

FLASH

POINTS by DAVID BOWEN, F.R.Met.S.

OUR hottest areas have the greatest number of thunderstorms. Most of Lincolnshire experience just over twenty days of thunder every year, while Leicestershire, west Yorkshire, Essex and the mid-Thames Valley are next in line with between fifteen and twenty days. Western and north-western districts of Britain are the least thundery regions, particularly Scotland and south and east Ireland. In the Shetlands there are only about two days of thunder a year.

Between December and April thunderstorms are infrequent everywhere in Britain. Between May and August there are generally five thundery days in East Anglia, London, and Midlands and the Welsh Border counties for every one to two in the west and south-west. Then, by the autumn, there is a marked change as south-west England becomes more thundery than anywhere else. Dartmoor at this time is four times as vulnerable as any eastern area.

Thunderstorms can be a real menace on the farm, and, seeing that animals will insist on sheltering under lone trees or by isolated hedges or thickets, the comparatively small cost of insuring them against this risk is well worth while.

According to statistics recently made available, the oak suffers more from lightning than any other tree. Next in order came the elm and ash and, last of all, the beech. We should keep away from outbuildings, wire fences, single trees and all high ground during thunderstorms. Rivers and lakes should also be avoided.

Proximity

Some idea of the nearness of a storm can be obtained by counting the number of seconds between each lightning flash and the resulting thunder. A five-second interval shows that the storm is a mile away, ten seconds that it is two miles away, and so on in that proportion. A flash from a storm immediately overhead

Which is the most dangerous tree in a thunderstorm? Where are storms most frequent? Here are the answers to these and many other questions.

comes simultaneously with the thunder, which, in the experience of most of us (at one time or another) resembles the smashing of several tons of plate glass.

The well-known climatologist, Dr. C. E. P. Brooks, discovered several years ago that the number of thunderstorms over the world as a whole increases during years of peak sunspot activity. Fortunately, the eleven-year sunspot cycle reached its peak two years ago. However, one must also remember that, at any one moment, there are as many as four thousand thunderstorms over the world as a whole, and between forty and fifty thousand of them occur every day. The average annual death rate from lightning is one per million in population in this country, but it is eight times as great in Australia and in the United States of America. In South Africa it is fifty-five times as great, and here the thunderstorm season, between October and February, is a time of terror for those who live in small, overcrowded wooden buildings.

Lightning Conductors

In recent years there has been some confusion about the value of lightning conductors. They are necessary on tall buildings, and even on small buildings which stand on relatively high ground. They are also desirable on large or small buildings which stand singly on level ground and are not protected by nearby tall trees. However, except on very slim, steeple-like buildings, one conductor is seldom adequate, as it will protect only a small zone of the building. Houses having several chimneys, or which have a broad expanse of roof, invariably need several conductors. To install them is no job for the amateur handyman, and the cost of a large installation could be quite considerable in view of the large amount of copper rod that is used.

Chimneys, of course, are particularly vulnerable, since the lining of carbon

inside the stack makes an excellent conductor for lightning in the immediate vicinity.

People sometimes wonder what to do if they are caught in a thunderstorm when driving. The answer here is not to rush out of the car, for a saloon car with metal roof will (according to laboratory tests) give complete protection to those inside. If the car is struck—and this, as it happens, is very rare—the lightning charge will be conducted through the car to the metal hubs and from here will jump to the ground.

Probably the most dangerous place of all in a thunderstorm is a golf course—the metal tip of a swinging golf club acts as a perfect conductor! Make for shelter as soon as possible, and, in this

blinded by forked lightning) is not very convincing. But its exact composition remains a mystery. Nor is it known how it is formed. According to photographs, it varies in size and occasionally reaches the proportion of a football. It appears to have the habit of drifting through open windows and then exploding.

A single thunderstorm can be roughly compared to an atomic bomb explosion in slow motion. It contains winds that are vicious enough to tear an aircraft apart. A large thunderstorm would have the energy of at least one hydrogen bomb and enough electricity, if harnessed, to light a moderate-sized town for at least a week.

Conditions favourable for the development are to some extent predictable.

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regard, I am bound to say that a wooden golf pavilion offers less protection against lightning than the underside of a cliff (should one be handy). The object is to get away from the highest ground in the vicinity, if possible.

Quite apart from casualties and damage to property, we suffer a loss of thousands of pounds worth of milk every year during thundery weather, due to the great number of temperature fluctuations (not always felt by human beings) that are associated with it. Winter thunderstorms, however, can be ignored in this respect, since temperature fluctuations have little effect when they are below about 60 degrees Fahrenheit.

Meteorologists have long argued about whether there is such a thing as "ball" lightning. Due to the numerous reports of it, and even of photographs, the old theory that it is simply an image in the eye of an observer (temporarily

The best guide is to go by the local indications. Turretting cloud tops through the distant haze, a slight fall in barometer level after a very hot spell, or a slight fall of the barometer accompanied by unusually oppressive atmospheric conditions: these are all signs that we should be on the alert.

Don't blame the forecaster too much if he gives the alert, and no storm materialises. For although thundery weather can be general over a wide area, it need not affect the whole of the area at the same time, the point being that slight shift of wind here or there can make all the difference to where the lightning will strike and the rain fall.

Can lightning strike twice in the same place? Most certainly it can—and will. The Empire State Building in New York was once struck a dozen times within fifteen minutes!

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