



Lightning

A Fact Sheet prepared by the National Telecommunications Safety Panel

Introduction

Lightning is a major threat during a thunderstorm. In the United States, between 75 and 100 Americans are hit and killed each year by lightning. If you are outdoors and hear thunder, get to a safe shelter immediately. Following simple safety precautions can help reduce your chances of being affected by lightning.

What is lightning?

Lightning is an electrical discharge that results from the buildup of positive and negative charges within a thunderstorm. When the buildup becomes strong enough, lightning appears as a "bolt." This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning reaches a temperature approaching 50,000 degrees Fahrenheit in a split second. The rapid heating and cooling of air near the lightning causes thunder.

Did You Know?

- The power of lightning's electrical charge and intense heat can electrocute on contact, split trees, ignite fires and cause electrical failures.
- More deaths from lightning occur on the East Coast. More forest fires are started in the West as the lightning season coincides with the dry season there.
- Lightning kills more people in the United States in a year than tornadoes.
- Approximately 10,000 forest fires are started each year by lightning.
- Approximately \$100 million in annual losses result from forest and building fires caused by lightning.
- Your chances of being struck by lightning are estimated to be 1 in 600,000 but those chances can be reduced by following safety rules.
- Most lightning deaths and injuries occur when people are caught outdoors, and most happen in the summer.



- Lightning has "favorite" sites that it may hit many times during one storm. It is a myth that lightning never strikes twice in the same place. In fact, lightning will strike several times in the same place in the course of one discharge.
- Lightning often strikes outside of heavy rain and may occur as far as 10 miles away from any rainfall.
- Rubber-soled shoes and rubber tires provide NO protection from lightning. However, the steel frame of a hard-topped vehicle provides increased protection if you are not touching metal. Although you may be injured if lightning strikes your car, you are much safer inside a vehicle than outside.
- Lightning-strike victims carry no electrical charge and should be attended to immediately.
- What is referred to as "heat lightning" is actually lightning from a thunderstorm too far away for thunder to be heard. However, the storm may be moving in your direction!

How Do You Know if You Are in Danger?

Lightning is a threat whenever:

- You see lightning or hear thunder
- You hear loud static on your AM Radio
- You hear buzzing sounds on radio antennas

Estimating the Distance from a Thunderstorm

Because light travels much faster than sound, lightning flashes can be seen long before the resulting thunder is heard. Estimate the number of miles you are from a thunderstorm by counting the number of seconds between a flash of lightning and the next clap of thunder. For every five seconds you count, the lightning is one mile away.

Important: You may be in danger from lightning if you can hear thunder. Knowing how far away a storm is does not mean that you're only in danger when the storm is overhead.

What measures can be taken if someone is hit by lightning?

- People who have been struck by lightning are safe to handle - they don't carry an electrical charge.
- Call for help. Get someone to dial 9-1-1.
- Being struck by lightning can cause burns or nervous system damage, broken bones and loss of hearing and eyesight. It is a very serious emergency.
- If you have been properly trained, give first aid, and if the person has stopped breathing, begin rescue breathing. If their heart has stopped beating, give CPR.

Take Protective Measures

If you see lightning or hear thunder . . .

- Get inside a home, building, or hard top automobile (not a convertible). Although you may be injured if lightning strikes your vehicle, you are much safer inside a vehicle than outside.
- Remember, rubber-soled shoes and rubber tires provide NO protection from lightning. However, the steel frame of a hard-topped vehicle provides increased protection if you are not touching metal.
- Avoid showering or bathing. Plumbing and bathroom fixtures can conduct electricity.
- Use a corded telephone only for emergencies. Cordless and cellular telephones are safe to use.
- Unplug appliances and other electrical items such as computers and turn off air conditioners. Power surges from lightning can cause serious damage.
- Stay away from natural lightning rods such as tall, isolated trees and telecommunications towers in an open area or the top of a hill, and metal objects such as wire fences and metal tools.
- Move away from open fields, pools, and other bodies of water.
- Use extra precautions when using aerial lift trucks.

Additional Information:

Fact Sheet: Thunderstorms and Lightning

<http://www.fema.gov/hazards/thunderstorms/thunderf.shtm>

Lightning Fact Sheet for Boaters

<http://www.nws.noaa.gov/om/wcm/lightning/resources/LightingFactsSheet.pdf>

Lightning Safety Awareness Week

June 19-25, 2005

<http://www.lightningsafety.noaa.gov/week.htm>

National Lightning Safety Institute

<http://www.lightningsafety.com/>