

## When Lightning Strikes

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Lightning is a frightening thing. It produces a lot of noise and light, and often leaves behind considerable damage resulting in significant insurance claims. Technically, it is an electrostatic discharge between the sky and the earth. The average lightning strike carries approximately 40,000 amperes at up to 15 million volts. No wonder some damage is left behind! It is also interesting (to some of us) that lightning consists of several sequential strokes lasting a few millionths of a second. This makes lightning more like high frequency alternating current than direct current and gives it some properties that you might not expect.

It radiates a radio signal, which explains why you hear it easily on your radio, particularly on the AM band. It also likes to travel in straight lines, which is why you should never have a kink or a bend in your lightning protection conductors. In addition, lightning may avoid transformers if there is a straighter path for the current to follow. The farther you are from the lightning, the lesser the likelihood of being able to detect the cause of electronic equipment failure, if it did occur at the time of the storm. .

So what can you do to protect yourself? Several things. If you are near a tall tree, move away because tall trees often explode as a result of a lightning strike. If you are a golfer, you should move to lower ground. If you are in your car, stay inside, because if the car is struck by lightning, it will flow around you and jump to the ground. For electronic equipment, surge suppressors can help, especially if they are housed in metal containers. Power transformers should have a lightning arrestor across the primary windings; they are inexpensive protection compared to the unexpected cost of having the transformer damaged.

There are now meteorological organizations that record the time and location of lightning strikes. This can be useful to correlate a lightning event to an insurance claim. If you give them a location and a time frame, they can provide a map and information on the strikes in the area.

While lightning strikes will always be with us, we have made significant progress since 1750 when Benjamin Franklin flew a kite in a thunderstorm and lived to tell about it.

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