



**A Fact Sheet prepared by the National Telecommunications Safety Panel**

## Introduction

Arthropods are a phylum of the animal kingdom. By nearly any measure, Arthropods are the most successful animals on the planet. Their members include an incredibly diverse group of insects, crustaceans, spiders, scorpions, and centipedes. The Arthropods can be identified by having an exoskeleton with segmented bodies and jointed appendages.

In Telecommunications operations, a wide variety of arthropod hazards are present. These hazards not only occur in the outside environment, but also are encountered in customer locations, such as crawl spaces, garages, etc. Telecommunications equipment has also been an attractive place for insects to nest. Given the adaptability of this phylum, it is important to understand the hazards and locations of the arthropods, as well as hazard prevention and first aid techniques

## What Are Different Types of Hazards Encountered by Arthropods?

Hazards from arthropods include:

- The bite or sting itself
- Secondary Injuries, such as infections, diseases, allergic reactions, or falls from trying to get away from the insect or spider

## General Guidance for Bites and Stings

- Understand when you are at risk and be vigilant to avoid exposure (avoid areas where insects are expected, wear insect repellent, wear clothing that covers exposed skin)
- Know General First Aid
  - Wash bite/sting area well with soap and water
  - Apply an ice pack to the bite/sting area
  - Elevate and rest the wounded area to decrease swelling
- Consult a physician immediately for:
  - **Allergic Reactions** - Observe for signs of a severe allergic reaction such as wheezing, difficulty breathing, rapid, severe swelling, abdominal cramps, vomiting, dizziness, chest tightness, hoarseness, or blue discoloration to lips. If these signs occur, go to an emergency room or consult a physician immediately. Persons with demonstrated hypersensitivity should wear an identification tag and carry a small sting emergency kit, containing antihistamines and a syringe of epinephrine.

- **Toxic reactions** – Single bites from very poisonous insects or spiders, or multiple stings/bites, especially to the neck and head, may be particularly serious. Symptoms include: nausea or vomiting, diarrhea, fever, weakness, lightheadedness, rapid swelling at the site of the sting/bite, muscle spasms, headache, drowsiness, fainting (syncope), uncontrollable jerking movements.
- **Insect borne viruses and parasites** – know the signs and symptoms of such disease as Lyme Disease, West Nile, etc.


## What are Common Types of Arthropods that Cause a Problem for Telecommunications Workers?

Arthropods that affect Telecommunications workers can be broken down into the classes Insecta or “Insects” and Arachnidia or Arachnids.


### 1. Insects


Insects of concern include:

- The Stingers – bees, wasps, hornets, etc
- Mosquitoes
- Fire Ants

<b>Stingers – Bees, Wasps and Hornets</b>	
<b>Picture</b>	<b>Symptoms</b>
	<ul style="list-style-type: none"> <li>• Local itching / burning at site of sting</li> <li>• Allergic reaction may cause: large areas of swelling, abnormal breathing, tightness in throat or chest, dizziness, etc.</li> </ul>
<b>Hazard</b>	<b>First Aid</b>
<ul style="list-style-type: none"> <li>• Painful sting</li> <li>• Allergic Reaction</li> <li>• Infection</li> </ul>	<ul style="list-style-type: none"> <li>• Bees leave behind a stinger attached to a venom sac. Do not try to pull it out as this may release more venom; instead gently scrape it out with a blunt-edged object, such as a credit card or dull knife.</li> <li>• Wash the area carefully with soap and water. This should be continued several times a day until the skin is healed.</li> <li>• Apply a cold or ice pack for a few minutes.</li> <li>• Apply a paste of baking soda and water and leave it on for 15 to 20 minutes.</li> <li>• Take acetaminophen for pain.</li> </ul>
<b>Locations</b>	
<ul style="list-style-type: none"> <li>• Throughout the United States</li> <li>• Warmer temperatures</li> </ul>	
<b>Prevention</b>	
<ul style="list-style-type: none"> <li>• Never swing or strike or run rapidly away</li> <li>• Never strike, swing or crush a wasp or bee against your body</li> <li>• Do not wear perfumed hygienic products (soaps, lotions, etc),</li> <li>• Avoid shiny accessories and bright colored clothing</li> </ul>	

Insects and Spiders, continued


<b>Mosquitoes</b>	
<b>Picture</b>	<b>Symptoms</b>
	<ul style="list-style-type: none"> <li>• Redness around mosquito bite site</li> <li>• Itching at bite site</li> <li>• Local swelling around bite site</li> </ul>
<b>Hazard</b>	<b>First Aid</b>
<ul style="list-style-type: none"> <li>• Bites</li> <li>• Vector Borne Disease (West Nile, types of encephalitis)</li> </ul>	<ul style="list-style-type: none"> <li>• Itching is the main symptom to control with insect bites.</li> <li>• Use topical antihistamines and anesthetics for quick temporary relief.</li> <li>• Hydrocortisone cream 1% improves both itching and swelling/redness.</li> <li>• Any systemic reaction should be seen by a doctor immediately. This includes hives wherever they may occur, swelling in the face, shortness of breath or wheezing, difficulty swallowing, and light-headedness or fainting. These usually occur within minutes to an hour after the sting.</li> </ul>
<b>Locations</b>	
Throughout the United States	
<b>Prevention</b>	
<ul style="list-style-type: none"> <li>• Wear insect repellent.</li> <li>• Wear long pants, long-sleeved shirts and closed shoes. Tuck pant cuffs into socks or boots.</li> <li>• Reduce time spent outdoors, especially in the evening.</li> <li>• Stay on paths and out of thick vegetation.</li> </ul>	


<b>Fire Ants</b>	
<b>Picture</b>	<b>Symptoms</b>
	<ul style="list-style-type: none"> <li>• Burning, itching and a white pustule that forms a day or two afterward.</li> <li>• The bites are easily infected if the skin is broken, and may leave permanent scars.</li> <li>• Also can cause allergic reaction or anaphylactic shock. Symptoms include severe chest pain, nausea, severe sweating, loss of breath, serious swelling or slurred speech</li> </ul>
<b>Hazard</b>	
<ul style="list-style-type: none"> <li>• So named because their venom induces a painful, fiery sensation.</li> <li>• They aggressively attack -- in mass -- anything that disturbs their mound.</li> </ul>	
<b>Location</b>	<b>First Aid</b>
Southern US	<ul style="list-style-type: none"> <li>• For pain and the development of pustules, treat with OTC products that relieve insect bites and stings.</li> <li>• For an allergic reaction, the person should be taken to an emergency medical facility immediately.</li> </ul>
<b>Prevention</b>	
<ul style="list-style-type: none"> <li>• Wear shoes or boots and/or tuck pant legs into socks.</li> <li>• Use insect repellents on clothing and footwear</li> </ul>	

**2. Arachnids**

Arachnids of concern include:


- Spiders – Recluses, Black Widow
- Scorpions
- Ticks
- Chiggers


<b>Spiders - Recluse (Hobo, Brown)</b>	
<b>Picture</b>	<b>Symptoms</b>
	<ul style="list-style-type: none"> <li>• The victim is often unaware of the bite and has little early pain.</li> <li>• Mild to severe pain usually develops in the bite area after two to eight hours.</li> <li>• Blisters quickly form, and a dark purple center may be seen by the third or fourth day.</li> <li>• Pain and itching usually increases. The bite area also feels hot, swollen, and firm to touch.</li> <li>• In one or two weeks, this tissue dies and sloughs away as an open ulcer forms. If the wound is very large, it may become chronic and heal very slowly.</li> </ul>
<b>Hazard</b>	
<ul style="list-style-type: none"> <li>• Necrotic bite</li> <li>• Causes a "volcano lesion"</li> <li>• Recovery may take 1 months</li> </ul>	
<b>Locations</b>	
<ul style="list-style-type: none"> <li>• Hobo – Northwest USA</li> <li>• Brown recluse – Southeast USA</li> <li>• Other– Southwest USA</li> </ul>	
<b>Prevention</b>	<b>First Aid</b>
<ul style="list-style-type: none"> <li>• Before dressing, shake out clothing, shoes, and hats that have not been worn for a while.</li> <li>• Be cautious using items that have been stored for a long time.</li> <li>• Move cluttered materials carefully or not at all in basements, closets, attics, and garages.</li> </ul>	<ul style="list-style-type: none"> <li>• Wash the area well with soap and water.</li> <li>• Apply a cold or ice pack to the site</li> <li>• Apply an antibiotic lotion or cream.</li> <li>• Give acetaminophen for pain.</li> <li>• Elevate the site if the bite occurred on an arm or leg (to help prevent swelling).</li> <li>• Seek immediate emergency care for further treatment</li> </ul>


<b>Spiders – Black Widow</b>	
<b>Picture</b>	<b>Symptoms</b>
	<ul style="list-style-type: none"> <li>• Pain usually progresses from the bite site and eventually to the abdomen and back.</li> <li>• Severe cramping or rigidity may occur in the abdominal muscles.</li> <li>• Nausea, profuse perspiration, tremors, labored breathing, restlessness, increased blood pressure and fever.</li> </ul>
<b>Hazards</b>	
<ul style="list-style-type: none"> <li>• Venom is a neurotoxin</li> </ul>	
<b>Locations</b>	<b>First Aid</b>
<ul style="list-style-type: none"> <li>• Undisturbed, cluttered areas in basements and crawl spaces, woodpiles, rubble piles, under stones, in hollow stumps, and in rodent burrows, privies, sheds and garages</li> <li>• Seen throughout the US</li> </ul>	<ul style="list-style-type: none"> <li>• Clean the bite area with soap and water</li> <li>• Apply ice to the bite area to slow absorption of the venom.</li> <li>• Elevate and immobilize the extremity.</li> <li>• Seek medical attention immediately.</li> </ul>
<b>Prevention</b>	
<ul style="list-style-type: none"> <li>• Before dressing, shake out clothing, shoes, and hats</li> <li>• Be cautious around items that have been stored for a long time (garages, attics, basements, etc.)</li> </ul>	

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## Insects and Spiders, continued

<b>Scorpions</b>	
Picture	Symptoms
	<ul style="list-style-type: none"> <li>• Causes immediate local pain with minimal swelling</li> <li>• Numbness and tingling are frequently reported</li> <li>• Hypersensitive to touch, pressure, heat and cold</li> <li>• Some scorpions are more serious with post-sting manifestations. May include heavy sweating, difficulty swallowing, blurred vision, loss of bowel control, jerky muscular reflexes, and respiratory distress</li> </ul>
Hazard	
<ul style="list-style-type: none"> <li>• Attacks occur at night during the warm weather</li> <li>• Not all scorpions are poisonous</li> </ul>	
Locations	
<ul style="list-style-type: none"> <li>• 30 species are known to occur in the United States, southwest of a line drawn from North Dakota to the Carolinas.</li> </ul>	
Prevention	
<ul style="list-style-type: none"> <li>• Never put your hands or feet anywhere you cannot see.</li> <li>• Shake out all clothes and shoes before using</li> <li>• Wear a long-sleeved shirt, hat, gloves, and boots when handling boxes, firewood, lumber, and rocks, etc.</li> <li>• Use insect repellants, such as DEET or Picaridin, on clothing and footwear.</li> </ul>	
First Aid	<ul style="list-style-type: none"> <li>• Cooling the wound to allow the body to more easily break down the molecular structure of the venom. Cooling also reduces pain.</li> <li>• Use ice or cool running water if available.</li> <li>• Keep the victim calm and still.</li> <li>• For serious symptoms seek medical attention immediately</li> </ul>

<b>Ticks</b>	
Picture	Symptoms
	<ul style="list-style-type: none"> <li>• Visible tick attached to skin</li> <li>• Watch for Lyme Disease symptoms, such as fever, muscle pain, extreme fatigue, headaches, chills joint pain, swollen glands, or a rash that develops at the site of the bite within three days to two months after.</li> <li>• If these symptoms develop, see your physician.</li> </ul>
Hazard	
<ul style="list-style-type: none"> <li>• Bites</li> <li>• Vector Borne Diseases such as Rocky Mountain Spotted Fever, Lyme disease, and Tularemia.</li> </ul>	
Locations	
Various types throughout the USA	
Prevention	
<ul style="list-style-type: none"> <li>• Make frequent personal inspections.</li> <li>• Wear long pants, long-sleeved shirts and closed shoes. Tuck pant cuffs into socks or boots.</li> <li>• Wear light-colored clothing in order to see crawling ticks.</li> <li>• Apply repellents</li> <li>• Stay on paths and out of thick vegetation.</li> </ul>	
First Aid	<ul style="list-style-type: none"> <li>• To remove the tick, use tweezers, if available.</li> <li>• Use masking tape for seed ticks.</li> <li>• DO NOT use a match to make the tick move.</li> <li>• DO NOT cover the tick in any cream or Vaseline, as it will make removal difficult.</li> <li>• Be very careful not to crush the body of the tick, as that may cause it to inject its stomach contents into the wound.</li> <li>• Make sure all parts have been removed</li> <li>• Wash the area thoroughly with soap and water.</li> </ul>

<b>Chiggers</b>	
Picture	Symptoms
	<ul style="list-style-type: none"> <li>• When humans come in contact with infested grass or other vegetation, the chigger larvae get onto the skin and travel until they meet an obstacle like a waistband. At this point, they attach to the skin and begin to feed.</li> <li>• Within twenty-four hours of attachment, a reddened area up to one inch in diameter will appear which may be accompanied by a blister.</li> <li>• When feeding, the larvae secrete a fluid that causes intense itching. They feed for three to four days and then drop off.</li> </ul>
Hazard	
<ul style="list-style-type: none"> <li>• Chiggers are the larvae of the harvest mite</li> <li>• Bites - Chiggers are different from other mites, in that they feed on humans and other animals only in the larval stage</li> <li>• Infection</li> </ul>	
Locations	
Various types exists throughout the USA	
Prevention	
<ul style="list-style-type: none"> <li>• Avoid uncultivated areas and heavy vegetation where chiggers are known to exist.</li> <li>• If that type of avoidance is not possible, then clothing should fit snugly at any possible entry point for the chigger, such as at the ankles, wrists, and collar.</li> <li>• Insect repellents may be beneficial in preventing the attachment of chiggers, if applied every 2 to 3 hours.</li> </ul>	
First Aid	<ul style="list-style-type: none"> <li>• Treatment consists of reducing discomfort and preventing infection.</li> <li>• Household remedies aimed at killing the chigger are unlikely to help with the itching, since the larva frequently have dropped off before treatment is started.</li> <li>• The affected area should be kept clean by washing with soap and water.</li> <li>• A topical hydrocortisone cream, antihistamine, or local anesthetic may be of value in reducing the itching.</li> <li>• If signs of infection occur, consult your physician.</li> </ul>

### Other Arthropods of Interest

#### Centipedes

- Centipedes have flattened bodies, long antennae, and only one pair of legs on each body segment.
- Centipede bites produce immediate pain, redness, itching and swelling that can persist for several hours.
- Swollen glands, irregular pulse, headache, dizziness, and vomiting are less commonly seen. Consult a physician if these symptoms occur

#### Millipedes

- Millipedes have a cylindrical body divided into several segments. Each segment has two pairs of legs.
- These non-venomous creatures do not bite or sting. As a self-defense mechanism, millipedes may give off a foul smelling liquid that can be irritating enough to cause blisters.

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### **Stinging Caterpillars**

- This hairy caterpillar is found in the southern states, ranging west through most of Texas and north to Maryland and Missouri.
- The caterpillar has fine hairs that act like hypodermic needles to inject venom. Symptoms are usually minor and self-limiting. Mild pain, swelling, redness and itching can be expected at the site.
- Wide masking tape can be applied to the site area to lift these tiny hairs from the skin. To avoid further injury, the area should not be rubbed until these hairs are removed. The wound area should then be washed with soap and water

### **Additional Information**

- **Oklahoma State University**  
<http://www.pp.okstate.edu/ehs/links/poison.htm>
- **EPA – Insect Repellants**  
<http://www.epa.gov/pesticides/health/mosquitoes/insectrp.htm>
- **Medline Plus - U.S. National Library of Medicine / National Institutes of Health**  
<http://www.nlm.nih.gov/medlineplus/insectbitesandstings.html>