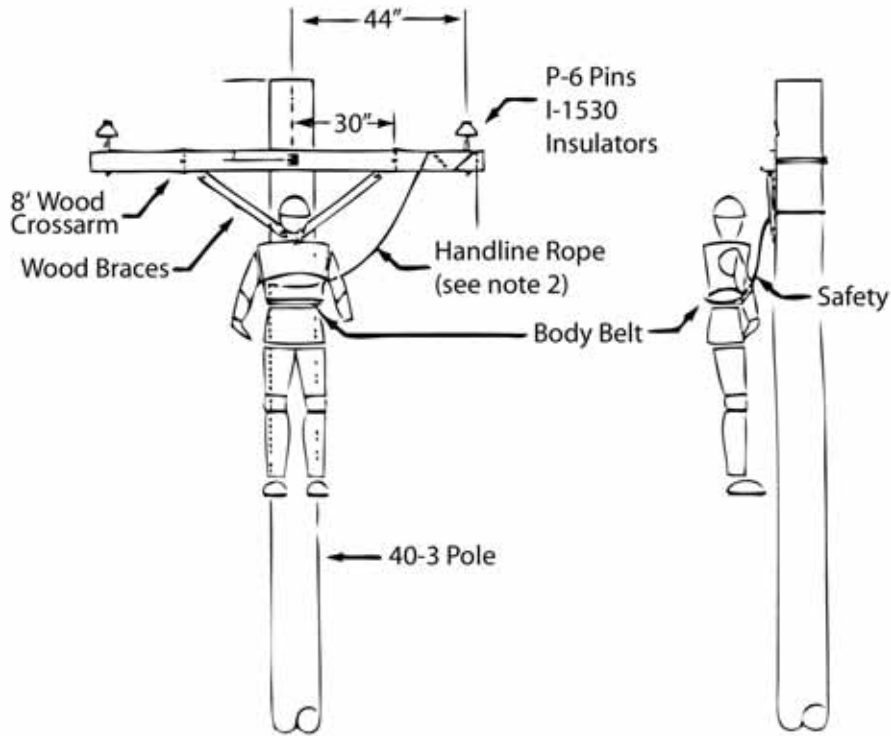
1. Time starts at judge's signal with Apprentice at least an arm's length from extendo stick.
2. Rubber gloves will be in glove bag cuffs down with no fingers protruding.
3. Lineman belt and hooks will be on the ground opposite the switch side of the pole.
4. Extendo stick will be lying flat on tarp and fully retracted.
5. Time will stop when mannequin is on the ground with slack on the handline.
6. Apprentice will stay on pole and help hang mannequin.
7. Apprentice will close switch back after time stops. Work gloves can be used.
8. You must use the eye to open and close switch.
9. When time starts extendo stick will be lying flat on tarp and must be back on tarp fully retracted before time will stop.
10. Apprentice must stay in 5 foot circle while he has his gaffs on.
11. Rubber gloves or work gloves must be worn anytime you are working or handling tools and equipment.
12. You must cut the Bashlin 57-A insert. There will be a 10 point deduction for cutting the belt in the wrong place
13. The blade of the Apprentice knife must not be exposed while climbing.
14. Judges will use a 4" PVC conduit between the rope and the mannequin to evaluate the rope knot, the eye splice can not be in any part of the knot.
15. You may use any standard knot or hitch around the mannequin's legs that can be easily removed. (including placing the rope through the hook, but it must not come off)
16. The Apprentice must open switch before putting gaffs on.

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

Extendo Stick

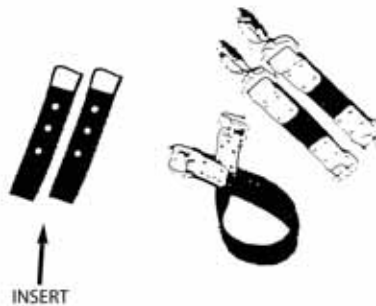
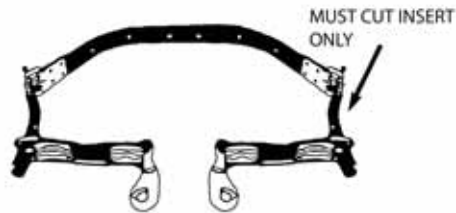
Vertical Hurtman Rescue

## 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 pinto outside the pin. Use three half hitches on dummy, under the arm pit. (Splice cannot be part of the half hitches.)



## **3-Phase Open Delta Bank**

Mean Time: 15 Minutes

Drop Dead Time: 20 minutes

In this event the apprentice will have to install primary and secondary jumpers on a 2-pot open delta bank and achieve forward rotation. The bank will be Delta primary and Delta secondary (no neutral). The focus on this event is the rotation and proper jumper connection. The apprentice will ascend the pole, after belting off, will pull pre-cut jumpers up in a material bag. Install primary and secondary jumpers to achieve the forward rotation. The cutouts will be labeled A, B, C. The secondaries will be open wire and will be A, B, C top to bottom. This bank can be viewed in the Lineman and Cableman's Handbook.

1. All general rules apply
2. Rubber Gloves will be required
3. 5-minute set up time (jumpers in bag)
4. Time will start at judges signal
5. All connections must be brushed
6. When complete the apprentice will call out stop.
7. When judge is finished checking for proper rotation the apprentice will disassemble jumpers
8. Judging will continue until apprentice is back on the ground and area returned to original condition.

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

Climbing Tools

Handline

Hand tools including a 9/16 wrench (for secondary connectors and cutouts)

## ***Rope Toss (Throw Line)***

Mean Time: 2 Minutes

Drop Dead Time: 4 minutes

***This is a non-pole climbing, non-rubber glove event.***

In this event the apprentice will demonstrate a common utility practice of pulling rope, cable or conductors over trees or other objects with the aid of a throw line. A throw line is a small diameter, generally a 3/8 inch poly rope which is coiled, wrapped and thrown over a cross arm, trees or other objects to pull back a larger rope, cable and or conductor.

Throughout this event, the conductor must be pulled back over the cross arm and tightly secured using common utility industry knots.

1. See General Rules
2. The apprentice will be allowed a 5 minute set up time
3. The apprentice event time will start upon instructions of the event judge for the apprentice to begin.
4. A 3/8 inch throw line rope shall be provided and ready for use at the event site.
5. The throw line shall be uncoiled and lying on the ground at the feet of the apprentice prior to their event time starting.
6. Upon instruction to begin, the apprentice will make a small hand coil in the end of the throw line no greater than 18 inches in length, then take a minimum of two wraps around the hand coil to give the rope end weight for throwing. Note: the number of loops in the hand coil and the number of wraps around the hand coil shall be left to the discretion of the apprentice.
7. Any weights, objects, tools or any other material attached to the throw line is unacceptable and deductions will be applied.
8. The apprentice at his/her discretion may choose either side of the pole to toss the throw line from.
9. The throw line MUST be thrown over either side of the cross arm to continue the event. Additional throws are acceptable if needed, however, the Drop Dead time will apply if reached.
10. Upon successful tossing of the throw line over the cross arm, the apprentice shall tie the throw line to the provided conductor using a "Rolling Bend" knot. (Reference 9th edition Lineman Handbook section 43.26)

### ***Rolling Bend Knot***

- The Rolling Bend Knot is used to attach rope to conductor or secondary service cables.
11. Upon tying the Rolling Bend knot to the conductor, the apprentice will pull the conductor taut over the cross arm and then securing the rope to a provided guy anchor using a "Bowline On A Bight" knot and two "Snub Hitches". (Reference 9th edition Lineman Handbook section 43.18)

### ***Bowline On A Bight***

- The Bowline on a bight knot is used to place a loop in a line somewhere away from the end of the rope. The knot is used to gain mechanical tension similar to using rope blocks to pull tension.

### ***Snubbing Hitches***

- Snubbing Hitches are knots used to secure or anchor a rope. (Reference 9th edition Lineman Handbook section 43.24)
12. Only the pre-described knots shall be used to compete in this event
  13. The conductor shall be pulled taut and all knots will be correctly tied as outlined in section 43 of the 9th edition Lineman Handbook.
  14. Time will stop when the apprentice raises his/her hands after the last snubbing hitch is tied.

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

Work Gloves

P.P.E

# APPRENTICE EVENTS

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# MYSTERY EVENT

A large, 3D-rendered question mark graphic. The top portion of the question mark is solid black, while the bottom portion is a light grey color. The text 'MYSTERY' and 'EVENT' is positioned above and to the right of the question mark, respectively.