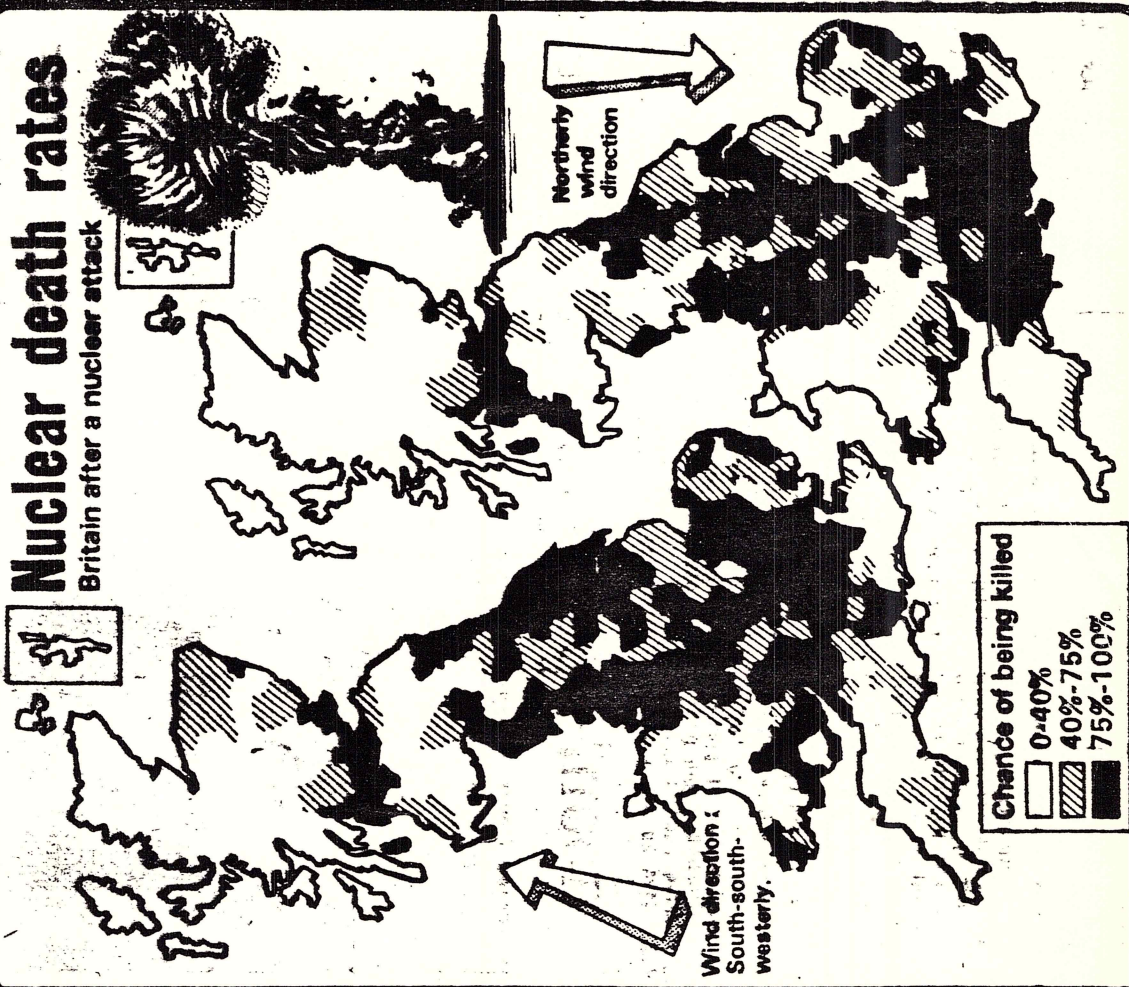


80% casualties

DAVID HEARST on a computer study of fallout

Nuclear death rates

Britain after a nuclear attack



EIGHTY per cent of Britain's population would be dead or dying within two weeks of a nuclear attack, says an independent computer study. On conservative estimates, between 43.9 and 44.2 million people would be killed or seriously injured.

The study has produced the first detailed "casualty map" of Britain, broken down into 458 districts and based on 1981 census statistics. The best chances of survival are in the Scottish Highlands, the Borders, North Wales and parts of the West Country but, as the study notes, these are also the optimum locations for cruise missile launchers and would become targets.

The author of the study, Dr Stan Openshaw, of Newcastle University's department of geography, says: "The geographical fact of life is that Britain is uniquely poorly placed and equipped to fight any kind of nuclear war."

"The country is too small there are too many important strategic targets and the population is too heavily concentrated near to potential target areas to offer much hope of large-scale survival even if population centres are explicitly banned. The most limited of nuclear wars would result in the most grotesquely unacceptable casualty levels."

Dr Openshaw bases his figures on an attack equivalent to 219 megatons of TNT, which many strategists agree is the lowest conceivable level of attack. Any smaller attack would assume a highly successful Nato 'first' strike. If the Soviet Union was to

published in the autumn they will not include estimates of casualties. "We can not estimate the likely casualties which would depend on many unforeseeable factors."

However, the latest Home Office circular on the government's planning assumptions for civil defence is more optimistic, in line with previous statements issued to local authorities in the past. While saying that the numbers killed or injured in a nuclear attack could amount to "many millions" it goes on: "Despite the potentially devastating effects of nuclear attack, there could be many millions of people left."

"Their immediate problems would be immense and would increase if supplies ran out and living conditions and morale deteriorated. But if effective planning had been undertaken in peacetime to provide them with essential supplies and assistance as soon as radiation levels allowed safe movement, the chances of their continued survival could be greatly increased." The circular makes no attempt to quantify the problems involved.

Asked how the Home Office could advise councils to plan Britain's civil defence if it made no estimate of likely casualties, the spokeswoman said planning assumptions issued recently went into "more detail" about likely target areas, but actual targets depended on the enemy's motives. "This is the difficulty with civil defence. It depends on such a wide

of all ratings is daunting. If your house is tucked away in Colwyn Bay or a quiet Borders town like Roxburgh your chances of surviving the first two weeks are 100 per cent.

Dr Openshaw says the figures are an indication of which areas of Britain are sensitive to fallout only. Where the figures for both wind directions fall approximately, such as in Carlisle, with a 24 per cent chance or Berwick-upon-Tweed with a 88-99 per cent chance, the computer model is at its most reliable.

"The outstanding conclusion is that most human life would simply cease to exist after a large-scale nuclear attack on Britain and despite what some politicians say or even believe this would be the most likely outcome for Britain from world war three." His figures concern only the immediate aftermath of such an attack. They take no account of starvation, lack of shelter, disease and climatic changes such as the nuclear winter which might arrive in the months after the attack.

The Home Office is revising its assumptions of the effects of blast and radiation, which have been criticised for being out of date. Original Home Office assumptions of blast damage were based on information collated on the effects of conventional weapons in the second world war. Similarly, they overestimated the amount of radiation needed to provide a lethal dose to a human being. A Home Office spokeswoman said that even when

deploy warheads available for use in Europe on a per capita basis, Britain could expect between 500 and 700 megatons.

The casualty rates are calculated by examining population spreads around targets for 342 separate warheads. Targets would be nuclear forces and military bases, airfields, power stations, ports, heavy industry and installations like the Bank of England.

But Dr Openshaw says assumptions about the location of people at the moment of attack, the weather and the protection that buildings provide from flash, blast and fall-out are critical. The two maps reveal how casualties would vary according to the general wind direction at the time of attack.

The computer has produced a short-term survival rate for each district working on a list of assumptions entered into the programme, which if anything errs on the side of conservatism, says Dr Openshaw. People in major population centres like London and Manchester have little or no chance of survival, even if the bombs are not deliberately targeted on them.

London districts produce 0 per cent, apart from an unexplained 0.01 per cent for the inhabitants of Kensington and Chelsea in a south-south westerly wind.

But the chances can vary dramatically for a town like Bournemouth, which is 76 per cent sure of survival in a south-south westerly, but only 4.7 per cent in a north-