



Lightning Safety

Senior Management ViTS Meeting

March 7, 2016

Steve Cash

Director, Safety and Mission Assurance Office
Marshall Space Flight Center

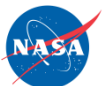


This and previous presentations are archived at
<https://sma.nasa.gov/safety-messages>

Lightning Safety

Thunderstorms,
Tornadoes,
Lightning...

...Nature's Most Violent Storms



Lightning Strikes

- Lightning strikes the United States about 25 million times a year.
- Although most lightning strikes occur in the summer, lightning can strike at any time of year.
- Lightning kills an average of 49 people in the United States each year and hundreds more are severely injured.



Lightning Myths and Facts

- **Myth:** If you're caught outside during a thunderstorm, you should crouch down to reduce your risk of being struck.
Fact: Crouching doesn't make you any safer outdoors. Run to a substantial building or hard-topped vehicle. If you are too far to run to one of these options, you have no good alternative. You are NOT safe anywhere outdoors.
- **Myth:** Lightning never strikes the same place twice.
Fact: Lightning often strikes the same place repeatedly, especially if it's a tall, pointy, isolated object. The Empire State Building is hit nearly 100 times a year.
- **Myth:** If it's not raining or there aren't clouds overhead, you're safe from lightning.
Fact: Lightning often strikes more than 3 miles from the center of the thunderstorm, far outside the rain or thunderstorm cloud. "Bolts from the blue" can strike 10-15 miles from the thunderstorm.
- **Myth:** Rubber tires on a car protect you from lightning by insulating you from the ground.
Fact: Most cars are safe from lightning, but it is the metal roof and metal sides that protect you, NOT the rubber tires. Remember, convertibles, motorcycles, bicycles, open-shelled outdoor recreational vehicles, and cars with fiberglass shells offer no protection from lightning. When lightning strikes a vehicle, it goes through the metal frame into the ground. Don't lean on doors during a thunderstorm.
- **Myth:** If you touch a lightning victim, you'll be electrocuted.
Fact: The human body does not store electricity. It is perfectly safe to touch a lightning victim to give them first aid. This is the most chilling of lightning myths. Imagine if someone died because people were afraid to give first aid!

What You Need To Know

Get Indoors

- **NO PLACE** outside is safe when thunderstorms are in the area!
- If you hear thunder, lightning is close enough to strike you.
- When you hear thunder, *immediately* move to safe shelter:
 - a substantial building with electricity or plumbing
 - an enclosed metal-topped vehicle with windows up
- Stay in safe shelter at least 30 minutes after you hear the last sound of thunder.

Once Indoors

- Stay off corded phones, computers, and other electrical equipment that put you in direct contact with electricity.
- Avoid plumbing, including sinks, baths, and faucets.
- Stay away from windows and doors and stay off porches.
- Do not lie on concrete floors and do not lean against concrete walls.

Last Resort Outdoor Risk Reduction Tips

If you can't get indoors

- Immediately get off elevated areas such as hills, mountain ridges, or peaks.
- Never lie flat on the ground.
- Never shelter under an isolated tree.
- Never use a cliff or rocky overhang for shelter.
- Immediately get out and away from ponds, lakes, and other bodies of water.



When Thunder Roars, Go Indoors!