

# ROBBIE DINWOODIE and CHRIS MULLINGER look at a st Nuclear Arms in the aftermath of

THE TOTAL number of short term casualties from blast, burns and radiation in a nuclear attack on Britain — similar in scale to that portrayed in the television feature film *The Day After* — would be 43 million if it of a total UK population of 60 million.

This is one of the conclusions of *Doomsday — Britain after Nuclear Attack\**, published today, which examines the likely effects of a series of Soviet nuclear attacks on Britain ranging from a minimal 38 megatons — the equivalent of 30,000 Hiroshima bombs.

Drawing on existing NATO and Soviet literature but rejecting the idea of a "limited nuclear war," the book's authors construct their own set of nuclear scenarios, labelled from "A" to "K." Their conclusions offer little comfort, especially to heavily-fortified Scotland.

Under "attack A," for example, targets in Stornoway, the Foray Firth, the Forth and all round the Clyde would be taken out." Even in this lowest category attack the number of circles drawn over the Holy Loch (denoting blast damage at one pound per square inch) on the book's map becomes confusing.

Yet these are only some of the 54 targets of supreme strategic importance in the UK. Attack B" adds a further 71. Life in particular and the Forth valley in general begin to look like unpleasant places to be. By the time "attack K" is reached the number of targets becomes startling and Central Scotland can barely be seen under the mists on the map.

*Doomsday's* authors — Stan Openshaw of Newcastle University and Philip Steadman and Owen Greene, both of the Open University — have produced a book which is as sober as its subject is sensational. The volume is packed with arcane and technical knowledge on such matters as blast damage contour lines and median lethal doses of radiation from fallout. But although it may be less compelling than soap opera, the book's treatment of the statis-

tics of nuclear holocaust is a chilling contribution to the debate.

It is, unashamedly, a product of the anti-nuclear movement and its authors have produced a study which they see as not only realistic, but as a direct challenge to the Government's civil defence exercises.

But they are clear: "The purpose of this book is to present as realistic, detailed and reliable a set of predictions about the effects of a nuclear attack on Britain as the current state permits."

Overall, they present either the official evidence gathered by the Government during civil defence exercises, or they draw on meticulously created alternative statistics. They have as their stated aim the purpose of banishing "forever the currently prevailing official assumptions that for planning purposes '75 to 90 per cent' of the population might be expected to survive."

## Study by members of Scientists Against The Day After

inhabited area of the UK would receive radiation doses in the two weeks following the attack of 900 rads or more. A dose of 450 rads is generally estimated to kill 50 per cent of those exposed and 600 rads would kill nearly everyone.

Yet even in "attack H," which the authors describe as the first "plausible" scenario and one in which only one third of the Soviet missiles targeted on the UK are launched, major industrial and chemical plants are destroyed and with them the nation's industrial infrastructure.

"Attack H" is central to the book, given that the authors describe it as "if anything an underestimate of the most probable scale of the attack on the UK" and that it represents the Government's civil defence exercise which CND christened "Hard Luck." The list of Scot-

In a pronouncement which sums up their overall stance, they say: "Some people in Britain today, including many politicians and members of the civil defence community, seem truly to think that a nuclear attack will be rather like the Blitz, if slightly worse, and that so long as our determination and morale do not fail, then we can pull through."

"For them the findings of this book will be news. In the Blitz, throughout the whole of the war, the Germans dropped some 70,000 tons of high explosive in Britain. The smallest single Russian warhead assumed to be used in the attack scenarios considered here — that of the SS20 — has more than twice that explosive power. Overall, in the attacks on Britain which we analyse, the explosive used — in the course of a few hours or days — would be equivalent to perhaps 50 times the quantity used

in all the countries involved throughout the entire World War II. It will not be the same as the Blitz."

The team have used methods of calculation devised by the US Department of Defence which were endorsed by the British Medical Association in their recent report on the medical effects of nuclear war. They conclude that in a 220 megaton attack, 42.5 million short-term casualties would result and 48.5 million casualties from an attack of 350 megaton. The only short-term survivors would be found in the Highlands, North Wales, parts of the West of England and, if a South-westerly wind is assumed, a significant number on the English South coast.

In densely populated Britain, 60 to 70 per cent of all buildings would be destroyed in such an attack and the level of fallout would be such that half the

over eight such dispersal sites. When this attack is added to that of the 220 megaton scenario, a total of 43 million are killed and four million injured.

Computer programs used by the Home Office until earlier this year for predicting casualties gave estimates of numbers killed and injured which are one third to one half of those predicted by the *Doomsday* authors for identical patterns of attack. But the Home Office figures omitted burns casualties, used Second World War data from conventional bombing for predicting blast casualties, exaggerated their lethal level of fallout radiation dose, and made no allowance for the effect of blast damage in reducing protection against fallout. The Home Office have now withdrawn their figures and are revising their calculations.

tish targets makes lengthy reading, covering airbursts, groundbursts, waterbursts and a series of combinations which hardly bear thinking about. Machrihanish, for example, is vaporised from the opening moment of an exchange by a combination of ground and air bursts.

The book also presents for the first time an assessment of the effects of Soviet nuclear attacks on dispersed Cruise missiles in Britain.

In a time of tension prior to nuclear war, Cruise missile launchers would move to pre-planned sites up to 100 miles from their base. But because of the constraints on possible dispersal sites, the Soviet Union are likely to have worked out where they are likely to be.

The authors assume 24 Soviet SS-18 missiles are "air burst"

The authors are keen to dis-mantle what they see as a false reliance on civil defence, claiming: "The analogy of the fire brigade is false. Where two nuclear weapons Powers confront each other, it would be more apt to compare the situation to that of two arsonists, each surrounded with drums of petrol and each threatening to set fire to the other's home. The first priority is to get rid of the petrol from both houses."

In television's *The Day After* the petrol caught light and civilisation went up in flames. But after watching the film, Stan Openshaw said he believed that *Doomsday* showed that the effect of a similar scale of attack on the UK would be far greater. "In our most likely attack scenario there are 352 warheads detonated — similar to the number in the film — but no realistic impression of the effects of such an attack has ever been given in this country before."

\* OPENSHAW, STEADMAN AND GREENE: *Doomsday — Britain after Nuclear Attack* (£15.50 hardback; £4.95 paperback. Basil Blackwell).