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What would happen to the north-west in a nuclear war?
Are the region's civil defence plans adequate?
How will the survivors be controlled?
Is there an alternative?

For the first time, this pamphlet assembles the pieces of the civil defence jigsaw in the north-west. Extensive original research now reveals:

* The targets
* The bunkers
* Emergency communications
* Plans for food, water, first aid, roads, shelter, energy and firefighting
* The full system of emergency regional government

'Home defence' plans in the north-west are, in fact, more concerned with controlling people than with protecting them. They tie in with secret plans for semi-military government to combat serious political upheavals. This pamphlet exposes these preparations, and considers ways in which the people of the region could be defended and protected without risking either annihilation or tyranny.

Thornton in Lonsdale microwave relay,

cover design by social resistance graphics.

TARGET NORTH WEST.

By Robert Poole & Steve Wright, The Richardson Institute Study Group on Civil Defence.

Civil Defence & Nuclear War in Cumbria, Lancashire, Manchester, Merseyside & Cheshire.

85p

TARGET NORTH-WEST

Civil defence and nuclear war in Region 10

By Robert Poole and Steve Wright
Civil Defence Study Group,
Richardson Institute for Peace and Conflict Research, University of Lancaster.

1982

Institute for Policy Studies
Arms Race and Nuclear Weapons Project
1901 Q Street, N.W.
Washington, D.C. 20009

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1) Fulwood Army Barracks. North-west Armed Forces HQ and Regional Seat of Government.
2) Sub-regional Control 101 (Lancashire and Cumbria). Basement of Government/DHSS offices at Duke's House, Houghton St, Southport. Partially flooded and probably useless at present.
3) Sub-regional Control 102. Ex-ROTOR station bunker, Hack Green, near Nantwich.
4) Cumbria County Control. Carlisle Castle.
5) Cumbria standby County Control. Not known, but possibly the district control, also used by the Navy, at Abbot's Wood, Mill Brow, Barrow.

Westleigh, showing aerial and ventilation pipe emerging from the bunker at the back.

6) Lancashire County Control. Emergency planning HQ, Westleigh, Lea Rd, Preston.
7) Lancashire standby County Control. Town Hall basement, Lancaster.
8) Merseyside County Control. Walker Art Gallery extension, William Brown st, Liverpool. ('Old civil defence building', perhaps dating from World War II).
9) Merseyside standby County Control. Basement, Technical College, Mornington Rd, Southport (district education authority premises).
10) Manchester County Control. Ex war room, Mill Lane, Cheadle.
11) Manchester Standby County Control. Basement, Bolton Town Hall.
12) Cheshire County Control. Basement, County Hall, Chester.
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14) Weeton. Home Office Supply and Transport Depot.
15) Pilling. Home Office Regional Wireless Depot.
16) Billinge. Home Office Wireless Depot (and relay station).
17) Burtonwood. Home Office Supply and Transport Depot (and US base).
18) Cumbria County Police HQ, Penrith.
19) Lancashire County Police HQ, Hutton, near Preston.
20) Merseyside County Police HQ, Liverpool.
21) Manchester County Police HQ, Chester St, Manchester.
22) Cheshire County Police HQ, Chester.
23) UKWMO Western Sector Control, Langley Lane, Goosnargh.
24) ROC Group HQ, near RAF Carlisle.

WHAT CHANCE WAR?

"Deterrence is dead"

—US strategist

"According to a Brookings Institution Study, prepared in co-operation with the Department of Defence, the U.S. government threatened the use of strategic nuclear weapons no less than 18 times between 1946 and 1970."

—'Counter Spy' July/August 1982

The political decision to use nuclear weapons has already been made. They await only the opportunity.

There was once a time, not so long ago, when nuclear weapons existed in theory only to prevent wars, not to fight them. They were 'the ultimate deterrent' because if used by either side, there would be Mutually Assured Destruction'—MAD for short. CND flourished for the first time in the naive belief that this was the ultimate in military horrors. Looking back, the early 1960s seems like a time of happy stability, for now the old theory of deterrence has gone, although it is still used by governments to justify their nuclear arsenals to their own peoples.

In the last 20 years, the accuracy of nuclear weapons has increased enormously, most notably in the new cruise missiles, and strategists now plan to use their own nuclear weapons to knock out the other side's—a 'counterforce' strategy. This means striking first, while an enemy's weapons are still on the ground—in fact, it means striking before the enemy even realises there will be a nuclear war. As well as the new missiles, there now exist battlefield nuclear weapons for just about every purpose—bombs, rockets, shells, mortars, depth charges and so on. Britain has an estimated 1400 nuclear warheads; it seems likely that the Falklands task force carried some of them. In short: since nuclear weapons are now designed to fight and win wars, since every advantage is now to be had from striking first, and since NATO's idea that a nuclear war could be kept 'limited', the nuclear threshold has dropped alarmingly.

Nuclear alarms and threats have become staggeringly commonplace. During the 1962 missile crisis, reports Calder, 'American bombers were orbiting the Soviet Union, waiting for the order to go in'. President Nixon put NATO on a top-level nuclear alert during the 1973 Arab-Israeli war. In November 1979, a tape simulating a Russian nuclear attack was accidentally put into the US air defence computer, and large numbers of nuclear bombers were scrambled into the air. If such a thing were to happen once either side has one of the projected computerised 'launch on warning' defence systems, a simple scare could become an automated holocaust.[1]

Even a 'limited' nuclear war will engulf Europe. Nigel Calder, impartially researching among top NATO strategists for the BBC, concludes that any sort of 'limited' nuclear war is highly unlikely: 'the most probable kind of nuclear war in the era of counterforce weapons is one in which both sides simply smash each

other as rapidly as they can, while their missiles survive'. Some 15,000 weapons from both sides would then fall on Europe: 'in the course of an hour Europe can be turned from a garden continent thronged with admiring tourists, into a festering ruin far worse than all the other hells Europeans have ever made—Verdun, Auschwitz, Dresden...'

Second only to West Germany as a target, but far more densely packed with bases and people, Britain would be the darkest corner of a dead continent. The government proclaims that 'if we have the sort of nuclear attack which we think we can expect', between 25 and 40 million people would die from the more immediate effects; 5% of the land area would suffer serious blast damage and 20% would have some blast damage. This is rubbish. After re-working the government's own figures, Open University scientist Philip Steadman accused it of 'a gross distortion of the evidence'. He found that 20% of the land surface of Britain would suffer serious blast damage, while at least 34% (containing 60% of the population) and probably over 40% would have some blast damage. More generally, the *Guardian*'s science correspondent, Anthony Tucker, has (in *Crucible of Despair*) described the 'systematic and deliberate underplaying of nuclear weapons effects' by the Home Office.[2]

The sort of nuclear attack which the government thinks it can expect was shown in the imaginary target maps for the Operation Square Leg exercise in Autumn 1981; 200 megatons of nuclear explosive, with the power of 16,000 Hiroshima bombs, fell on nearly 100 targets in England, Scotland and Wales. Using US government assumptions, such an attack would kill 75% of the population outright, regardless of future casualties from radiation illness and disease (which eventually doubled the death toll in Hiroshima), and wipe out virtually our entire industrial resource base. In fact, the size of the Warsaw Pact arsenal available for an attack on the UK suggests that we could expect a first strike of between 400 and 600 megatons, while the Secretary of State for the Air Force has admitted that an attack of 'more than 1000 megatons' would be needed to make sure of destroying our future share of cruise missiles. The main fire zone alone in this case would cover most of England and Wales and extend well into the north-west.[3]

TARGET NORTH-WEST

Even this region, far from the main concentration of air bases, is an important target, either for a 'limited' strike against vital energy sources or from an attack designed to eliminate long-term 'recovery capability' (industry, people and cities). The north-west also has some important military targets. The main targets in the region are shown in figure 1. Some of them were 'hit' by warheads of between a half and three megatons in Operation Square Leg; a number also appeared on a Soviet map of military potential targets in Britain, published in 1980.[4]

COMMUNICATIONS Perhaps the biggest risk is the VLF radio station at *Anthorn* near Carlisle, which 'relays reports from Fylingdales ballistic missile

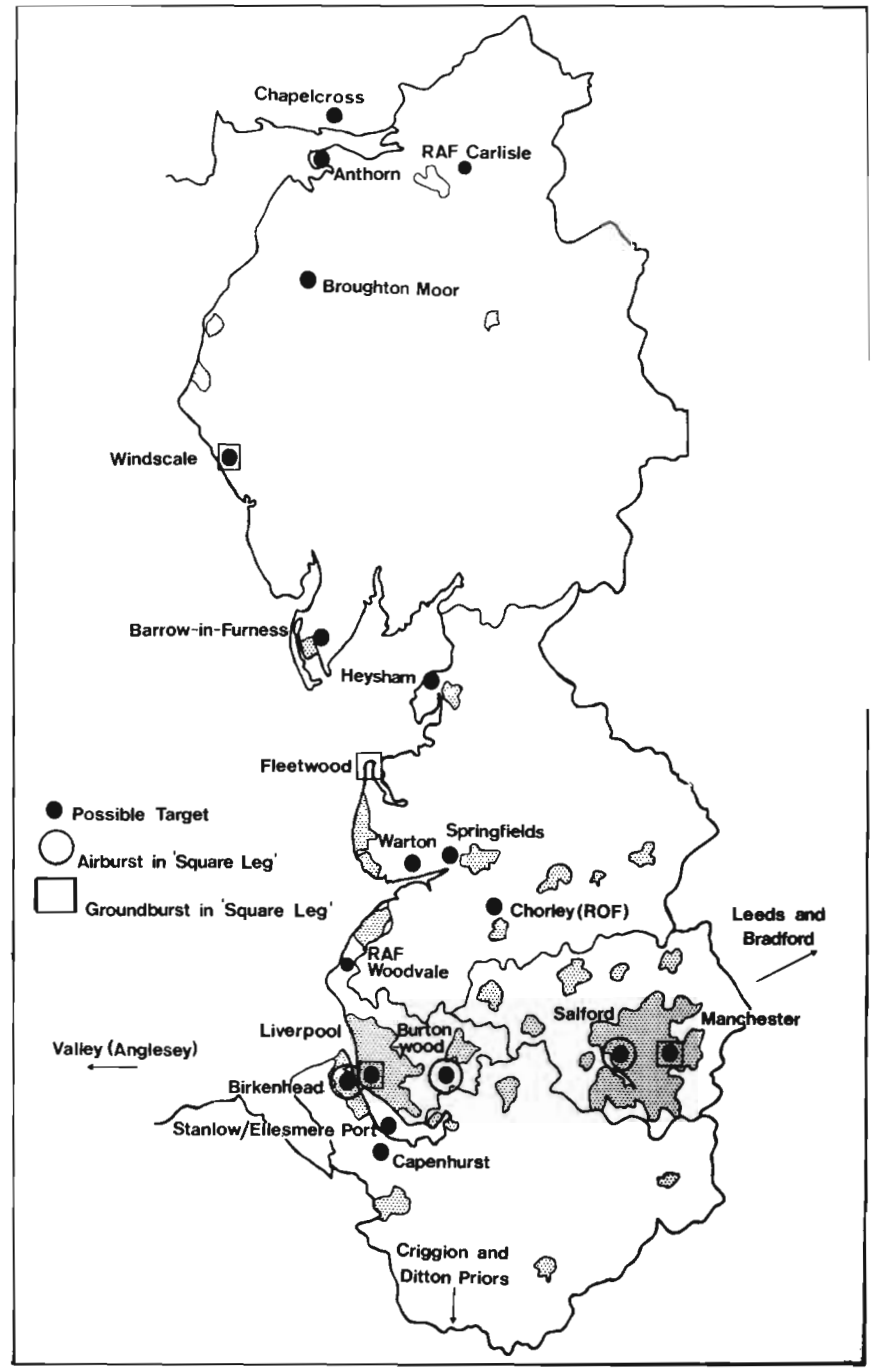


Figure 1. Possible nuclear targets in the north-west. Only selected military sites and airfields are included; some others are given in figure 9, and in the text.

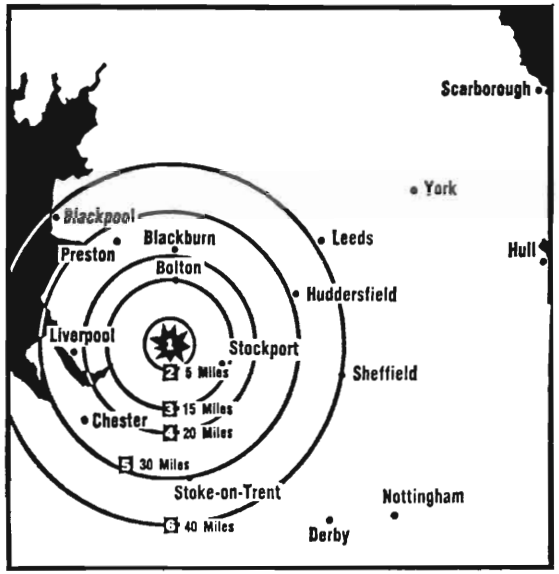
radar back to the American Air Defence HQ are Cheyenne Mountain, Colorado', and also backs up similar stations at Rugby and Criggion in communicating with Polaris submarines. Criggion is in north Shropshire, while the most important US undersea monitoring facility in Europe is at Valley in Anglesey; large parts of the region would be at risk from the fallout from groundburst attacks on these, depending on the wind direction.

MILITARY BASES *Burtonwood,* near Warrington, is the site of a truly gigantic US army store and helicopter base, one of only two in the country which stock the whole range of US Army equipment. It is also, according to Duncan Campbell, 'the probable site for the US Army's reserve stocks of theatre nuclear weapons', and thus a very likely target. Fallout from another US arms base at Ditton Priors in North Shropshire also threatens the north-west. *Liverpool* docks house a big US troop and supply landing facility. The Polaris dockyard at *Barrow* would be at risk—Cumbria's emergency planning officer believes that it would only be attacked if there were actually submarines there, but concedes that it would be 'a reasonable deduction' to suppose that, since the Russians may not know for sure, Barrow will be targeted anyway. The large, supersonic-capable airfield at *Warton,* near Preston, could be at risk, as well as those at *Samlesbury, Blackpool,* and *Ringway,* and the RAF bases at *Ternhill, Sealand, Woodvale* and *Carlisle,* (although none of these is of particular importance in a strike against the East).

ENERGY FACILITIES Home Office circular ES5/1976 states that 'the risk of air attack on North Sea gas and oil offshore terminals and individual oil refineries and electricity generating stations constitute the major threat' to the country in time of war. The north-west has several major energy facilities, and is Britain's main centre of nuclear activity. Although *Heysham* nuclear power station (which isn't working yet) was ignored in Operation Square Leg a similar reactor at Dungeness was probably the real target of the bomb which fell nearby on inoffensive Eastbourne. Fallout for an attack on the nuclear power stations at *Wylfa,* on Anglesey, and *Chapelcross,* just across the Solway Firth, would also threaten the north-west. The region also contains the British Nuclear Fuels nuclear fuel manufacturing plant at *Springfields,* near Preston; the URENCO uranium enrichment plant at *Capenhurst,* near Runcorn; and the nuclear fuel reprocessing plant at *Windscale* (earmarked for a groundburst in Square Leg). These three are all vital parts of the nuclear cycle in Britain, Europe and even the USA, both for providing reactor fuel and nuclear bomb material. There is no reason to suppose that nuclear installations would specially be spared.

Two of Britain's biggest oil refineries are at *Stanlow* and *Ellesmere Port,* on Merseyside; an attack on these would create an inferno that could engulf much of Liverpool. The projected terminal for the Morecambe Bay gas field will add to our worries.

INDUSTRY Industry and people concentrate in cities and, believes Peter Laurie, 'the crowded Liverpool-Manchester conurbation is almost certain to be a target in either a counter-force or a counter-city war'. In Square Leg, *Liverpool, Manchester, Birkenhead* and *Salford* were all considered to have been targets, mainly because of their urban-industrial significance, and perhaps also because of the docks, airports and oil refineries. If the Soviet Union were determined to obliterate Manchester, they might use one of their many 25-megaton warheads which, exploded in the air on a clear day, can create a main fire zone 55 miles across—see figure 2.



FLASHPOINT MANCHESTER

THIS, experts predict, would be the trail of death and destruction from the fireball of a Russian 5-megaton SS-19 exploding in central Manchester.

1. AT 3-4 MILES. Metals vaporise as the air temperature soars to 10 million deg. C in places such as Salford and Didsbury. Death is instantaneous.

2. AT 6 MILES. Metals melt. A bus in Sale would simply liquidise around its passengers.

3. AT 15 MILES. Rubber and plastic burst into flames. Aircraft standing at Ringway Airport explode. Car tyres in towns as far away as Stockport melt.

4. AT 20 MILES. Exposed woodwork in places as distant as Blackburn and St. Helens ignites spontaneously.

5. AT 30 MILES. Clothes flare. In Bradford, Stoke, Chester and Liverpool people caught in the open are horribly burned.

6. AT 40 MILES. People in towns like Sheffield, Leeds and Blackpool suffer second-degree burns and severe blistering.

PEOPLE IN Morecambe, Barrow, York and the North Wales resorts feel the explosion as a breath of hot air—as though they had walked past the open door of a furnace.

Figure 2. Heat effects of a 25-megaton bomb on Manchester.

Predictions, of course, can be futile; the Square Leg plan is not a target map but (according to Cumbria's Emergency Planning Officer) a collection of 'useful guesses'. Bombs miss their targets and fall randomly; the bomb on Fleetwood in Square Leg was probably a 'random'. There are far more bombs than targets. Frank Barnaby, former director of the Stockholm International Peace Research Institute, estimates that by 1990 there will be enough warheads available for Europe alone to hit every town of 20,000 people or more on the continent: 'proliferation and overkill have now gone so far that the military have run out of major targets'. A top-secret US target list of nearly 20 years ago revealed that in Europe, bridges, railways and motorway intersections were targeted. (In Lancashire, the M6/M61 junction, with the M55 and M61 joining nearby, would be leading candidate for destruction, especially since this would break the vital 'military road route' network). To the extreme embarrassment of the Pentagon, many of the targets were in 'friendly countries' in western Europe and the middle east, doubtless to 'deny them to the enemy'. The UK was not on that list, but the number of warheads to be targeted has grown enormously since then. Viewed as an 'unsinkable aircraft carrier' for the US, the UK could prove equally useful to the USSR; its use may have to be denied them.[5]

Whoever 'wins' the war, Britain will not live to find out.

THE EFFECTS OF NUCLEAR WEAPONS

"Hiroshima does not look like a bombed city. It looks as if a giant steamroller had passed over it and squashed it out of existence."

—Daily Express reporter, September 1945

Two British scientists who visited the ruins of Hiroshima suggested that to appreciate what had happened there, one should imagine a Lilliput-sized model village, inhabited by people six inches high, and then imagine what it would look like after a gigantic twelve ton bomb (twice as big as any conventional bomb then in existence) had exploded over it. The Hiroshima bomb was a tiddler by modern standards, with a power of 12 kilotons, or 12,000 tons of TNT. The typical modern nuclear bomb has an explosive power of one megaton, or one million tons of TNT. Although there is no reason to suppose that Lancaster will be a nuclear target, it is a typical modern town, and can serve as an example. What would happen if a typical modern town were hit by a typical modern bomb?[6]

Blast and fire effects

A one megaton bomb exploded on the ground will produce such a searing flash that people in the open eight miles away will have burns needing medical attention if they are to survive. It will produce a fireball three miles across which will create an expanding firestorm with hurricane-force winds, which will last for several hours, suffocating everyone within it, however well sheltered. It will dig a deep crater a hundred yards across, sucking the material up into a mushroom cloud twelve miles across and depositing it as lethal fallout over a much wider area. The blast wave will create a zone of serious destruction, with most private housing more or less destroyed, covering 104 square miles. Cloudy weather could reduce the burning effects of the bomb; a fine day or night could double their range.

A diagram cannot tell us everything about these effects (a single photo can say much more) but figure 3 shows the blast effects. If the bomb were an airburst, there would be much less radioactive fallout, but a much larger zone of fire and blast damage. Figures can only be approximate, and the circles marked will roughly do for an airburst as well, except that the 'total destruction' ring, A for a groundburst, is at B for an airburst, while 'irreparable damage' extends to ring C, 'serious damage' to ring D and there will be some damage and fires started as far as ring E, 13 miles away. All these neat figures will be ruined if there is a second nuclear burst, either sooner or later, near enough to affect this area; already weakened and damaged structures (and people) will collapse and burn much more easily.

Radiation effects

Radiation effects are of 3 sorts: prompt, short term, and long term. The Home Office believes that 'prompt' rays from the initial radioactive flash need not be

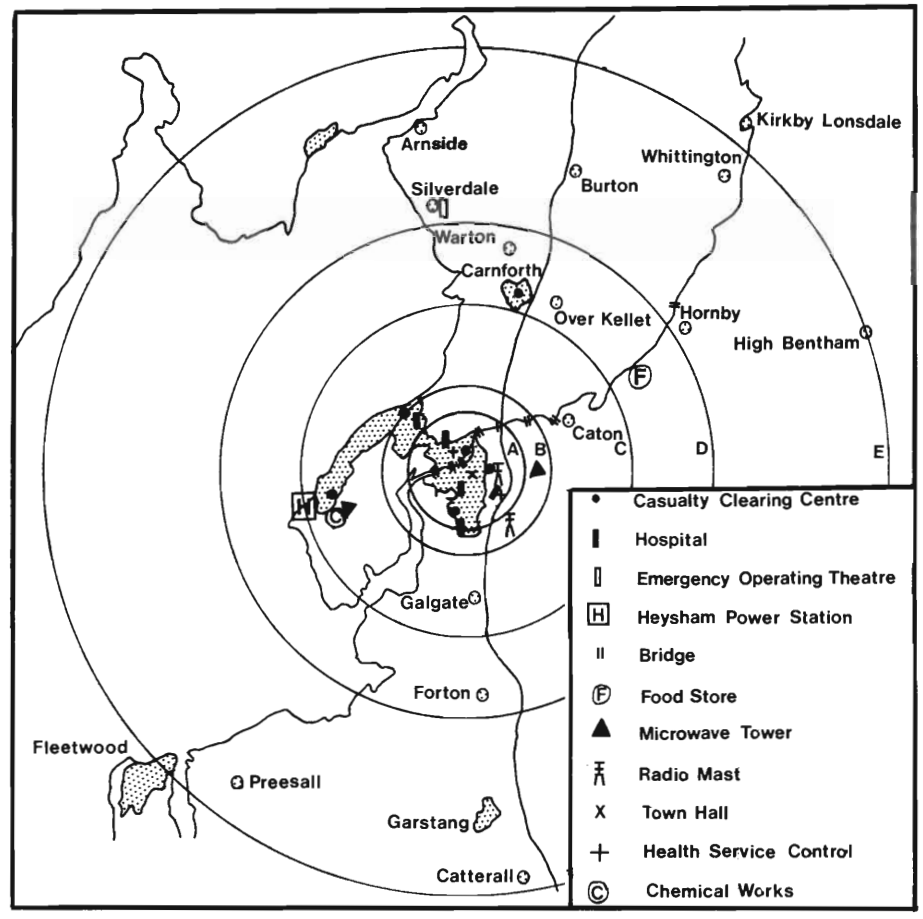


Figure 3. Blast and fire effects of a 1 megaton bomb on Lancaster.

EFFECTS OF A 1 MEGATON BOMB—BLAST AND FIRE

Distance in miles from ground zero Airburst	Groundburst	Max blast pressure (lbs/sq")	Immediate casualties Dead	Ser/inj	Wind speed of blast (mph)	Damage
—	1,000'					Crater
2.5	1.7 **A**	11	98%	2%	300+	Total destruction
4.3	2.7 **B**	5	50%	50%	160	Irreparable damage
8	4.7 **C**	2	5%	40%	65	Most houses wrecked
13 **E**	7.4 **D**	1	few	25%	35	Some damage; fires started

considered, because everyone within their range will die from blast or fire anyway.

The 'short term' is mainly a matter of a couple of weeks, during which time 92% of the radiation in nuclear fallout will have decayed. Radiation is measured in rads or rems (similar units for our purposes). One in ten people will develop anorexia at 40 rads, nausea at 50, vomiting at 60 and diarrhoea at 90. At 240 rads well over half those exposed have some or all of these symptoms, some very badly. At 350 rads there is a 50% probability of death without treatment; at 550 rads, 99%. Infants and the old are especially at risk; as little as 10 rads can abort a foetus. People who do not die recover within a few weeks, but may relapse and die. The Home Office claims that a person can absorb 220 rads within seven days and suffer 'no deterioration', but admits that at 520 rads, mortality could be 100%. It also decrees that 'those with only radiation sickness should not be admitted to hospital', for there will be no resources to treat them.

Figure 4 shows the fallout effects from a 1 megaton bomb dropped on Birkenhead, assuming a typical 15 mph south-westerly wind. After 14 days, once the worst is over, 560 square miles have received a dose of 500 rads or more. Half of that area has received 1000 rads, which may be lethal even to people who shelter for a month in patched-up houses with a relatively good protective factor of between 10 and 20. Again, this picture is idealised—idealised because in practice bombs falling even long distances apart would create overlapping fallout zones, combining to produce local 'hot spots' which make planning and mathematical forecasting quite impossible, even without the complication of changing winds.

In the long term, even very low radiation doses can produce illnesses such as cancer and leukemia; the current limit for workers in nuclear industries is 5 rads a year, still too high for the liking of many experts. These effects alone will produce a long-term cancer epidemic far beyond the capacity of even the present fully-fit health service. In Hiroshima alone, over 2,000 people a year are still dying from the effects of the small and inefficient experiment conducted 37 years ago; some of these were not even born when the bomb went off.

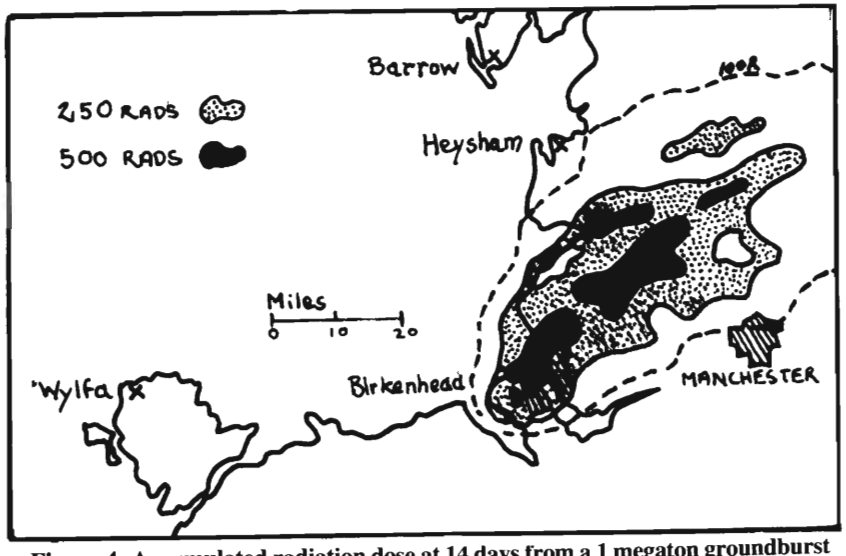


Figure 4. Accumulated radiation dose at 14 days from a 1 megaton groundburst (50% fission yield) on Birkenhead.

ATTACKS ON NUCLEAR INSTALLATIONS

"Had nuclear power been in widespread use at the time of the last war it is likely that some areas of central Europe would still be uninhabitable because of ground contamination by caesium."

—Royal Commission on Environmental Pollution, 1976

According to work done in the USA, 'centralised energy systems', of which nuclear power is the best example, 'are not only vulnerable but form essential industrial and hence valid military targets'; this is especially true of high power reactors, like those at Heysham. The Home Office states that in a war, 'many generating stations could be destroyed or rendered inoperable'.[7]

Nuclear installations at Dungeness, Windscale and Dounreay were deemed to have been hit in Operation Square Leg, and maps showing the effects of nuclear attacks on Barrow's nuclear submarine yards, the Chapelcross nuclear power station and the Windscale/Calder Hall complex have been on view in Cumbria's emergency planning HQ at Carlisle. The County emergency planning officer, Group-Captain Matthews, talking to us about this subject, stressed that plans made for exercises cannot be considered as targeting assumptions, and while agreeing that these installations would be more likely to be targeted than any town in Cumbria, added emphatically: "Having said that, *I don't know*".

The official government view, echoed by the Emrgency Planning Officer to the North-West Regional Health Authority, Dr. Fairfax, is that the possibility is 'not really a major consideration'; the additional radiation released from destroyed reactors would be 'a little added problem... minimal compared with the rest of the damage that would be done'. This is wrong. Whereas 92% of the radioactivity from a 1 megaton bomb will be decayed after 14 days, nuclear reactors contain a large proportion of radioactive material which will take a generation (like strontium-90 and caesium-137) or even many thousand years (like carbon-14 and plutonium-239) to decay to even half their original radioactivity. A 1 megaton bomb which destroyed a 1000 megawatt reactor would produce an area of 23,600 square miles over which the radiation dose after a year was *at least* 100 rads—thirty times greater than that produced by a 1 megaton bomb exploding on its own. With all the shorter-lived radioactivity now gone, this area would diminish further only very slowly.[8]

Heysham Nuclear Power Station

A nuclear power station can be destroyed in two ways: by damage of various sorts leading to a huge release of radiation or an uncontrollable meltdown ('The China Syndrome'); or by a direct hit, which will vapourise the contents and turn them into fallout. Figures 5 and 6 show the possible consequences if Heysham suffered either of these catastrophes.

Military planners expect that a nuclear attack on Europe would be preceded by a massive nuclear explosion high in the atmosphere whose electromagnetic pulse (EMP) would knock out communications over the entire continent and 'cause failure of the entire national grid, including destroying the sensitive control facilities at modern electric power plants'. More locally, the blast and flash from a 1 megaton bomb five miles away could damage the vital circuits and cooling systems of a US-type reactor, but 'most UK reactors including Heysham do not have the protective outer concrete shell that most US and European reactors possess. They would be more easily disabled by shelling, bombing or guided missile attack'. Even when shut down, nuclear power stations need constant monitoring, manning and power supply (even if only fuel for emergency generators) to ensure that a meltdown is averted.[9]

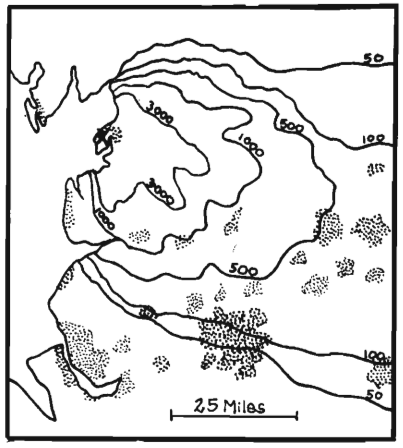


Figure 5. Destruction of Heysham Nuclear Power Station by a 1 megaton bomb: 1 day cumulative dose (rems) from ground contamination to a person in the open, assuming a 15mph north-westerly wind.

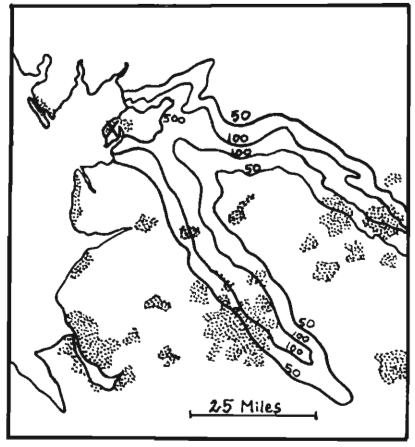


Figure 6. Meltdown of Heysham Nuclear Power Station: 1 day cumulative dose (rems) from ground contamination to a person in the open, assuming a 15mph north-westerly wind.

These two diagrams are not directly comparable with figure 4, which shows the accumulated dose after 14 days, rather than after just one day, as here. (Adapted from Political Ecology Research Group).

What could be done in such an event? According to Brian Hill, who, as Chief Executive of Lancashire is in charge of war/emergency planning,

> We do not see Heysham Nuclear Power Station as a likely target since 60% of such a detonation would be dissipated into Morecambe Bay but should it be subject to attack naturally there would be devastation in that area... although there would be casualties in that immediate area it would not affect the county's post attack administrative arrangements...[10]

The county plan for dealing with a major peacetime accident at the plant is not available to the public, but it involves evacuating everybody within a kilometre—

some 3,550 people—to 25 rest centres. (150,000 people live within five miles.) The county's major emergency scheme could supplement this effort; it was successfully used to house the homeless during the 1977 floods and, believes Mr. Hill,

> There is no reason to doubt why equally effective similar operations could not be mounted in a wartime setting.

Rubbish. In the first place, even in peacetime, evacuees would have to brave outdoor radiation and might well be safer at home. In the second place, after a nuclear attack, no-one is supposed to move for at least 14 days—much longer, with that level of radiation about. In the third place, huge areas of the region would be destroyed, rest centres and their potential occupants alike. In the fourth place, the Home Office point out that,

> Unfortunately, most buildings which are earmarked as rest centres in the event of a peacetime emergency, would provide poor protection in the event of fall out'. (ES7/1976)

The truth is that nothing will be done; nor could it be.

Windscale

The nuclear reprocessing plant at Windscale houses the highly active waste from dozens of nuclear power stations, in cooling ponds and in vulnerable surface waste tanks. Constant power and expert monitoring are needed to prevent both from overheating and releasing their contents into the environment. According to Group-Captain Matthews:

> Even a major leak of radioactivity from the storage plant would be confined to a very small area. The damage to the population and environment which such a leak would cause would pale into insignificance when compared with that resulting from the detonation of the weapon itself... I really do believe that, in the event of a nuclear war, BNFL Windscale will prove to be the very least of our problems.

Dr. Tognarelli, the secretary to the Windscale Local Liason Committee, takes a different view:

> The consequences of such an event (nuclear war) to the population and environment of West Cumbria would be of such significance that the problems of continuing to run the works would be overwhelmed.

As for the possibility of a direct hit on Windscale, Group-Captain Matthews has written:

> I doubt whether its strategic importance would justify its inclusion in an enemy target list.[11]

As we have seen, this optimistic view has to be carefully qualified. On the pessimistic side, Peter Goodwin's carefully-researched book, *Nuclear War: The Facts* judges Windscale to be a strong candidate for destruction. The results would be catastrophic beyond imagining—see figure 7. The Medical Research Council recommends that in a peacetime nuclear accident, people should be evacuated wherever they are likely to receive a total lifetime dose of 10 rems or, in cases of exceptional difficulty, 25 rems. A year after the vapourising of a single one of

Windscale's many waste tanks, Londoners could still be receiving 50 rads a year (similar to rems), having already absorbed far more.

The effects of attacks on nuclear installations are so catastrophic that a sort of Geneva Convention banning them has been suggested but, writes Prof Lindop, 'it is unlikely to be honoured once a war has started'.[12]

Figure 7. Land uninhabitable after one year (at 50 rads per year) following destruction of one nuclear waste storage tank at Windscale by a 1 megaton bomb. (Adapted from Prof Lindop).

The Long Term

According to Group-Captain Matthews, the aim of civil defence (or 'civil preparedness', as he prefers to call it) is 'our survival and recovery to some semblance of normality after attack', but, he adds, 'it is impossible to define what one means by normality'. Many eminent scientists have been trying to define 'normality' for the post-nuclear world. Some of their conclusions are summarised in Jonathan Schell's recent book, which has already assumed historic importance, *The Fate of the Earth.* An assembly of 800 Dutch doctors concluded in 1980 that:

> Large parts of the world would remain contaminated by radioactive fallout for generations. The atmosphere would be so greatly disturbed that all life on earth would be seriously affected.[13]

The ozone layer, which shields all living things from lethal cosmic rays, would be seriously disrupted for a generation, and perhaps for ever; as a result, the entire ecosystem on which the human race depends for all its needs would collapse. Even if you are in the perfect shelter, it may never be safe to come out.

EMERGENCY GOVERNMENT IN THE NORTH-WEST

(Information on the consequences of nuclear attack) "will be freely available except in the very rare cases where... release might actually harm the security of the nation... We shall be candid and we shall be outgoing."

—Leon Brittain, Home Affairs Minister, to the Commons, 7.8.1980

"This is the work of a traitor."

—Home Secretary to the Commons on the disclosure by 'Spies for Peace' of details of the regional system of government, 14.4.1963

The recent publicity given to the nuclear war aspects of 'home defence' has obscured its prime purpose, which is 'to secure the United Kingdom against any internal threat' (ES3/1973). The main preparations are made by police and the military; war recovery plans, the main concern of local authorities come second.

In 1968 the government disbanded the old Civil Defence Corps because it was deemed irrelevant to nuclear war. In the 1972-4 local government re-organisation, which conveniently brought together the boundaries of local authorities and the various public and emergency services, 'civil defence', peacetime 'emergency planning' and internal state security were brought together in a single hierarchical system now called 'home defence' whose main concern is to counter all forms of civil unrest, from strikes and rebellion to the mass resistance which may accompany any state attempt to risk nuclear war.

These plans involve replacing central government with a system of regional government, based round twelve regions and seventeen sub-regions, plus the usual counties and districts; a parallel military hierarchy takes precedence at every level, overseen, in theory, by the UK Commanders-in-Chief Committee (see fig 8). This system was tested in Operations Scrum Hall (1978) and Square Leg (1980), but both were essentially military exercises, part of NATO manoeuvres; among the north-western counties, only Cumbria chose to test its local civil defence to any great extent.[14] Operation Hard Rock, in Autumn 1982, will be the first national test of civil defence, though with the military acting firmly, 'in support'. Figure 9 shows the home defence set-up in the north-west.

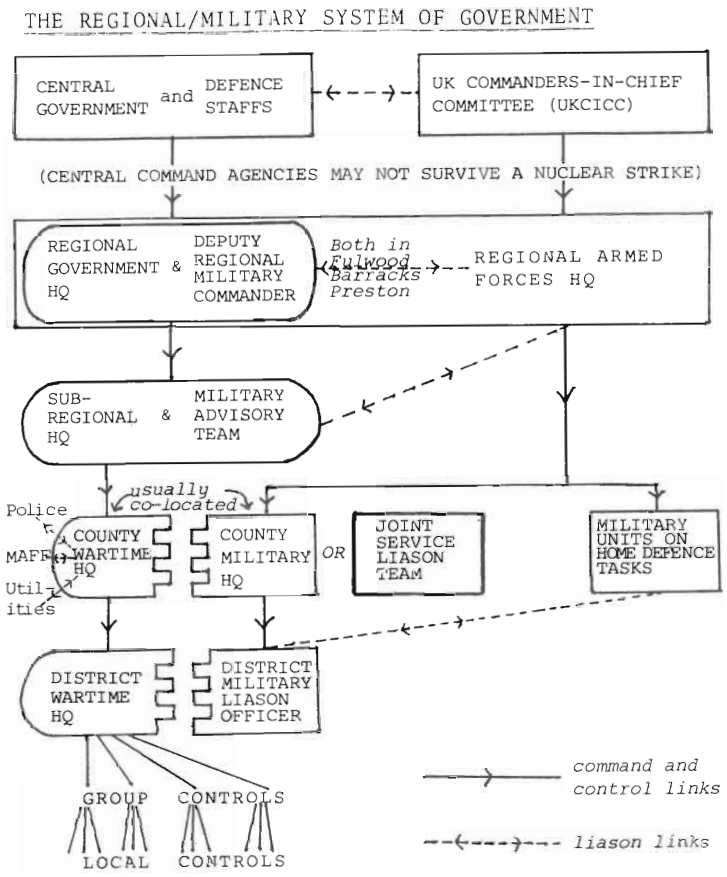


Figure 8. Structure of emergency government in the north-west—the hierarchy of communication, command and control.

The Region and Sub-region

Lancashire, Cumbria, Manchester, Merseyside and Cheshire comprise Region 10. The Regional Seat of Government has been constructed within the Regional Armed Forces HQ at Fulwood Barracks, Preston, which will be in overall control; the semi-civilian RSG will not actually be activated until a month or more after the attack, once things are safer. The Regional Commissioner will be a senior or Cabinet minister, supported by a Regional Police Commander (a Chief Constable, reputedly Lancashire's), a Regional Military Commander and a Regional Controller, and aided by 180 staff and experts of all sorts.

Until the RSG is activated, the sub-region will be the highest level of 'civilian' government, headed by a junior minister or perhaps a senior permanent civil servant, supported again by a controller, a police and a military commander, and a

staff of some 200. Sub-regional control (SRC) 101, covering Lancashire and Cumbria, is in the basement of the government offices in Duke's House, Southport—just outside the Sub-region, and presently flooded and useless. Aerials on the roof communicate with SRC 11 at Hexham (Northumberland), SRC 21 at Shipton-by-Beningborough (North Yorkshire) and SRC 102. SRC 102, for Manchester, Merseyside and Cheshire, is the old ROTOR station concrete bunker at Hack Green, near Nantwich (grid ref 644478). It is being secretively and extensively refurbished. The authorities are saying nothing, but a call to the contractors, Seddon's of Stoke, brought the guarded reply that the work was 'modification to Crown property', while a site worker said they were 'building a shelter for the government'.

The County

The Region and Sub-region are concerned with overall planning and resource allocation, while the small district authorities are concerned with mobilising local efforts. In between, the County Controller and his staff have very wide emergency powers and responsibilities. The Region's five county controls and their standbys, none of them particularly impregnable, are shown on the map. Manchester's Cheadle control, for example, could easily be disabled or destroyed by an attack in the area, according to the emergency planning officer, Bernard Hayes.[15] The Merseyside county control is an 'old civil defence building' under the Walker Art Gallery, possibly dating back to World War II. Lancashire's is in a semi-underground bunker at Westleigh, the existing emergency planning HQ and one of the three 'forward controls' under the old civil defence system (the others were at Rawtenstall Police HQ and Haydock Civil Hall). It was 'constructed at a modest cost in 1962 to house, in the main, communication equipment and associated staff', and will hold about 100 people, 'one third from county council and two thirds from government departments, and other public authorities'. The county standby HQ, in the basement beneath committee room B in Lancaster Town Hall, was reportedly reinforced in 1980 and would hold 80 people, but 'the protection offered will be no greater than that to be found in a private house'—albeit a very large one. Although these are the only two shelters for staff (without their families), the county emergency planning officer has suggested that County Hall in Preston would be used later if possible; an emergency electricity supply and a new electronic telephone exchange were installed in 1978-9.[16]

The county chief executive will normally be the county controller, working alongside county military and police commanders and supported, in order to ease the transition to unrepresentative government, by a committee of three councillors in whom the full powers of the council will theoretically be vested. These will normally be the three most senior chairmen—in Cumbria, for example, those of the full council, the policy and resources committee and the public protection committee. The county controller will have immense powers, relating particularly to 'law and order'; at least two county controllers have admitted they will have the authority to kill people ('summary execution').[17]

Unusually, the civil side of Lancashire's emergency plans have already had a thorough testing, during the coastal floods of November 1977. The Chief Executive took control and 'a good liason was established with the County Departments, the Lancashire Constabulary, Voluntary Aid Societies, industry, public utilities, and the Military'. All went well, but certain problems boded ill for the system's chances of dealing with a nuclear attack. The police found that 'Operations were

hampered by darkness, which made accurate reconnaissance almost impossible. The county surveyor's department had 'communications difficulties' with its emer-

hampered by darkness, which made accurate reconnaissance almost impossible'—the county surveyor's department had 'communications difficulties' with its emer-

gency centre, while the council found it had only one lorry big enough to rescue cars from flood water.[18] In a nuclear attack, the emergency planning office reckons on the extra problem of there being some 560,000 dead out of a population of 1.4 million, but this is based only on the discredited government guideline that 2/3 of the country might survive given basic protection; the county, like every other, is 'not privy to government assumptions about target patterns'—a hopeless state of affairs for local war planners to have to contend with.[19]

District and below

Districts will be administered along similar lines to counties, but with smaller staffings and more immediate local problems in mind. The Chief Executive of each district council is the 'District Controller (designate)' and will normally operate from the safest part of the authority's peacetime offices. Known district controls include Oldham Civic Centre, Swinton Town Hall, Bolton Town Hall and Lancaster Town Hall, the latter two also designated as county standby HQs. Some districts, such as Lancaster, have not yet nominated their war officers, but Bolton Council's Management and Finance Committee led the way as early as June 1975, and came up with the following list:

District Controller—Chief Executive
District Food Officer—Director of Education
District Food Distribution and Emergency Feeding Officers—Education Dept. officers, to be nominated by the Director of Education
Transport Officer—Director of Engineering
Intelligence and Information Officer—Public Relations Officer
Communications Officer—Director of Administration
Scientific Advisor—To be nominated by Director of Education
Officer for Health, Sanitation and Refuse—Director of Environmental Health
Officer for Billeting and Care of the Homeless—Director of Housing
Officer for Works of Repair and Demolition—Director of Architecture
Officer for Rescue—Director of Engineering
Officer for Burial of the Dead—Director of Recreation

The school meals service makes the education department important for emergency feeding while, in the blackest of ironies, his responsibility for parks and cemeteries leaves the director of recreation in charge of the corpses. Other designations, where known, are similar. By way of variety, Stockport has designated its Principal Electrical Engineer (Town Planning) as District Communications Officer. Salford's Technical Services Officer becomes the Rescue Officer, while the job of Information Officer goes to the Cultural Services Manager.[20]

The district will keep in touch with its people by using the existing ward or parish organisation. In Lancaster, for example, the polling station in each of the 29 wards will become a 'local control', while six schools become 'group controls' to link the local controls with the Town Hall. In Cumbria, things are slightly different; in each of the six districts the group controls are replaced by several 'desks' within the district control, each dealing with a group of wards or parishes.

Although the district organisations of the various emergency services are best able to help people on the ground, they are only useful to the higher authorities in so far as they help maintain some sort of stability in the region. They are firmly at the bottom of the pecking order when it comes to vital services and supplies, and the answer to public anger, unrest and panic is more likely to be repression than relief.

Finance

County emergency planning budgets in the north-west vary from 6p per head in Lancashire (£90,000) and 8p per head in Manchester (£216,000) to 25p per head in Cumbria (£117,000, of which £15,000 goes to the police). Per head comparisons can be misleading—Cumbria has high travel costs and a small population—but in no case does the money pay for significantly more than a planning staff and their various expenses. Counties find their way round this to some extent by relying on voluntary organisations and by recruiting volunteer scientific advisors from amongst local experts. These will man district and county controls to help monitor fallout, as well as giving various advice in peacetime; Cumbria has 29 advisors. Cheshire reportedly over 60. Cumbria also runs an ambitious programme to train 1% of the adult population—some 2-3,000 people—as wartime Community Advisors. 480 have qualified to date and another 130 have followed courses, but the council recently put a drastic brake on the programme. (A report in *Municipal Engineering* that the community advisors would be used to 'identify pacifists and lefties' was later withdrawn by the magazine (5 May and 30 June 1981) and it is not county policy, but it must be admitted that they would be a potentially valuable source of such information in a crisis, whether officially or not).

In short, the civil defence budgets for the whole of the north-west can pay only for limited planning, training and advice, often constrained to rely on corrupt Home Office guidelines; there is no money for any public equipment, stores or sheltering.

COMMUNICATIONS

Public Information

The state has already decided what we will be told in the period before a war. At first, 'the emphasis would be on assurances that everything possible was being done to prevent war and on references to the effectiveness of the nuclear deterrent' (if you can't spot the difference with the present official line, start worrying). Later, the wartime broadcasting service, transmitted partly from sub-regional HQs, will broadcast protection information designed to make people stay put and occupy themselves calmly with shelter-building and other displacement activities. It is also suggested that local planners should 'identify, but not at this stage approach' 'reliable' wartime public information officers—at county level, 'men (sic) of some standing... press or public relations officers would be suitable', while locally, council staff, teachers, librarians, PR and press people, citizens' advice

bureau staff... Lancashire has not earmarked anyone yet, but other counties may have done, and *you* could be one of them. The while aim of official information policy is to avoid creating 'alarm and despondency'—one reason why the 1976 edition of the official pamphlet *Protect and Survive* was marked 'not to be distributed, sold or shown to the public in normal peacetime'. Part of the reason for its issue in 1980 may have been that the reduced warning period now expected—between two days and a week, as opposed to a month or more previously—would not be long enough to distribute it. Cumbria's emergency planning officer, who is committed to effective 'civil preparedness', has described *Protect and Survive* as 'inadequate' but he has warned the Public Protection Committee (ironically in a memo marked 'CONFIDENTIAL. For Members Only') that in giving out alternative information, 'great care should be exercised if we are to avoid spreading alarm and despondency unnecessarily'.[21]

In short, official information is designed to persuade people to 'stay put' and not to flee, riot or panic, even though following such advice would be a death sentence to those in likely target areas. It is perhaps not too cynical to suggest that this is deliberate; neither the system nor the food supply could cope with vast wandering bands of survivors.

Telephone Communications

Communications between emergency HQs rely heavily on the telephone trunk cable network, which in the early 1960s was

> relaid away from the likely targets to guard against nuclear attack. A striking example is perhaps the underwater cable from Colwyn Bay to Heysham, bypassing the Liverpool-Manchester conurbation which is almost certain to be a target.

In a war or internal emergency, the Post Office Telephone Preference System can cut off 95% of subscribers, so that they can only receive calls, while giving priority to, on the first rank, lines 'vital to the prosecution of the war and to national survival' and, on the second, lines 'necessary to maintain the life of the community in a peacetime emergency'. Thus, the authorities gain secure communications while at the same time cutting off millions of potential 'subversives' from contact with one another as the state regroups itself. The role of restricted communications in combatting subversion is also shown in the way in which the lines required to tap our telephone system are routed through the secret defence communications system to prevent Post Office engineers from recognising the system.[22]

Lancaster telephone exchange contains a semi-underground secret emergency switching room, apparently with considerable capacity; although it doesn't officially exist, it is common knowledge amongst staff.

The telephone system is, of course, vulnerable to demage by EMP, but protection is not always easy. Recently there was an exercise in protecting vital lines at Carnforth exchange with portable lead blocks; it was supposed to be an emergency procedure, but the blocks were so cumbersome it took two days.

Radio

Fortunately, the region's authorities have radio to fall back on. Emergency HQs have separate radio communications, as do the various emergency services and

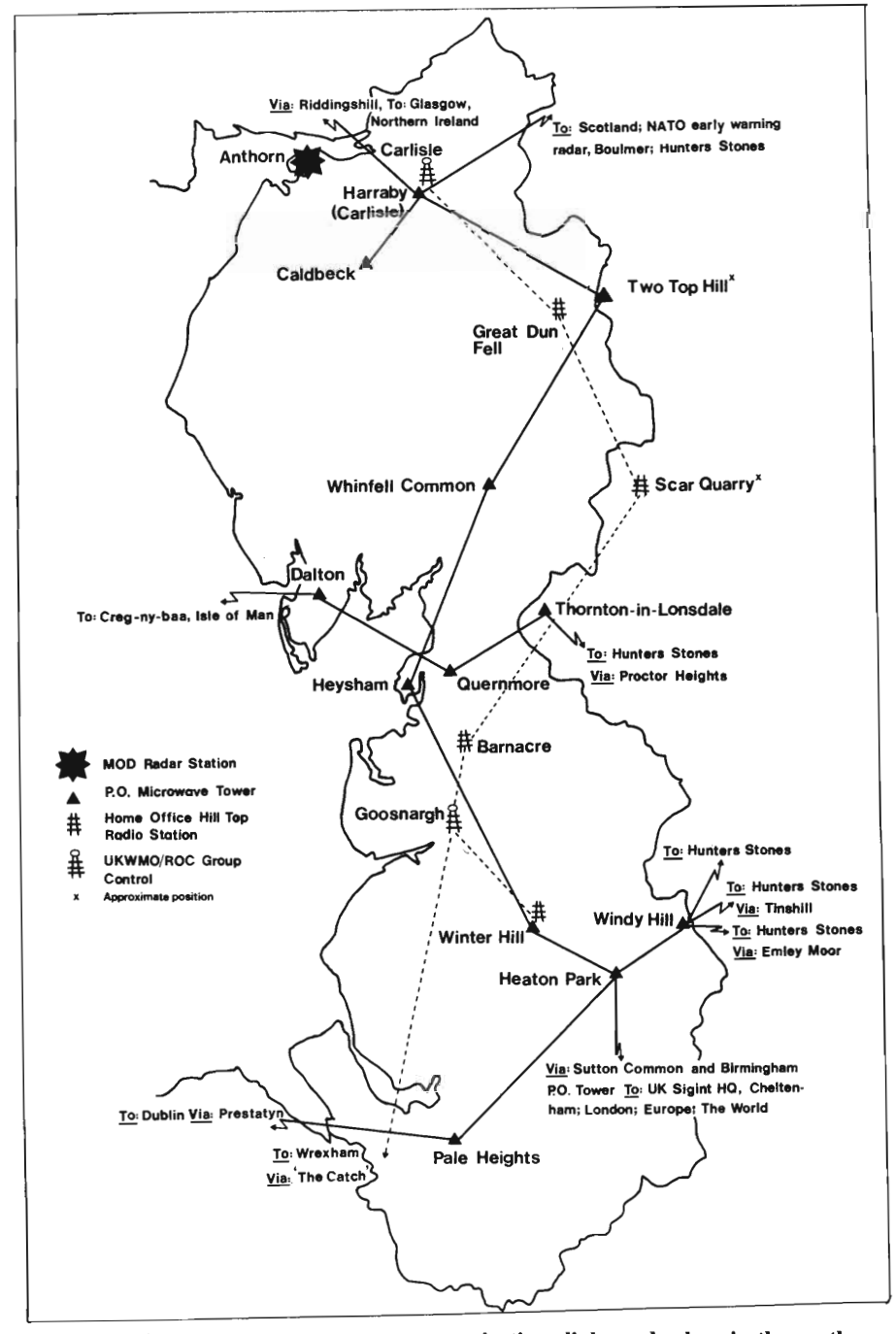


Figure 10. Important emergency communications links and relays in the north-west.

public utilities. These rely for their wider coverage on the Home Office network of hilltop radio stations which are recognisable by their two very tall masts, rising next to small brick and concrete control rooms with visible air filters. Those used in the Royal Observer Corps network are marked on figure 10 ; the rest are listed in appendix C. Pye Telecommunications (who operate the back-up aerial for Lancaster's fire, police and ambulance at Langthwaite) are currently wiring up the new 'MOULD' system, which by the end of 1983 will give Regional Military Commanders access to the existing emergency services radio net to back up their landline communications.[23]

The Microwave System

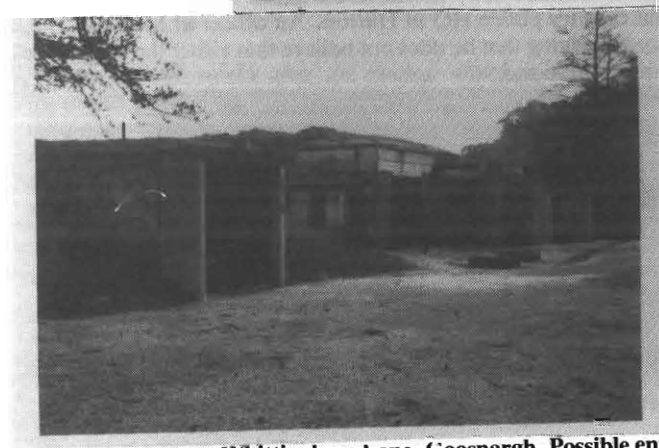
The Post Office supplements its cable network with a system of microwave towers which, double-routed away from likely targets, 'offers great capacity with high security'. The system carries TV signals as well as thousands of telephone lines; the network in the north-west is shown in figure 10 . (Gas and electric boards, the USAF and Air Traffic Control each have separate, smaller microwave systems; these are not shown).

The microwave system is more than just a secure system of emergency communications, for Britain is Europe's major centre of international communications. A huge network of undersea cables and satellite stations feeds into the UK microwave system, which in turn carries a number of extra routes converging on the tower at Hunters Stones, near Harrogate, and from there by cable to the nearby secret US National Security Agency base at Menwith Hill—'America's big ear on Europe'. One of these special links, built in 1963, links Hunters Stones with Lancaster at Quernmore, via Proctor Heights and Thornton-in-Lonsdale (near Ingleton), and continues to the Isle of Man with possible links to Ireland and elsewhere. In 1977 Steve Wright, a researcher at Lancaster University, was arrested and questioned (but not charged) by the Special Branch because of his correspondence with Duncan Campbell—one of the journalists accused of 'spying' in the farcical ABC trial at the time—about the Quernmore microwave tower. The US/British system of international eavesdropping has enabled the two countries in the past to monitor the international activities of the anti-Vietnam war movement and to make important interventions in international affairs. In a pre-war 'period of rising tension' we can be sure that this monitoring system, including the Lancaster link, would be humming with activity to counter diplomatic and 'subversive' moves alike which threatened the prosecution of the war.[24]

The U.K. Warning and Monitoring Organisation (UKWMO)

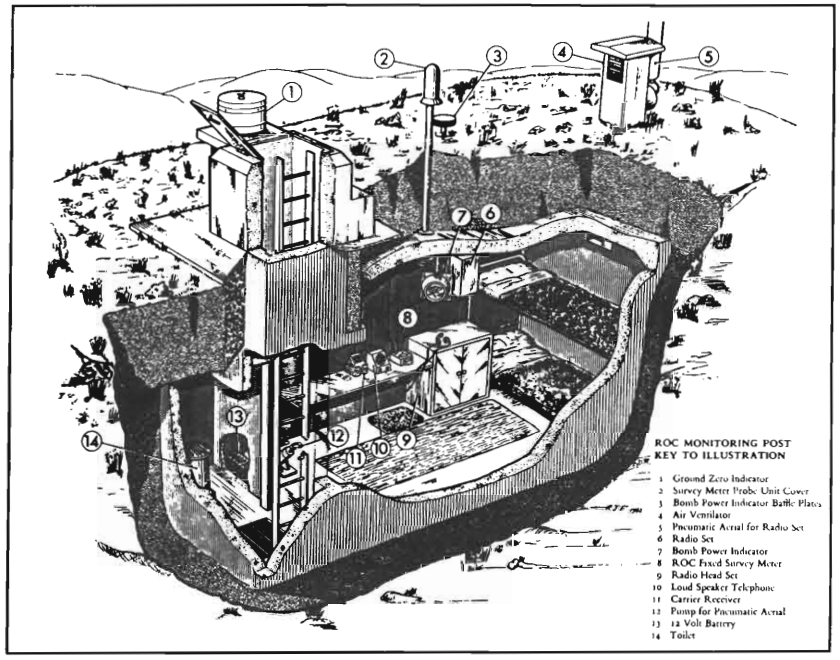
The UKWMO exists to warn of, and to monitor, enemy attacks on Britain. On the one hand, it is connected with Strike Command. On the other hand, it is connected with Royal Observer Corps, whose volunteers monitor nuclear bursts and fallout from 873 underground monitoring posts in the UK. The information from these is collated in 25 'group controls'. Two of these are in the north-west: no. 22 next door to RAF Carlisle, and no. 21 at Langley Lane, Goosnargh, near Preston, which is also the UKWMO's Western Sector Control. The immense bunker here has recently been undergoing extensive renovation, as the photographs show; site workers say it contains four floors and numerous beds. Nearby is

Top Centre: The massive UKWMO/ROC bunker, Langley Lane, Goosnargh, with refurbishment (pipe lagging) going on one Sunday in May, 1982.

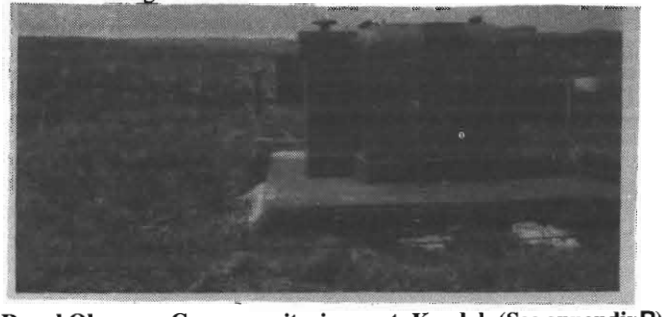


Mystery bunker, Whittingham Lane, Goosnargh. Possible entrance to the extensive tunnel network reported to centre on the massive UKWMO bunker at Langley Lane, several hundred yards away.

the joint Ministry of Defence/Air Traffic Control radar station at Whittingham Lane, and further down the lane is another bunker of unknown purpose, equipped with heavy blast protection and a lift.



The group controls pass their information on to the military, to sub-regional HQs, and to 250 'carrier control points', mostly in police stations, which in turn alert 18,000 'warning points' (sirens) and 4,000 'warning recipients' (civil defence HQs, hospitals, public utilities etc.) Lancashire's sirens are activated from a control room in the country police HQ in Hutton. An officer at Menwith Hill, however, is on record as saying that he does not believe that either the four of the thirty minute warnings will sound.



Royal Observer Corps monitoring post, Kendal. (See appendix B).

Although the ROC has been accused, with some justification, of complicity in war preparations, its volunteers' thankless task would be important even in a

Britain without nuclear weapons. Potential recruits from schools in the Morecambe area who are shown round a local monitoring post are sworn to secrecy about its location, and such information is often regarded as 'classified', but there is no need for all this, since the ROC's official history contains a full list of its sites (see appendix B).[25]

Electro-Magnetic Pulse (EMP)

There is every reason to believe that a Soviet attack on Europe would be preceded by an atmospheric nuclear explosion whose violent instantaneous EMP would knock out unprotected communications across the continent:

> Present emergency services radio systems are all vulnerable, as are all boosted telephone lines (for example, the British system), all unprotected computers, all wide band width radio systems (these are especially vulnerable but are now being adopted by the emergency services) and virtually all equipment containing sensitive electronics and wire circuitry.[26]

British civil defence has only just woken up to this, and local planners (Bernard Hayes in Manchester, and the regional water board and health authority) now talk manfully about using 'runners' to carry messages and maroons to warn of fallout (though how the maroon operators get their information is not explained). The Regional Health Authority has a modest 'ongoing programme' to keep computers and other electrical equipment in tin boxes, behind cellar walls, or simply unplugged when not in use but, doubtless like everyone else, has no money for any proper measures. The simple truth is that without the vulnerable electronic communications on which it so heavily relies, the region's civil defence will not function.

THE AFTERMATH

"Two or three weeks after the nuclear attack a situation might arise in which hundreds of thousands of people were living in grossly overcrowded and often temporary accommodation, on a dull and largely inadequate diet, on an inadequate and potentially contaminated water supply and in insanitary conditions worse than those found in the poorest and most overcrowded areas of the under-developed countries."

—DHSS circular HDC (77)1

"It would be unrealistic to think of extensive life-saving in the immediate aftermath of a nuclear attack. Present plans are based on a regime of minimum exposure to fallout and the need to ensure that essential workers are not exposed unnecessarily to the risk of radiation injury."

—Home Office circular ES3/1978

"We must recognise that people die in days or weeks: it takes months or years to restructure resources."

—Crucible of Despair

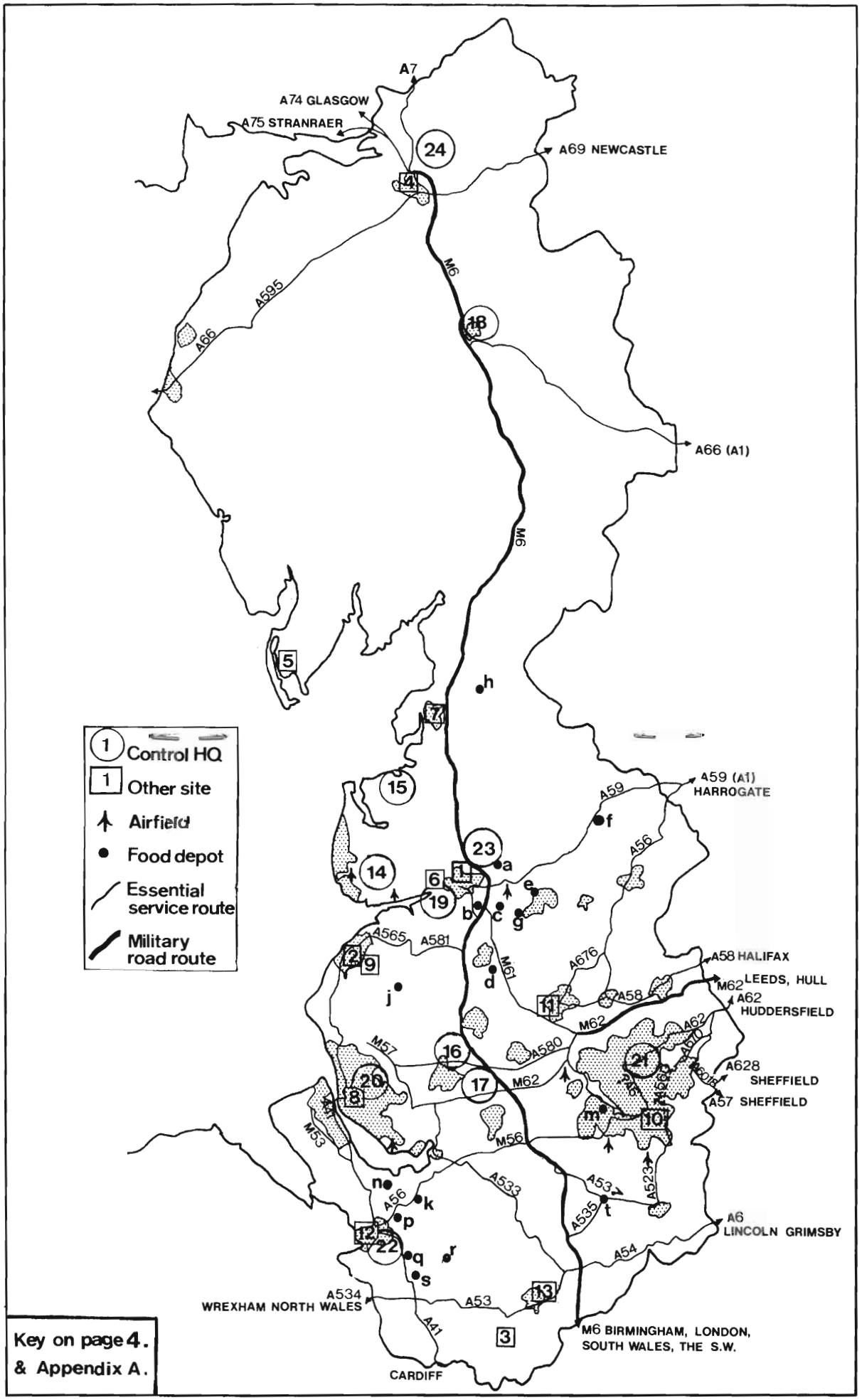


Figure 9. The means of emergency control in Region 10.

The second set of official instructions above applies to the 'hardest hit areas' which are defined in ES7/1973 as those where 60% of the people survive a fortnight after the attack; these would arguably be the lightest hit areas. Even the cautious approach shown in the second quote will prove disastrous. Official guidelines state that people can safely absorb up to 150 rads of radiation in two days and 10 rads a day thereafter, an assertion for which

> there is no published scientific evidence... it appears that emergency personnel in post-attack conditions will be expected to accumulate, as a matter of course, near lethal acute radiation exposures.

Furthermore, Home Office guidelines, on which all the emergency plans for the north-west which we have investigated appear to be based, do not seriously consider that an attack may occur in the depths of winter, or that it may be repeated over weeks or months, or that nuclear installations may be hit, or that chemical and biological weapons may be used, or that EMP may wipe out communications, or the devastating psychological effects which the experience will have on the survivors. This last is vital. Far from being animated by 'Dunkirk spirit', people at Hiroshima wandered aimlessly or fled blindly, often leaving friends and family behind; pre-arranged rescue teams did not form. Many survivors were mentally 'destroyed' and have never recovered. Yet whereas in Hiroshima, outside rescue teams arrived and people began to return, in a widely devastated region, this would not happen. Probably, survivors would need to form armed bands and tribes and any remaining shreds of government would need to resort to totalitarian controls (though, as we shall see, what is actually being planned is not far different from this).[27]

With these considerations in mind—or rather, temporarily forgetting them how would the emergency services in the north-west cope with a small local holocaust?

THE HEALTH SERVICE

"Hospitals should, initially, accept only those casualties who, after limited surgical procedures, would be likely to be alive after seven days, with a chance of eventual recovery... people suffering from radiation sickness only should not be admitted."

—DHSS circular HDC(77)1

"All the dying would want is a bit of tender loving care."

—Home Defence College war game organiser

The Region

In 1981 the government allocated £500,000 for the appointment of health service 'war planning officers' by the simple measure of witholding part of each region's

normal budget unless this was done. In September, the North West Regional Health Authority appointed Dr Charles Fairfax as 'Regional Specialist in Community Medicine (Emergency Planning)'.[28] He freely admits that this £35,000 budget is 'inadequate'; it will only support two or three staff with no money even for such basic tasks as surveying hospital buildings for blast resistance. Hence the strategy is simply to organise a sort of basic survivability into the health service, rather than to plan expensive protection. Within this scheme, however, Dr Fairfax's approach is quite sophisticated.

The computers which exist in each county control will be used to keep track of surviving resources, such as hospital beds, and generally, remarks Dr Fairfax, 'we're thinking of this degree of sophistication'. If these and their back-ups are destroyed by EMP (see above), local hi-fi shops could be looted to provide alternatives. The region has several dispersed printouts of doctors and their phone numbers—doctors are on the second rank of the telephone preference system, hospitals on the first—and to find a doctor, health officers would simply ring down the list until one answered. Although stocks of bandages, blood, plasma and drugs would rapidly be exhausted, there are no special stockpiles in the region, since 'there are no resources for that kind of expenditure'; in any case, drugs don't keep. Cambridge and East Anglia accordingly rely on 'cottage medicine', 'self-help' and herbal remedies (although East Anglia has reportedly since dropped the herbal side of this). As Dr Fairfax points out, herbs couldn't cure many nuclear casualties. In any case, they grow in seasons: 'you couldn't just go out and grow a crop of *digitalis* (foxglove) if you needed it'. Such schemes are 'utter nonsense and totally unrealistic'. Instead, says Dr Fairfax, 'I look at chemical works with a greedy eye from the point of view of using them to revive civilisation'. The north-west has a large chemical industry (though how much would survive a nuclear attack is doubtful) and companies are being asked to earmark part of their stocks of certain chemicals for post-war use, since some basic drugs can be synthesised at bench-top level. Breweries, which grow yeast, could be used to grow penicillin. All in all, believes Dr Fairfax, 'we could cope if the bombs went off in different places, but we couldn't deal with it if a large number of bombs went off in one place'.

Lancaster—a local case study

Lancaster's health plan was drawn up, without any financial aid, in 1980 and therefore has none of the vulnerable sophistications of more recent regional plans. It became a model for the county's other five district health authorities—Preston, Ormskirk, Blackpool, Blackburn and Burnley—although Lancaster has certain special advantages. It is not a likely target, unless Heysham is hit, and as a major centre of health care it has three hospitals, two large mental hospitals and some 4,000 doctors, nurses, paramedics, care staff and administrators to draw upon. How will Lancaster's unusually well-placed health service cope with a nuclear war?

Immediate aid will be based on 38 First Aid Posts (FAPs—one per ward control plus nine extra to cater for the country districts), manned by volunteers such as the St John's Ambulance Brigade and WRVS, with some non-practising nurses. They will provide a local focus for the injured and will give very basic first aid before passing patients on to one of six Casualty Collection Centres (CCCs). The CCCs will be schools at or near local authority Group Controls, and will be manned by nurses, dentists, volunteers, even chiropodists and opticians—in fact, 'almost

anyone who is not frightened of blood'. They provide further treatment and select those to be admitted to hospitals. The district's 20 ambulances will ferry patients between FAPs, CCCs and hospitals if there is any petrol available. 'Doctors would be an absolute luxury' and would be confined to hospitals; they would work 8-hour shifts, considered the useful maximum, but would also do house calls—their work load will be tremendous. Hospital admissions will be based on the 'triage' system invented to cope with the unprecedented battlefield casualties of World War 1: only those who are likely to survive will be admitted. People who will probably not die will be treated at FAPs and CCCs and sent home, while the doomed will simply pile up. To enforce this system, hospitals will be guarded by the police and will only admit from CCCs, while CCCs will (in theory) admit only from FAPs, and be guarded by 'bouncers in all but name'.

In the pre-attack period, CCCs and FAPs will be open to make people familiar with them. They will then close, along with the hospitals, and FAPs will open first, followed by CCCs and finally, after a fortnight or more, the hospitals. Unfortunately, the local health service depends entirely on other authorities for radiation advice which, as has been shown, may not materialise and may in any case prove fatally misleading.

Before the attack, the hospitals will send patients home to make room for casualties; the DHSS recommends 70% of maternity cases, 60% of acute cases, 50% of non-active infections, 15% of psychiatric cases and all convalescents, whatever their condition. Only emergency cases and women needing caesarian sections will be admitted. In Lancaster, Beaumont and Queen Victoria hospitals will have to close completely for the attack, while the Infirmary and the Moor, both much older and with extensive tunnel and cellar accommodation, will remain open with a skeleton staff of volunteers—volunteers because staff cannot be expected to leave their families. The Albert hospital, likewise old and extending underground, will become the centre for the city's mental patients, taking many from the Moor while its own 800 complement will have to be reduced by half—a measure which staff consider impossible, since most patients cannot look after themselves and have nowhere else to go. Mental patients, it seems, are a big unsolved problem.

The Moor Hospital, since it has cellars and the district emergency services radio transmitter (the back-up is at Langthwaite) provides a natural HQ for the local health service's war officers, who are as follows:

War designation	**Current civilian job**
District Health Director	Community Health Officer
Senior Nurse	District Nursing Officer
Administrator	District Administrator
Treasurer	District Treasurer
Works Officer	District Works Officer
plus supporting staff:	
Dietician	District Dietician
Pharmacist	District Pharmacist
Catering Officer	Moor Hospital Catering Officer
Catering staff	Moor Hospital catering staff
Telephonist	
2-3 personal secretaries	

(Each officer has a designated deputy; details will vary between districts).

These officers will also run the Moor Hospital. The other hospitals will be run by a triumvirate of a director (an administrator), a senior doctor and a senior nurse, with similar supporting staff.

The standby health service HQ is at the Community Health Offices, Slyne Road, from where the district's 600-700 personal radios are controlled (or will be in 1983, when this system begins). Doctors and nurses, however, will stay at home, having been told where to report after attack through their computerised monthly pay slips, assuming a pay day can be arranged during the 'period of rising tension'. Such a move was reportedly considered after the 1980 Russian invasion of Afghanistan, but was not implemented for fear of causing alarm. Lancaster has a modest stockpile of drugs, regularly turned over, believed to have been begun some ten years ago, perhaps at the time of the 1973 Arab-Israeli war. Stocks of vaccine, however, are limited; barely enough, for example, to immunise health service staff against typhoid and diptheria—some 4,000 shots at most. With disease likely to be rife from dead bodies, polluted water and plagues of vermin (which develop immunities and breed quickly in such uncontrolled conditions), the outlook even for initially healthy survivors looks bleak.

A Direct Hit

As figure 7 shows a one megaton bomb on Lancaster would destroy all five hospitals; one on Heysham would very probably do the same, regardless of the catastrophic radiation effects. In the event of a direct hit, five other casualty collecting centres might be established at Bailrigg, Galgate, Hornby, Silverdale and Borwick, and an emergency operating theatre may be set up at St John's Hospital, Silverdale, although damaged roads and bridges would seriously hamper the transport of survivors even if fuel and transport were still available. Official guidelines rule out help between districts; some districts may bravely ignore this.

The vulnerability of Lancaster's health service to a direct hit is not at all unusual, given the sheer power of modern weapons and the NHS's long-standing policy of centralisation, which war planning has done nothing to change. (The same goes for hospital design; Barrow's new hospital has been built, entirely above ground). In Birkenhead, as a local consultant in emergency care has pointed out, 'most of the hospitals would be completey demolished or seriously damaged by the attack. I can't see any way they could provide a useful service at all'. All nine of Sheffield's hospitals would be flattened by a single nuclear bomb.[29]

The ethical problems of planning for nuclear war, particularly of sorting casualties so as to condemn many potential survivors to death, have led many conferences of eminent physicians round the world to declare that nuclear war is medically untreatable, and that the only possible cure is prevention, in the form of disarmament. Comparing the best efforts being made in the under-financed, over-technological and over-centralised health service in the north west with the likely minimum of nuclear damage, one can only agree with them.

FOOD

"Most local authorities are incapable of implementing the present procedures."
—Institute for Civil Defence study of emergency feeding, 1980

A government which can organise itself a near-monopoly on food supplies wields enormous power in a war or insurrection. The main effect of the current emergency feeding system will be to give it this power; food will be supplied, but probably only in return for work or good behaviour. There are two sides to the system: supply, which will be mainly organised by Regions and Sub-Regions; and distribution, which will mainly be the concern of counties and districts.

Supply

In peacetime, the Ministry of Agriculture, Fisheries and Food (MAFF) oversees emergency planning. The north-west is covered by three regional offices (in Newcastle, Leeds and Wolverhampton); these will apparently be absorbed into Regional and Sub-regional government. MAFF already has a number of semi-secret food buffer depots in the region (see appendix A) which contain stocks of 'flour, yeast, sugar, refined fat and special biscuits', plus emergency feeding equipment. These will need to be supplemented by other stocks which MAFF will lay in nearer the time, using emergency powers to requisition farm and other supplies. Regional government will take control of MAFF flour mills and mobile bakeries and also of ports, and therefore of grain stores and any future imports. In the longer term, MAFF will try to control and regenerate agriculture. Food stocks of all sorts will be distributed to local authorities via MAFF distribution points. In Cumbria, there is one to each district:

		grid ref
Allerdale	Lilleyhall Industrial Estate, Workington	*016247*
Barrow	ASDA supermarket	*192697*
Carlisle	Durranhill Industrial Estate	*415550*
Copeland	Richmond Estate, Whitehaven	*992173*
Eden	Gilwilly Estate, Penrith	*509304*
S. Lakeland	Mintsfeet Industrial Estate, Kendal	*520942*

Cumbria has an extra problem, in that MAFF buffer depots are generally concentrated near large population centres, which the county, with roughly 5-10 buffer depots, lacks: the problem is being looked at.

Distribution

There will be no time before an attack to introduce rationing. Afterwards, there will not be enough food or enough organisation for rationing, but in any case, food will be a useful carrot which the authorities can use to gain control of survivors.

As war approaches, local authorities will lay in previously earmarked food stocks for their various HQs, activating 'dormant contracts' with suppliers and requisitioning food from warehouses and supermarkets—perhaps interfering with people's attempts to lay in the 14 days' supply which they will be assumed to have. Lancaster is believed to have plans to slaughter cattle and place the meat in dispersed refrigerators, such as in butchers' shops (though a power failure could mar this strategy). Fourteen days after the attack, emergency feeding will (hopefully) begin. Local controllers will transport food from distribution points to emergency feeding centres in schools, run by people from the education authorities; these centres in many cases double as 'local' or 'group' administrative

controls, first aid posts, casualty collecting centres, community centres, or all of these. The school meals service and voluntary organisations will do the feeding, using emergency equipment from MAFF such as the 'Soyer Boiler', invented in the 1840s to cope with the Irish potato famine. The 1960s emergency feeding manuals were optimistic about what could be provided:

Breakfast

Porridge
Bread or Biscuits
Margarine
Jam, Marmalade
or Syrup
Tea

Dinner

Shepherds Pie
Cabbage, Roast Potatoes

Boiled Fruit Pudding

Bread

Tea or Coffee

Supper

Tomato Soup
Bread
Margarine
Tea or Cocoa

Enjoying the nuclear challenge: the 1981 WRVS practice with 1840's boilers.

The current aim is to provide 20 million people in Britain with 'half a pint of stew-type meal' a day, cooked with burning rubbish; Cumbria hopes to add a cup of tea a day. The government reportedly estimates that people could survive on this sort of diet for two years.

The Long Term

Major disasters in the world are often followed by plagues and famine which may kill more than the original catastrophe. Nuclear war is no exception.

In the long term, MAFF, aided by local authorities, will aim to regenerate agriculture, but there are massive problems: radioactive ground contamination being absorbed by crops and animals; livestock dying from the effects of radiation; seed, fertiliser and pesticides lacking (modern agriculture has evolved to depend upon them); hordes or desperate people plundering farms and food stocks; uncontrollable plagues of vermin and disease; and doubtless many more unfor-

seen difficulties. With many other countries also destroyed or suffering from the effects of nuclear war on climate and environment, there would be little hope of food imports, which at present meet half of Britain's requirements. It has been calculated that any significant civil protection plans, even those simple ones which the government imagines will mean 15 million fewer dead, would only increase the number of short-term survivors even further above the land's ability to feed them.[30]

WATER

"It can be said with absolute assurance that any widespread nuclear attack would quickly disrupt the distribution system for domestic and industrial water and much of the sewerage system... It should be assumed that in all areas there will be prolonged disruption."

—Home Office circular ES6/1976

"If someone wanted to knock us for six, he'd knock our water supply for six... Water is one of the strongest arguments against nuclear war."

—Dr Fairfax, Emergency Planning Officer, NW Health Authority

Supply

The north-west has two main systems of water supply. Water from the recent (1980) Conjunctive use scheme, which now supplies most of Manchester, comes from the Lune-Wyre-Ribble pipeline system, the Fylde boreholes, and Stocks and Barnacre reservoirs. Apart from the reservoirs, this system relies on heavy pumping, and on treatment at Franklaw and Catterall; it could not function after a nuclear attack. Water from Thirlmere and Hazelmere, on the other hand, is fed by gravity, and while Hazelmere water is chlorinated at Watchgate, Thirlmere water needs only micro-straining. This system would provide the region's main post-attack supply.

The region also has between 250 and 300 small underground service reservoirs, which regulate daily supplies; the biggest, at Prescot, holds 50 million gallons. These might provide useful emergency supplies. Because people will need to stock up, and because the main problem anyway will be distribution rather than conservation, water will not be cut off before an attack. However, some service reservoirs have two separate tanks, one of which could be held back until after the attack. In addition, there will be emergency powers to requisition private springs, wells and boreholes although in practice the water boards generally find that private sources are of little use. The Department of the Environment keep stocks of water pumping equipment. The many storage tanks attached to public and private buildings could prove useful short-term sources if they survived; those at Lancaster's hospitals contain 20-30 days supply.

Problems

The Thirlmere pipeline, although three feet underground, is 'by no means immune' to blast damage. Urban pipes would simply be wrecked and water would

just leak away. Until makeshift repairs by local work parties could be organised, cutting off supplies would be very important. This can only be done manually, and is important enough for staff engaged on it to have personal radiation dosimeters, which is rare outside the police force—even most doctors won't have them. This work, however, requires transport and communications, whereas fuel would be scarce and the water authority's 10-20 channel radio system is not protected against EMP. As one water board planner told us, 'if the radio doesn't work, the man's just going to have to get on his bike and pedal from one place to the next'.

There will, of course, be much less sewage to deal with, and although most sewage works rely on pumped water and would fail, a few simple filter plants could keep going. Sewage would leak into water supplies, but fortunately, the north-west does not rely much on rivers and springs—at least, in normal times. 'On the whole', believes the water authority, 'the sewage works could cope'. However, what ceased to be a problem for the water authority would become one for public health.

..... But how will he drink his tea ...?

Radiation cannot be removed from water by boiling, or otherwise destroyed; it just has to decay naturally. The official view is that radioactive particles could be removed from water by letting it stand, and then removing the scum or sediment. The micro-strainers which alone filter the Thirlmere supply are 'not particularly efficient' at removing radioactivity and there are no plans to cover reservoirs against fallout. Dr Fairfax, the north-west regional health authority's emergency planner points out that 'if you have to have water to survive, you'd be willing to take in quite a lot of radioactivity', 'probably not as much as ten times' the peacetime limits, but it would depend on circumstances: 'local contamination could be a millionfold', and long-lived radiation would be a permanent danger.

'Until chlorination could be effected', writes the Home Office, 'boiling small amounts of drinking water would be the public's only safeguard against bacterial

pollution... Immediate post-attack consumption might be based on a litre per person per day'—not even enough to drink, especially for the sick and injured. With corpses lying on the ground, people living in 'overcrowded and grossly insanitary conditions', and epidemics such as typhoid and cholera rife, pure water would be rare. The water board and the government believe that water pollution from chemical warfare would be minimal, since the dilution in reservoirs would be enormous; but no sophisticated monitoring would be possible, and bacterial warfare would be a different matter.

The North West Water Authority has between 50 and 75 mobile tankers, each holding up to 4,500 gallons, and 150-200 smaller trailers, while many other sorts of vehicle might be pressed to carry water. High axle, four-wheel drive Bedford water carriers are kept at food buffer depots and Home Office Supply and Transport Depots.[31] Even so, this could only cater for some drinking water, even supposing there was enough fuel. Emergency mobile generators are kept prudently a little way outside the major cities of Preston, Manchester, Liverpool and Crewe, and would rely on diesel (which would be especially tightly controlled) to power pumps and treatment units. The Fylde boreholes do have large standing emergency generators, but using them in such a fuel shortage would almost certainly be out of the question.

The North West Water Authority's war plans are drawn up at the authority's Warrington HQ by Mr R.B. Stannard and Mr C.H. Batty, who have general responsibility for all sorts of emergency plans. Mr Batty would probably work, along with other water experts, at county or sub-regional level, but the regional controller of water would be the current director of operations, Alan Riley. The region seems to be fortunate in its water supply compared with, say, London, but plans can only do so much to defend against nuclear war, and the only thing that can be guaranteed is acute shortage in all the areas affected by the attack, and very, very slow recovery.

FIRE

Viewers of *The War Game* who were shocked to see firemen being sucked into a firestorm while vainly attempting to combat the effects of a nuclear attack can rest assured: there will be no early firefighting in bombed areas. Even in peacetime, the North West Water Authority sometimes has trouble supplying the fire service, and there is 'no large scale emergency water scheme' to supply it in wartime. One fire engine using up to 18,000 gallons a minute causes water pressure to fall over an area, so fighting many fires in one place would be difficult, even supposing mains were intact, which they would not be.

The Home Office is quite clear that 'planning is directed towards the preservation of the fire service'. Fortunately, fire stations are naturally dispersed, and before an attack, half the fire services' equipment would be further dispersed, supplemented by Home Office pumps and vehicles. Although there will obviously be close liason with emergency government and the military fire services—Lancashire's county fire brigade HQ is in Fulwood, bear the Armed Forces HQ/Regional Seat of Government—the fire service would apparently be organised along peacetime lines. Manpower will be 'more intensively used' and staff would

be expected to stay on. As Jack Warden, Lancashire's experienced Chief Fire Officer, has said, 'I have a job to do and I will do it. In the event of war, there is no reason why that should change—there is no question of opting out'.

Queries about emergency planning in the region's fire service should be addressed to: The Regional Fire Commander, County Fire Service HQ, Bolton Rd, Swinton, Manchester, marked: 'for the attention of Divisional Fire Officer Parker'.

ROADS AND REFUGEES

Many of the emergency arrangements we have looked at depend on transport: ambulances to ferry the injured, lorries to move food, water carriers to reach drinking water, water workers needing to cut off broken mains, fire brigades to start firefighting again, and so on. Yet vast numbers of vehicles would be destroyed, roads would often be blocked and the fuel shortage would be dire, especially if ports and refineries had been hit. Accordingly, each Region, Sub-region and county will have an inland transport co-ordinator, with various specialised assistants, who will decide what can move and what can't. In theory, surviving private haulage firms will be important. There will be no fuel rationing: only vital services would get any fuel at all, and 'generally speaking, only official transport will be allowed on the roads'.

The government has designated a number of roads as 'essential service routes' (ESRs). Those for the north-west are included in figure 9, which is neither up to date nor complete; local controllers can specify their own essential routes for local services. In addition, the M6 (codenamed 'BUCK') and the M62 are part of the extra-high security Military Road Route Network, set aside for troop movements of all kinds. One can probably add to these the M61, which joins the M62 to the M6, and the M6/A74, north to Carlisle and the nuclear bases on the Clyde. ESRs would be little use after a nuclear attack, when only vital services have transport anyway, and when unblocked major roads will all be important. In fact, they have more to do with controlling the population and ensuring the movement of vital supplies in a general strike or insurrection, and before an attack with containing panic, mass gatherings and concerted opposition to the war, all of which may seriously interfere with preparations for its prosecution. The 'stay at home' policy is clearly meant as a vital part of this strategy.

It will not work. With nuclear attack imminent, people will not stay at home, pottering with sandbags and waiting to die. In the words of Hampshire's emergency planning officer, who expects two-thirds of the population of Portsmouth and Southampton to flee north, 'people will probably leave work, they will march, they will demonstrate, there will be sabotage and chaos will reign supreme'. A local planner told us: 'people will run like hell and you can't blame them. If they start running around there will be a riot or an insurrection or something'. Group Captain Matthews expects 'at least three quarters of a million' refugees from the

industrial north to arrive in Cumbria (more than the population of the county) up the M6 (despite its protected military essential service route status), the A6, the A66 and the A69. There are plans to channel them into special camps, perhaps military camps, near the county border—one about 20 miles south of Penrith on the A66. Local authorities are now asked to prepare emergency accommodation in schools, church halls, etc., for the equivalent of 2% of their peacetime population, to give 'transients'—people away from home or work—somewhere to go. The aim is doubtless to prevent such people from panicking, fleeing or rioting, for

If you leave your car in the street, it not only stands a bigger chance of being wrecked but it may also block emergency traffic after a raid.

the Home Office has admitted that such places 'would provide poor protection in the event of fallout'. Such accommodation, if generally known, would become hopelessly crowded (many unprepared homeowners may flee there) and more drastic solutions will be needed; Pontin's holiday camp in Heysham has been suggested as Lancaster's refugee centre. One can only imagine the public health and policing problems posed by herding frightened and unwilling refugees into these places in vast numbers, particularly after the attack, when vital services and government have ceased, and no emergency services are planned for at least a fortnight.

LAW, ORDER AND STATE SECURITY

"The military forces and the police must be considered as one security force operating jointly in a previously rehearsed plan."

—Army Land Operations Manual Vol. III
Counter Revolutionary Operations

The recent surge of interest in the public protection side of home defence has perhaps obscured the fact that its main aim is still officially 'to secure the United Kingdom against any internal threat'. This was strikingly demonstrated soon after the system was reorganised for the 1973-4 miners' strike which saw the sudden

growth of local authority home defence and emergency planning committees. Regional Commissioners were put on standby in December 1973 but by February the government had fallen and they were not activated. The following year Sir Leslie Mavor, then principal of the new Home Defence College (but now the national co-ordinator for voluntary effort in civil defence) declared: 'the full possibility of the present internal threat is only just sinking in'. In 1973, 'without reference to parliament' the power to order the military onto the streets quietly passed from local magistrates to the police, and ultimately the home secretary, while other measures in the 1970's have made the transition from 'military aid to the civil power' to full military/regional government much simpler. The Cabinet's Civil Contingencies Committee, formed in 1974 as the National Security Committee, still sits. The 1977-8 fireman's strike and the 1978-9 haulage drivers' strike both saw the setting up of local emergency committees similar to the top stages of county emergency government, consisting of the county Chief Executive, the chairman of the County Council, the Chief Constable, the Chief Fire Officer and the local army commander. One of the Home Defence College's main concerns are the dissident extremist political groups whom they imagine will be active in 'promoting strikes and anti-war demonstrations, blacking certain activities and interfering with the movement of reinforcements to Germany'.[32]

Britain is becoming no stranger to emergency forms of government; nor it seems, to the idea of military interventions in politics.

The Army

In recent years the role of the army has changed. It is now (perhaps surprisingly to many people), primarily concerned with counter-insurrectionary measures at home, as laid down in Volume III of the Army Land Operations Manual, entitled 'Counter-Revolutionary Operations'. These include: outbidding the rebels in promising reforms; setting up integrated national intelligence organisation (i.e. the army, police and MI5 pooling their knowledge of subversives); setting up an effective organisation for joint civil and military control at all levels' (the regional system of government); strengthening the police and army 'so that their loyalty is beyond question'; and measures to isolate insurgents from popular control' (arrest, internment, censorship and closing down the public phone system). The official scenario for 'Operation Square Leg' in 1980 included military measures to counter some imaginary 'Red Peace Trotskyists' and a 'Purple Peace' (i.e. Labour) party, and to defeat 'industrial arrest (sic) and large scale political activity'. In the similar 1978 Operation Scrum Half, the army was issued with large quantities of riot gas. The Home Defence College's list of 'Home Defence duties for the armed forces' includes other activities along these lines—guarding service bases, key points and ports, law and order, with further tasks such as 'control of public movement' and restoring vital services after the attack.[33] The control measures needed to put down insurrections and to prosecute an unpopular war are so similar that the distinction has virtually disappeared.

With the army's concentration on counter-revolution at home has come an extension of its role. From straightforward fighting to 'low intensity operations'—intelligence and other subtle activities against 'subversive' political groups in peacetime. This approach has been persued through a number of high level seminars, such as the 'North West District Senior Officers' Study Period' on *Counter-revolutionary Warfare,* held at Lancaster University in April 1974. The list of participants read like a North West army Who's Who. It included officers from army HQ's all over the region; officers from RAF Carlisle, RAF Sealand and

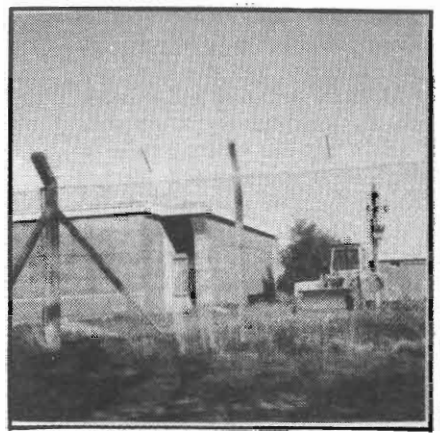
the Royal Navy; nine police officers including the Chief or Assistant Chief Constables of Cumbria, Lancashire, Manchester, Merseyside and Cheshire; twelve academics from Lancaster University (including two pro-vice chancellors and six from the politics department); five specialist academics from other universities, as well as the right wing journalist and US 'spook', Robert Moss. Unofficially, the editor of the Daily Telegraph, Bill Deedes (of 'Dear Bill' fame) also attended. The discussions ranged over such diverse subjects as the use of the SAS, the rebel Clay Cross councillors, strikers (or 'industrial guerillas') subversives and the possibilities for a paramilitary 'third force' to control insurrections.[34]

It is no coincidence that the territorials are already getting their call up papers for the 1982 Hardrock Exercise (organised by UKCICC to test out communications, civil/military co-ordination and the internal security units of the army.) Tony Bunyan estimates that the potential crisis strength of the army in Britain, including the territorials and all possible reserves is 340,000 with another 170,000 in the Navy, RAF and their reserves. In the event of an international war, however, foreign commitments will drastically reduce this, hence the Defence Minister's creation in March 1982 of a new 4,500 strong force to guard 1,000 key points in the country, such as telephone exchanges, gas holders, transformers and pipelines. Much was made of the familiar 'Home Guard' name and the 'threat' of SAS style Russian sabotage squads. In fact the new fore will consist of police and military veterans who will serve to strengthen the state's control over essential services in times of crisis.

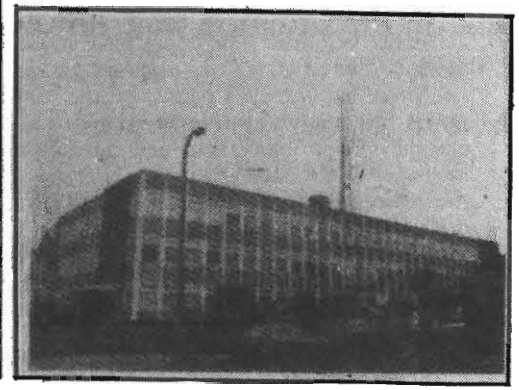
North-west District Armed Forces HQ, incorporating Regional Seat of Government 10, Fulwood Barracks, Preston.

Despite the lack of major operational bases, the army are quite thick on the ground in the North West. There are barracks and/or train ing camps (and thus potential internment centres) at Warcop, Halton, Weeton, Holcombe Moor, Bury, Chester, Liverpool, Altcar and Warrington. There are also HQ's of various kinds at Carlisle, Ardwick, Clifton, Chester, West Derby (Liverpool garrison), Belfast docks (for 'movement and control' at the important troop landing facility) and of course, the North West Region Army HQ and Regional seat of government at Fulwood Barracks, Preston. A TAVR unit is based there and may help to defend it since there have been suggestions that the TAVR would help to defend

the North East AFHQ at Ouston. Strategically important stores exist at Longtown, near Carlisle, and Burscough, the ordnance depot which, like Fulwood, is near a big food depot. There are also Home Office Supply and Transport depots, which stock fire engines, water tankers, blankets, tarpaulins and probably riot control equipment, at Weeton and at Great Sankey/Burtonwood. The Home Office regional wireless depot is at Billinge.[36]



Sub-regional Control 102, Hack Green, near Nantwich, with work in progress, May 1982.



Sub-regional Control 101, Duke's House, Houghton St, Southport.

The Police

The police, like the army, have expanded their counter-subversion activities in recent years. In the same way, this ties in with their war/civil defence duties, which are laid down in Home Office ES circulars and the Police Manual of Home Defence, which are not available to civilian emergency planners.

Chief Constables are at the top of the tree of emergency government, alongside the various controllers and military commanders. They will command and control forces with frighteningly wide emergency powers. The Superintendent of Lancashire who has attended a home defence course run by UKCICC at the Army Defence School, is the 'Staff Officer to the Regional Police Commander (Designate)', so perhaps the Regional Police Commander (designate) is the Chief Constable of Lancashire, Albert Laugherne. The Lancashire police have undertaken joint exercises with the UK Warning and Monitoring Organisation. Most of the UKWMO 250 carrier control points, which activate sirens, are in police stations, including the HQ's at Manchester, Bolton, Rochdale, Wigan and Hutton (the Lancashire force HQ). The first four of these are all connected to two hardened underground telephone cables in Manchester City Centre. One going from Pendleton Exchange and terminating near Bailey Street, Salford, and another from the once secret Piccadilly underground telephone exchange to Islington Street, passing under the Town Hall and close by the police HQ and the Crown Court. (The Crown Court itself contains a restricted area giving access to cellars, secretly fitted up by the Ministry of Defence in 1976, with among other things, a ventillation system that can flood the place with gas).[37]

During an attack, the police will shelter in protected areas in police stations, using radiation monitoring equipment (and the dangerously high Home Office dose guidelines) to decide when to come out. Many police stations will in fact be local fallout monitoring points. While holed up the Police Manual suggests that: 'If the lighting permits, personnel should pass their time reading, playing cards or in some other quiet way which would conserve oxygen and energy'.

The pre-attack duties of the police centre around controlling public movement by guarding Essential Service Routes, freezing petrol filling stations and 'Control of people on foot and public transport'. In addition, 'the police must be prepared to co-operate with the army, navy and airforce authorities and give them any assistance required. The police have statutory duties for 'billeting and impressment.' After an attack, the aims are the same but the jobs multiply: 'controlling and directing homeless people on the streets' and if possible billeting them or putting them safely away in 'rest centres'; stopping looters; guarding hospitals and emergency feeding centres; and generally enforcing the state monopoly on the means of subsistance as a means of reasserting state control. It seems likely that the police will also perform summary executions, but officers who object to their duties will have no choice in the matter. Chief Constables have the power to 'prevent police officers from leaving the service'. Bunyan estimates that the police could muster over 400,000 (113,000 regulars, 100,000 'emergency reservists' and 200,000 volunteer Special Constables). If the crisis was an internal one, another 300,000 people might be attracted into a 'citizen guard' like the one used to break the General Strike of 1926. This makes, with the armed forces and their reserves, well over a million people at the disposal of the state for 'Emergency' duties.

The police and military will work particularly closely together in 'the guarding of key points and the maintenance of protected areas'. The reliable volunteer Special Constables, (although they will in general probably have only 'support duties'), will be useful in 'offensive patrolling against insurgents (and) static defence of vital utility installations'. High on the list also come 'Special measures to maintain internal security, with particular reference to the detention or restricted movement of subversive or potentially subversive persons'. When it comes to these special security duties, the links with current policing development are particularly strong.[38]

The police, like the army, are increasingly interested in domestic subversion, the official definition of which has widened alarmingly. In 1963 Lord Denning pronounced a 'subversive' as anyone who wanted to overthrow the system by 'unlawful means'; in 1978, the Home Secretary decided that a 'subversive' was anyone who sought this through 'political, industrial or violent means'—a much wider definition (which is very close to that of the Army Counter Revolutionary Operations Manual), covering anyone whose activities, lawful or not challenges the system. The Special Branch is, according to one standard history, 'the political police for the whole of Britain'. It aims at 'collecting information about "undesirable" political persons and movements'. 'Photographers', testified one (ex) Special Branch officer, 'are present at all demonstrations, and photographs are kept and compared'. Regular revelations about the sheer scale (and often pettiness) of the Branch's activities leaves no doubt that the peace movement is one of its targets. Although MI5 'has nearly ten times as many people working on subversion as the Special Branch', there are still some 1,200 Special Branch men in the country, of whom 164 were estimated in 1978 to be in the North West.[39]

Intelligence is held on the Special Branch national computer, (which has files on at least 1¼ million people) and local computers. The Police National

Computer in Hendon interfaces with the Special Branch computer and of course all the countries forces. It is officially prepared to store 'sensitive information' should the political climate become more sympathetic to such measures, and may already be acting as a huge index to such political intelligence in files stored elsewhere.

More significant for this region, however, is the Greater Manchester Police computer. Buried in the fortress like new county police HQ in Chester House, with entry from there only via a tunnel, it will when it starts work (appropriately in 1984), be perhaps the biggest local computer in Europe. Its Multi-Factor Search Capacity' will be able to create instant lists of information keyed into anyone on a huge variety of cross referenced heading on the basis of even partial details such as name, address, or cars used, or identifying marks or associates etc.[40] A key area of police-military co-operation in times of crisis will be using such intelligence systems and those of MI5 to produce arrest lists of "undesirable" persons opposing government policies, for the state security forces to 'neutralise'.

The police have a number of specially trained sections which could tackle this sort of forceful public order duties associated with times of insurrection or war. To begin with, in Britain as a whole, perhaps 500 or 1,000 of our police belong to highly specialised armed squads, 'SWAT' or 'Sweeney' style groups known as Tactical Force Units (or TFU's). In general the government recommends that 5-10% of each force should be trained as 'authorised weapons carriers'. In Lancashire, at least a quarter of the police have some firearms training.

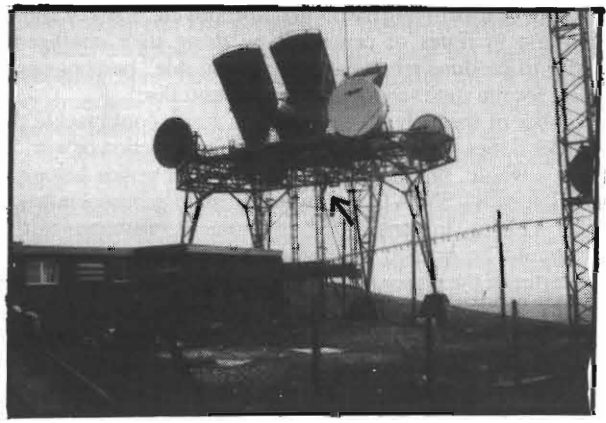
Secondly, there are the Special Patrol Groups, best known for their actions against troublesome demonstrations and pickets. Manchester's 70 strong in 1977, is called the Tactical Aid Group. 'Our front line troops who are raring to go at a minute's notice' according to Peter Collins, the Assistant Chief Constable who was responsible for establishing the group in 1976. They are equipped with Armalite rifles and two HK-33 semi-automatic sub-machine guns which can also fire grenades. Greater Manchester police have also acquired stocks of 7.62mm 'Enforcer' rifles and CS gas grenades.

In 1978, the TAG took part in a joint Home Office exercise with the army to seal off the Collyhurst district of Manchester for twelve hours; residents were stopped at road blocks and shots were heard.[41] This was similar to a more famous anti-subversive exercise carried out at Heathrow in 1974 to accustom people to the sight of troops on the streets. The Sam Cummings Interarms warehouse in Hulme (nr. Manchester's Moss Side), contains 400,000 rifles—enough to arm both sides of a small war—and Manchester police have contingency plans to seal off this potentially anti-state arsenal in times of civil unrest.

Thirdly there are the Police Support Units, originally formed to deal with 'the additional duties arising from the onset of war' but since 1974 regularly used in public order situations. Each unit has its own transport and consists of 35 male police officers and a driver, and each police division in the UK (284) should in theory have at least one. They only form up for training or for action, when they work with PSU's from other forces in dealing with crisis points. They are trained in riot control; Manchester's Tactical Aid Group has trained PSU's from Lancashire, Cheshire and Merseyside.[42]

Britain now leads the world in riot control technologies, whose effecitveness and lethality is often sadly underestimated, and has the ideal testing ground in Northern Ireland. As one US Congressman commented over ten years ago now, *"We can tranquilize, impede, immobilise, harass, shock, upset, stupefy, nauseate, chill, temporarily blind, deafen or just plain scare the wits out of anyone the police have a proper need to control."*[43]

In November 1981, following the summer riots and the first use of CS gas on the British mainland, the Home Office authorised that water cannon, plastic bullets and CS gas should be available if necessary to all British police forces in all types of crisis. In addition to these weapons, the Army may use the blinding and incapacitating agent CR which is stockpiled throughout the UK and has been authorised for use here in certain special situations since 1973. CR which was discovered at Salford College of Technology, is currently being researched at the University of Manchester's Medical School as part of a study for the M.O.D. on the Neurophysiology of pain. CR dissolves in water and could be sprayed onto crowds from water cannon to blind, disorientate and paralyse people who would then become easy meat for the snatch squads and their internal security vans. The connections



Whinfell Common microwave relay, showing men at work replacing small dishes (as at left, and on the ground) with larger ones (as at right), April 1982. Similar improvements seem to have been made to other microwave towers in the region.

between war policing, crisis policing, riot policing and political policing are becoming ever clearer, particularly as the aggressive 'reactive' or 'fire brigade' style of policing advocated by Manchester's Chief Constable James Anderton becomes ever more widely adopted. (Anderton is himself a notorious adherent to the crude 'Red Plot' theory of politics). Home Defence training provides a vital link between the police and the army, practice and politics, war and peace. Thus in Lancashire during 1980 alone, (and quite apart from the highly specialised weapons training) we find the Superintendent training at the Army Defence School; inspectors attending regional home defence courses; various officers going on courses at the Home Defence College (whose emphasis on fighting strikes and unrest is well attested and geared to be passed on by those trained to numerous sergeants and constables); a few practicing aerial reconnaisance at RAF Woodvale; some 'specialist officers' doing courses in surveillance, three Task Forces based at Blackpool, Penwortham and Blackburn stated to be ready for any unusual contingencies; the War Duties Branch 'maintaining liaison with the military' and taking part in 'Operation Square Leg', and the whole force taking part in exercises with UKWMO.[44]

In Manchester, the last Emergency Planning Officer was a man who epitomized this trend. As Assistant Chief Constable to James Anderton, he was a strong advocate of paramilitary style policing and was actually responsible for setting up the Tactical Aid Group. None other than Peter Collins.

ALTERNATIVE DEFENCE

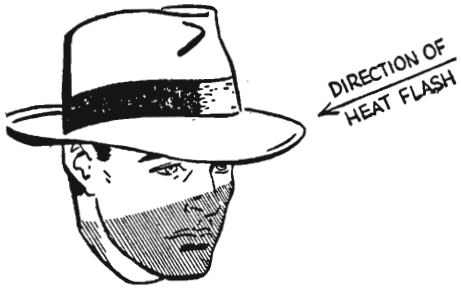
The current British nuclear defence strategy ensures that the NW will be targetted with nuclear weapons if war ever breaks out in Europe. Under present plans, the North-West would become Region 10, a sort of mini but fully militarised police state. In the pre-attack period of uncertainty, the people in this area will be cut off from their friends and relatives as the telephone system is selectively closed down. Outside movement will br restricted but many people will choose to ignore the warnings in *Protect & Survive* to stay put. They will attempt to flee the cities, only to discover that the main trunk roads are closed off to become essential service routes to the state security services. The crowds will be turned back to the prime target zones like rats in a trap. Ugly disturbances are certain to develop in some areas as the full implications sink in. But as the last section made clear, the police are already making plans for such an eventuality to move in with sophisticated riot technologies to reassure the public.

After any nuclear attack, the medical system in this area would simply not be able to cope with the enormous numbers of casualties. Millions of people will have been killed in the absence of hardened shelters, many more would die as radioactive fallout was absorbed by the remnants. Even one or two nuclear blasts in this area would deprive the region of electrical power due to EMP. Only the elite—the rich and of course the state security forces will have sufficient reserves of food and water. The rest will be migrating and most if not all will be either physically or psychically damaged if not both. The rural areas of the NW are expected to receive huge inflows of people from the connurbations of Manchester & Merseyside. But the plans laid are not to protect this highly vulnerable and desperate group of survivors. Instead they will be forcefully channelled into military camps to become slave labour whilst a ruthless triage system is continuously operated to ensure that the weakest people are deprived of medical care. The horrific consequences of allowing this so called defence policy to become a reality defy our imagination. Research undertaken at the Richardson Institute indicates that many of these internal control measures would actually provoke and escalate the social resistance they were ostensibly designed to contain. But is there an alternative defence to nuclear suicide given the range of real and potential threats which may be encountered? As it stands there are two sides to civil defence—one sensible, one sinister.

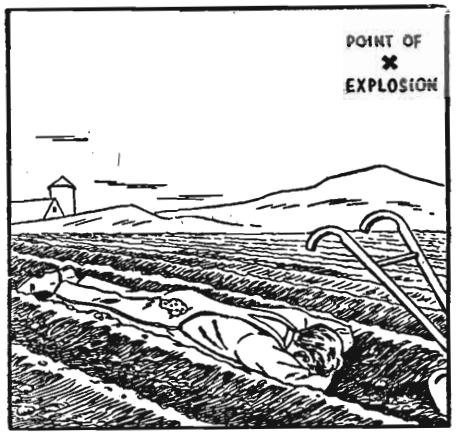
The sinister side is the way in which the local availability of the basic means of life will be controlled from above as the only last ditch way, along with brute force, of keeping the system alive. This concentration on ruthless (or 'realistic') strategies such as refusing aid to stricken areas in order to build up obedient pockets of surviving labour elsewhere involves a complex, almost baroque organisation which stands little chance of survival. In every instance, it owes more to the demands of state control in a turbulent peacetime than to those of public survival in war. As Peter Laurie puts it:

"In effect civil defence forces a government to winnow out what is vital for survival in society, stockpiles, depots, communications centres, research establishments etc., and to put it out of reach of the rest of the people."

Beneath the City Streets



If you are caught outdoors in a sudden attack, a hat will give you at least some protection from the heat flash.



In case of a sudden attack in the country, even a furrow in a plowed field will give some protection.

It deprives people of support just when they need it most. Yet the sensible side of civil defence recognises the futility of rigid planning and concentrates instead on supplying local points of reference around which any peacable remnants of communities can gather to try and recover with their own resources, which is all they will have. There are no guarantees here, just a good deal of flexibility. By and large, this sort of approach is generally dictated through lack of resources to plan anything further. Could an alternative defence policy develop this sensible side so that real protection was possible? Are there in essence alternatives to nuclear suicide?

The direct answer is that most of the world's 140 or so nations currently favour a non-nuclear defence policy—95% in fact. If we unilaterally disarmed our nuclear systems, the probability of us becoming a nuclear target immediately decreases.

But we would as a nation continue to rely on some variety of defence preparations. Its actual form is likely to become a politically contentious matter if the UK transforms into the first ex-nuclear power.

Whatever our defence policy, as an island we are always vulnerable to the classic blockading tactic. Any alternative defence policy should involve both protecting people—even if only from being hit by missiles straying from wars elsewhere—and resisting attack. The possibility of blockades means that food and other essential items should be stockpiled in every community whilst the country must become less dependent on food imports. If energy systems are too centralised to sustain nuclear attack, or are vulnerable to EMP, then decentralised back up systems should be developed which are accessible to members of the public. These could be based upon renewable solar or wind resources which require minimum maintenance yet could provide a local emergency supply independent of precious fuel. Medical resources could also be decentralised perhaps by training teams of paramedics in first aid, midwifery and emergency health care. Without nuclear weapons, a shelter building programme for the whole population instead of just the elite would not be seen by an enemy as provocative war preparations. There is no reason why such buildings should not be well known and double up to form community centres or be used for other socially useful services in peace time.

Defending ourselves in this way is more challenging since most people in the UK simply see defence as another government service to be passively consumed, (or more likely be consumed by!). Building a security system as if people mattered means that this must change. People must take on personal responsibility for what happens next.

There are four established non-nuclear defence options; conventional defence; territorial defence; a combination of these two; and non-violent social resistance. A key idea which runs through these alternative strategies is the strong influence which the choice of a particular means of defence can exert on the viability of different means of attack. There is no doubt who had the superior firepower in India, Vietnam and Iran but firepower alone was insufficient to secure victory.

Firstly, conventional defence. You don't need nuclear bombs to be secure. As a neutral country, Sweden operates a highly successful conventional defence system. They last went to war with neighbouring Russia in 1808, and weren't blown to kingdom come when the Swedish navy captured a Soviet submarine found in territorial waters during 1981. After the Falklands debacle, it is quite likely that the British Government will attempt to spend far more on conventional arms. However, with Trident and Cruise missile acquisition, our nuclear systems will also be expanded, so we will be no safer, despite the incredible costs. This is especially true at the regional level.

An effective approach to regional protection is afforded by the 'territorial defence' system adopted by the peoples of Yugoslavia and Switzerland. This involves arming the population to fight a peoples war. The British government may favour the home guard equivalent rather than fully equipping the public to fight a guerilla war. Armed citizens in the current economic context might decide they could just as easily resist the state. Indeed this is one of the benefits of the territorial approach. It can be successfully applied to struggle against internal tyranny as well as external aggression. Mixing conventional and territorial approaches is sometimes used as part of a phased resistance plan designed to make the cost of occupation unbearably expensive.

The fourth alternative relies on the use of methods of non-violent social resistance such as strikes, non-co-operation and sabotage to make continued occupation both difficult and demoralising. The Polish people favoured this approach rather than overt confrontations and were able to sustain their resistance far longer than if military means had been used. The same went for the admittedly more militarised French resistance. Most groups who have used non-violent social resistance did so spontaneously without prior training. How much more effective they could be if this approach was more adequately developed with proper training, organisation and practice.

With its hills and moorland, territorial means of defence could be effectively operated in the rural parts of the North West. Here the food, energy and other resources could be established to provide the necessary support network to sustain active resistance against a range of threats for a considerable period of time. A decentralised communications system could be built to facilitate both co-oper-

ation and solidarity during active periods of resistance. What is more, the methods of Non Violent Direct Action currently applied by the peace movement could be adapted for use within these contexts. The whole point of these alternatives would be to involve the whole community to provide genuine local support, solidarity and protection for everyone if that culture was faced with the prospect of war.

The beauty of some of the alternative security strategies is their ability to create a better society in peacetime rather than just a more militarised one. Some of the protection systems would provide employment opportunities—particularly in the depressed rural areas where a full regeneration could result. Many of the effects would be socially beneficial especially the enhanced medical care, renewal pollution free energy, cheaper food and so forth.

Of course this approach would be utopian thinking of the worst sort without realistic planning, education and research. We need to start thinking in a new way. Our next government may be committed to getting rid of nuclear weapons and a complete re-orientation of our defence policies would be required. Some careful thinking needs to be done now if we are ever to have a system which really guarantees our security as if people mattered.

The Dutch are probably at the forefront of this turning point and may become the first country to seriously research and think through the potential of engaging the whole population in social resistance training.[45] We are clearly at the very beginning of what could become a tremendously significant transition. Research into these alternatives is vital as is widespread education about the benefits in real security they can offer us. The North West is fortunate in having not only a highly active branch of the peace movement but also centres of peace education and research. Developing an appropriate alternative approach to the defence of this land is destined to become one of our biggest challenges in taking the next vital steps towards survival.

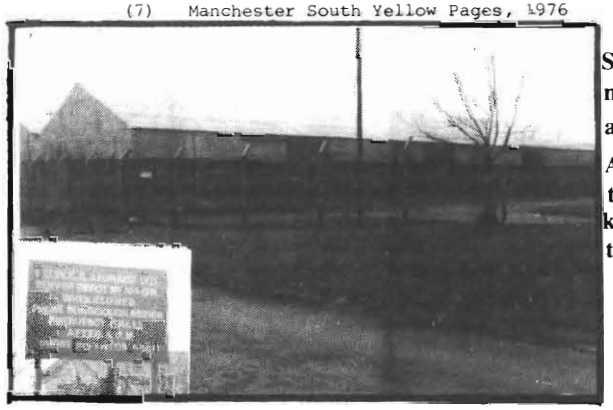
APPX. A A PARTIAL LIST OF FOOD BUFFER DEPOTS IN THE NORTH WEST

Number	Address	Run by	Source
Lancashire			
a) 314QR	Railway Station, Preston Rd, Grimsargh	LUWKA	(L) (1)
b) 314E	Brownedge Lane, Tardy Gate, Preston	Lancs	(L) (2)
c) ?	Gregson Lane, Hoghton	Lancs	
d) ?	London Road, Adlington	Chesh	(3)
e) 395D	Stanley Street, Blackburn	NW	(L)
f) 395K	Taylor Street, Clitheroe	NW	(L)
g) 395L	Feniscowles, Blackburn	NW	(L)
h) 544CD	Marston Sheds, Hornby Rd, Claughton	LUWKA	(4)
j) 475Q	Orrell Lane, Burscough	Lancs	(L) (5)
Cheshire			
k) 562C	School Bridge, Dunham Town	Chesh	(L)
m) 562E	Raglan Rd, Sale	NW	(L)
n) 344E	Dunham Hill, Thornton Le Moor	Chesh	(6)
p) 344F	Mickle Trafford	Chesh	
q) 344G	Waverton	Chesh	
r) 344CD	Tarporley	Chesh	
s) 344B	Tattenhall	Chesh	
t) ?	Knutsford Rd, Chelford	Chesh	(7)

'Run by' Lancs = Lancashire Storage Company Ltd; may be same as LUWKA
Chesh = Cheshire Storage Company Ltd
NW = North Western Storage Company Ltd
LUWKA = L.U.W.K.A. Storage Ltd (sometimes given as 'Luwka')

None of these companies appear in business directories consulted, so are presumably non-public trading state subsidiaries. The HQ of Lancashire Storage is at Burscough, where there is an ordnance depot.

Sources
(L) = Laurie, Beneath the City Streets, 1970 edition (so may be out of date).
(1) Preston area postcode directory 1975. On E side of main rd, just S of Grimsargh. Longridge 3644; emergency calls after 5pm to Poynton 5561 - can anyone in Poynton explain?
(2) N. Lancs Yellow Pages, 1980, p311; Preston 35356
(3) Manchester Mole Express no. 52, 1976
(4) N. Lancs Yellow Pages, 1980, p255. On N side of main rd, between Preston Farmers and Fenwick Arms. Lancaster 770279
(5) Company HQ. Burscough 893909/892166
(6) Merseyside & N. Wales phone book, 1976
(7) Manchester South Yellow Pages, 1976



Storage sheds and massive telephone exchange at Grimsargh food depot.

At least two mobile telephone exchanges are kept at the site, painted in telltale dark olive green.

APPENDIX B ROYAL OBSERVER CORPS POSTS IN THE NORTH-WEST

(County names used are those from before the 1972 re-organisation.)

No. 22 Group HQ: No. 14 MU RAF Carlisle.

No. 21 Group HQ, and UKWMO Western Sector HQ: Langley (or 'Longley') Lane, Goosnargh, near Preston.

Name	Grid Ref
CUMBERLAND	
Allonby	Y.084430
Alston	Y.724462
Bassenthwaite	Y.229328
Brampton	Y.532604
Caldbeck	Y.337391
Carlisle	Y.383593
Culgaith	Y.615294
Dalston	Y.380484
Eskdale	D.135001
Penrith	Y.504293
Roadhead	Y.519748
Threlkeld	Y.307244
Whitehaven	Y.986189
Wigton	Y.252493
Workington	Y.009295
CHESHIRE	
Aldford	J.417586
Altrincham	J.715889
Audlem	J.661448
Helsby	J.493754
Knutsford	J.748794
Malpas	J.495480
Middlewich	J.708663
Neston	J.316796
Poynton	J.932827
Saughall	J.368693
Tarporley	J.538638

Name	Grid Ref
WESTMORLAND	
Appleby	Y.674199
Bampton	Y.521175
Grasmere	Y.322108
Kendal	D.526917
Kirkby Lonsdale	D.603787
Kirkby Stephen	Y.779088
Tebay	Y.619045
LANCASHIRE	
Atherton	D.692044
Bacup	D.865228
Barrow-in-Furness	D.172690
Brinscall	D.593230
Broughton-in-Furness	D.218889
Burscough	D.427105
Catforth	D.455368
Fleetwood	D.325482
Flookburgh	D.368742
Forton	D.496504
Hawkshead	D.351978
Heysham	D.409601
Longridge	D.617382
Lytham	D.335274
Padiham	D.797349
Prestwich	D.831048
St Helens	J.487945
Turton	D.724143
Woodvale	D.304095

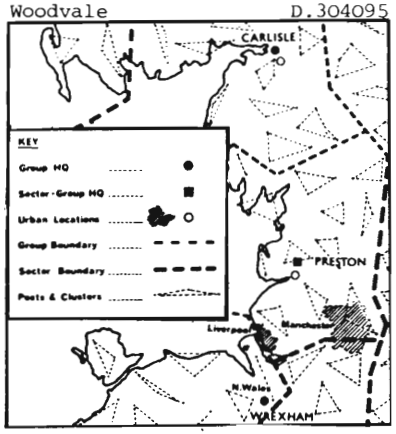
APPENDIX C HOME OFFICE RELAY STATIONS IN REGION 10

Region 101

Billinge
Winter Hill
Hameldon Hill
Dunhazles
Idle Hill
New Hey
Barnacre

Region 102

Old Palace
The Catch
Sutton Common
Frodsham



FURTHER READING

Civil defence and nuclear war

Home Office 'ES' circulars. The official planning documents, these are mostly declassified and available free from: F6 Division, Home Office, Queen Anne's Gate, London SW1.

One book stands out above all the others: *Crucible of Despair* by Anthony Tucker and John Gleisner. Authoritative and devastating analysis of UK civil defence, utterly invaluable. £1.50 inc. post from Menard Press, 8 The Oaks, Woodside Ave., London N12.

New Statesman, *Britain and the Bomb* (1981), £2.25 from 10 Great Turnstile, London WC1. Vital research into bombs & bases.

Paul Rogers et. al., *Lambs to the Slaughter* (Arrow Books, 1981), £1.75. Excellent introduction.

Effects of Nuclear War. The standard work by the US Congress Office of Technology Assessment (Croom Helm, 1980). Expensive; order it from your library.

Civil Defence—The Cruellest Con Trick. 80p from CND, 11 Goodwin St, London

Nigel Calder, *Nuclear Nightmares* (Penguin, 1981), £1.50. Possible wars.

Jonathon Schell, *The Fate of the Earth* (Picador, 1982), £1.95.

Local studies

Region 1 (the north-east). 75p + post from Days of Hope Bookshop, 115 Westgate Rd, Newcastle NE1 4AG.

Living on the Front Line (East Scotland). 75p + post from Aberdeen People's Press, 163 King St, Aberdeen.

H Bomb on Ogwr (South Wales). 50p + post from 28 Kensington Dve, Bridgend.

The state

Duncan Campbell, *Big Brother is Listening* (New Statesman, 1981), £1.50.

Tony Bunyan, *The Political Police in Britain* (Quartet Books, 1977), £2.95.

Peter Laurie, *Beneath the City Streets* (Panther edition, 1979), £1.75.

Crispen Aubrey, *Who's Watching You?* (Penguin, 1981), £1.95.

C. Ackroyd et. al., *The Technology of Political Control* (Penguin, 1977, rev. edn. Pluto, 1980).

State Research, an alert bi-monthly magazine. Sample issue 75p + post from 9 Poland St, London W1.

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2. *Protect and Survive* (HMSO); Anthony Tucker & John Gleisner, *Crucible of Despair; Guardian*, 18.6.81 and subsequent letters.

3. New Statesman, *Britain and the Bomb;* Paul Rogers et. al., *Lambs to the Slaughter; Crucible of Despair*.

4. The following information is drawn from: *Britain and the Bomb;* Peter Goodwin, *Nuclear War. The Facts on our Survival;* Peter Laurie, *Beneath the City Streets* (1979 edition), 180 and 244; *Lambs to the Slaughter*, chapter 5.

5. *New Statesman*, 27.6.80; *Guardian*, 3.12.81.

6. The following information is condensed from: *Crucible of Despair;* Radical Statistics Group, *The Nuclear Numbers Game;* and in turn from standard US government sources.

7. Wilson Clark, *Energy, Vulnerability and War*, quoted in *Science*, 11.2.81; Home Office Circular ES5/1976.

8. Interview with Dr Fairfax, 26.2.82; *Nuclear Numbers Game*, 59. We are grateful to Dr Fairfax for his help.

9. Bennett Ramberg, *Destruction of Nuclear Energy Facilities in Time of War* (1980); Political Ecology Research Group, *Civilian Protection and Britain's Commercial Nuclear Installations*. (Ecology Party, 1981).

10. Letter from Mr Hill to the authors, 9.6.82.

11. Letters from Dr Tognarelli and Gp. Capt. Matthews to local people, February 1980.

12. Patricia Lindop, 'Medical Implications of Nuclear Disasters' in: *Proceedings of the Medical Association for the Prevention of War*, March 1981.

13. *Guardian*, 3.12.80.

14. Interview with Gp. Capt. Matthews, 10.6.82. We are grateful to Gp. Capt. Matthews for his help.

15. 'A Week on Friday', Granada TV 30.10.81.

16. Letter from Mr Hill to the authors, 9.6.82; Lancashire CC Land & Buildings Sub-committee, Nov 1978; Policy & Resources Sub-committee, May 1979. Lancashire's pre-1968 Civil Defence Committee minutes and maps are on public access in the County Record Office, Preston.

17. E.g. Bernard Hayes (Manchester), Granada TV 30.10.81.

18. Lancashire CC Policy & Resources Committee, March 1978. This was the only information provided to the council on emergency planning between March 1975, when the emergency planning officer promised to keep the council informed, and November 1981, when the 'nuclear free zone' resolution was tabled.

19. Meeting of Lancaster City Council with the County emergency planning officer, April 1982.

20. *State Research* 8; Salford Management Sub-committee, 3.6.75; Manchester *Mole Express* (n.d.).

21. ES2/1975 and ES9/1976; Cumbria CC Public Protection Committee papers appendix, Jan 1981.

22. *Beneath the City Streets*, 180; ES2/1979; *New Statesman*, 1.2.80 in Duncan Campbell, *Big Brother is Listening* (1981).

23. *Guardian*, 6.1.82.

24. *Big Brother is Listening; Beneath the City Streets*, chapter 7; Crispin Aubrey, *Who's Watching You?*, chapter 2.

25. Derek Wood, *Attack Warning Red* (1976), 249; Lancs CC Policy & Resources Committee, Oct 1979; *Big Brother is Watching You*.

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27. *Crucible of Despair*, 47-52.

28. Interview with Dr Fairfax; ES8/1976 and ES1/1977.

29. Jonathan Marrow, on Granada TV, 30.10.80.

30. ES1/1979; Cumbria CC, 'Preparation and Use of Community Centres' (March 1981); *Emergency Feeding* (HMSO, 1960); *Crucible of Despair*, 6; *Nuclear Numbers Game*, 69-70.

31. Manchester *Mole Express*, 52.

32. *Leveller*, 53, 3-16 April 1981.

33. *Britain and the Bomb*, 75-7; *New Statesman*, 11.7.80.

34. Tony Bunyan, *The Political Police in Britain*, 282; Ackroyd et. al., *The Technology of Political Control* (Penguin, 1977), 101-2; SCAN (Lancaster student newspaper), April 1974.

35. Martin Spence, *Region 1* (1982 edition), 14-16.

36. *Mole Express*, 52.

37. Lancs. Chief Constable's Report, 1980; Lancs. CC Policy & Resources Committee, Oct 1979; *Mole Express* 52.

38. *Technology of Political Control*, 111, 121; *Police Manual of Home Defence* (HMSO, 1974).

39. *State Research* 6; *Technology of Political Control*, 124, 126; *Political Police in Britain*, 130, 281.

40. *State Research* 14.

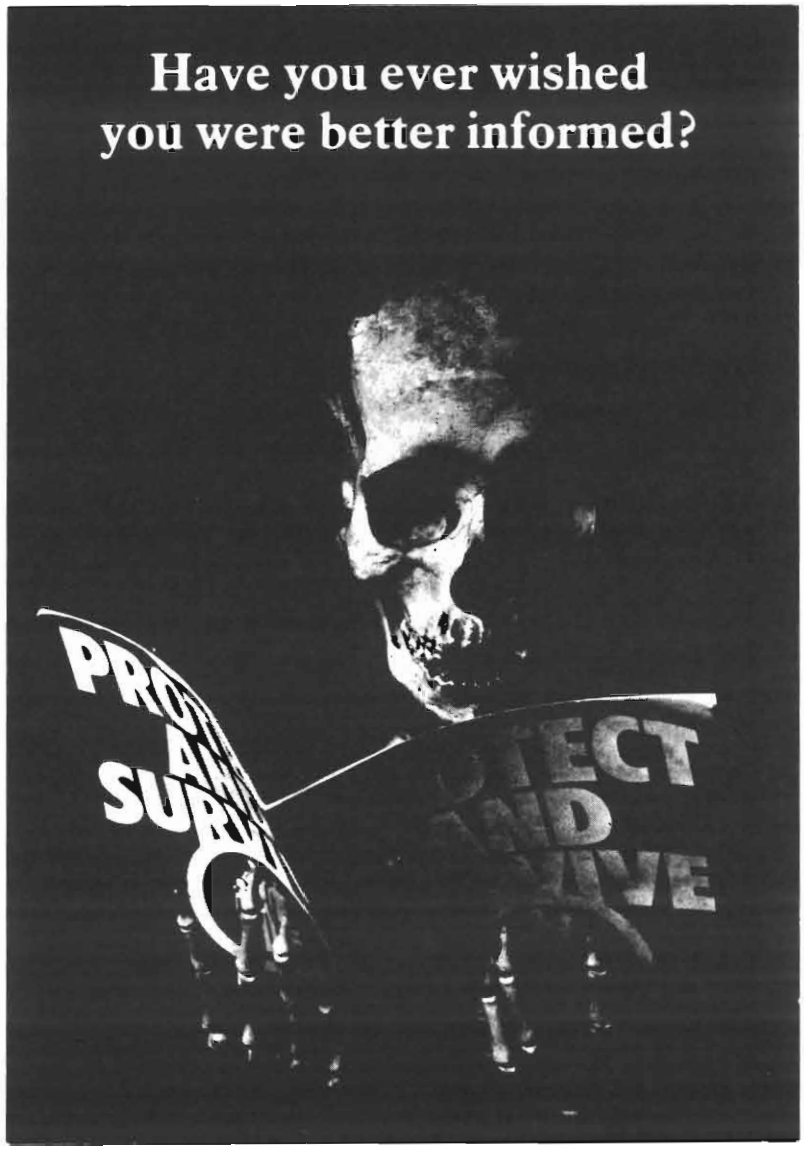
41. *State Research* 13.

42. *State Research* 16;

43. Steve Wright, 'Your Unfriendly Neighbourhood Bobby', *Guardian* 16.7.81.

44. Lancashire Chief Constable's Report, 1980. In 1979, under the heading 'War Duties Branch', the Chief Constable of Lancashire had had this to report: "This year, the spring exercises were cancelled as all authorities were fully committed in dealing with operational problems arising from industrial disputes."

45. See for example, "Het onderzoek naar geweldloze conflictoplossing en sociale verdediging". Deel II: En Witgewerkt onderzoeks-programma, February 1982 ISBN 90 12 03821 9.


Have you ever wished
you were better informed?