

David Watt

28/9/84 T.

Blotting out some nuclear facts

"Nuclear winter" has become a fashionable phrase in the disarmament debate this year and the screening of *The Eighth Day* on television the other night has put it on the wider political map.

Having been one of the first people to write about this issue in this country and to proclaim its importance, I can honestly say that all this discussion is very welcome. On the other hand, as usual with a new idea, the whole thing has been accepted with wildly uncritical enthusiasm by a lot of people who ought to know better.

It is crucial to be clear that the scientists are still putting forward a chain of unproved hypotheses, every link of which is speculative and which only several years of painstaking research will verify or discard. Everyone now knows the supposed conclusion of this chain, namely that in the aftermath of a large-scale nuclear war the smoke and soot thrown up into the atmosphere by burning cities would create a sun-proof blanket over the northern hemisphere, causing temperatures to drop to sub-freezing levels for many months, photosynthesis to cease and darkness and famine to stalk every nation.

Very few people seem to recognize the complexity of the preconditions necessary to produce this state of affairs:

- The nuclear exchange must be large enough to produce at least 1,000 huge conflagrations in built-up areas. This requirement depends, in turn, on the targeting strategies of the superpowers as well as on the weather at the time of the attacks — both very variable factors.

- The fires, once started, must generate a very large quantity of soot particles. It has been assumed that 10 to the power of 14 grams of small black particles would be produced by fires on the scale supposed; but it is not proved and in any case calculations are made difficult because fire conditions would vary widely.

- Very considerable amounts of this soot would have to reach high altitudes, for if it did not, rain and wind would soon disperse it. Forest fires, which produce about a third as much smoke in a year as the nuclear war is supposed to create, do not usually inject it into high altitudes. Big city fires might well be different, but just how different nobody knows.

- If the smoke did get to high altitudes, it is not at all certain how it would spread. Assumptions have been made on the basis of what we know about high altitude winds, but it is probable that the presence of the particles on a big scale would cause changes in the wind patterns. What these changes might be, is still not well understood.

It is certainly possible that all these assumptions will turn out

envelop his own country in a nuclear winter whether his opponent retaliates or not, he will never press the button.

Moreover this argument is even stronger than it looks at first sight, because it is not necessary for the nuclear winter thesis to be *absolutely* certain in order for it to have its effect. As in the case of nuclear deterrence itself, it is enough that decision-makers should believe that there is a reasonable probability that something unpleasant will happen, for then they will not take the risk.

But here, too, great caution is necessary. The more one thinks about it, the more one sees that the nuclear winter hypothesis is not necessarily the answer to the nuclear disarmament's prayer. In the first place, it does not do away with the necessity of possessing nuclear arms of some kind, so long as one's opponent possesses them. This can easily be seen if you imagine a situation in which the Soviet Union has one deliverable hydrogen bomb and the West has none. The Russians then have the capacity to blow up New York, and because the consequences of such an act would be far below the nuclear winter threshold, the threat would be real.

By the same token, nuclear winter does not affect the Gaddafi, Galtieri, Gandhi problem, for all the Third World countries who possess or are working to possess nuclear weapons know that the scale of their nuclear operations will remain irrelevant to the actual fate of the planet for many years.

All one can say on this point is that the nuclear winter theory, if proved, would make unnecessary vast arsenals of nuclear weapons and that if, as scientists hypothesize, 100-megatons of nuclear explosion would produce this calamity, the most that either superpower would need to hold would be 50 megatons minus one. Beneath the 100 megaton level, parity would be required in order to prevent one's opponent being able to let off more bombs on one's territory than one could on his, before bringing on the nuclear winter.

An important aspect of this point is that it allows tactical or battlefield nuclear weapons a role, and therefore leaves many of the familiar arguments about escalation and "no first use" virtually untouched. Nato can still invest in nuclear artillery in order to avoid the cost of conventional forces, knowing that a limited nuclear war in Europe would not have wintry consequences. If such a war escalated to intermediate-range missiles the threshold might be crossed — and in the confusion of an escalating nuclear exchange, that danger would be very high. But this consideration might not be enough to prevent either side taking the first step on the escalation ladder — a step which in itself, would be far short of the global catastrophe of *The Eighth*

Day. It follows from this that the point made by George Walden in the programme — that nuclear-free zones do not make much sense in the nuclear winter context — is wrong. Efforts to eliminate tactical nuclear weapons in Central Europe would still be relevant. On the other hand the Labour Party should be aware that this same context makes it more certain than ever before that neutralism would be no guarantee of survival.

Research should clear up many uncertainties, though it will never remove them entirely. Meanwhile it is irresponsible to raise people's hopes on rickety foundations. — I say "hopes" because, as everyone has realized, the whole thesis, if true, appears to make nuclear weapons unusable. We do not have to worry about Star Wars and other elaborate ways of defending ourselves. If the attacker knows that his attack will eventually

Call for more farm advice on nuclear winter

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15/10

By VICTOR ROBERTSON, Our Agricultural Editor

The creation of strategic "food Fort Knoxes" against the possibility of a nuclear war — and the following nuclear winters could be considered a worthwhile insurance, suggested Mr John Hay, the Scottish National Farmers' Union's vice-president, at the weekend.

At the very least, farmers' organisations want to see more meaningful advice given to farmers to deal with the possible outcome of a nuclear conflict.

The almost complete lack of useful Government advice in this field was revealed at a weekend conference on "farming and the nuclear winter" at Newtown St Boswells, sponsored by the Defence Research Trust.

All the speakers pointed out that projections of the aftermath of a nuclear conflict had far outstripped any official advice.

The majority of scientists who had been working in this field in Europe, the US and the USSR now agreed that a sizeable nuclear war would lead to vast amounts of smoke and dust being trapped in the upper atmosphere, blocking out about 95 per cent of the sun's light and, therefore, totally cutting off photosynthetic activity in plants, and creating sub-zero temperatures for weeks or months.

Yet the most recent advice from the Government was a pamphlet *Home Defence and*

the Farmer, first published in 1958, only moderately updated a few years later and now out of print.

One of the speakers, Mr Brendan Butler, a Devon farmer, said that the National Farmers' Union had tried to find out more about the latest information with no response from official circles.

From his own researches, and those of the Defence Research Trust, he painted a gloomy picture. But he was firm in his declaration that he was not part of a "campaigning peace movement. I just want, the agricultural industry to understand what the reality of a nuclear war would be."

Mr John Home Robertson, MP for East Lothian, who attended the conference, said he would appreciate the receipt of "pertinent questions" on the subject so that these could be brought up with the Ministry of Agriculture and other Government departments.

Mr Hay said the farmers' unions on both sides of the Border were campaigning for more up-to-date information on the subject.

The prospects appeared bleak, he said. But there could be a case for continuing to keep strategic food stocks "by carving food Fort Knoxes out of the hillsides" for the storage of supplies. This would also require research into guaran-

Civil defence update lessens nuclear fall-out

A MODERN Domesday Book landed with a thump on the desks of local government officials this month — 263 pages outlining the Government's plans and assumptions in the event of nuclear war.

Many local authorities, particularly in Scotland, have made it clear that they will have no truck with civil defence preparations, arguing that they create a misleading and over-optimistic impression of the aftermath of a nuclear holocaust. However, this major up-date in civil defence planning is highly revealing in terms of current official thinking on the subject, and according to Scientists Against Nuclear Arms it demonstrates a shift towards a slow acceptance of the realities on the part of the Government.

Dr Alan Longman, of SANA's Scottish group, argues that this shift is also accompanied by a willingness to approach the question in a more open and candid way.

"Similar documents from the 1950s were marked confidential and not for use by the Press," he said, adding: "Now, for the first time in any Government publication they have at least given sources — something that is basic to scientists, who tend to feel that if something isn't sourced it is to be doubted from the start."

So much for the credits. There are, however, debits to be accounted for. According to Longman there are serious flaws in two areas: while mentioning some sources of published material there are obvious gaps; and although official thinking has moved slightly closer to a more realistic acceptance of the consequences of nuclear war it still lags very far behind the views of most scientists, particularly over current thinking on the nuclear winter, the period of intense cold and dark which would be caused by the dense dust clouds thrown up after such a war.

A Government civil defence manual dating from 1956 suggested: "The plans of the public authorities would accordingly be based on a controlled resumption of activity in a large part of the fall-out area after about 48 hours." As scientists have discovered the full impact of radiation, the authorities have gradually lengthened their assessment of how long it would be before it was safe for survivors to emerge from the bunkers.

But this slow process of revision has got only as far as 14 days, a period most experts believe is scarcely more credible than the 48 hours assessment of the 1950s. "This concept of two weeks is utterly unrealistic," said Longman, arguing that a minimum of six weeks should be used as a basis for planning. With the modern tendency being for using greater numbers of nuclear weapons with smaller warheads, this would mean dust and debris would come down as fall-out sooner while it was still highly potent.

The entire document from the Scottish Home and Health Department, entitled "Consolidated Circular to Local Authorities on Emergency Planning," is virtually identical to the guidelines issued by the Home Office south of the Border. The civil defence part of it runs to 20 sections — covering everything from planning assump-

tions and local authority responsibilities to care of the homeless and emergency feeding. Individual sections cover fire and rescue services, the police and the armed forces. Missing from the current batch is a section on the health service, which is to follow later. A further five sections cover planning for peacetime emergencies.

While Longman welcomed the fact that the circular cited sources for its evidence he said there were glaring omissions, in particular the failure to mention the nuclear aftermath edition of *Ambio*, the environmental journal of the Royal Swedish Academy of Sciences, which was regarded as one of the most authoritative documents produced on the subject.

A close reading of the guidelines revealed a number of areas which clashed with the findings of *Ambio* and other reliable sources of information. In particular, the circular failed to base itself on the standard practice of "worst case analysis" and in general seemed over-optimistic.

The section on drinking water, for example, is based, like the rest of the guidelines, on the principle of 14 days in the bunker. But even if this is accepted, it suggests storing one litre per person per day — whereas the more commonly accepted minimum required is 1.45 litres, he said.

It also speaks of radioactive contamination of water being a "relatively minor hazard" for survivors — an assumption flatly contradicted by *Ambio*, as is the claim in the section on food and agriculture that "scientific assessments suggest that the short-term ingestion hazards arising from radioactive contamination of food are relatively small, provided that simple precautions are taken to remove fall-out dust from unpackaged or growing crops."

He said the Government had at least revised their figures on the amount of protection ordinary homes would give from fall-out, which were previously based on the assumption that windows would not be broken. But the most significant omission from the mass of material was any recognition of the whole concept of the nuclear winter.

"SANA is concerned about this," he said. "It came out of a conference nine months ago. It is extremely important and was widely publicised, so it could have been inserted as an extra section."

"They have circulated to civil defence officers the views of one critic hostile to the concept of the nuclear winter, whose article was published only in the *Civil Defence* journal, whereas I could name half a dozen top experts who came down in favour of the nuclear winter and who have been widely published. The nuclear winter changes everything — it's as if we learned the rules of one game and then found ourselves playing quite a different one."

Nevertheless, overall he detected "a welcome movement — if too small a movement — in the direction of realism. There is this repeated implication that after 14 days we can just come out and rebuild again, but at least in some of the documents there is a recognition that there will be both short-term and long-term problems and there will be a need to reconcile these."

16/8/84 T. Circular on civil defence shows little change

By Nicholas Timmins
Social Services
Correspondent

Department of Health plans to put the National Health Service on a war footing for conventional or nuclear attack have changed hardly at all in spite of fierce criticism from the British Medical Association and the Royal College of Nursing.

Both organizations last year criticized the previous plans as ineffective, with the BMA stating that effective regional or national planning for nuclear war was impossible.

The existing plans were "far too rigid" and "seriously deficient" the BMA said. The revised circular however, sets out a structure similar to the old one, recommending the appointment of regional and district health directors, the identification of first-aid posts and casualty clearing centres.

Neither the BMA nor the RCN has yet considered the draft in detail, but it does not appear to answer the criticisms made. Instead the circular seems to provide less detail than before.

Beyond that, however, the Department of Health's circular is little changed from the previous plan. In its report on the medical effects of nuclear war, the BMA gave a warning that the psychological effect of a large scale nuclear attack would render many people, including those charged with organizing services, incapable of action.

● The Government's latest attempt to bring into line the local authorities who have refused to implement civil defence plans in the event of nuclear war is not likely to succeed (Pat Healy writes).

Another circular, bringing together previous emergency planning guidance from the Home Office with some updating, is being considered by local authority associations.

But the Association of Metropolitan Authorities, whose members include a majority of the 157 local authorities who have declared themselves nuclear-free zones, has decided to ignore the section on war planning.