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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

CHATS WITH THE WEATHER MAN. Friday, February 21, 1930

NOT FOR PUBLICATION

Speaking Time: 10 Minutes All regions

PROTECTING FARM PROPERTY FROM LIGHTNING

OPENING ANNOUNCEMENT: At this time Station____ presents our old weather friend, Ob. Server. He is a weather-wise person and tells us interesting things about the weather, and what Uncle Sam's Weather Bureau is doing to interpret it. Protecting farm property from lightning is the subject of Ob. Server's talk today. All right, Mr. Weather Man.

--ooOoo--

Lightning is an electrical monster of tremendous power. It is destructive, dangerous, and deadly unless he is tamed. Just two weeks ago I tried to tell you something about lightning. Today, I'm going to try to tell you how to protect yourself and your property from this electrical giant.

To get the latest information on this subject I went over to Uncle Sam's Weather Bureau and had a long talk with Mr. Roy N. Covert, who includes with his other duties the answering of questions about protection from lightning. Mr. Covert wrote Farmers' Bulletin No. 1512-F, entitled "PROTECTION OF BUILDINGS AND FARM PROPERTY FROM LIGHTNING." Every farmer ought to read this bulletin. It's free for the asking.

It is not necessary for us to talk about how hard lightning can strike, how completely it may destroy a tree, or how many animals it can kill in a pasture. We know it can do all of these things, and do them all too well. The deadly, destructive power of lightning is not questioned at all. Let's frankly admit that lightning can do unbelievable things, and then pass to the subject of protecting ourselves and our property from it.

Lightning kills about 500 people in this country every year. This information comes from the Census Bureau. It injures about 1,300 people. About nine-tenths of all the people killed by lightning are killed in the rural districts. This indicates that the lightning hazard is by far greatest among persons engaged in outdoor pursuits. That certainly does include the farmer, and of course, it goes without saying that he is interested in protection from lightning.

Now the actual danger of personal injury from lightning is, in general, very small, except under certain circumstances of exposure out of doors, which, as a rule, can be avoided. Cases of injury from lightning are relatively rare within buildings of considerable size, or dwelling houses of modern construction. Lightning injuries are more frequent within small unprotected buildings of the older type. Isolated schoolhouses and churches where people may congregate during thunderstorms present a considerable lightning hazard if unprotected.

I told you two weeks ago that very few bolts of lightning jump from the clouds to the earth or from the earth to the clouds. Most of the lightning we see jumps from point to point in a cloud or from one cloud to another cloud. However, occasionally a big spark jumps earthward, and it will hit whatever is in its path. Of course, as a general thing, the more thunderstorms you have, the greater are the chances for these occasional bolts to jump to the earth. The west coast of Florida has about 90 thunderstorms per year. Out in Kansas the average is about 50 per year. They decrease to about 20 along the Canadian line from Quebec to North Central Montana. There is a whirlpool of thunderstorms in the mountains out in New Mexico and southern Colorado where the average increases to 50, 60, and 70 per year while most of the area roundabout has an average of between 30 and 40 thunderstorms per year.

Now what are you going to do to protect yourself when one of those severe thunderstorms occurs? Well some people get into a cellar, others believe they they are safe in a feather bed. Here's what the authorities say about protecting yourself from lightning:

"Do not go out of doors or remain out during thunderstorms unless it is necessary. Stay inside of a building where it is dry, preferably away from fireplaces, stoves, and other metal objects. If there is any choice of shelter, choose in the following order:

First, large metal or metal-frame buildings.
Second, dwellings or other buildings which are protected against lightning.
Third, large unprotected buildings.
Fourth, small unprotected buildings."

Now if you have to remain out of doors during a thunderstorm, you are warned to keep away from places named in the following order:

First, keep away from small sheds or shelters if they are in an exposed location.

Second, keep away from isolated trees.
Third, stay away from wire fences.
Fourth, keep away from hilltops and wide open spaces.

Now what are you going to do when you are out squirrel hunting and a bad thunderstorm comes up? You are advised to seek shelter in dense woods, a grove of trees, a cave, a depression in the ground, a deep valley or canyon, or at the foot of a steep or overhanging cliff. And the final word is: Don't take chances with lightning."

Now I have told you how to take care of yourself in a thunderstorm, and I have also told you what sections of the country have the most thunderstorms. Next we'll take up the protection of property from lightning.

The United States Weather Bureau believes that lightning loss is a great deal larger than it ought to be. At least $13,000,000 worth of property is destroyed every year by lightning. This much is actually reported, by the National Board of Fire Underwriters and that much more they estimate may be destroyed but unreported. In some of the Middle Western States lightning occasionally leads the list of causes of fire loss. This was true in Kansas, Oklahoma and Iowa in 1925. Lightning rods are used extensively in the sections just mentioned and that no doubt cuts down a big share of loss.

I guess you radio listeners wonder just how lightning rods protect buildings from lightning. Mr. Covert explains that lightning strikes buildings that are rodded just the same as those which are not rodded. Where lightning rods are used, well insulated and grounded, they form a path which the lightning follows so that the building suffers little or no damage. Lightning striking an unrodded building built of non-conducting materials causes considerable damage by shattering the non-conductors in its path to earth. But most of the losses are due to the fires resulting when the electric current passes through inflammable materials such as are frequently stored in farm barns. Such damage is almost entirely prevented by proper rodding.

Now what is a protected building? Well, it's a building usually with metal uprights called air terminals projecting upward from the highest part of the structure such as peaks, gables, chimneys, dormers, ventilators, etc. These air terminals are connected electrically to permanent moist soil by two or more down conductors and ground connections. The important ground connection to which the down conductor is attached consists of a buried body of metal, often an extension of the down conductor, which, as a rule, extends well into permanent moist soil, that is to a depth of 8 or 10 feet into the earth.

About fifty per cent of the farm buildings in Iowa are rodded. In 2 years 28 of these rodded buildings were destroyed by lightning fires. During the same time 503 unrodded buildings were destroyed. It's quite possible that many of the 28 rodded buildings were improperly rodded or poorly grounded.

If your farm is in the path of frequent thunderstorms, and your buildings are valuable, or house valuable crops -- or livestock -- then it might be profitable for you to consider rodding such buildings. Rodded buildings very frequently take a lower insurance rate, and the cost of rodding often becomes an economic investment.

The Washington monument is 555 feet high, and Mr. Covert has seen lightning strike it several times, but it is well rodded, so no harm results, but damage occurred before it was protected. The White House is also well rodded.

There is some lightning danger from a radio antenna unless it is protected by a lightning arrester or a grounding switch.

Well, my time is up, and I'll have to stop. In closing let me suggest that you write this station for a free copy of Farmers' Bulletin No. 1512-F, entitled "PROTECTION OF BUILDINGS AND FARM PROPERTY FROM LIGHTNING." This bulletin is well illustrated and full of information about rodding houses, barns, trees, radio antennae, and other objects. Good bye now until two weeks from today when I'll be back with you again with some more information about our changing weather.

--ooOoo--

CLOSING ANNOUNCEMENT: You have just listened to the regular Weather Man program which is presented from this station at this time every two weeks through the cooperation of the United States Department of Agriculture. Ob. Server Mentioned Farmers' Bulletin No.1512-F, "PROTECTION OF BUILDINGS AND FARM PROPERTY FROM LIGHTNING." Write this station for a free copy of that bulletin.

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National Oceanic and Atmospheric Administration

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