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## Conference on European Tornadoes and Severe Storms

### **Deaths and injuries caused by lightning in the United Kingdom, 1852-1998**

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The Tornado and Storm Research Organisation (TORRO) began compiling a national database of lightning injuries and deaths in the United Kingdom in 1993 in order to quantify the risk of people being struck by lightning and the type and severity of injuries likely to be sustained in relation to location, activity and characteristics of the lightning discharge. Other TORRO databases concerning lightning incidents include one listing the details of animals injured or killed by lightning and one listing buildings and other structures damaged by lightning.

Typically, around 30-60 people are struck by lightning each year in the UK (population 59 million), two-thirds of them being men, of whom three people die. Annual fluctuations in the number struck by lightning reflect that in some years, large groups of people may be struck during a single event. For example, at Aylesford, Kent, on 2 September 1995, 17 boys and adults were injured when lightning struck the large golfing umbrella that one man was holding (the man, his wife and two sons suffered superficial and full-thickness burns but nobody was killed).

The majority of people affected by a lightning discharges from 1993 to 1998 experienced only minor injuries (e.g. suffering a small electrical shock, being thrown to the ground, experiencing a brief blackout or temporary paralysis of the arm or legs). A minority experienced severe injuries including full thickness burns and/or required resuscitation. Around 1:10 to 1:20 of people struck were killed. All the lightning fatalities in 1993-1998 occurred outdoors but around half of all personal-injury lightning incidents occurred indoors, with one-in-four of incidents involving the telephone. The annual number of deaths in England and Wales were examined for the past century and a half using the Office of Population Censuses and Surveys (OPCS) database initiated in 1852 (based on the cause of death entered on each death certificate) and brought up to date using the TORRO database of lightning fatalities. Lightning fatalities in England and Wales have fallen markedly since the second half of the nineteenth century.

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The average annual number of deaths decreased from 19 for the period 1852-1898 (84% of victims were male) through 13 for the period 1900-1949 (89% male) to five for the period 1950-1998 (82% male). In the most recent ten years, 1989-1998, this figure has fallen to three people. The worst years for lightning fatalities in the nineteenth century were 1852 (45 deaths), 1872 (46) and 1895 (43). In comparison, since 1960, there have been only two years when the number of deaths exceeded ten, namely 1970 (11 deaths) and 1982 (14). The large reduction in the annual number of lightning fatalities, despite the threefold population increase since the 1850s, is due to a combination of reasons. Today there are fewer people working in open fields (farm labourers were the most frequent group of lightning victims a century ago), the expansion of urban areas has meant more buildings and structures exist to divert lightning away from people, there is a greater awareness of the need to take safety precautions during a thunderstorm (using more widely available and improved forecasts), and there are many more occasions when paramedics and the public have managed to resuscitate lightning victims.