

# Lightning

## A Flash in the Sky

by CHARLOTTE JONES

**I**F we lived during the time of the Ancient Romans, we would believe that thunder and lightning were the weapons of the god Jupiter. Ancient Romans thought that such powerful and deadly weapons could belong only to the greatest of gods. Thunder and lightning was one of the great mysteries of nature.

Now the mystery is solved. We know, through scientific study, that lightning is really a flow of electricity, formed high above the earth. One thing that has not changed over the years is it can make us quake in our boots and raise our heart rate with the anxiety of seeing a bolt of lightning and waiting to hear the crack of thunder. Before you can say, "YIPES!", your pet dog has run under the bed or found some place to hide. All creatures great and small have an instinctive respect for lightning.

Do you know how lightning produces thunder? As lightning travels, it heats the air in its path. The sudden heating causes the air to expand violently. The cool air farther away is pressed into a smaller space. This process starts a great air wave that results in THUNDER.

Before you hear the thunder, flashes of lightning take place between a positively charged area and a negatively charged area. These may be different parts of the same cloud, different clouds, or a cloud and the earth.

A spark between a cloud and the earth may measure as much as eight miles in length. It may travel at a rate of 100,000,000 feet a second. Lightning that reaches between oppositely charged clouds may have a length of 20 miles. Photographs of lightning obtained by radar indicate that some cloud-to-cloud lightning strikes may measure 100 miles in length.

Lightning between clouds does not cause any damage on earth, because the electrical energy is dispersed in the air. But lightning between a cloud and the earth often causes loss of life and property. A bolt of lightning can kill a person or start a forest fire. Scientists have found that one stroke of lightning usually measures more than 15,000,000 volts.

### There Are Different Kinds of Lightning

All lightning strikes are basically about the same. But they appear to have different forms, depending on the position of the observer.

**FORKED, ZIGZAG, OR CHAIN** lightning is a chain of brilliant light that appears to zigzag. It actually follows a winding path, like a river. The single streak of lightning often breaks into several branches or forks.

**SHEET** lightning has no particular form. It is usually a bright flash that spreads all over the horizon and lights up the sky. Sheet lightning is really light from a flash of chain lightning that takes place beyond the horizon.

**HEAT** lightning, often seen on summer evenings, is the same as sheet lightning, but the flashes are fainter. Thunder usually does not accompany them. The lightning occurs too far away for thunder to be heard.

**BALL** lightning seems to consist of balls of fire, as small as walnuts or as large as balloons, that last about three to five seconds. They fall swiftly from the clouds until they strike the ground and explode. Sometimes they roll slowly along the ground and do not explode until they hit an obstacle. Ball lightning is the least understood of all forms of lightning. Many meteorologists even doubt that it exists. They think it may be an optical illusion. However, so many reliable witnesses have seen it, that scientists have begun to study it. They have produced ball lightning in the laboratory. This kind of lightning does not appear to be dangerous.

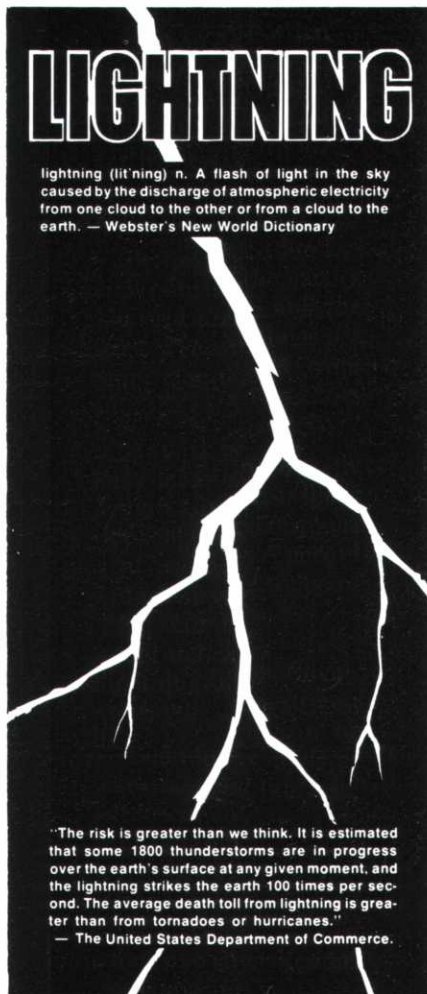
According to the United States Department of Commerce: 1800 thunderstorms are in progress over the earth's surface at any given moment, and the lightning strikes the earth 100 times per second. The average death toll from lightning is greater than from tornadoes or hurricanes.

Normal household current usually contains around 200 amps whereas lightning can contain up to 200,000 amps. Don't be misled by amperage. A person can be killed with as little as 3 amps of electricity.

Lightning also poses another threat. Heat is a problem with lightning strikes. A person struck by lightning can be burned with temperatures as high as 15,000 degrees fahrenheit. Lightning presents three initial problems:

1. High Voltage
2. High Amperage
3. High Temperatures

These three things can inflict serious damage to a person. *Continued on p. 66*



Florida with its tendency for surprise afternoon storms make the golfer and golf course employees a likely target. No one likes to think about getting struck by lightning. Perchance you find yourself in the midst of a surprise storm, keep these precautions in mind:

**Keep away from trees.** Lightning generally strikes tall objects such as trees, posts, poles, etc. By being close to these objects you may become a target and get shocked.

**Stay away from water.** Water is an excellent conductor of electricity and you may get shocked even if you are a distance away from the lightning strike or standing on wet grass. Do not seek shelter near a lake, river, etc.

**Stay away from metal huts.** Lightning, as with all electricity, is conducted through wet surfaces and metal.

**Seek shelter.** Get inside a building or inside a closed car. Do not seek shelter in a small partially enclosed building. Many outdoor "huts" still get wet floors.

**Open area.** If you are in an open area such as a fairway, crouch down or lay on the ground.

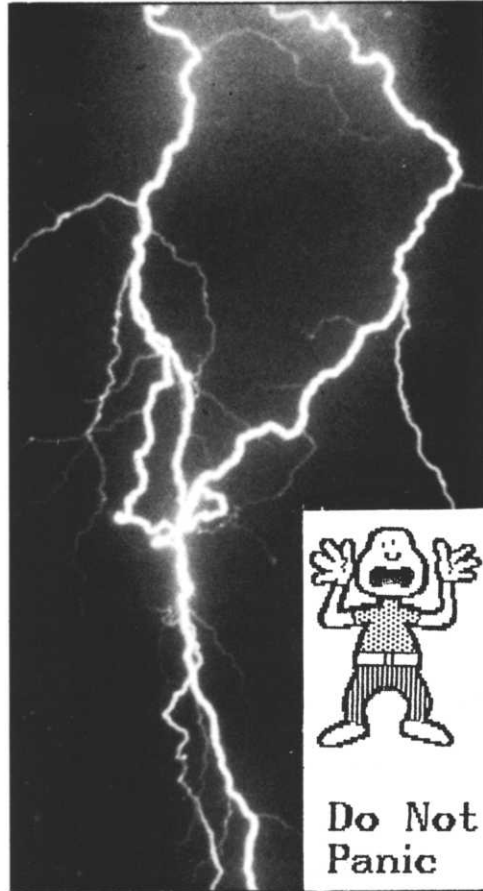
**If skin tingles, duck.** Static electricity will build just before a lightning strike. If your skin starts tingling, this is an indication of an impending strike. Get onto the ground quickly.

Because Florida's weather can change from beautiful sunshine to a torrential downpour in a matter of a few hours, use common sense and get back to the clubhouse or safe shelter before lightning strikes.

### How to Treat A Victim Struck By Lightning

Above all do not panic. Nothing gets done in a panic.

1. Before leaving the safety of a building, call Rescue. If possible, have someone watch for Rescue to guide them to your exact location. Time is

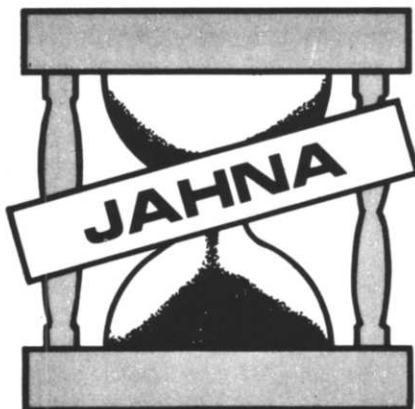


of the essence. Resuscitation needs to be started as soon as possible after the lightning strike.

2. Check the victim: If cardiac arrest, perform CPR. Keep working on the victim until Rescue arrives.

- There may be burns on the skin or burns inside the body. As electrical current passes through the body, it burns the tissues. From the entrance into the body until it leaves the body through the exit wound, the current damages the tissues in its path.
- Victims are usually thrown into the air, landing several feet from their original position. This landing may have caused broken bones and more importantly, it may cause a broken neck. A broken neck, if not handled properly, can cause permanent paralysis.
- Other people near the victim can be injured, too. Golfers play in groups from two to four. Anyone in the group standing too close or standing on damp ground can receive a serious shock. You may be treating more than one victim.
- Unless there is a severe threat to your life and the lives of the people around, you, do not move the victim. *Do Not* be tempted to put the victim into a golf cart and make a run for the clubhouse regardless of what the people around urge you to do. Remind people around you not to panic!

Lightning is an unpredictable act of nature that makes a mighty and sometimes deadly statement of force. True respect of this force is to *know* the rules for safety and to *follow them*. ■



# Your Sand Man

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