

LIGHTNING: THE UNDERRATED KILLER

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Lightning kills more people in the United States than tornadoes, floods, or hurricanes. During the 34-year period that ended Jan. 1, 1974, lightning was responsible for the deaths of about 7,000 Americans, or 55 percent more than were killed by tornadoes and at least 41 percent more than were killed by hurricanes and floods combined.

This total of lightning deaths is undoubtedly conservative, statistics-gatherers agree. Many are not included in national summaries because lightning usually kills only one person at a time. Occasionally there are two deaths from a single stroke; rarely as many as three or more (although multiple numbers of injured from a single bolt are not uncommon.)

Lightning deaths don't attract nationwide attention, as do the more-spectacular hurricanes, tornadoes, and floods, which may kill hundreds and cause many millions of dollars in property damage in a single episode.

Paradoxically, though, the statistics available indicate that the annual numbers of lightning deaths in recent years have been much lower than death tolls earlier in this century, even though the U.S. population has increased greatly. There were, for example, 120 per year for the decade ending with 1973, compared to an average of 329 per year during the decade of the 1940's. This apparent drop is misleading. To understand why, it's necessary to know a little about the complex subject of natural-disaster statistics.

Annual death tolls for hurricanes, tornadoes, and floods are prepared by NOAA's National Climatic Center in Asheville, N.C., and published in its annual "Climatological Data, National Summary." But lightning death tolls are not included in this summary, even though the Center receives each month tallies of lightning deaths and injuries from field offices of the National Weather Service and publishes them in a monthly periodical called "Storm Data."

Why? "Because we are confident that any annual total of lightning deaths we could provide would be too low for the nation as a whole," says Marvin Burley, chief of the Cooperative Data Branch of the Climatic Center. "Weather Service field units can't possibly learn about all of the lightning fatalities in their areas of responsibility. Their principal assignment is forecasting the weather, and this takes precedence over tabulating storm deaths, injuries and damage, although they do the best they can."

Then who does supply lightning fatality statistics for the nation?"

For years, this information has been provided by the National Center for Health Statistics, U.S. Public Health Service, Department of Health, Education, and Welfare. The Center bases its totals on causes of death listed on certificates signed by physicians.

A logical first reaction is that these death certificates should provide an even more-accurate count than other sources, since such certificates are prepared one by one, by

skilled medical examiners. But there is a flaw in this reasoning, based on a change that took place in the Health Service's rules for tabulating lightning deaths more than 20 years ago.

According to Marvin D. Magnuson, former Regional Climatologist for the Western Region of the National Weather Service, "Statistics compiled by the Public Health Service prior to 1953 contain other causes of death, such as those resulting from fires started by lightning. In 1953, Health Service coding rules were modified so that all deaths caused by any accident that was secondary to the effects of lightning were to be assigned to that cause rather than lightning."

As a result, said Magnuson, deaths from lightning, which formerly totaled from 300 to 400 a year, have been greatly reduced in the record book since 1953.

Without debating whether deaths in lightning-caused fires should or should not be included as lightning fatalities, understanding the topic requires at least a cursory look at the number of lightning-caused fires, and an estimate of the possible number of fatalities therein.

To do this, one must look, first, at the number of fire deaths annually in the United States, and, second, at the proportion of fires caused by lightning. This can be done by examining "Accident Facts," an annual publication of the National Safety Council, which draws on a number of sources for its statistics.

In the 1975 edition, the Council lists a Health Service total of 4,362 fire deaths in private dwellings for the year 1973. In that same issue, the Council lists National Fire Protection Association statistics for 1973 indicating there were slightly more than a million fires for all causes that year, of which 21,600 or two percent were started by lightning. If one assumes that two percent of the fire deaths in private dwellings that year were also attributable, indirectly, to lightning, that would add 87 deaths to the 124 lightning fatalities reported in 1973 by the Health Service, for a total of 211.

A rough guess, true, but even this does not take into account indirect fatalities resulting from lightning-felled trees, electrocution by lightning-downed power lines, and deaths in forest fires started by lightning, all of which occur with some frequency. (Most forest fires in western U.S. are kindled by lightning.)

So it's clear that the real dimension of lightning's role as a killer, while uncertain at best, is undeniably a leading one when compared with other weather hazards.

U.S. Weathermen, seeking ways to reduce the annual lightning toll, can point to a number of statistics which offer clues as to where the greatest hazard lies and where to go and what to do to reduce that hazard.

One set shows that if you stay inside or get inside your home or a similarly large structure, you are in very little danger of being killed by lightning. This fact shows up clearly both in statistics from the National Center for Health Statistics and from NOAA's "Storm Data."

The Health Service statistics show this indirectly. Their figures are broken down by sex and by age. For the 10-year period 1964 through 1973, 1,015 of the 1,198 people killed by lightning--85 percent-- were male. The trend was very consistent, with the lowest proportion of males in 1965--80 percent--and the highest in 1966--89 percent.

Since boys and men are outdoors so much more than women the conclusion is obvious that the danger is chiefly there.

This conclusion is further reinforced in the breakdown by age. Considerably more than half of the males killed by lightning were aged 10 to 35--when outdoor recreation and work are engaged in the most.

That lightning danger is largely outdoors is also shown vividly in various studies by other authoritative persons and organizations and in the one year log of "killer-lightning incidents" culled from "Storm Data," which appears with this article.

Other definite patterns emerge from these studies.

In 1964, Magnuson, writing on "Accidents and Deaths from Weather Extremes" for "Medical Climatology," said that "on the average" during that period "175 persons were fatally injured each year by lightning" with "more than 70 percent of these fatalities" occurring during "June through August" and "only an occasional death" in winter. He added:

"It appears that city dwellers are somewhat protected by large steel-frame buildings. These tall structures tend to shield the adjacent areas and safely conduct the lightning into the ground. In rural areas trees--particularly isolated ones--are more likely targets because of their height. About one fourth of all fatalities from lightning have resulted from persons seeking shelter under trees....Males' deaths outnumber female deaths by four to one. A considerable number of farmers are killed while operating tractors in the field: in urban areas, the golf course has been a prime target."

In 1967, Ferdinand H. Zegel, of the ESSA Atmospheric Physics and Chemistry Laboratory, confirmed Magnuson's conclusions in an article in "Weatherwise" entitled "lightning Deaths in the United States: A Seven Year Survey from 1959 to 1965." Zegel also provided other useful generalizations and statistics. Among them:

....70 percent of all lightning deaths are single events--defined as a single death due to a single discharge.

....Nearly 15 percent of all lightning deaths occur in groups of two; the balance being three or more deaths in a single event.

....About 70 percent of all injuries and fatalities occur in the afternoon, 20 percent between 6 p.m. and midnight, 10 percent between 6 a.m. and noon, and about one percent between midnight and 6:00 a.m.

....While there were lightning injuries reported in all of the lower 48 states during that period, Washington and Oregon reported no lightning fatalities, and Alaska and Hawaii reported neither lightning deaths nor injuries.

....There is a higher-than-average incidence of lightning fatalities along some of the nation's principal waterways--the Mississippi, Ohio and Hudson Rivers and their drainage basins.

....Other lightning-prone areas are along the Gulf Coast, particularly the Tampa, Fla., area, and in the mountains of Colorado.

Zegel also explored the situations in which lightning casualties occurred. He included a table of 960 persons killed and 1,736 injured by lightning in the U.S.--1959 through 1965--in which he singled out five important categories: "under trees," "open water," "tractors," "golf," and "telephone." He explained that:

"Open water" included casualties among people swimming and being near or on beaches, piers, levees, small boats, water skis, and so on.

"Tractors" included people on, in, or near farm tractors and other implements, construction equipment, cars and trucks.

"Golf" did not include golfers in the "under trees" category.

"Telephone" consisted of people killed and injured while talking on a phone.

Zegel did not say whether people killed "under trees" were known to have been standing under isolated trees or in a forest, although other investigators say it's usually the former. Out of the total 2,696 lightning deaths and injuries during the seven-year period, Zegel extracted 643 which were known to have fallen into these five categories with the following results.

....Eight percent (102 dead, 120 injured) were known to have been under trees.

....A little more than five percent (78 dead, 70 injured) were in or near open water.

....A little less than five percent (69 dead, 60 injured) were in the "tractor" category, but only four of the injured and none of the dead were known to have been inside a car or truck.

....Almost four percent (36 dead and 68 injured) were golfers in some other situation than taking shelter under trees.

....About one percent (4 killed, 36 injured) were talking on the telephone. (Zegel said he included this category because "many people do not consider the telephone as a lethal instrument though telephones, especially rural lines, are capable of acquiring great electric charges.")

Zegel did not categorize the remaining 2,053 lightning deaths and injuries in his study (very frequently, the exact causes are not known), but he did say many people were killed when in open fields.

Another broad-gage effort to categorize lightning deaths and injuries was made by Dr. Martin A. Uman in a book, "Understanding Lightning," published in 1971, when Uman was with Westinghouse Research Laboratories in Pittsburgh, Pa. (He is now a professor of electrical engineering at the University of Florida in Gainesville.)

Uman said he constructed his book around the question almost always asked him by people--ranging from high-school students to scientists--when he was lecturing about lightning. Among these, of course, were questions about how many and in what ways people were killed and injured by lightning, and what people can do to avoid it.

Like other researchers, Uman said "no exact figures on lightning fatalities are available," but added that, whatever the number, lightning causes more direct deaths than any other weather phenomena." Among other statements:

....About two thirds of the people involved in lightning accidents make a full recovery. Most of these are probably not struck directly, but receive a shock from being in close proximity to a stroke.

....The largest single category of lightning deaths--12 to 15 percent--is composed of people who seek refuge under trees during thunderstorms, and perhaps a third of these are golfers.

....Two of the categories mentioned by Zegel--"open water" and "tractors"--each probably claim about 10 percent of the total.

....Most lightning deaths occur outdoors, with more than 30 percent involving people who work there and more than 25 percent involving outdoor recreationists.

....Relatively few people are killed indoors by lightning, with the greatest number of indoor deaths probably due to lightning-caused fires, and a smaller proportion of indoor deaths and injuries involving people using telephones or standing by or touching fixtures connected to house plumbing or electrical wiring.

Drawing on a previously unpublished analysis of deaths and injuries from lightning during the 20-year period 1950 through 1969-- prepared from National Climatic Center data by Alan R. Taylor of the U.S. Forest Service--Uman presented the following conclusion:

....Of the 2,054 people killed by lightning in this study and the 4,156 injured, 494 of those killed (24 percent) and 941 of those injured (23 percent) were outdoor recreationists. Uman said the annual percentages in the recreationist category were rising in the later years.

....Farmers and ranchers made up 587 or 29 percent of those killed and 714 or 17 percent of those injured by lightning.

A further breakdown was made of casualties among outdoor recreationists.

....Of the 494 killed, 200 or 40 percent were in, on, or near open water, and 177 or 19 percent of the 941 injured were in that category.

....Golfers comprised 95 or 19 percent of those killed and 164 or 17 percent of those injured.

....Campers and picnickers comprised 36 or 7 percent of those killed and 188 or 20 percent of those injured.

....Viewers or participants in athletics comprised 29 or 6 percent of those killed and 65 or 7 percent of those injured.

Recreationists in, on, or near a land vehicle comprised seven of those killed and eight of those injured (about 1 percent or less).

....Horseback riders (for pleasure) comprised nine killed and eight injured (also a very small percentage).

Because the proportion of lightning casualties associated with water was so high, Uman included a still further breakdown in that category, as follows:

....Of the 200 killed and 177 injured, 39 of those killed and 30 of those injured were fishing from shore or bank.

....Thirty-three fishermen in boats were killed and 21 were injured.

....Thirty other boaters were killed and 38 injured.

....Nine swimmers were killed and nine injured.

>From studies such as these, drawn from years of case histories provided by the National Weather Service, the National Climatic Center, and other agencies, it had been possible to draw up a list of useful safety rules for avoiding death or injury from lightning.

First, of course, is to get the latest weather forecast before setting forth to work outside, or before embarking on a recreational outing. If there is a chance of thunderstorms, take a small battery-operated radio along to get occasional updates, and be ready to seek shelter if a severe thunderstorm watch or warning is announced. The more severe the thunderstorm, the greater the intensity and frequency of lightning strokes.

"And by all means develop the habit of keeping a weather eye on the sky," says Professor Helmut E. Landsberg, former Weather Bureau scientist and now Director of the Institute for Fluid Dynamics and Applied Mathematics at the University of Maryland.

"You don't need an official warning to tell you a thunderstorm is coming. In almost all cases you can see the towering thunder-head and occasional flashes of lightning at least a half hour in advance. Usually this is ample time to find shelter or take precautions."

When a thunderstorm threatens, all lightning experts agree that the most important single thing you can do is to get inside a home or a large building, or inside an all-metal vehicle.

"Outdoor recreationists frequently overlook the fact that their all-metal automobile is an excellent lightning shelter," says Dr. Landsberg. "Even if struck, the car allows the current to be discharged harmlessly into the ground."

Inside a home, avoid using the telephone, except for emergencies.

But what about the situations when people outside really don't have time to reach a safe building or an automobile--as when hunting, hiking, canoeing, horseback riding or camping in remote areas far from civilization? Or if they're soldiers on bivouac? Or farmers at work in their fields, willing to accept some risk but seeking to minimize it?

Under these circumstances, say the experts:

....Do not stand underneath a natural lightning rod such as a large tree in an open area.

....Avoid projecting above the surrounding landscape, as you would do if you were standing on a hilltop, in an open field, on the beach, or fishing from a small boat.

....Get out of and away from open water. (If you're swimming, lightning current from a nearby stroke can flow through the water to you.)

....Get away from tractors and other metal farm equipment.

....Get off of and away from motorcycles, scooters, golf carts and bicycles. Put down golf clubs.

....Stay away from wire fences, clotheslines, metal pipes, rails and other metallic paths which could carry lightning to you from some distance away.

....Avoid standing in small isolated sheds or other small structures in open areas.

....In a forest, seek shelter in a low area under a thick growth of small trees. In open areas, go to a low place such as a ravine or valley.

....If you're hopelessly isolated in a level field or prairie and you feel your hair stand on end--indicating lightning is about to strike--drop to your knees and bend forward putting your hands on your knees. In this position, if lightning strikes near you, the chances of it using your body as a conductor are minimized. (In the past, some authorities have recommended lying flat in this situation, to get as low as possible, but the International Commission on Atmospheric Electricity of the World Meteorological Organization disapproves this practice. It recommends kneeling, instead, so that a low profile is maintained while at the same time keeping as small an area of the body in contact with the ground as possible. The Commission also disapproves lying in a ditch or hollow where surface water or saturated soil is likely to be a better conductor of electricity than the surrounding area.)

....Groups of persons in exposed situations such as hikers or mountain climbers should spread out--staying several yards apart-- so that if lightning strikes nearby, the smallest number will be affected.

Many people apparently "killed" by lightning can be revived if quick action is taken. When a group is affected, the apparently dead should be treated first; those unconscious but breathing will probably recover spontaneously.

First aid should be rendered to those not breathing within four to six minutes or less to prevent irrevocable damage to the brain, says the American Red Cross. Mouth-to-mouth resuscitation should be administered once every five seconds to adults and once every three seconds to infants and small children, until medical help arrives.

If the victim is not breathing and has no pulse, cardiopulmonary resuscitation is necessary. This is a combination of mouth-to-mouth resuscitation and external cardiac compression. It should be administered by persons with proper training. The technique can be learned from local Red Cross or Heart Association chapters in one-day sessions.

Medical attention also should be given to victims who appear only temporarily stunned or otherwise unhurt, since there may be hidden effects.

WHEN LIGHTNING KILLED

July, 1974--June, 1975

This list contains 90 incidents or episodes where one or more persons were killed by lightning in the year that ended June 30, 1975. It was culled from the monthly periodical, "Storm Data," published by NOAA's National Climatic Center. The list is not considered to be a complete tally of the lightning death toll, because it is known that fatalities listed by the U.S. Public Health Service's National Center for Health Statistics run consistently higher than totals from the Climatic Center. Even the Public Health Service tallies do not tell the whole story, because they do not include deaths in lightning-caused fires, which are known to be numerous.

In addition to the 60 injuries listed here, "Storm Data" reported 144 other injuries in lightning strikes where no deaths occurred, for a total of 204.

Entries for each month are alphabetical by state.

WHEN LIGHTNING KILLED

July, 1974--June, 1975

July - 1974

1. July 23, Navajo County, Ariz.--A woman died over Snow Low in a house fire caused by lightning.
2. July 14, near Redfield, Ark.--Lightning struck and killed a motorcyclist while he was standing in an open field. His two companions were slightly injured.
3. July 1, Larimer County, Colo.--A girl was killed by lightning at the Iceberg Lake parking area at 12,000 feet above mean sea level on Trail Ridge Road.
4. July 5, Connecticut--A line of thunderstorms moved southeastward across the state. Lightning caused two deaths, one at Brookfield in Fairfield County and one at Bloomfield in Harford County.
5. July 14, Connecticut--a 9-year-old girl was killed by lightning while camping. She was sleeping in a metal-frame tent.
6. July 5, Wilmington, Del.--A mother was killed by lightning while standing on her porch.
7. July 10, Tequesta, Palm Beach County, Fla.--Two employees of the Tequesta Water Company were struck by lightning while working on a water meter at a private residence. One was killed and the other knocked unconscious.
8. July 28, Avon Park, Fla.--a 6-year old girl was killed by lightning while outside manually turning a TV-antenna pole for better reception.
9. July 26, Cleghorn, La.--A 27-year-old man was killed by lightning while working near a metal tool shed.
10. July 14, Jefferson Davis Parish, La.--A man riding a tractor on his farm near Woodlawn was killed by lightning.
11. July 25, Brownsville, Minn.--Lightning killed a 17-year-old youth as he slept in a tent. A companion was injured.

12. July 8, near Wewt Plains, Mo.--One lightning death. No details.
13. July 5, New Jersey--A line of thunderstorms moved eastward across the state in the afternoon. One man in Trenton was killed by lightning.
14. July 12, Philmont Scout Ranch, Colfax County, N. Mex.-- Lightning struck a group of scouts and leaders who had gathered beneath a nylon dining canopy to avoid heavy rain; killed one, injured six.
15. July 5, New York City--A thunderstorm passed northeastward across the south and central sections of the city. Lightning struck three girls in Central Park, killing one and injuring two.
16. July 14, Owego, N.Y.--One person was killed and two were injured by lightning during an evening thunderstorm. No further details.
17. July 28, Fallsburg, N.Y.--A midafternoon thunderstorm killed one golfer and injured another.
18. July 29, Westchester County, N.Y.--Lightning associated with a brief afternoon thunderstorm killed one golfer.
19. July 19, Laurinburg, N.C.--a 20-year-old man was killed by lightning and two small children were injured.
20. July 7, Shields, N.D.--a man was struck and killed by lightning while working in a hayfield.
21. July 10, central Ohio--One person was killed and another injured by a lightning strike on a golf course in Morrow County.
22. July 28, Hamilton County, Ohio--A boy was killed by lightning while walking from field to farmhouse.
23. July 27, Mount Hood Forest, Oreg.--Lightning-caused forest fires broke out in which a firefighting helicopter was lost with its crew of two.
24. July 28, eastern Pennsylvania--One death and three injuries were reported to have resulted from lightning strikes. No further details.
25. July 10, western Pennsylvania--One man was killed by lightning while cleaning up mud on a road; another died of a heart attack.
26. July 4, Waitwell, Tenn.--Lightning struck two youths who were playing in a wooded area; killed one, injured the other.
27. July 4, Memphis, Tenn.--Lightning struck three youths running across a playground; killed one, injured two.
28. July 25, western Texas--Lightning struck and fatally injured a woman during a thunderstorm. No further details.

August

29. August 3, Brooklyn, Conn--Lightning struck and killed a youth when he was running from a tent toward home at 2:40 a.m.
30. August 14, Bethany Beach, Del.--A young girl was killed by lightning as she stood on the beach.
31. August 5, Fort Walton Beach, Fla.--Lightning struck an aluminum ladder at a construction project. The man on the ladder was killed, three nearby workmen were injured.
32. August 14, Lehigh Acres, Fla.--Lightning struck four workers as they were preparing to leave a road-construction site. Killed one, injured three.
33. August 25, Tampa, Fla.--A 32-year-old Largo, Fla. woman was killed and two children were injured when lightning struck into a crowd watching an air show at McDill Air Force Base. The two children injured were the woman's 3-year-old son and an 11-year-old Clearwater girl.
34. August 25, Ocala, Fla.--Lightning struck a lakeside dock just west of Ocala killing a 17-year-old boy and injuring five other youths.
35. August 26, De Soto County, Fla.--a 17-year-old boy was killed by lightning while repairing a fence on a ranch near State Road 31.
36. August 1, Georgia--An 18-year-old youth was killed by lightning at a lumber camp on the Ocmulgee River.
37. August 11, Illinois--Lightning struck and killed a boy who was hunting in Jersey County.
38. August 1, Maine--One person was killed by lightning at Fort Fairfield. Aroostook County. No further details.
39. August 24, Maine--A line of thunderstorms developed across the southern part of the state. Severe lightning caused two deaths at Rockland.
40. August 21, Gulfport, Miss.--A woman was killed and her two nephews were injured by lightning while taking clothes off a clothesline during a thunderstorm.
41. August 9, New Jersey--One person was killed when struck by lightning at a rock concert at Atlantic City Race Course.
42. August 24, central New Jersey--A brief lightning storm killed one person on the beach in Long Island Township.
43. August 28, central New Jersey--Lightning resulted in one death. No details.
44. August 10, Clayton Lake, N. Mex.--A camper was struck and killed by lightning at 9 p.m. during a thunderstorm.
45. August 23, Wawarsing, N.Y.--A 15-year-old girl was killed by lightning and five others were injured while camping during a thunderstorm.

46. August 23, Brown's Summit, N.C.--a 9-year-old girl was killed by lightning.
47. August 26, Wake County, N.C.--A high-school boy was killed by lightning while on his way in from athletic practice.
48. August 28, Sanford, N.C.--A woman in her backyard was hit by lightning and died in a hospital.
49. August 31, Idabel, Okla.--Lightning struck and killed a 9- year-old boy while he was playing in his treehouse.
50. August 16, De Pere, Wisc.--Lightning struck and killed a youth as he was driving a tractor on a family farm three miles west of De Pere.
51. August 2, 25 miles east of Buffalo, Wyo.--Lightning struck a party of fishermen, killing one and injuring four others.

September

52. September 6, Tucson, Ariz.--A 17-year-old boy was struck in the chest by lightning but lived about one week before he died.
53. September 28, Orlando, Fla.--A 20-year-old Naval Training Center student was killed while jogging.
54. September 29, Lake County, Fla.--Two men were struck by lightning while working on a car. One was killed and the other slightly injured.
55. September 28, Belleville Ill.--Lightning killed a man who was playing football in a park.
56. September 11, North Manchester, Ind.--Lightning struck and killed a student playing soccer at Manchester College.
57. September 3-4, eastern Pennsylvania--Lightning killed one person. No details.

October

No Lightning Deaths Reported.

November

58. November 2, southeast Kansas--Lightning struck and killed a man in a duck blind near Lowell about 10 a.m.
59. November 19, Ashland City, Tenn.--The body of a hunter was found at the foot of a tree. He was apparently up in the tree when lightning passed from the trunk of the tree to him. A ski mask he was wearing showed burn marks.

December

No Lightning Deaths Reported.

January 1975
No Lightning Deaths Reported.

February

60. February 22, Muldrow, Okla.--A young man was killed by lightning while working on a television antenna. Another man was injured and taken to a hospital. Lightning apparently struck the antenna.

March.

61. March 23, Bettendorf, Iowa--At 3 p.m., a 14-year-old boy was killed while reeling in a kite with a nylon string attached to a Fiberglass fishing rod. Two companions were knocked to the ground, but otherwise unhurt.

62. March 13, Laurens, S.C.--at 7:40 a.m., one person was killed by lightning. No details.

63. March 23, Pickwick Dam, Hardin County, Tenn.--At 1 p.m., a man was killed by lightning while fishing from a bass boat at Pickwick Dam.

April

64. April 23, Wapello, Iowa--A 12-year-old boy was struck and killed by lightning while sitting under a tree, fishing.

65. April 27, Leavenworth, Kans--A man was killed by lightning. No details.

66. April 23, Moberly, Mo.--A man was killed by lightning. No details.

May

67. May 24, Cleburne County, Ark.--A 15-year-old boy was struck and killed by lightning at the Cove Creek Recreation area on Greers Ferry Lake.

68. May 7, St. Johns County, Fla.--Lightning struck and killed a 68-year-old man at the Guana Dam fishing pier. The victim was wearing a metal hardhat such as those worn by construction workers.

69. May 16, Wildwood, Fla.--One man was killed by lightning and one injured in an open field as they were running for shelter.

70. May 3, Monroe County, Ga.--One person was killed by lightning at High Falls State Park. No other details.

71. May 20, northern Illinois--A Commonwealth Edison construction worker was electrocuted when lightning struck a crane he was operating at the Seneca nuclear-powerplant site at about 2:50 p.m. Two other workers were injured and treated for burns.

72. May 25, Raccoon Lake, Ind.--Lightning struck the motor of a speedboat and traveled up the control wires, killing the driver. The 38-year-old man was knocked into the water by the bolt. His wife and two children, also in the boat, were not injured.

73. May 21, Macomb County, Mich.--One man was killed while working on an antenna in Shelby Township. Seven persons were injured by lightning in flooded section of Sterling Heights police station. A woman was injured in Warren.

74. May 20, Springfield, Mo.--A Springfield city employee was killed by lightning during a severe thunderstorm.

75. May 23, Scotland County, N.C.--A man was killed by lightning. No details.

76. May 27, Everman, Tex.--Lightning struck a tree under which three boys were sitting, killing two and injuring the third.

June

77. June 6, Eudora, Ark.--A 17-year-old boy was struck and killed by lightning when getting on the back of a pickup truck.

78. June 6, Briggsville, Ark.--An 82-year-old man was struck and killed by lightning while walking on his farm.

79. June 27, near West Memphis, Ark.--Lightning struck and killed two farm workers.

80. June 28, Eudora, Ark.--Lightning struck and killed a farmer who had sought shelter under a tree during a thunderstorm.

81. June 29, near Kingsland, Ark.--Lightning struck and killed a 6-year-old and injured her aunt while they were on a family outing on the banks of the Saline River.

82. June 3, Pompano Beach, Fla.--A 9-year-old girl was struck and killed by lightning while walking home from school during a thunderstorm.

83. June 20, Lakeland, Fla.--A 16-year-old boy was killed instantly and his 16-year-old companion was injured when lightning struck a power line adjacent to a tree house in which the boys were located.

84. June 15, Plymouth, Ind.--Lightning killed a 55-year-old man as he was taking shelter under a pine tree on a golf course.

85. June 3, Scottsbluff, Neb.--A bolt of lightning killed two men working in a beet field four miles east of Scottsbluff.

86. June 16, New York City--Two children were killed and seven injured by a single bolt of lightning when they took refuge from rain under a tree in Central Park.

87. June 20, Atlantic Beach, N.C.--A man was killed on the beach by lightning.

88. June 19, near Philadelphia, Pa.--A boy and a woman were killed by lightning in separate locations.

89. June 5, Franklin, Tenn.--A farmer was struck and killed by lightning while baling hay during the approach of a thunderstorm.

90. June 15, Carlisle, Tex.--An 11-year-old girl was burned to death in a fire caused by lightning. The lightning struck a window air conditioner and the home exploded into a blaze of fire. Another girl was injured.

LIGHTNING--CHIEF KILLER IN STORMY WEATHER

| | Lighting Deaths | Tornado Deaths | Flood Deaths | Hurricane Deaths |
|-------|--------------------|-------------------|-----------------|---------------------|
| 1940 | 340 | 65 | 60 | 51 |
| 1941 | 388 | 53 | 47 | 10 |
| 1942 | 372 | 384 | 68 | 8 |
| 1943 | 432 | 58 | 107 | 16 |
| 1944 | 419 | 275 | 33 | 64 |
| 1945 | 268 | 210 | 91 | 7 |
| 1946 | 231 | 78 | 28 | 0 |
| 1947 | 338 | 313 | 55 | 53 |
| 1948 | 256 | 140 | 82 | 3 |
| 1949 | 249 | 212 | 48 | 4 |
| 1950 | 219 | 70 | 93 | 19 |
| 1951 | 248 | 34 | 51 | 0 |
| 1952 | 212 | 230 | 54 | 3 |
| 1953 | 145 | 515 | 40 | 2 |
| 1954 | 220 | 36 | 55 | 193 |
| 1955 | 181 | 126 | 302 | 218 |
| 1956 | 149 | 83 | 42 | 21 |
| 1957 | 180 | 191 | 82 | 395 |
| 1958 | 104 | 66 | 47 | 2 |
| 1959 | 183 | 58 | 25 | 24 |
| 1960 | 129 | 47 | 32 | 65 |
| 1961 | 149 | 51 | 52 | 46 |
| 1962 | 153 | 28 | 19 | 4 |
| 1963 | 165 | 31 | 39 | 11 |
| 1964 | 129 | 73 | 100 | 49 |
| 1965 | 149 | 296 | 119 | 75 |
| 1966 | 110 | 98 | 31 | 54 |
| 1967 | 88 | 114 | 34 | 18 |
| 1968 | 129 | 131 | 31 | 9 |
| 1969 | 131 | 66 | 297 | 256 |
| 1970 | 122 | 72 | 135 | 11 |
| 1971 | 122 | 156 | 74 | 8 |
| 1972 | 94 | 27 | 554 | 121 |
| 1973 | 124 | 87 | 148 | 5 |
| Total | 6,928 | 4,474 | 3,075 | 1,825 |

Annual

Average 204 132 90 54

***U.S. death totals from lightning are from the National Center for Health Statistics, Public Health Service; for tornadoes, floods, and hurricanes, from NOAA's National Climatic Center. Some overlap occurs in death totals from hurricanes and floods, because most hurricanes deaths are drowning, and those occurring in rivers and streams swollen by hurricane rains are also counted as flood deaths.**