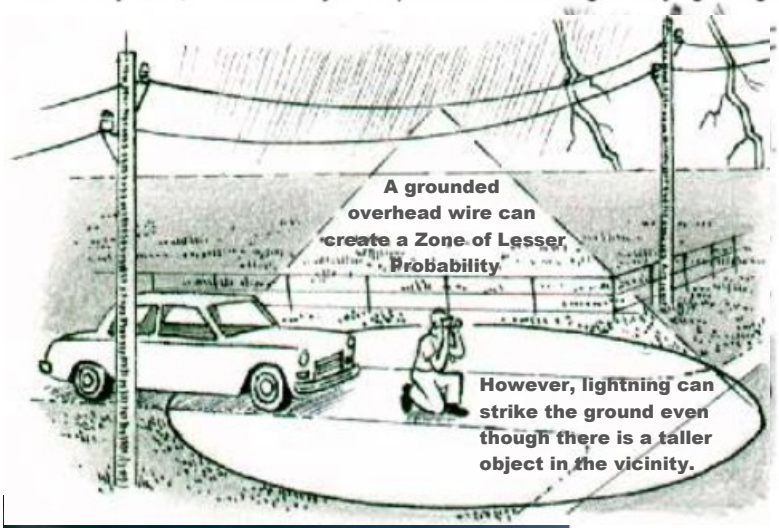
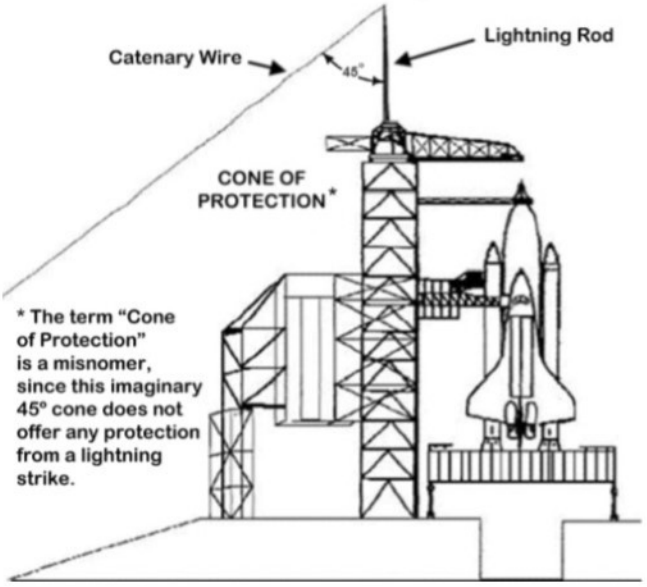
WHAT TO DO IF YOU CAN'T GET OFF THE WATER SAFELY IN A THUNDERSTORM: "Cone of protection" is an imaginary 45º cone around a tall isolated object with the assumption that lightning won't strike within this cone since lightning should strike the taller object first. Many lightning experts and safety organizations like the *National Lightning Safety Institute* consider the so-called "cone of protection" to be fallacious. They are correct, there is no guaranteed protection since lightning can easily strike inside the "cone of protection"; and even if lightning strikes the taller object, persons close to the tall object are in danger as a lightning strike dissipates along the ground or side flash. The streamer that the step leader reaches is not necessarily the closest streamer to the cloud. It's very common for lightning to strike the ground even though there is a tall object in the vicinity. Lightning streamers rise from both the tops of tall objects as well as from the ground and from the surface of the water. However, the probability is greater that a step leader from a cloud will reach the highest step leader off the ground which would be the top of the cone made by a tall object, which is why lightning rods are placed on the tallest parts of a building. "Cone of Protection" is a misnomer, it would be more appropriate to call it a "Zone of Lesser Probability" of a lighting strike. Lightning is a capricious and random event. It cannot be predicted with any accuracy. It cannot be prevented. Advanced planning is the best defense. Immediate evasive action could save a life. If it is impossible to find proper shelter during a thunderstorm and you are out in the open, and there is a nearby grounded tall object like an antenna tower or a group of taller objects (not a lone tall tree or a single pole); play-the-odds, and go inside the "Zone of Lesser Probability".

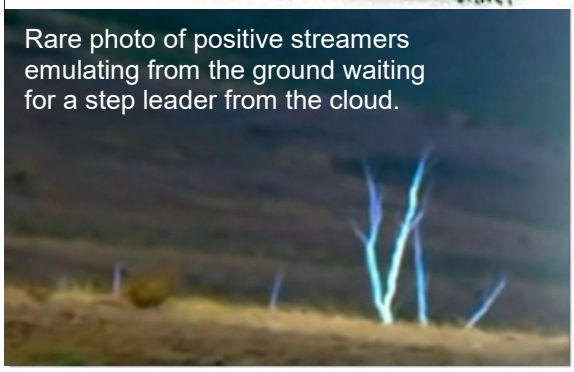
No place outside is safe in a thunderstorm.

If it is raining especially hard, lightning may not be readily visible and thunder may be drowned out. If the atmosphere has enough energy to make it rain really hard, it could easily be capable of unleashing deadly lightning.



ROCKET SCIENTISTS BELIEVE IN THE CONCEPT CALLED THE "CONE OF PROTECTION"





As the step leaders approach the earth, objects on the surface begin responding to the strong electric field. The objects reach out to the cloud by "growing" positive streamers—once produced they do not continue to grow but wait patiently as the step leaders approach. When a step leader and a streamer meet—current flows (strike).

Lightning Safety:

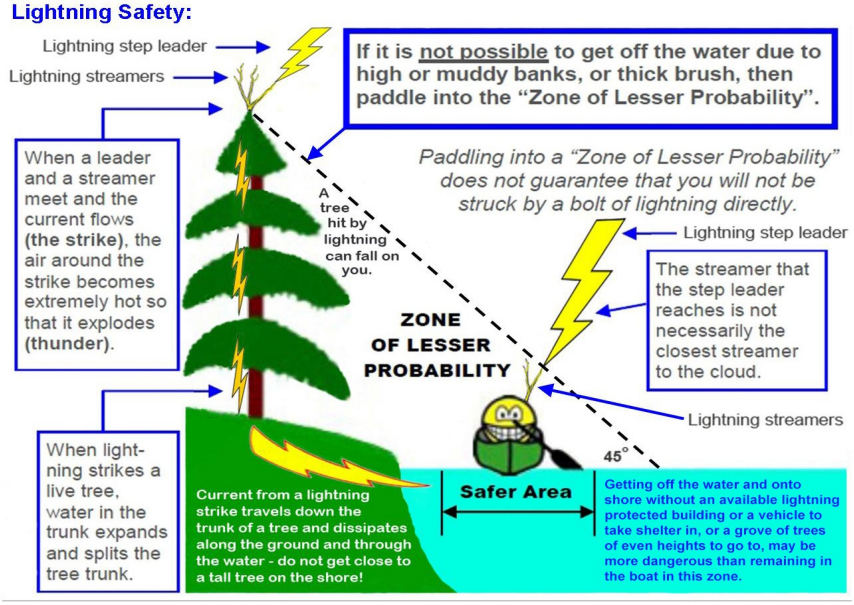


ILLUSTRATION BY GLEN GREEN