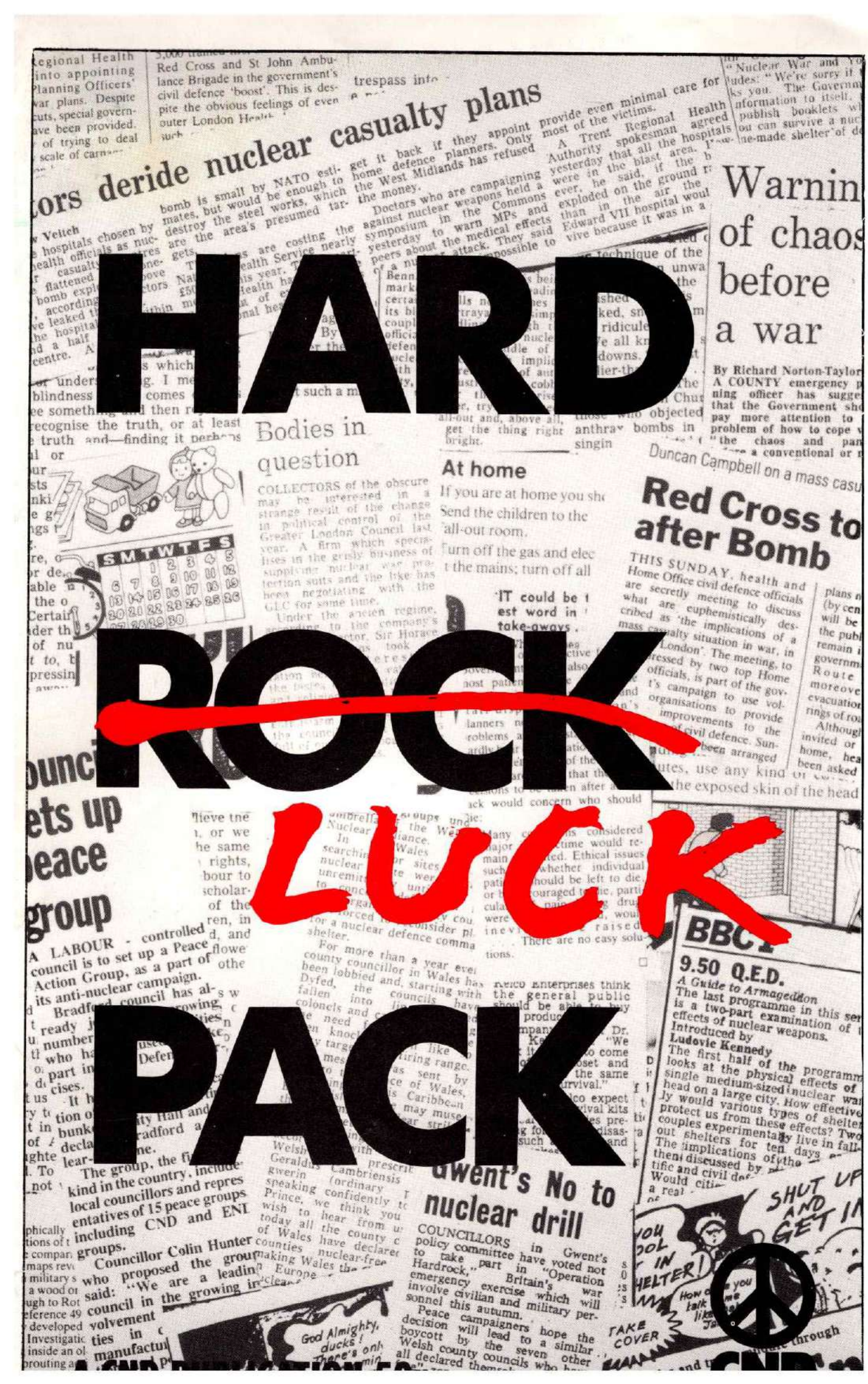
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The Effects of Nuclear Weapons: 'How the Home Office Gets it Wrong'

The recent revival of the idea that there is an effective civil defence against nuclear war, and its vigorous promotion by the government,, has given rise to an intense debate. While it is clear that at least some people in the UK would survive at least the short term effects of a nuclear attack on the UK, unrealistically optimistic assessments of the casualties are often quoted by supporters of the present civil defence program.

A careful, scientific, examination of the effects of nuclear weapons and of the ways in which casualty calculations should be carried out has revealed several misleading assumptions and errors in Home Office data and methods. This article briefly describes some of these and also points to some areas where misleading statements are often made.

When a nuclear bomb explodes, the first important effect is to expose tens or hundreds of square kilometers to intense heat which causes serious burns to exposed people and also starts fires throughout the area. Casualties from this effect are usually not included in any estimates. The number of people affected is very uncertain but it is sure to be large. When the blast waves arrive, people are crushed under falling masonry, flung against walls or slashed by flying glass. The radii of blast damage rings used in Home Office calculations are significantly smaller than the values given by other authorities, notably the standard US work 'The Effects of Nuclear Weapons', produced by the US Dept of Defence and the Dept of Energy. For example, for a 1MT bomb (airburst), the comparative figures are as follows:

	Approximate Area of Damage (Km^2)	
	Home Office	US
A ring (12 psi and above)	30	50
A+B rings (5 psi and above)	85	135
A+B+C rings (2 psi and above)	300	450

(The 'psi' values measures the peak blast pressure in excess of atmospheric pressure in pounds per square inch)

Since this work is based on the results of US nuclear weapons tests, the only explanation of the discrepancy, in the absence of any official justification, is Home Office error.

The Home Office then uses casualty rates from a given level of blast which are lower than those used in American studies. The following tables compare the Office of Technology Assessment (of the US Congress) (OTA) figures, which they describe as being 'relatively conservative', with the data provided for Home Office scientific advisers:

OTA	dead (%)	injured (%)
A ring (12 psi & over)	98	2
B ring (5 to 12 psi)	50	40
C ring (2 to 5 psi)	5	45
D ring (1 to 2 psi)	0	25

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Home Office	killed (%)	trapped (%)	seriously injured (%)
3.5 psi	0	0	5
5 psi	0	11	6
12 psi	18	40	7
20 psi	50	33	6
40 psi	100	0	0

(The Home Office appear to take trapped = killed in casualty calculations, though we cannot confirm this.)

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The discrepancies in the C ring are particularly large. The differences are not explained by differences in house construction between the UK and the USA. Rather, they seem to arise because the Home Office bases its figures on experience of conventional explosions in W.W.II. This is not appropriate for nuclear explosives, as the Home Office now acknowledge. The effect of these discrepancies is, of course, to greatly underestimate the casualties and damage caused by blast.

Short of spending programs in excess of the entire UK defence budget, there is, of course, nothing that can be done to significantly reduce the number of blast casualties. The 'Protect and Survive' recommendations are largely aimed at providing some protection against fall-out. However, in any credible attack on the UK, even if it is 'limited' and directed against our 'war-fighting' facilities rather than population centres per se, most casualties will be caused by blast. The majority of the population would be in areas with blast pressure levels sufficient to destroy the makeshift shelters recommended in 'Protect and Survive'. Windows are smashed even at overpressure levels lower than 0.5 psi. Consequently suggestions that even a large minority of the population is unlikely to suffer blast effects are simply false.

Moving on to protection against radioactive fallout, the object of any shelter is to increase the 'protection factor' (*PF) of the dwelling. The PF is the ratio of the radiation dose received in the open to that received inside. So, if the radiation dose outside would have been 30 rads and the dose received inside the shelter is 6 rads, the PF is said to be 5. The Home Office assumes unrealistically high PF's in its calculations and also does not usually take any account of the blast damage which most dwellings would have suffered.

Once a value for the dose of radiation received has been arrived at, casualties can be calculated. The Home Office use a formula for this which is being applied outside its range of validity (if it is valid at any dose level). The dose of radiation at which 50% of a large group of healthy adults exposed to it would die (the LD 50) is generally agreed to be around 400 to 450 rads. The Home Office uses, in effect, an LD 50 of 600 rads (recently increased to 800 rads). This whole area is a controversial one, but there is no clinical evidence to justify such high values, and some to justify much lower ones.

The effects of all these factors lead to serious underestimates of the numbers of casualties that are likely to arise from a nuclear attack. For instance, the GLC Emergency Planning Office calculate that there would have been 600,000 deaths in London as a consequence of the nuclear attack assumed in the Government's 'Square Leg' civil defence exercise. A study by five scientists using US data and more realistic assumptions arrived at a figure of around 5 million (see 'London After the Bomb', Oxford University Press paperback to be published on 15th September).

It is as well to remember that the additional casualties resulting from food and water shortages, epidemics, lack of shelter, fuel or medical care, cancers, effects on the environment and many more are not included. It is, of course, impossible to quantify these casualties, but it is certain that the toll would be high.

The casualty levels arrived at by the Home Office are truly horrific. Once more reliable data and more realistic assumptions are used, it is clear that it is doubtful that any form of civilised society could remain after even 'limited' nuclear attack.

Owen Greene

SANA

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Notes on Hard Luck Casualty Figures

The immediate casualty figures resulting from the direct effects of the Hard Luck scenario are now available. Regional Secretaries have these and will be passing them on as soon as possible; we hope you are able to use them to good effect. The following notes are intended to help you interpret them, and to put them into context.

The results are in the form of a set of figures that relate to every Ordinance Survey National Grid square in the country (10 km x 10 km). County or regional organisations may wish to combine the results of more than one grid square.

Below is an example of the way the figures are presented:

1.	2.		3.	4.	5.	6.	7.	8.	9.	10.	11.
NU	41	60	2806	67.11	44	11	57	870	1108	674	1209

1. The letters (eg. NU) refer you to the relevant 100 km. square on the National Grid on a map.

2. The numbers (eg. 41 60) refer you to the relevant 10 km square. Ignore the first digits of these numbers in each column, they are not relevant. This leaves you with the numbers 1 and 0. Working from the bottom left hand corner of the 100km grid, these numbers indicate how far to the East and North you will find the relevant square. The first number is the easting, the second the northing. Thus, in our example, you want one square to the east and 0 squares to the north from the bottom left corner. This is the square that lies between the lines 1 and 2 going east, and between 0 and 1 going north.

3. Total population (eg. 2806): The original population of the square before the attack, drawn from the 1971 Census. (1981 figures not available).

4. Deaths and Injuries: The percentage of the original population either killed or injured during the two-week period following the attack. (eg. 67.11)
The rest of the figures are a breakdown of how these deaths and injuries are caused. It will probably help to refer to 'Introduction to the Effects of Nuclear Weapons' in Additional Hard Luck Materials, circulated with Campaign No.12.

5. Deaths after burns (eg. 44)
Deaths due to burns: arising from direct exposure to thermal radiation from the fireball. (See: c) Thermal Radiation, in 'Introduction to the Effects of Nuclear Weapons', part of Additional Hard Luck Materials).
It is assumed that 5% of the population is outdoors and thus exposed to the fireball, although this could vary depending on the time of day, the time of year and whether enough warning was given to allow people to take adequate cover.

6. Injuries after burns (eg. 11)
It is assumed that people suffering from 2nd or 3rd degree burns will eventually die. Those suffering from 1st degree burns have been classed as injured. Clearly there would be variations; eg. an elderly person suffering 1st degree burns might die, whereas a healthy adult receiving 2nd degree burns might survive. Although these figures are approximate, they are a reasonable estimate and are in line with US Office of Technology assessments.

7. Deaths after blast (eg. 57)
(see Hard Luck supplement already received)
The figures include those killed directly by blast and also those people already injured by burns who are subsequently injured by blast. It is assumed throughout the study that victims of more than one serious injury will not survive.

8. Injuries after blast (eg. 870)
This figure is the sum total of people injuredafter the blast. This includes people previously uninjured, who receive blast injuries plus those suffering from burns injuries who avoided blast injuries. (As explained, those suffering from both burns and blast injuries have been included in the deaths figures above.)

9. Deaths from fallout (eg. 1108)
The figures indicate the number of people who will die within two months from radiation doses received during the first two weeks after the attack. This figure is the sum total of those people killed directly from high radiation doses and those who had already been injured by burns or blast who then receive sufficient radiation doses to injure a healthy adult.

Since fallout distribution is effected by wind direction, we have assumed a steady 15 mph SSW wind (the mean wind direction over the UK in September - Royal Meteorological Office). It is also assumed that the fallout distribution is regular. In reality, turbulence, rain and other factors would produce an uneven fallout distribution, with some 'hot-spots' of intense radiation, and other areas of much lower radiation. Nevertheless, the over-simplified radiation plumes provide a reliable basis for calculating average radiation levels and the subsequent number of radiation victims.

Radiation deaths and injuries are significantly effected by the "protection factor" of buildings. People sheltering indoors would receive lower doses of radiation than those exposed in the open. Blast damage would clearly reduce the degree of protection from fallout provided by buildings.

To calculate the "protection factor" of buildings:-
If someone inside a building received a dose of 10 rads (unit of radiation) at a place where, in the open they would have received a dose of 100 rads, then the protection factor would be 10. In Blast ring A therefore, where there would be no protection because the vast majority of buildings would have been destroyed, the protection factor would be calculated at 1.

Blast Ring	Estimated PF
inside A	1
" B	1
" C	2
" D	5
outside D	8

By combining the outside accumulated radiation doses and the appropriate "protection factor", it is possible to calculate the radiation dose received within the buildings that are being used as shelters. We have assumed that a dose of 450 rads would kill 50% of a group of healthy adults and have based our casualty figures on graph readings used by the Home Office.

10. Injuries after fallout (eg. 674)
This is the sum total of people injured after fallout. This includes those who received sufficient radiation doses to injure a healthy adult, plus those suffering burns and blast injuries not exposed to fallout. (As explained, those burns and injuries victims exposed to fallout have been included in the deaths figures above). This is the final number of injuries after these three bomb effects.

ADDITIONAL HARD LUCK MATERIALS

CONTENTS:

(i) Introduction and what to do now about Hard Luck.

(ii) Description of the Hard Luck attack.

(iii) Introduction to the effects of nuclear weapons.

(iv) Tables of the blast and burns effects of the weapons used in Hard Luck.

(v) Your regional target list.

(i) This addition to the Hard Rock/Luck pack will provide you with the basic information which you require to start preparing materials for the 'Hard Luck' campaign. It begins with a description of how the 'Hard Luck' attack might occur, how the targets were chosen, and which weapons were used. Next, we have provided a list of allthe 'Hard Luck' targets in your area. This tells you the name of the target, its grid reference, why it was attacked and which weapon was used. For simplicity, the regions have been made rather large, so it is up to you to sort out the targets most relevant to your area. Most important, at the moment, is to identify those explosions which directly cause burns or blast damage in your area. To help you with this we have included a short introduction to the most obvious effects of nuclear weapons and a series of tables which should help you to draw the appropriate blast and burns rings on a map using a pair of compasses. We suggest that you buy Ordnance Survey maps of your area of scales; 1:50,000 ("one -inch " map), 1:100,000, or 1:200,000. The tables in section (v) will tell exactly what radius each of the blast and burns rings is for each weapon type. Be careful to check whether the explosion was a ground burst (G) or an airburst (A) in each case. These maps could then be used for exhibitions, or as a basis for a local leaflet on Hard Luck.

To get a better idea of what the attack might mean, we suggest that you identify the position on the map of a few local landmarks, the main hospitals, resevoirs, stores of highly imflammable materials, etc. You should bear in mind that although it is customary to finish drawing rings at blast pressures of 1psi (pound per square inch), that is at the edge of the D ring, windows are smashed at least as far as ½ psi (about half as far again).

Your locality will also be threatened by radioactive fallout from surface explosions many miles downwind. We have not provided the information that you require to find out in detail what this would mean; it is a long and complex procedure. You could, however, use standard 'plumes' from one of the many books available to show roughly what each of the bombs could do.

By the end of August you will recieve details of the deaths and injuries caused in your area by the 'Hard Luck' attack. These are being calculated on a computer program developed over the last year. In particular, you will be provided with ;the original population, blast deaths, burns deaths, radiation deaths, avarage radiation level, andthe total number of deaths and injuries - all for your locality. While these will be specific to Hard Luck(details in any real attack may of course turn out to be different), the numbers will have been arrived at using the best available scientific data, avioding some of the many errors and false assumptions that the Home Office Scientific Advisory Branch generally make. The results should give an idea of what a limited nuclear attack on Britain would really mean.

Please start work using the information supplied here as soon as possible. Once you have the appropriate map, it shouldn't take you more than an hour or so to draw the rings and mark local landmarks. Prepare also for how to use the casualty figures when they are supplied, in late August.

The national casualty figures for Hard Luck will be released in late September - we hope as part of a massive campaign to expose the civil defence 'con - trick' and to reinforce our arguments for nuclear disarmament.

(ii) Description of the Hard Luck Attack

The 'Hard Luck' scenario, on which much of CNDs response to the Hard Rock exercise will be based, can be described as a full scale attack on major 'counterforce'(military) targets together with a limited attack on 'countervalue'(economic)targets such as industrial centres and power stations. The number of weapons used has been chosen to be rather less than the number that the Soviet Union is likely to have targetted on the UK, and population centres are not directly targetted. An actual attack might well be heavier - we have chosen a 'limited' attack to see what the minimum effects of a realistic attack on the UK would be. We also chose the size of the attack(total explosive power about 220 Megatons) to coincide with previous government assessments and exercises, like Square Leg.

There are several ways in which the Hard Luck attack could have come about - we list some of the possibilities here:

Scenario 1

As a result of the continuing build up of nuclear missiles of increasing accuracy, including the deployment of Pershing II missiles in Germany which can reach targets deep inside the Soviet Union within 5 or 6 minutes, the USSR adopts a launch - on -warning policy in an attempt to ensure that its own missiles cannot be destroyed in their silos. Later, as a result of an accident or computer failure, the Soviets believe that an attack has been launched against them and launch their own missiles in a strike against military targets. Having triggered all out war, they are forced to see it through by following up their missile attack by bombing economic targets which could be of military value with those bombers that manage to reach their targets.

Once an aggressive posture has been adopted, of course, it is always possible that through some miscalculation or delusion that most of the damage might be confined to Europe, the US attempts a disarming first strike on the Warsaw Pact, with the same result for the UK as described above.

Scenario 2

The conventional war in Europe, which NATO strategists constantly plan for, actually breaks out. In Central Europe, some NATO army divisions are being overrun. In line with NATO's 'first use' policy in this situation, an artillery commander orders the first use of AFAPs(Artillery Fired Atomic Projectiles) and the war turns nuclear. In the ensuing chaos and destruction, communications break down and the conflict rapidly escalates. The Soviet Union, in the belief that once a nuclear war starts it is bound to escalate, launches a full scale, 'damage limiting', strike on western Europe, including the UK. For the time being it refrains from attacking US forces outside of Europe in the hope of achieving a last minute ceasefire. Even if, by some fluke, this is achieved, the UK will already have received an attack of at least the size of Hard Luck. Much of the USSR will have been destroyed as well and they shall, by negotiating a ceasefire with the USA, have chosen effective defeat in order to avoid total annihilation.

Scenario 3

A popular uprising in one of the Gulf states threatens to remove a pro - western government, and so the Wests guaranteed access to the country's oil. NATO, led by the US government, believes the uprising to be inspired and supplied by the USSR and sends its Rapid Deployment Force to the area to intervene. The USSR, in the meantime, concentrates its own military forces in the area. After a period of increasingly serious fighting without either of the superpowers directly engaging the other, one finally attacks the other. As the conflict escalates, targets in Europe, for instance Sicily from where the RDF might be supplied, are attacked. The machinery of war drives the centre of gravity of of the conflict towards Europe, where the bulk of the appropriate weapons are deployed. Whether or not nuclear weapons are first used in the Middle East or in Europe, the conflict continues as described in Scenario 2.

Unfortunately, there are several other ways in which a conflict leading to an attack such as the one simulated in the Hard Luck might develop. Whether the US, the USSR, or some other power is guilty of crossing the 'nuclear threshold' first, the UK is inevitably a major target in a nuclear war involving the superpowers.

The UK has a high concentration of possible targets - only the most important ones(that we know of) have been attacked in Hard Luck. The targets included can roughly be divided into five categories.

1) Major nuclear strike facilities;that is Polaris and Poseidon submarine bases, Cruise Missile bases, nulear weapons stores, and US and UK nuclear bomber airfields and their support facilities.

2) Major command or communication centres such as the National seat of Government, NATO and UK forces command centres, and early warning and military communication systems.

3) Large military airfields to which aircraft might be dispersed in time of war, major naval bases, and UK Army barracks.

4) Large civilian airfields and ports which are likely to be used by the military in wartime.

5) Some military industrial centres such as Royal Ordnance factories and major MoD contractors. Oil refineries and power stations(both nuclear and large conventional ones), some centres of heavy industry such as chemical or steel works, a few transport centres and the City of London.

Eurostrategic weapons , such as the SS4, SS5, SS20, Backfire and Badger bombers have been used , together with some of the 180 ICBMs(Intercontinental Ballistic Missiles), SS19 s and SS11 s, in the western USSR which are known to be targetted on Western Europe(see SIPRI Yearbook 1982, p8). None of the 18 SS-N- 5 submarine launched ballistic missiles on 'Golf' submarines in the Baltic, have been used although they are generally classified as Eurostrategic. Neither have we used the many 'strategic', but still short range , SLBM s which would probably be fired from the Atlantic against some of the very high priority targets in Britain.

In order to get some idea of the number of weapons that the USSR has targetted on the UK, we estimated the total numbers of the weapons, relying mainly on the SIPRI Yearbook 1982 and 'The Military Balance 1981-82'(produced by the Inernational Institute of Strategic Studies). Then an appropriate number of these were subtracted, because they are likely to be targetted on China. Having arrived at an estimated number for Western Europe, we took a quarter of these to be aimed at the UK. This would leave another quarter for use against West Germany(which would also recieve the bulk of the 'tactical' warheads available), a quarter for Italy and France , and the last quarter to be divided between Turkey, Scandinavia, the Benelux countries and elsewhere. In view of the number of important targets in the UK , this is probably a rather conservative estimate. By this process , we arrived at the following totals.

Missile	approx. no. targetted on the UK.	No. used in Hard Luck.	No of warheads/ delivery vehicle.	Yield per warhead(MT)
SS4	48	48	1	1
SS5	13	13	1	1
SS20	46	44	3	0.15
SS11 *	31	31	1	1
SS19(1) }	15	7	6	0.5
SS19(2) }		3	1	5
Backfire	18	17	4 bombs **	1 ***
Badger	56	3	2 bombs	1 ***
SS-N-5	5	0	1	1

* There are two models ;the one with 3 MRVs(Multiple Re-entry Vehicles) has not been used.
** Or 2 bombs plus 2 Kingfish surface to air missiles.
*** As quoted from the Nuclear Weapons Info. Centre; but it could be more.

The total explosive power of the bombs used in the Hard Luck attack is about 222MT. This is about the same size as previous government civil defense exercises, and is also about the size that has often been quoted in official publications(e.g. Domestic Nuclear Shelters;Technical Guidance). The forthcoming Hard Rock exercise seems likely to be much smaller. An examination of the targets that they appear to take as attacked by conventional bombs reveals the total lack of realism of their scenario(for example, some of these are heavily protected underground bunkers).

If Cruise missikes were to be deployed at Greenham Common and Molesorth they would, in times of 'international crisis' be dispersed throughout Southern England. The Hard Luck scenarion is not based on a Soviet attack designed to destroy such a dispersal. We hope to run another programme which does make this assumption in early 1983.

How to use the Target Lists and Tables

Plot the targets in your area onto an O.S. map, you will want a different scale for leaflets, posters, display materials etc. Any O.S. map should contain a section explaining how to use the grid references.

The tables give the size of the blast rings for the different warheads used in the Hard Luck scenario.

Information used in the Hard Luck exercise

1 The weapons used in the exercise have the following explosive yields:

0.15 Mt on the SS 20, airburst and groundburst.
0.5 Mt on the SS 19/1, airburst and groundburst.
1.0 Mt in the SS4, SS5, Backfire and Badger, airburst and groundburst.
5.0 Mt on the SS19/2, groundburst only.

2 The heights of all airbursts are calculated to maximise the area covered by the 10 pounds per square inch (psi) blast pressure.

3 Radiation from fallout will be taken into consideration in the computer model which will be used to calculate the total casualties. These casualties figures will be available in late August. They are not included in the present tables.

4 Waterbursts (W) should be treated as Groundbursts (G).

11. Total Deaths (eg. 1209)
The final column is the total number of people in that grid square who have been killed by burns, blast and radiation.

Summary

We believe that these figures are as reliable as is reasonably possible and that each stage in the calculation is fully justifiable. Clearly however, a real attack could result in a different distribution of casualties, although it must be remembered that the overall national total would stay about the same. There are a number of factors that could effect the distribution of casualties. The topography of the area (mountains, valleys etc.) could distort the blast rings so that they are not circular. Different weather conditions (eg. wind direction, rain etc.) can create variations in fallout distribution. Burns casualties caused by the bomb will be increased if snow is lying on the ground or if there is cloud cover, as cloud and snow act as reflectors.

The figures that you have been presented with should not therefore be taken too literally and for practical purposes be rounded up to the nearest sensible number. For instance, 30,172 blast deaths would be rounded to 30,000, and a figure of 63 for casualties could be read as 'under one hundred casualties'.

There may be several perfectly valid targets in your area which have not been hit. This is in line with our decision to simulate a "limited" nuclear attack on the UK. As outlined in the previous supplement, we have used far fewer bombs than are actually likely to be targetted on the UK, so that a real attack could be much bigger and include those targets that we have ignored. We have assumed that all warheads will hit their targets. In fact, many will fall short or overshoot, and those few areas not close to a target may be hit. It has also been assumed that Cruise Missiles have been deployed at Greenham Common and Molesworth (but not dispersed) and that the NATO base at Stornaway has been extended, though this would obviously not be the case by 1982.

The casualty figures are lower than would actually be the case because of various effects that have not been included in the calculations:

a) Deaths and injuries caused by fires started by the nuclear explosions.

b) Although nuclear power stations have been targetted, the resulting radiation from the release of these radioactive materials into the environment has not been taken into account. The different mix of isotopes in nuclear power stations or nuclear waste decay much slower that the fission products of nuclear weapons, and so will contaminate large areas of the country for months and years (at lower but still extremely dangerous levels).

c) Similarly, fallout from attacks on nuclear weapons stores has not been included.

d) No fallout from France has been included, so the South East coast appears to have escaped serious injuries. This would not necessarily be the case in a real attack.

e) Please remember that a large percentage of those who survive the direct effects of burns, blast and radiation will die from fires, epidemics, thirst, starvation, lack of shelter etc. in the months and years following the attack. It is also worth remembering that rats and insects have a higher resistance to radiation than humans. As the months pass, the plight of the short term survivors will get worse rather than better. The effects on the ozone layer, of smog, of cancers etc., and of upsetting the ecological balance, all mean that our calculations presented here are only an initial indication of the terrible effects of a "limited" nuclear attack.

(iii) Introduction to the Effects of Nuclear Weapons

At the core of an atom, there is a nucleus which is bound together by extremely powerful ('Strong ') forces. The enormous amounts of energy released when a nuclear bomb explodes comes from these forces. The release is achieved in two ways - by splitting a heavy nucleus such as Uranium or Plutonium ('fission') or by fusing together two light nuclei('fusion').

Modern nuclear weapons are of 'fission - fusion', or 'thermonuclear', type: they use the fission chain reaction to generate the collosal temperatures - millions of degrees centigrade - at which nuclear fusion reactions can begin. In these reactions, very light nuclei fuse together with an energy release which is (per kilo of material) even greater than for fission, and is potentially unlimited. The sun and the stars derive their energy from this sort of process; they convert vast quantities of hydrogen, the lightest element, into helium, the next lightest.

The amount of energy released by a nuclear weapon is called its explosive yield. It is measured by the quantity of the chemical explosive TNT needed to release the same amount of energy. The Nagasaki explosion was roughly equivalent to 20,000 tons(20 kilotons or 20 kt). Today, the yields of warheads range between about 1 kt and tens of Megatons(1 Megaton is one million tons).

As the yield increases, so does the area of destruction. However many smaller, scattered, bombs will destroy a larger area than one large bomb with the same total yield. Modern weapons often have many warheads which can be targetted independantly - these are called 'MIRV s'(Multiple Independantly Targettable Reentry Vehicles). One MIRV ed missile can be used to hit several targets.

The energy released in an explosion takes several forms.

a) Initial Radiation (This should not be confused with 'fallout' - see below)

At the instant of the explosion a short, intense pulse of neutrons and gamma rays(like X-rays but more penetrating) is emitted. For yields of more than 10 kt those within the lethal range of this radiation would have died from blast and heat in any case. For small yields it becomes more significant. In the neutron bomb, the warhead is designed to further enhance this tendancy, so that the initial radiation becomes an important 'kill mechanism'.

b) Electromagnetic Pulse(EMP)

At some altitudes, the gamma rays from the initial radiation interact with the atoms of the surrounding air to produce an extremely high voltage pulse, known as EMP. It is harmless to humans but can damage electronic devices hundreds of miles away.

c) Thermal Radiation

The neutrons, gamma rays and fission products are ejected, following the fission - fusion process at tremendous speeds. These collide with the surrounding air, which is heated to around 10 million° C. This 'fireball emits energy in the form of heat and light. The effects of the thermal radiation depend upon the atmospheric conditions. The heat flash can kill by causing second or third degree burns. It will also ignite fires which may kill many of the blast survivors (including those in shelters) from high temperatures, lack of oxygen, and poisonous fumes.

Medical Description of Burns

Level of flash-burns (degree)	Medical effect
Third	Full thickness of the skin and some underlying tissues killed. Skin is red or charred. Severe pain from the edges of burns. Burns over 2" in diameter require skin grafting. Untreated victim will probably die of shock if over 20% of the body is affected.
Second	Upper and intermediate layers of skin killed. Blisters and swelling develop. Persistent pain. Extensive burns require specialised treatment in sterile conditions.
First	Immediate pain followed by redness of affected area. Will heal without scar formation.

d) Blast

Nuclear energy is also transferred to the surrounding air in the form of a blast wave, measured in terms of the pressure in excess of normal atmospheric pressure(the overpressure), in units of pounds per square inch(psi). The blast wave travels more slowly than the thermal radiation, and so would reach someone a few miles away from the explosion a few seconds later.

The extent of blast damage from a weapon of given yield depends mainly on the height of detonation. There is a height which maximises the area of a given level of blast damage; for a 1 Mt weapon, the 10 psi blast radius is largest for an airburst height of 7000 ft. When the weapon detonates at or near ground level(a ground burst), some of the blast and heat energy goes to producing a crater. Groundbursts are more effective in causing damage to fortified underground structures such as missile silos, command bunkers, runways on airfields, or docks.

Most deaths from blast are indirect. Humans can withstand quite large overpressures and sustain only ruptured eardrums, but as little as 2-3psi(15 - 20 % above atmospheric pressure) could blow people out of office buildings. Five psi completely demolishes brick built dwellings and seriously damages concrete structures. Less than 1 psi damages roofs, blows out doors, and smashes windows, causing injuries from flying glass. Falling debris, collapsing buildings, being blown against obstacles - allwould be sources of blast casualties.

e) Fallout Radiation

The 'fireball' produced by the explosion causes powerful updraughts of hot air . In a groundburst large quantities of dust and soil particles thrown up by the explosion as it forms a crater are sucked into the fireball and made radioactive. These are thrown high into the air and form the mushroom cloud. These radioactive, 'fallout', particles fall back to the ground over periods ranging from minutes for the largest to many years for the smallest. Radiation sickness caused by exposure to radiation from fallout is likely to be one of the major causes of death in a nuclear war - not quick deaths but slow lingering deaths lasting several weeks.

Blast Ring	Overpressure† psi	Wind velocity mph	Mean Fatalities* %	Mean Injuries* %	Typical Effects on Structures
A	12	330	98	2	Most factories, commercial buildings and blocks of flats destroyed.
B	5-12	165-330	50	40	Typical houses destroyed; blocks of flats, etc, severely damaged.
C	2-5	70-165	5	45	Severe damage to houses, walls badly damaged, roof tiles blown away.
D	1-2	35-70	0	25	Windows and doors blown out, roofs damaged, people endangered by flying glass and debris.

Notes on the Direct Thermal Radiation Effects of Nuclear Weapons

*People exposed directly to the fireball suffer flashburns

*Distances given in the accompanying tables apply to good visibility conditions (12 miles) with no cloud cover or snow on the ground. Cloud and/or snow will increase the extent of burn injuries by 13% to 20% if one of these conditions exists, and by 30% to 50% if both exist.

*Fire zone is defined as the area in which some indoor or outdoor materials exposed to the fireball could ignite and as a result start a fire.

*The U.S. Congress Office of Technology Assessment suggests that third degree and second degree burns are eventually fatal in the conditions prevailing after a nuclear war, and that first degree burns require medical treatment. However Glasstone and Dolan suggest that third degree burns only will be fatal, while second degree burns require medical treatment, especially if they are combined with nuclear radiation sickness. These conclusions are confirmed by observations from nuclear bombings in Japan. In Hiroshima, however, there were cases of first degree flash burns which required medical treatment.

*Total fatalities and casualties are averaged over the ring.

5.0 Mt Warhead

Groundburst

Blast Effects

Blast Ring	Radius, miles (km)	Distance on Map, cm scale 1:50,000	Distance on Map, cm scale 1:100,000	Distance on Map, cm scale 1:200,000
A (12 psi)	3.0 (4.8)	9.6	4.8	2.4
B (5 psi)	4.8 (7.7)	15.4	7.7	3.85
C (2 psi)	8.25 (13.3)	26.6	13.3	6.65
D (1 psi)	12.38 (19.9)	39.8	19.9	9.95

Thermal Radiation Effects

Thermal Radiation Ring	Radius, miles (km)	Distance on Map, cm scale 1:50,000	Distance on Map, cm scale 1:100,000	Distance on Map, cm scale 1:200,000
Mostly Third Degree Burns	8.7 (14.0)	28.0	14.0	7.0
Mostly Second Degree Burns	10.1 (16.25)	32.5	16.25	8.1
Mostly First Degree Burns	12.1 (19.45)	38.8	19.45	9.7
Fire Zone	10.3 (16.55)	33.1	16.55	8.3

1.0 Mt Warhead

Groundburst

Blast Effects

Blast Ring	Radius, mile (km)	Distance on Map, cm scale 1:50,000	Distance on Map, cm scale 1:100,000	Distance on Map, cm scale 1:200,000
A (12 psi)	1.75 (2.8)	5.6	2.8	1.4
B (5 psi)	2.8 (4.5)	9.0	4.5	2.25
C (2 psi)	4.83 (7.8)	15.6	7.8	3.9
D (1 psi)	7.24 (11.65)	23.3	11.65	5.8

Thermal Radiation Effects

Thermal Radiation Ring	Radius, miles (km)	Distance on Map, cm scale 1:50,000	Distance on Map, cm scale 1:100,000	Distance on Map, cm scale 1:200,000
Mostly Third Degree Burns	5.35 (8.6)	17.2	8.6	4.3
Mostly Second Degree Burns	6.45 (10.4)	20.8	10.4	5.2
Mostly First Degree Burns	8.0 (12.85)	25.7	12.85	6.4
Fire Zone	6.6 (10.6)	21.2	10.6	5.3

1.0 Mt Warhead

Airburst at 7200 feet above target

Blast Effects

Blast Ring	Radius, mile (Km)	Distance on Map, cm scale 1:50,000	Distance on Map, cm scale 1:100,000	Distance on Map, cm scale 1:200,000
A (12 psi)	2.4 (3.85)	7.7	3.85	1.9
B (5 psi)	4.1 (6.6)	13.2	6.6	3.3
C (2 psi)	7.45 (12.0)	24.0	12.0	6.0
D (;1psi)	11.0 (17.7)	35.4	17.7	8.85

Thermal Radiation Effects

Thermal Radiation Ring	Radius, mile (km)	Distance on Map, cm scale 1:50,000	Distance on Map, cm scale 1:100,000	Distance on Map, cm scale 1:200,000
Mostly Third Degree Burns	7.0 (11.3)	22.5	11.3	5.6
Mostly Second Degree Burns	8.0 (12.9)	25.7	12.9	6.45
Mostly First Degree Burns	10.2 (16.4)	32.8	16.4	8.2
Fire Zone	8.1 (13.0)	26.0	13.0	6.5

0.5 Mt Warhead

Groundburst

Blast Effects

Blast Ring	Radius, miles (km)	Distance on Map, cm scale 1:50,000	Distance on Map, cm scale 1:100,000	Distance on Map, cm scale 1:200,000
A (12 psi)	1.39 (2.2)	4.4	2.2	1.1
B (5 psi)	2.22 (3.55)	7.1	3.55	1.8
C (2 psi)	3.83 (6.2)	12.4	6.2	3.1
D (1 psi)	5.75 (9.25)	18.5	9.25	4.6

Thermal Radiation Effects

Thermal Radiation Ring	Radius, mile (km)	Distance on Map, cm scale 1:50,000	Distance on Map, cm scale 1:100,000	Distance on Map, cm scale 1:200,000
Mostly Third Degree Burns	4.2 (6.75	13.5	6.75	3.4
Mostly Second Degree Burns	4.95 (7!95)	15.9	7.95	4.0
Mostly First Degree Burns	6.3 (10.15)	20.3	10.15	5.2
Fire Zone	4.95 (7.95)	15.9	7.95	4.0

0.5 Mt Warhead

Airburst at 5700 feet above target

Blast Effects

Blast Ring	Radius, miles (km)	Distance on Map, cm scale 1:50,000	Distance on Map, cm scale 1:100,000	Distance on Map, cm scale 1:200,000
A (12 psi)	1.9 (3.05)	6.1	3.05	1.5
B (5 psi)	3.25 (5.25)	10.5	5.25	2.6
C (2 psi)	5.91 (9.5)	19.0	9.5	4.75
D (1 psi)	8.75 (14.1)	28.2	14.1	7.05

Thermal Radiation Effects

Thermal Radiation Ring	Radius, miles (km)	Distance on Map, cm scale 1:50,000	Distance on Map, cm scale 1:100,000	Distance on Map, cm scale 1:200,000
Mostly Third Degree Burns	5.6 (9.0)	18.0	9.0	4.5
Mostly Second Degree Burns	6.7 (10.8)	21.6	10.8	5.4
Mostly First Degree Burns	8.5 (13.7)	27.4	13.7	6.85
Fire Zone	6.7 (10.8)	21.6	10.8	5.4

0.15 Mt (150 Kiloton) Warhead

Groundburst

Blast Effects

Blast Ring	Radius, miles (km)	Distance on Map, cm scale 1:50,000	Distance on Map, cm scale 1:100,000	Distance on Map, cm scale 1:200,000
A (12 psi)	0.93 (1.5)	3.0	1.5	0.75
B (5 psi)	1.49 (2.4)	4.8	2.4	1.2
C (2 psi)	2.57 (4.15)	8.3	4.15	2.1
D (1 psi)	3.85 (6.2)	12.4	6.2	3.1

Thermal Radiation Effects

Thermal Radiation Ring	Radius, miles (km)	Distance on Map, cm scale 1: 50,000	Distance on Map, cm scale 1:100,000	Distance on Map, cm scale 1:200,000
Mostly Third Degree Burns	2.55 (4.1)	8.2	4.1	2.05
Mostly Second Degree Burns	3.1 (5.0)	10.0	5.0	2.5
Mostly First Degree Burns	4.1 (6.6)	13.2	6.6	3.3
Fire Zone	3.05 (4.9)	9.8	4.9	2.45

0.15Mt (150 Kiloton) Warhead

Airburst at 3825 feet above target

Blast Effects

Blast Ring	Radius, miles (km)	Distance on Map, cm scale 1:50,000	Distance on Map, cm scale 1:100,000	Distance on Map, cm scale 1:200,000
A (12 psi)	1.28 (2.05)	4.1	2.05	1.00
B (5 psi)	2.18 (3.5)	7.0	3.50	1.75
C (2 psi)	3.96 (6.35)	12.7	6.35	3.2
D (1 psi)	5.85 (9.4)	18.8	9.4	4.7

Thermal Radiation Effects

Thermal Radiation Ring	Radius, mile (km)	Distance on Map, cm scale 1:50,000	Distance on Map, cm scale 1:100,000	Distance on Map, cm scale 1:200,000
Mostly Third Degree Burns	3.6 (5.8)	11.6	5.8	2.9
Mostly Second Degree Burns	4.3 (6.9)	13.8	6.9	3.45
Mostly First Degree Burns	5.6 (9.0)	18.0	9.0	4.5
Fire Zone	4.2 (6.75)	13.5	6.75	3.4

HARD LUCK CASUALTIES

Pre-attack population	53,949,000	(100%)

STAGE 1
Casualties caused by immediate burn and blast.

Dead	23,320,000	(43%)
Injured	9,543,000	(18%)
Dead or injured	32,863,000	(61%)

STAGE 2
Casualties caused by fallout up to 8 weeks after the attack.

Dead (including many of those already injured by burn and blast)	15,267,000	(29%)

TOTAL
As it appears 8 weeks from the start of attack.

Dead	38,587,000	(72%)
Injured	4,326,000	(08%)
Dead or injured	42,913,000	(80%)
Uninjured	11,036,000	(20%)

BUT in reality many more will die. A large percentage of those who survive the direct effects of burn, blast and radiation, will die from fires caused by the nuclear explosions, epidemics, thirst, starvation, lack of shelter or medical care etc. It is also worth remembering that rats and insects have a higher resistance to radiation than humans.
As the months pass, the plight of the short term survivors will get worse rather than better. The effects of smog, of cancers, on the ozone layer, and of upsetting the ecological balance, all mean that our calculations presented here are only an initial indication of the terrible effects of a 'limited' nuclear attack.

* *

Various assumptions have been made in the study, which have been detailed in the three duplicated materials: Additional Hard Luck Materials, Notes on the Hard Luck Casualty Figures, and How the Home Office Gets it Wrong. Some of the most important assumptions are outlined below.

1 The number of warheads used in the attack is 166, carrying 343 warheads, with a total explosive power of 222 Megatons (MT). (For comparison, the power of the Nagasaki bomb was 20 Kilotons or .02 MT, and the total power of all the explosives used in WW2 was about 5 MT.)

2 The Hard Luck scenario assumes a full scale attack on major 'counterforce' (military) targets, together with a limited attack on major 'countervalue' (economic) targets such as industrial centres and power stations. It does <u>not</u> assume that major population centres have been targetted for their own sake.

3 It has been assumed that Cruise missiles have been deployed at Greenham Common and Molesworth, making them targets, but that these have <u>not</u> been dispersed around the countryside. If they were to be dispersed many more weapons would be targetted on Southern England.

4 Anyone receiving an injury from more than one source (ie burn <u>and</u> blast, blast <u>and</u> radiation) is assumed to have been killed.

HARD LUCK SCENARIO: BURST LIST. SCOTLAND

NB: Those targets in the areas between CND regions have been included on both, or all three regional lists. If you find any omissions or want a wider picture of your locality, contact your neighbouring region for their list.

Grid Ref	Name	Comments	Weapon Type	Yield (MT)	
NB 459 392	Stornaway	US ASW Base (crisis base for US P3 Orion ASW) (runway: 2000m maximum)	SS5	1.0	G
NC 9960	Dounreay	PWR model plant for nuclear subs and Fast Breeder Reactor (& Thurso: US μ-Wave Station, collatoral damage)	SS4	1.0	A
NH 7168	Invergordon	UK Naval Base & Oil pipeline	SS20	0.15	G
NJ 925065	Aberdeen (Ab in Sq. Leg)	Industrial & Urban (popn. 182,000) British Shipbuilders Ltd. US μ-Wave link (collatoral damage)	SS4	1.0	A
NJ 065536	Kinloss	RAF Base (Airstrip 2500m) Nimrod; Air defence. Wartime Nuclear Weapons Store?	SS20	2 x 0.15	G + A
NJ 210695	Lossiemouth (Gb in Sq. Leg)	RAF Base, Communications Nuclear Weapons Store for Bucaneers. (Baltic Strategic & Shipping Strikes). Nimrod Air Defence. (airstrip 3000, 2000, 1300m)	SS20	2x 0.15	G + A
NJ 960570	Mormond Hill	USN and USAF Communications Ace High NATO (NADGE) Radar	SS20	0.15	G
NJ 879126	Dyce	Civilian Airport (runways: 2000, 1400, 1300, 1400m)	SS20	0.15	G
NK 125415	Buchan (Ab + Gb in Sq Leg)	RAF radar station RAF Sector Operational Control	SS20	0.15	
HU 3845	Sullom Voe	Oil Terminal, US Coastguard Station	Backfire	1.0	A
ND 3695	Flotta (Orkney Islands)	Oil Terminal	Backfire	1.0	A
HU 395110	Sumburgh	Airport with military facilities & Radar Station	Kingfish	0.2	G
HP 6315	Saxa Vord	Radar	Kingfish	0.2	G

Grid Ref	Name	Comments	Weapon Type	Yield (MT)	
NO 632691	Edzell	USAF, USN, SIGINT	SS20	0.15	G
NK 100520	St Fergus	N. Sea Gas Terminal	Badger	1.0	A
NO 467205	Leuchars (GB in Sq. Leg)	RAF Fighter Defence (Lightnings, Phantoms) (runway 2700, 1500m)	SS19/1 SS11	0.5 1.0	G A
NO 405 310	Dundee (Gb in Sq. Leg)	Industrial, Oil Ref: 350 K tonnes/yr. (Ferranti, & Engineering) Tay Bridge, Victoria & Camperdown Docks (popn. 182,000)	SS4	1.0	G
NR 660233	Machrihanish (Gb & Ab in Sq. Leg)	Nuclear Weapons Store, crisis base for US ASW aircraft (runway: 3000m)	SS20 SS20	0.15 × 2 0.15	G + G A
NS 2880	Clyde Estuary	Destroys Greenock (US Army + Navy Transport terminal & port). Port Glasgow, Polaris or Poseidon subs in Estuary, Finnack (Gare Loch Petrol Dump) & Flooding	SS19/2	5.0	W
NS 479670	Glasgow (Renfrew & Abbotsinch)	Airport (1900, 1200m runway)	Backfire	1.0	G
NSi 2173	Inverkip	Conventional Power Station (over 1000mw)	Backfire	1.0	A
NS 5964	Glasgow (Ab+2Gb in Sq. Leg)	Industrial & Urban. (popn. 986.000) Many major MOD contractors: eg. GEC, Courtaulds, Dunlop, Pilkington, Weir Group, Yarrow & Co.	Backfire	1.0	G
NS 6354	East Kilbride	Industrial & Urban (popn. 64,000)	SS4	1.0	G
NS 4371	Bishopton	Royal Ordnance Factory	Backfire	1.0	A
NS 6573	Kirkintillock	SSEB Electricity Grid Control	Backfire	1.0	A
NS 9869	Bathgate	Industrial (Vehicle, metal goods)	Badger	1.0	A
NS 7457	Motherwell	Industrial (Steel, Engineering) Urban (pop. 41,000)	Badger	1.0	A
NS 946820	Grangemouth	US Army, US Navy transport terminal	Backfire	1.0	G
NS 9281	Grangemouth	(BP) Oil refinery (8600 K tonnes/yr)	Backfire	1.0	A

Grid Ref	Name	Comments	Weapon Type	Yield (MT)	
NS 9387	Lonyannet	Conventional Power Station (UK's largest - 2400 MW)	Backfire	1.0	A
NS 170810 (GB in SQ. Leg)	Holy Loch	USN (Poseidon) Sub. base	SS19/1	0.5	G
NS 1880	Entrance to Holy Loch		SS19/1	0.5	W
NS 2588 (5MT Gb in Sq. Leg)	Faslane	UK (Polaris) Sub. base	SS19/1	0.5	G
NS 2783	Gare Loch (Entrance to Faslane) (Wb in Sq. Leg)		SS19/1	0.5	W
NS 2188 (2Gb's in Sq. Leg)	Coulport	Nuclear Weapons Store (Missile storage for Subs)	SS19/1	0.5	G
NS 275 995	Glen Douglas	NATOmajor conventional Weapons Store. (Finnart Oil Terminal nearby)	SS19/1	0.5	G
NS 2342	Ardrossan	Oil Refinery (275 K tonnes/yr) Port	SS4	1.0	A
NS 365268 (Ab in Sq Leg)	Prestwick	USAF Military Airlift command, USN Transport, Civilian Airport ASW Facilities. Air Traffic Control Centre (Scotland). British Aerospace Plant	SS11		
NT 100875	Dunfermline	NATO Commander N. Atlantic (Naval) NATO Commander N.E. Channel (Naval) Flag Officer (Scotland & N. Ireland) HQ Northern Maritime Air Region NATO COMMAIR N. Atlantic NATO COMMAIR Northern Channel GEC Plant (major MOD contractor)	SS19/1	0.5 x 2	G + G
NT 100840	Rosyth	Royal Dockyard, Polaris & Hunter-Killer Submanrine re-fit docks	SS19/1	0.5	G
NT 125800	Forth Bridge		SS19/1	0.5	W
NT 2777 (Ab in Sq. Leg)	Edinburgh - Leith	Docks, Industry, Urban (popn. 454.000)	Backfire	1.0	G
NT 156734 (Ab in Sq. Leg)	Turnhouse (Edinburgh)	Airport (runway 1100, 2100, 800m)	Backfire	1.0	G
NT 167753	Craigihall	Army HQ (Scotland)	SS19/1	0.5	A
NT 3975	Cockenzie	Conventional Power Station (1152 MW)	Backfire	1.0	A
NU 259133 (Gb in Sq. Leg)	Boulmer	B. Missile Early Warning System, Airfield (runway 1700, 1300, 1100m)	SS11	1.0	A

Grid Ref	Name	Comments	Weapon Type	Yield (MT)	
NY 1865	Chapelcross	Nuclear Power Station, Magnox (4 ×49.5MW) & Powfoot Ordnance Factory nearby	Backfire	1.0	G
NS 2048	Hunterson A	Nuclear Power Station, Magnox (2 ×150MW)	Backfire	1.0	G
	Hunterson B	Nuc. Power Stn, AGR (2 ×616MW)			
NN 9458	Pitlochry	NSHEB Electricity Grid Control	Badger	1.0	G

1 HARD LUCK HARD ROCK

Campaign for
Nuclear Disarmament
11 Goodwin Street London N4

Introducing the Hard Rock/Luck pack.

Welcome to CND's Hard Rock/Hard Luck pack. It has been prepared by the Hard Rock Working Group who hope that it will provide useful information and ideas to all the CND groups which are planning activities to coincide with the Government's war-planning exercise 'Operation Hard Rock' this autumn. We hope that groups will use the idea of an alternative 'Operation Hard Luck' to help draw together all the local actions around the country.

There are still many well-meaning people who believe that the principal purpose of all 'civil defence' is humanitarian and we will need to put our arguments with care. The Government is hoping that 'Hard Rock' will be a successful public relations exercise which will counteract the damage caused by the release of 'Protect and Survive'. The sensitive military section of the exercise will be played down while much is made of official 'openness' about the civil side. The Home Office is likely to claim that it has been successful in achieving wider civil participation. In fact, the spread of the nuclear-free zones movement has induced the Government to add a 'conventional' attack phase to the exercise (an innovation for civil participants) and offer authorities the option of taking part in this section only. Nevertheless, almost a third of the county authorities in England and Wales are *not* taking part. There are also signs that, despite the offer of 75% grant-aid to cover authorities' costs, the scale of involvement of individual authorities is less than originally envisaged.

Our own scenario

Since the Home Office admits that the 'Hard Rock' scenario is not intended to be realistic and has been devised to be of a scale that the 'civil defence' organisation in each area can cope with and since this scenario is not likely to be available until after 'Hard Rock' has happened, CND has decided to use a scenario of a nuclear attack which has been devised by Scientists Against Nuclear Arms. Further information about this will be available in a supplement.

Operation 'Hard Luck'

The 'Hard Luck' counter-campaign will cover the military and civil phases of 'Hard Rock' (19 Sept-29 Sept then 29 Sept-5 Oct). The first phase gives groups the chance to act out above ground what the military are planning for the civil population in the run-up to war (it's noticeable that the Home Office scenario plays down problems with 'disgruntled minorities' and demonstrations and emphasises external sabotage. In the second phase groups will have the opportunity to show who is involved in war-planning and the relevant sites and use accurate information to show the futility of 'civil defence' against the effects of nuclear attack. 'Hard Luck', if successful, will attract, interest and inform the public; involve sympathetic organisations, discomfort the Government; and, not least, be fun for us!

We hope this pack helps you plan for that success.

SHEET *CONTENTS*

This pack has been produced with the help of Francis Barker, Oliver Dowlen, Jenny Edwards, Liz Freuthal, Dave Hewett, Carole Jackson, Phil Jeffries, David Michael, Gareth Rees, Martin Spence, Peter Smith (CND) and David Caplin, Owen Greene and Neil Turok (SANA). We are grateful for valuable advice from Duncan Campbell, Steve Peake, and John Side. Also for the assistance of Cornelius, Phillip Steadman, Andy Gregg, The New Statesman and the Peace News Collective. Diagram artwork: Trevor Jago.

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HARD LUCK HARD ROCK

Campaign for
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Why there is no defence against nuclear attack.

The Campaign for Nuclear Disarmament fully supports a civil defence network which deals with life-saving in the event of natural disasters like flood, fire or major industrial accident. However, we totally oppose this government's civil defence programme.

No protection

By promoting civil defence, the Government seeks to convince us that nuclear war may be survivable, winnable, and even worthwhile. The 'home-made fall-out shelter' advice, outlined by the Government in 'Protect and Survive', will offer us no protection. Some people—top civil servants, the military, and certain members of the police force, will get a place in a hardened shelter or bunker. This does not mean they will survive a nuclear attack. There is only one way to defend ourselves against a nuclear attack, and that is to avoid it in the first place. Therefore, CND is not campaigning for bunkers and shelters for everyone.

Deterrent strategy

The Government considers its civil defence programme to be an essential part of its so-called 'deterrent' strategy. When he was at the Home Office, Leon Brittan declared, 'civil preparedness is essential for the credibility of the military nuclear deterrent'. It becomes very clear that references to civil preparedness do not apply to those humanitarian activities we are accustomed to associate with civil defence, but rather to the maintenance of government, and control over any of the civilian population unlucky enough to survive a nuclear attack. Britain's civil defence programme will increase steadily between now and late 1983. That is when cruise missiles are due to arrive in this country. Therefore, opposition to civil defence is an essential part of CND policy.

Stamped out

In the period preceding a nuclear attack civil defence measures would include many restrictions on our freedom of movement and association. These restrictions would doubtless be directed against the work of the CND. They would prevent us from holding meetings, demonstrations and rallies. All opposition to the government would be stamped out, and the process of military escalation would proceed without public dissent.

Continuous threat

Civil defence preparations necessarily present a continuous threat to our individual freedom and our democratic rights. The Government informs us that the Official Secrets Act is designed to protect information which could be dangerous if it found its way into the hands of 'the enemy'. In fact, a large part of this information enables the government and the military to carry out civil defence preparations without opposition from the public. The CND is an open campaign without an official secrets act, and we totally oppose the authoritarian, undemocratic attitudes and practices which are an essential part of civil defence.

Awful consequences

Instead of war being a relatively remote business involving professionals, it is now aimed at US, the taxpayers. Civil defence is a device which enables the government to hold its citizens hostage in peacetime, to involve our hopes and fears more directly in the arms business than any modern government has managed before. One of the effects of the Government's civil defence propaganda has been to remind people of the threat we face while we have nuclear arms. Every time the Government plays a 'war game' or tests its civil defence structure people become more aware of the awful consequences of nuclear attack.

Expose them!

The next national civil defence exercise, Hard Rock, will take place this autumn. This is an occasion when local CND groups and local authorities will work to expose the dangers of official civil defence policy. The chairman of the National Council for Civil Defence, Mr Edward Leigh, wrote apprehensively in his annual report (1981) that the opposition of local authorities was likely to turn Hard Rock into 'a complete shambles'.

The CND can and will succeed when everyone shows their rejection of war and their love of peace. Join us now.

NEW BOOK: *London after the bomb by 5 research scientists: Owen Green, Barry Rubin, Neil Turrock, Phillip Webber, and Graham Wilkinson. This book presents a study of the 'Square Leg' attack on London's population, considering the long-term social consequences as well as the immediate effects. It also shows how many Home Office calculations and statements are misleading or incorrect.*

NEW BOOK: *WAR PLAN 82 by Duncan Campbell of the New Statesman (Hutchinson/Burnett Books £2.95 or £3.95) is a detailed account of the history and current practice of British civil defence, including the secret government scenarios and plans for Hard Rock and previous exercises which will form the war plan behind the imaginary nuclear attack on Britain on Oct 2 and 3 1982. This book includes complete descriptions of government bunkers, plans for sealing off roads and the use of military and police forces.*

HARD LUCK HARD ROCK

Campaign for Nuclear Disarmament
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Operation 'Square Leg' — it wasn't cricket!

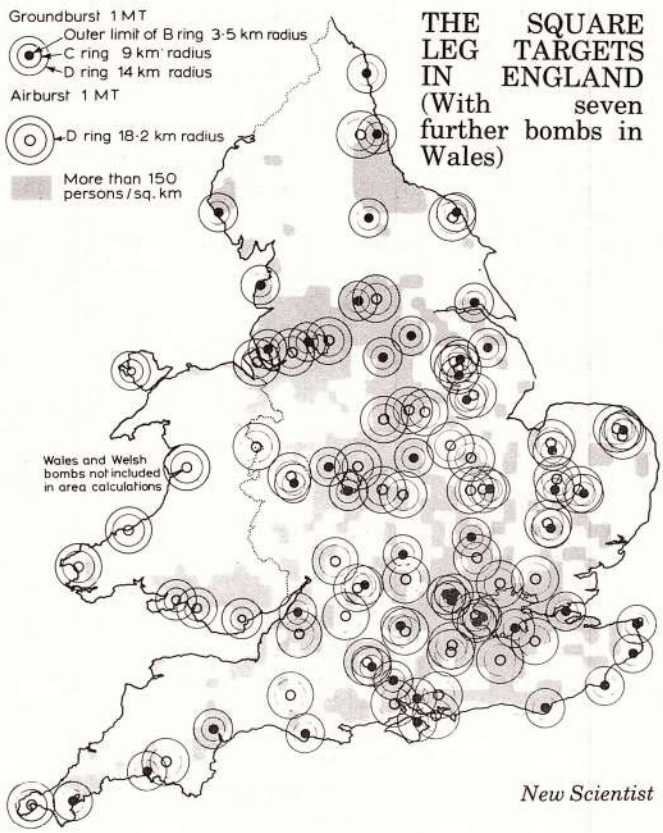
Operation Square Leg was the title given to a civil defence exercise, or war game , which was 'played' in September 1980. Other 'games' have included 'Inside Right' (1975), Scrum Half (1978), and Warmon (1981). Operation Square Leg was organised as part of an exercise called Crusader mobilised by NATO.

Blue Alliance

Most of the 'activity' for the exercise took place only on paper. Most war games begin with a scenario, which is an imaginary set of events leading to a build up of international tension and a nuclear war. According to Operation Square Leg, the course of human history was changed by the peace-loving Blue Alliance, (read NATO) and the adventurist Orange Pact (read Warsaw Pact). The build-up of Orange Pact forces supposedly started in January 1980. Subversives (read CND members) were at work within the countries of the Blue Alliance. Red Peace Trotskyists had penetrated the more passive Purple Peace Party. There were noisy demonstrations, leading to acts of criminal vandalism, and counter demonstrations by the Defenders of the Right. During August, Blue Alliance commanders proclaimed a state of 'Military Vigilance' in anticipation of war. On 27th August, Her Majesty's Government requested preparations be made to remove and protect the nation's art treasures. On 31st August, troops were called in to 'deal with' incidents of 'extreme left wing' subversion. During the next two weeks, preparations for war were put into action, and on 12th September, the Cabinet approved Queen's Order 2, (the suspension of Parliament and assumption of Emergency Powers). Many members of the public started panicking and disobeyed the 'Stay Put' policy of the Government, and attempted to move away from major cities and obvious targets.

Priority targets

War was declared on 15th September. The Government bunkers were theoretically staffed, and on Friday, 29th September the nuclear bombs started falling. In the Square Leg briefing, US sites were among the first targets. They included Alconbury, Lakenheath, Mildenhall, Upper Heyford, Fairford, Burtonwood, Ditton Priors, Boscombe Down and, of course, the Cruise Missile bases at Greenham Common and Molesworth. The Ministry of Defence has assured the people of Greenham Common and Molesworth that they are not likely to be priority targets. But what the Ministry really believes is quite different; for the Square Leg briefing showed Greenham Common as the second place to be destroyed in the attack — obliterated by a three megaton bomb nine minutes after a national warning. Newbury would be hit at the same time by a two megaton bomb, causing blast damage over a 30 mile area. This was part of the first wave of the attack, which took place at about midday, and also destroyed Nottingham, Derby, Salford, Newcastle and Leicester.



THE SQUARE LEG TARGETS IN ENGLAND (With seven further bombs in Wales)

New Scientist

'Moderate attack'

In the second strike, three hours later, Birmingham, Coventry, Cardiff, Swansea, Bradford, Sheffield and Liverpool were wiped off the map. In Scotland, Glasgow, Edinburgh, the Clyde area, Aberdeen and Dundee were hit. The organisers of Square Leg assumed that 125 nuclear bombs would hit Britain, 54 bursts in the air, 57 on the ground in England and Wales, and the remainder in Scotland. The bombs would come in two waves separated by about three hours, and would vary in power from half a megaton to three megatons; their combined power would be about 200 megatons. This was envisaged as a fairly moderate attack.

Undesirable elements

This, then, was the fictitious setting, which all happened on paper. However, unlike previous civil defence exercises, where nothing moved outside the bunkers, in the fortnight preceding Square Leg, 6,500 troops were exercised on army ranges at Otterburn and Stanford providing 'defence against sabotage, espionage and subversive groups'. One of the things Square Leg made clear was that a substantial part of the civil defence apparatus would be used for

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the preservation of 'law and order'. A brigadier, heading the military team at Basingstoke civil defence HQ, said one of the tasks of the police and the army was to round up 'undesirable elements'. He might be asked by the controller 'to deal with the difficult chaps, . . . round 'em up and put 'em away'. He did not deny that 'putting 'em away' might be done with bullets. The Yorkshire Post (25th September 1980) quoted a Square Leg instruction which said 'Local broadcasts should emphasize local controllers' powers for the direction of labour to prevent further resistance in some areas'. Further, the pre-attack exercise involved maintaining essential service routes, guarding key points, such as bunkers and food depots, and 'hunting down and ferreting out' saboteurs and subversives. These activities reached their most intensive phase just before the 'war' started. The major unit involved was the army's 3500 man 8th Field Force, which had the specific job of operating inside Britain in an emergency.

Post attack phase

Although the bombs were supposedly dropped on the 19th September, the bunkers, curiously, were not activated until Saturday 20th September. The following is an extract from an Emergency Planning Officer's account of the Square Leg Exercise:

1 TO 18 SEPTEMBER	Mobilisation by Military. Troop movement and meetings between military, local authority staff, and all other organisations concerned.
FRIDAY 19 SEPTEMBER	Briefing with military commanders. DR7 information (ie 7 hours after bomb burst) made available to County and District Scientific Advisers. Military Control Team becomes operational at county level.
SAT 20 SEPTEMBER 0800 TO 2200 HOURS APPROXIMATELY	Sub-regions, county and district controls fully activated. Phase 1 of the exercise, ie 48 hours stay-put time after bomb burst.
SUN/MONDAY 21, 22 SEPTEMBER	Military Control Team and selected county staff to prepare Phase II of the exercise, ie 14 days after bomb burst leading into survival period.
TUESDAY 23 SEPTEMBER 0900 TO 1700 APPROXIMATELY	All control teams activated for 14 days after bomb burst scenario and play.
WEDNESDAY 24 SEPTEMBER	All control activity ceases and Military Control Teams stand down. Final briefing with military commanders.

Over tne weekend of the exercise, teams at each control team played through the stay-put phase of the attack. This is when movement is restricted; before and just after an attack.

During the last few days of the exercise, local authorities were expected to deal with the situation expected 14 days after bomb burst. Most of this part of the exercise again reverted to paper. The first task of the military and police was to control those who had survived. In exercise 'Scrum Half' it was envisaged that every police and army unit involved would have to be issued with massive supplies of CS gas.

Police and military

The following is a selection of tasks carried out by the police and military in the post attack phase of Square Leg:

1 Maintenance of law and order — greatest problems urban area.
2 Control of selfish and disgruntled minorities.
3 Support and protect special courts.
4 Execution of sentences.
5 Protection of convoys.
6 Guards for controls.
7 Personal protection for VIPs.
8 Subjugation and elimination of hostile elements.
9 Guards on internment areas.
10 Assisting in control at Communal Feeding Centres.
11 Collection and delivery of special handling messages.
12 Control of movement.
13 Provision of air reconnaissance.
14 Assistance with any other essential task where military experience would be an advantage in getting the 'job' done.

Square Leg plans indicate that survivors will be divided into 3 categories: those who will survive without treatement, those who will survive with simple treatment, and the remainder who will go without drugs or treatment.

Evaluation

What can we learn from Exercise Square Leg? Some answers to this question have been provided by the GLC emergency planning officer's evaluation of the exercise:

The Council's group wartime controls were activated and manned (sic) by appropriately designated officers, together with police, health and water authorities, VOLUNTEER SCIENTIFIC ADVISERS AND OTHER VOLUNTARY ORGANISATIONS.

Ideally, such an exercise would test the group level home defence plans. Plans at this level have not progressed to the stage where they can be realistically tested. The exercise clearly indicated the need to identify the functions of and develop plans for the group and Sub Regional Controls. Civilian staff participated between 0900 and 1600 hours daily. The next major military inspired exercise is likely to be held in 1982 (HARD ROCK). There is a clear need to develop group plans, designate officers, revise borough plans and involve civilian personnel. □

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HARD LUCK HARD ROCK

Campaign for
Nuclear Disarmament
11 Goodwin Street London N4

Civil defence — the historical background.

First world war

The current structure of Civil Defence began to take shape in 1914, when the fear of a German invasion inspired the Government to take steps to ensure that authority would be maintained in any civilian area cut off from the normal means of government by the invading armies. Based on plans drawn up for a Napoleonic invasion in 1803/4 (which in turn had been based on plans for a Spanish invasion in 1588) the organisation was structured to give mayors and lords lieutenant emergency powers to take decisions normally taken in Whitehall.

In June 1915 the Zeppelin bombing attack on Hull shifted the emphasis from an invasion-based strategy, to one catering mainly for aerial bombardment and the subsequent bombings of London and the Midlands strengthened this resolve, heralding a new concept in war which put the civilian, hitherto remote from the main action, firmly in the front line.

Civil disorder

The Russian Revolution, and the real prospect of civil insurrection in Britain in the disillusion that followed the Great War, added a third arm to the argument for civil defence, to protect authority against a threat from within, and it was this requirement which dominated civil defence planning in the immediate post war period and into the twenties, and is still present today.

As expected there followed a turbulent industrial period, and in 1925 the Government set up regional bases, with commissioners empowered to 'give decisions on behalf of the Government' at fifteen major cities in the country. These powers were actually invoked on 30th April 1926, the following notice appearing in the British Gazette:

'All ranks of the Armed Forces of the Crown are hereby notified that any action which they may find it necessary to take in an honest endeavour to aid the civil power will receive the . . . full support of His Majesty's Government.'

Second world war

In the 1930s the technology of aerial warfare had advanced to such a degree that scenarios of attacks on major cities assumed civil destruction of H-Bomb proportions. The Air Raids Commandant (designate) and Regional Commissioners were appointed at twelve strategic locations, and this framework operated throughout the Second World War.

Nuclear attack

The Second World War did not bring carnage to Britain on quite the scale that had been predicted, although it is not clear whether this was by virtue of an efficient ARP, or an inefficient German bombing strategy, or simply because the expectations had been unrealistic. In 1946 the ARP was disbanded, but in 1948 it was reconstituted as the Civil Defence Corps in answer to a call to prepare for a possible threat from the newly forming alliances in the East and the acquisition by Russia of the bomb. It is significant that the authorities who entered into these schemes with the least gusto, were those such as Coventry who had been hardest hit during the war.

Throughout the fifties the Civil Defence Corps continued to build on the wartime experience of the ARP and in 1952, based on attack expectations of Hiroshima proportions, the Regional Commissioners were revived and given blast-proof headquarters. Before the end of the fifties it became clear that the scale of a nuclear exchange would be nothing like as limited as the 1952 notion. In addition to the original requirement of rescue from damaged buildings, new requirements became apparent such as the need to provide housing, food, sanitation, water and medicine for perhaps millions of people in varying degrees of 'survival'. In short, the Civil Defence Corps would have to parallel the institutions of local and central government, and for a voluntary organisation this was a tall order. Solly Zuckerman in his book *Nuclear Illusion and Reality* noted, 'as the British Government White Paper on Civil Defence put it as long ago as 1957 (Defence, Outline of Future Policy 1957 HMSO), there are no means of protecting the population against the consequences of nuclear attack'.

Nuclear reality

By 1962 it had become clear that the Civil Defence Corps could not possibly match the enormous demands on its resources, and the responsibility for looking after the population in wartime passed to local authorities. The regions were reorganised to follow county boundaries and split into sub-regions, and under emergency legislation County, Borough and Town Councils had to form emergency committees to which their power, and if necessary the powers of Central Government would devolve in the event of war — a policy which can be traced back in history to 1588. In 1967 the Rescue and First Aid sections of the Civil Defence Corps were abolished and in 1968 it was disbanded altogether.

Recent developments

The 1971 miners' strike re-awakened the fear of the threat from within. In 1972 the system was reviewed and the concept of 'Home Defence' was developed, setting up an army/police/civil triad to deal with an internal or external threat to the home base. In 1973 the Home Defence College was created ; civil defence planning as we now know it was brought into operation in 1974. This followed the re-structuring of the local authorities which brought civil County, Home Defence and Military Regions into accord.

We are probably all aware of the recent developments when in 1979-80 the Government decided to inject more money into civil defence and give it more publicity. The exact reasoning behind the production of the infamous 'Protect and Survive' booklet is unclear, but it was almost certainly connected with the 'Cruise' decision announced in late 1979. Our 'independent deterrent' is apparently more credible when accompanied by a civil defence programme. □

5

HARD LUCK HARD ROCK

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11 Goodwin Street London N4

Home Office defence plans

National Government

In charge of internal military operations in wartime would be the UK Commanders in Chief Committee (UKCICC). This military junta would rule Britain from its substantial and secret premises near Salisbury. Ministers will have attempted to reach another secret bunker, known in Whitehall as 'the Maggie bunker', thought to be located near Bath.

Regions and Sub-Regions

The UK is divided into twelve regions, nine in England with Scotland, Northern Ireland and Wales each as one region. Each region is under the control of a Regional Commissioner, and some are subdivided into two Sub Regions (Northern Ireland one, Scotland three zones) with a Sub-Regional Control (S-RC) and a Sub-Regional Commissioner.

Regional staff will comprise representatives of all Government departments and will include the armed services, the police, the fire service and public utilities. Sub-Regional staff will be similar to that of the Region. Regional Staff will operate only after an attack, but Sub-Regional Controls will be constituted prior to an attack, but with no executive authority, acting in an advisory capacity only.

County Headquarters

Each county council should maintain a staff and wartime headquarters at or near its county hall, with a standby headquarters at some distant part of the county, which will normally act as a lower level of control, but will take over county duties in the event of an attack on the county HQ. The Chief Executive of the County Council is the wartime County Controller, empowered to exercise the full functions of the local authority as an officer in the chain of Regional Government. For as long as circumstances permit he/she will consult an emergency committee on general policy.

Borough/District Headquarters

Districts should also form their own wartime headquarters at or near their own borough or district offices, and the Chief Executive of that council will again be appointed as the District Controller. They will form part of the internal regional government chain of command, and their relationship to the district emergency committee will be exactly the same as the County Controller to the county committee.

Sub-District Headquarters

Larger rural areas may be subdivided into smaller Sub-Districts for administrative purposes.

Area Headquarters

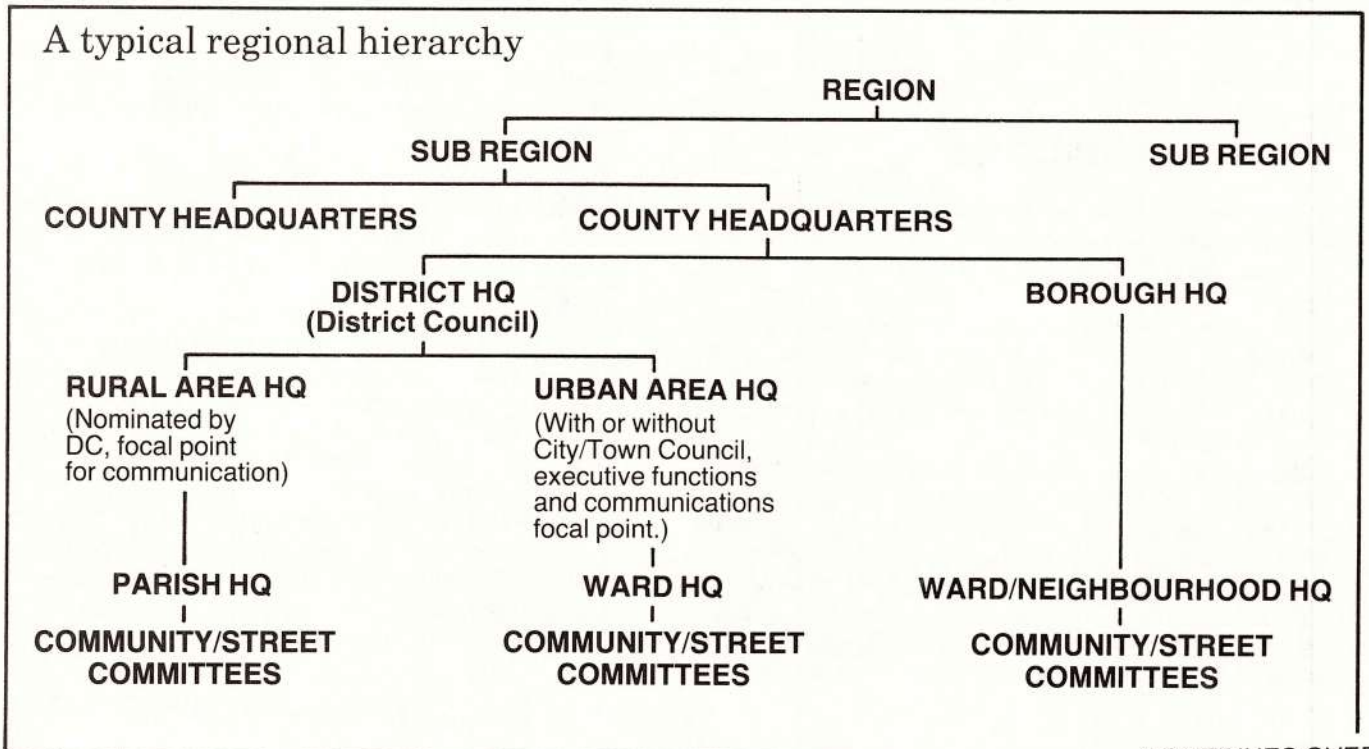
Groups of rural parishes or an Urban Parish (Successor) Council form areas but with no executive powers. They exist for communication purposes only. In practice the structure is not developed to this level.

Rural Parishes and Urban Ward Headquarters

These are responsible for wartime arrangements within their parish or ward, and are assisted by community or street committees of volunteers.

A typical Regional hierarchy will be as follows:

A typical regional hierarchy



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The role of the army

This regional structure closely mirrors a new network of 12 military-only bunkers (Armed Forces HQs). These are joint services centres which will be in effective control over post-war Britain.

Police involvement

The post-strike tasks of the Police are listed in the local authority briefing documents. A fairly accurate picture can be built up from the Square Leg information (see earlier section).

Much of this work would fall on the recently-formed Police Support Units, mobile units of officers specially trained to deal with a range of emergency conditions, including strikes, urban riots and Civil Defence. As soon as Alarm Warning-RED is sounded (by 7,000 power-operated sirens and 11,000 other warning posts now in position throughout the country), it is the task of these units, in liaison with the Army, to impound all petrol, move all food into designated food centres, and take control of all of the ESRs. One estimate suggests that about 10% of the police force has received this emergency training.

Information

It is possible to find out details of this activity by checking both the Chief Constable's Annual Reports and the minutes of the appropriate Police Authority in your local library. Although often expressed in most imprecise language, some of these Civil Defence and War Planning activities are often detailed. The police are meant to be publicly accountable and so it is theoretically possible for county councillors not only to question the Chief Constable, but to press for the police to cease engaging in nuclear war planning exercises.

A list of County War Headquarters (CWHQ) and their standby War Headquarters (CSWHQ) (where these are known) can be found in the Appendix

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Communications

Warning of an impending nuclear attack would come from one or both of two sources, the Ballistic Missile Early Warning System (BMEWS) at Fylingdales in Yorkshire, or from the NATO 'Ace High' system which has a network stretching from Norway to Turkey, and has British bases at Saxa Vord, Buchan, Boulmer, Brizelee Wood, Stacton Wold, Partington, Neatishead and the control at West Drayton.

The information from these systems is assessed by Home Office Personnel stationed at RAF Strike Command Operations Centre (SCOC) at High Wycombe who decide whether to activate the national warning network. Turning a key at SCOC alerts 250 Carrier Control Points (CCP), located in major police stations throughout the UK, and a switch at each CCP activates the 7000 or so power operated sirens throughout the country, which are backed up by some 11,000 other warning points in rural areas, located in an assortment of establishments from pubs to police stations, linked to the CCP by the GPO system and possessing a hand operated siren. At this point the ROC would staff its stations.

Telephones

An independent communications system has been set up which will function between sub-Regional headquarters, with links to the counties and districts. This consists of private underground telephone cables capable of speech and teleprinter traffic, and a radio communication system. The GPO has peacetime telephone lines plugged into a Telephone Preference Scheme (TPS), whereby all subscribers are categorised as Category 1, 2, or 3. 90% of subscribers are in Category 3 — in a period of tension, all these subscribers would be automatically cut off so that they could recieve calls but not make them. About 10% are in Category 2, which is largely concerned with internal security during a civil emergency. It includes 'lines required for the maintenance of law and order, for the continuance of the various public services and for distribution of essential supplies'. Category 1 is for wartime emergency, covering 2% of subscribers, when only those government, military, industrial and emergency services required by the authorities would remain fully connected. *All new subscribers are immediately categorised. It is not possible to discover one's own category.*

ROC and UKWMO

Although the Civil Defence Corps disappeared officially in 1968, parts of the original structure survived, most notably in the shape of the UK Warning and Monitoring Organisation, and its grass roots body, the Royal Observer Corps.

The ROC is staffed by volunteers and has 873 bunkers spread over the British Isles at roughly fourteen mile intervals. Its purpose is to locate bursts (by a method of triangulation, two or more working together) and measure the strength of blasts and the intensity of fallout.

The information is fed to one of twenty-five group controls most of which are now equipped with AWDREY or DIADEM electronic blast assessment systems.

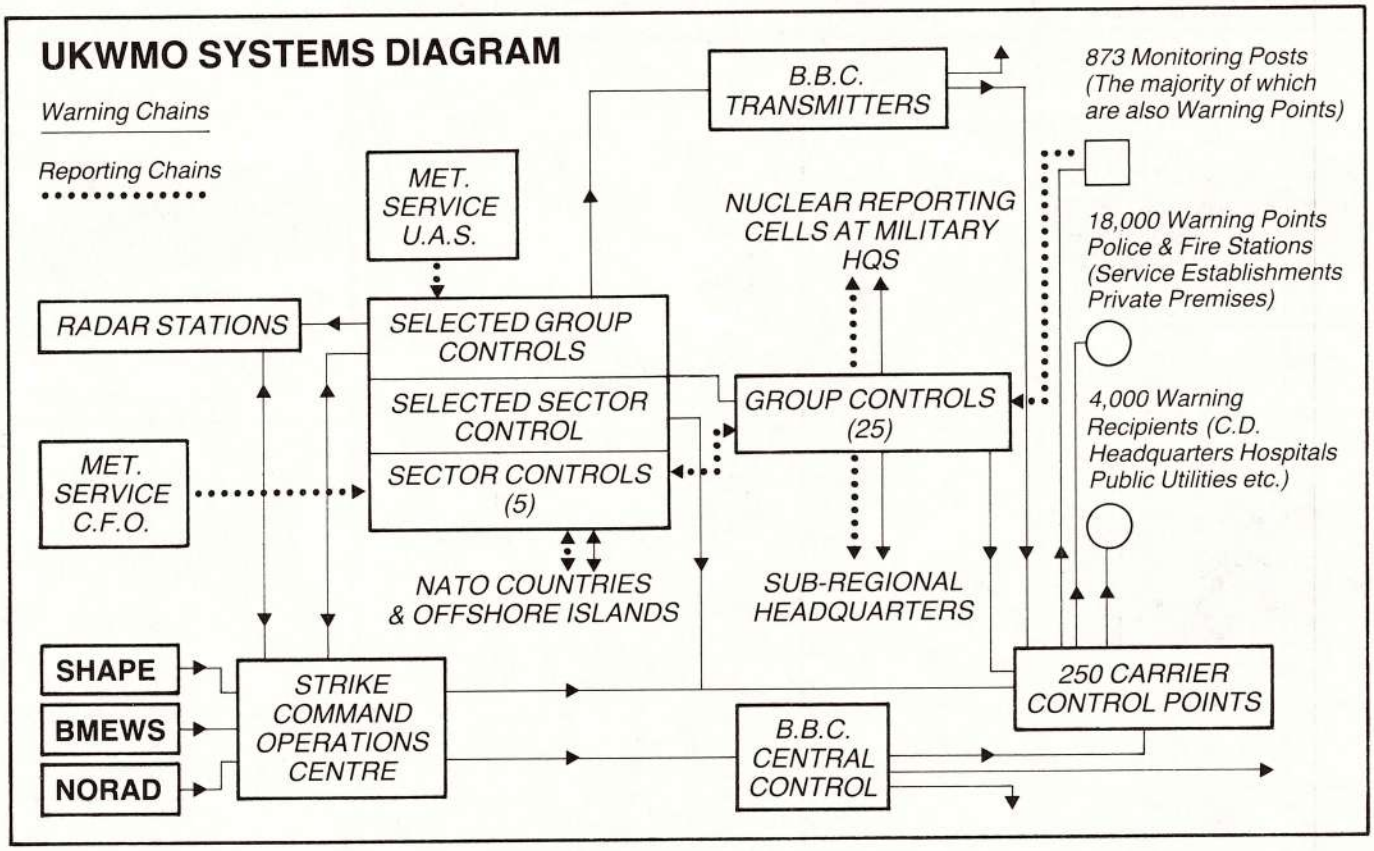
The twenty-five group controls in turn report to one of five sector controls, who are responsible for monitoring and providing information to Government and Military at national and international level. A feature of UKWMO is that there is no overall control: if one group or sector control is rendered non-operational the others carry on undeterred, and take over the tasks of the 'missing' group or sector. A list of the group and sector controls will follow in the Hard Luck Supplement.

SECTION CONTINUES ON SHEET 5a

5a HARD LUCK HARD ROCK

Campaign for Nuclear Disarmament
11 Goodwin Street London N4

Home Office defence plans — information



Sub-regional HQs are located as follows:

SRHQ 11 is currently being built, at a cost of £900,000 near Hexham.

SRHQ 21 is at New Parks, Shipton, Yorkshire.

SRHQ 31 is at Skendelby, Lincolnshire.

SRHQ 32 is a wartime cold store in Burder Street near Loughborough Station.

SRHQ 41 is at Bawborough, Norfolk.

SRHQ 42 is a Government Office, Sovereign House, Hertford.

SRHQ 51 is in Kelvedon Hatch, Essex.

SRHQ 61 is in Dover Castle.

SRHQ 62 is in the basement of the Government Offices at Alencon Link, Basingsstoke.

SRHQ 71 is at Ullenwood, Gloucestershire.

SRHQ 72 is at Bolt Head, near Saltcombe, Devon.

SRHQ 81 is not yet built (this may be in hand).

SRHQ 82 is an underground factory at Brackla Hill, Bridgend, Mid-Glamorgan.

SRHQ 91 is at Swinerton

SRHQ 92 is an underground factory at Drakelow, Kniver, near Kidderminster.

SRHQ 92 is an underground factory at Drakelow, Kinver, near Kidderminster.

SRHQ 101 is a bunker basement under Dukes House, Hoghton Street, Southport.

SRHQ 102 is at Hock Green.

NORTHERN ZONE CONTROL (Scotland) is in Anstruther, Fife.

EASTERN ZONE CONTROL (Scotland) is at Kirknewtown, Midlothian.

WESTERN ZONE CONTROL (Scotland) is at East Kilbride, Strathclyde.

SCOTTISH CENTRAL CONTROL is at Barnton Quarry Edinburgh.

NORTHERN IRELAND HQ (also an AFHQ) is at Cough Barracks, Armagh.

Each of these SRHQs is to be commanded by a Regional Commissioner (usually a junior minister) and a regional police commander, who will hold power in conjunction with the Regional Military Commander. Each SRHQ will be supported by a staff of about 200, including clerks and telephonists, provided by the Civil Service.

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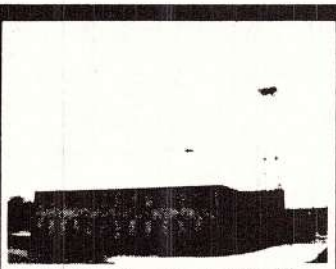
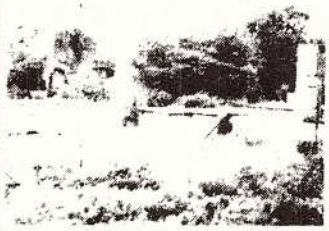
Map 2. Civil Defence Regions in Britain



Eastern Zone Control (Scot):
Kirknewton, Midlothian

Northern Zone Control (Scot):
Anstruther, Fife

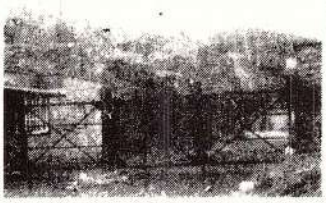


Scottish Central Control:
Barnton Quarry, Edinburgh

SRHQ 21:
New Parks, Shipton, Yorks

SRHQ 101: Dukes House,
Hoghton St, Southport

Western Zone Control (Scot):
East Kilbride, Strathclyde



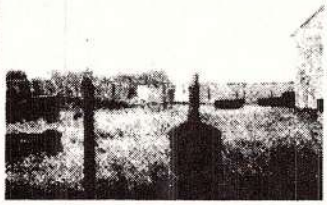
SRHQ 92: Drakelow,
Kinver, Hereford/Worcs

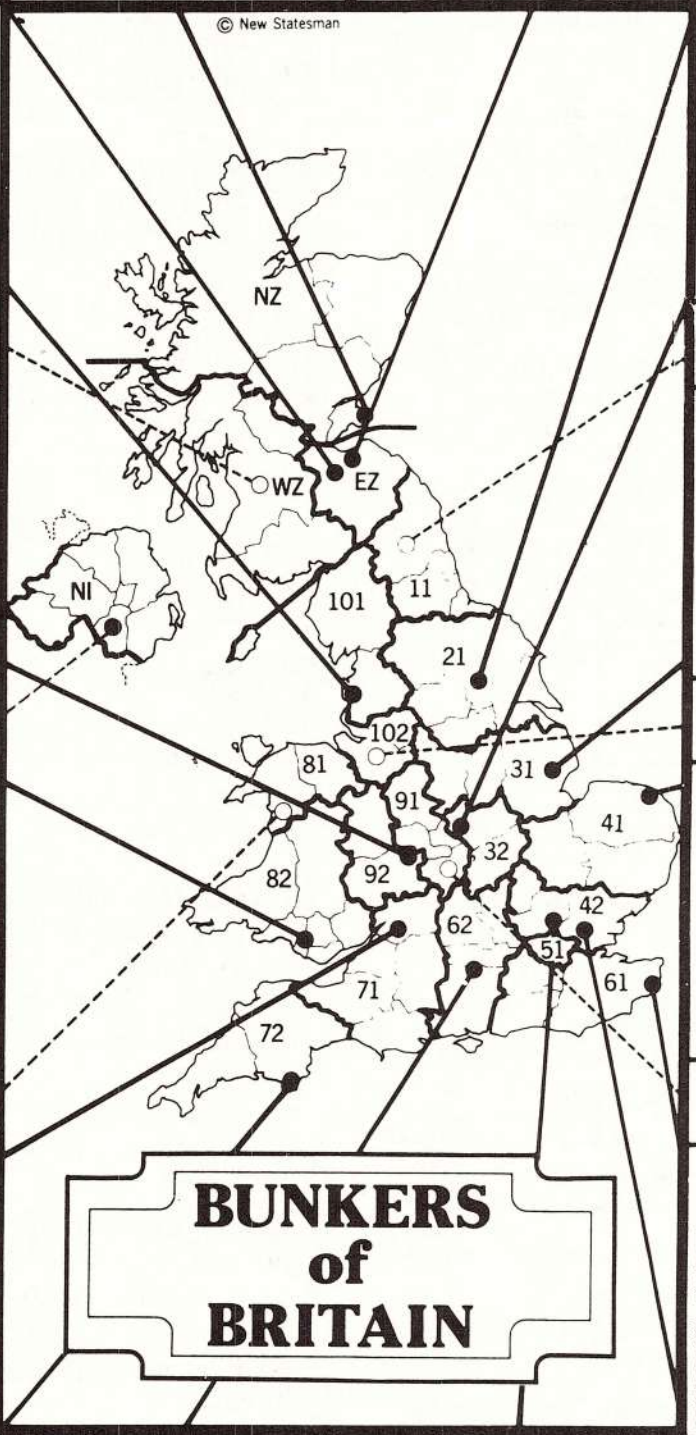
Northern Ireland HQ:
Gough Barracks, Armagh

SRHQ 82: Brackla Hill,
Bridgend, Mid-Glamorgan

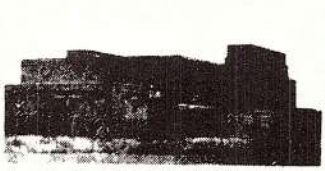
SRHQ 81:
NOT BUILT (1981)

SRHQ 71:
Ullenwood, Glos



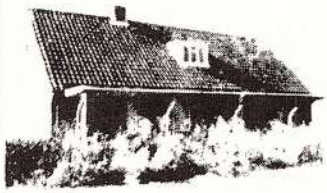


BUNKERS of BRITAIN



SRHQ 32:
Border St, Loughborough, Leics

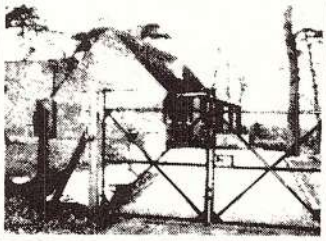
SRHQ11: Hexham
(under construction)



SRHQ 31:
Skendelby, Lincs

SRHQ 102
Hock Green

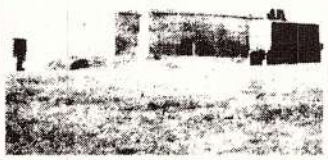
SRHQ 41:
Bawburgh, Norfolk



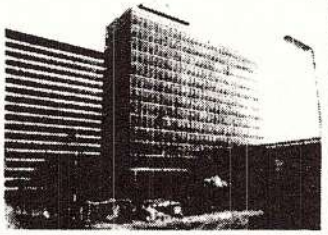
SRHQ 91
Swinerton

SRHQ 61:
Dover Castle, Dover

SRHQ 72:
Bolt Head, Devon

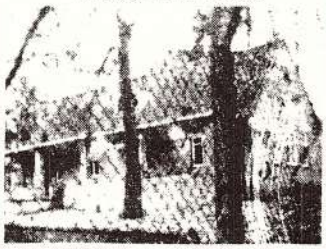


SRHQ 62:
Alencon Link, Basingstoke



SRHQ 42:
Sovereign House, Hertford

SRHQ 51:
Kelvedon Hatch, Essex



Stella Crew

From the 'New Statesman'. 2/10/81.

6

HARD LUCK HARD ROCK

Campaign for Nuclear Disarmament
11 Goodwin Street London N4

Hard Rock — what do we know so far?

What is it?

It is a national military and civil home defence command post exercise (CPX). This means it is a paper exercise that tests organisational structures. It is possibly linked to NATO. For the purpose of the exercise, a period of several weeks is compressed into several days real time, comprising separately identifiable stages.

When is it?

The part of the exercise involving the Home Office and local authorities will take place from 29th Sept until 5th Oct 1982, although it is likely that the military phase will begin on 19th Sept with conventional bombing starting on 27th Sept.

What is it for?

1 To test selected armed forces and civil home defence plans at all levels of headquarters within the regional government hierarchy, including key personnel in their wartime roles.
2 To practice the United Kingdom Warning and Monitoring Organisation (UKWMO) in its duties of providing bomb burst and meteorological details and communicating this information through the UKWMO hierarchy.
3 To test all emergency communications systems.
4 To exercise the armed forces in their role of supporting the civil authority, including the requisition and allocation of resources.

How is it structured?

The exercise will cover three phases at roughly the following timescale:

1 A pre-attack phase, during which headquarters will be established, and a conventional attack of 1½ days exercise time. This attack will involve the bombing of selective military and civil targets. The proposed targets for this attack are listed on sheet 6a.

2 A nuclear attack phase of a few hours (exercise time) similar in size to operation Square Leg. At an early stage in the planning, Hard Rock was intending to use a pattern of 80 ground bursts, 20 air bursts and 5 underwater bursts: total yield is approximately 200 megatons.

3 A post-strike phase of 3½ days (real time) divided into three sections:
   a The immediate post-attack period (1 day real time)
   b A 'survival' period from day 14 (D14) onwards, (1 day real time)
   c A 'recovery' period from D28 onwards, (1¼ days real time)

NB. The terms 'survival period' and 'recovery period' come from the Home Office and not from us!

Who is involved?

CIVIL DEPARTMENTS

All headquarters (actual or simulated) of all home defence regions or zones. SRHQs will be staffed by government departments. (Ministry of Agriculture, Food and Fisheries, Department of Health and Social Security, Department of the Environment, Dept. of Transport, Dept. of Industry.) Local authorities will be involved as far as possible. Participation at county level will probably include such departments as: Education (centres and feeding), Fire, Property (billeting), Social Services (welfare), Surveyors (works) and Trading Standards (food).

UKWMO

The UKWMO (including the Royal Observer Corps (ROC)) will participate during the second and third days, tapering off to Sector Control level involvement on the fourth day.

MILITARY

Area Field Headquarters (AFHQ) and Naval County Military Liaison Offices will be fully staffed, as will RAF posts where they form AFHQs or Response Cells (units activated during a nuclear attack). United States Liaison Officers will be present at AFHQs.

What is the Bomb plot?

This is not yet known (outside Home Office/military circles) except that we believe the numbers and yield to be approximately as described above. Counties were asked to suggest a plot which would best exercise their resources and many had to be discouraged from choosing too heavy a plot which would completely wreck their civil defence structures.

Conclusion

Notable features of Hard Rock are:

1 There was intended to be a higher civil participation than before, involving all arms of civil defence. The Nuclear-free Zones campaign has greatly restricted the level of this involvement.

2 The pre-attack phase is shorter than in previous exercises.

3 A conventional attack period for civil authorities has been added; since this has not been a feature of previous exercises this is possibly a response to the NFZ campaign.

4 The Home Office is emphasising that all phases of the attack are unrealistic.

5 Certain (sanitized) information about the civil side of the operation will be more readily available to the public. The press will have access to the bunkers.

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The Home Office argues that a limited and probably spurious attack scenario is not designed to provide an accurate picture of what the real thing would be like, but to oil and test the machinery of home defence. The limited scenario, the fictitious burst list and the period of conventional warfare all attempt to disguise or conceal the type of nuclear attack this country could expect. This can therefore be seen as a way of heading off any criticism that civil defence would be totally inadequate in the event of such an attack. the press involvement also makes us think that another function of Hard Rock is to publicly justify the Government's home defence policy.

Perhaps this view is somewhat cynical, but it is the sort of conclusion we are tempted to draw from the information available so far.

All further information relating to Hard Rock should be sent to Jenny Edwards, 11 Goodwin St., London N4.

6a HARD LUCK HARD ROCK

Campaign for Nuclear Disarmament
11 Goodwin Street London N4

Hard Rock — timetable and conventional target list

The following is a timetable of events as far as they are known — they may be subject to change. 'Real time' is the actual time on which the event will be played, 'Exercise Time' is the fictional point in the scenario.

INVOLVEMENT	REAL TIME	EXERCISE TIME	ACTION
		Sat. 18.9	Armed Forces, Local Authorities and other Utilities review their emergency plans.
		Sun. 19.9	Troops leave UK for Europe, subversive leaflets are distributed at Forces HQ's.
		Mon. 20.9	Rallies both for and against Government policy.
MILITARY	?	Fri. 24.9	Economic warfare begins, ports and oil supplies are blockaded.
		Sat. 25.9	Heavy traffic leaves London, broadcasts to stay stay put.
		Mon. 27.9 0430 0700	Enemy crosses border in Europe. Conventional air attacks against US military targets — see appendix 2.
		Wed. 29.9	Talks fail and the air attacks escalate.
	Thur. 0900 30.9	Pre-Strike Period.	Part of the above scenario may be played through. On 30th Sept. (Ex. Time) there is considerable civil disorder and SRHQ's etc. are manned. Hospitals discharge many patients and prisons parole all but the most dangerous prisoners.
	Fri. 1.10		
	Sat. 1959 2.10 2000	NUCLEAR ATTACK	Probably 80 ground burst, 20 air burst and 5 underwater bursts.
	Sun. 0300 3.10 0301	7 hours after— 31 hours after	UKWMO issues the dose rate plot at 7 hours after and 24 hours after, and then stands down at 1800 on Sunday, manning Sector Controls only.
MILITARY & CIVIL	Mon. 0300 4.10 0700		
	Tues. 0300 5.10 0700	7 days after— 28 days after	UKWMO Sector Controls will probably stand down at 1800 on Tuesday.
	Wed. 6.10 1500	28 days after and onwards	

List of conventional air attacks between 7.00 am on 27.9.82 and 6.30 pm on 29.9.82.

S.E. REGION

OXFORDSHIRE
- Abingdon—RAF/USAF
- Benson—RAF/USAF
- Brize Norton—RAF/USAF
- Upper Heyford—USAF

BUCKINGHAMSHIRE
- High Wycombe—Air Force, Nato, Strike Command et al.

HAMPSHIRE
- Aldershot—SE District HQ, 6th Field Force HQ
- Farnborough—RAF
- Odiham—RAF/USAF
- Portsmouth—Navy etc.

BERKSHIRE
- Bracknell—RAF, Met. Office

WEST SUSSEX
- Gatwick—Civil Airport

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S.W. REGION

WILTSHIRE
- Boscombe Down—USAF
- Wilton—UK Land Forces HQ, Maggie Bunker?
- Chilmark—Weapons Store
- Lyneham—RAF

DEVON
- Mountwise (Plymouth)—Navy

GLOUCESTERSHIRE
- Fairford—USAF

DORSET
- Portland—Navy

CORNWALL
- Portreath—Radar
- St. Mawgan—USAF

EAST REGION

CAMBRIDGESHIRE
- Alconbury—USAF
- Brampton—USAF
- Wyton

SUFFOLK
- Bawdsley—RAF, Radar
- Bentwaters—USAF
- Mildenhall—USAF
- Wattisham—USAF
- Woodbridge—USAF
- Honington—RAF

NORFOLK
- Coltishall—RAF/USAF
- Lakenheath—USAF
- Marham—USAF
- Neatishead—Radar
- Sculthorpe—USAF
- West Raynham—RAF

LINCOLNSHIRE
- Binbrook—RAF
- Conningsby—RAF
- North Coates—RAF
- Scampton—RAF
- Waddington—RAF/USAF

BEDFORDSHIRE
- Chelveston—USAF

ESSEX
- Colchester—7th Field Force HQ.

NORTHANTS
- Wittering—RAF/USAF

WEST MIDLANDS

STAFFORD—RAF
- Stafford—RAF

SHROPSHIRE
- Donnington Command Ordnance depot

NORTH EAST

SOUTH YORKSHIRE
- Bawtry—RAF
- Finningly—RAF/USAF

NORTHUMBERLAND
- Boulmer—RAF, Radar

NORTH YORKSHIRE
- Catterick—SRHQ, Hardened Communications, Army
- Fylingdales—RAF, USAF, BMEWS (Early Warning)
- Leeming—RAF, USAF
- Lindholme—RAF
- Staxton Wold—Radar

HUMBERSIDE
- Immingham—Navy

WALES

DYFED
- Brawdy—USAF, Anti Sub. Radar

NORTH WEST

MERSEYSIDE
- Burton Wood—US Army Weapons Store

CHESHIRE
- Sealand—RAF

NORTHERN IRELAND

Bishops Court—Radar

SCOTLAND

GRAMPIAN
- Buchan—Radar
- Lossiemouth—RAF

STRATHCLYDE
- Clyde—Mines
- Forth?
- Holy Loch—US subs and Poseidon
- Machrihanish—USAF, Nuclear Weapons Store

HIGHLAND
- Cromarty Firth—Mines
- Invergordon—Mines
- Kinloss—Loch Ewe, petrol, oil and lubricants

LOTHIAN
- Kirkliston—Navy
- Leuchars—RAF
- Turnhouse—RAF

FIFE
- Rosyth—Navy
- Pitreavie—RAF

SHETLAND
- Saxa Vord—Radar

FAROES
- NATO—Radar Site

LONDON
- Hendon—RAF
- Northolt—RAF
- West Drayton—RAF, Radar
- Northwood—Navy HQ and NATO
- Bentley Priory—Air Defence HQ, RAF
- Stanmore Park—Air Defence HQ, RAF

Civil targets

27. 9. 82 St Fergus, Peterhead.

28. 9. 82 **6.30 am:** Ruislip, Luton, Thurleigh (near Stansted) Salisbury.
11.30 pm: Felixstowe, Harwich, Canvey Island.
Also hit: Heathrow, Greenock, Huntingdon, Manchester, Liverpool, Chester, Oxford, Swindon.

Communications

Three networks will be used: ECN (Emergency Communications Network), UKWMO (United Kingdom Warning and Monitoring Organisation) and MOLD (Military Home Defence—100 transmitters).

ECN and UKWMO will link with SRHQs. ECN is on 450 megahertz UHF, UKWMO is on 150 mhz VHF. These can be picked up by short wave radio or other more specialised equipment. UKWMO and ECN share alternative protected landlines. NB it is an offence under the wireless and telegraphy act to receive and pass on unauthorised messages. □

7

HARD LUCK HARD ROCK

Campaign for
Nuclear Disarmament
11 Goodwin Street London N4

Introducing 'Operation Hard Luck'.

CND's action against Hard Rock will be called operation HARD LUCK. This name provides both a focus for the operation and a way of presenting our opposition to Hard Rock.

Because the Hard Rock scenario is likely to involve an improbably limited nuclear attack, CND is going to produce a 'Hard Luck' scenario based on military estimates of likely targets and the likely scale of attack. For the purposes of comparison we are using the same megatonnage (200) as the Home Office—although this is unrealistically optimistic.

A working group from SANA (Scientists Against Nuclear Arms) will be producing a burst pattern for this scenario — highly accurate local information will therefore be available for groups. Campaign materials will also be available — hopefully a format for a sequence of leaflets featuring a day-by-day account of the Hard Luck scenario, with provision for the SANA localised information will be included from the civilian point of view. The whole sequence of leaflets, displayed in conjunction with the SANA data could form a useful exhibition display. Obviously the Hard Luck Scenario will show up the inadequacies of Hard Rock and the unacceptable face of civil defence, as well as the effects of nuclear warfare — it is a public awareness programme which will provide a context in which direct action can take place.

Hard Luck, unlike previous campaigns and regional activities demands a very particular type of co-ordinated planning. There are many elements which have to be combined into an operation *centred* around a week of action, but involving activities both before and after that week.

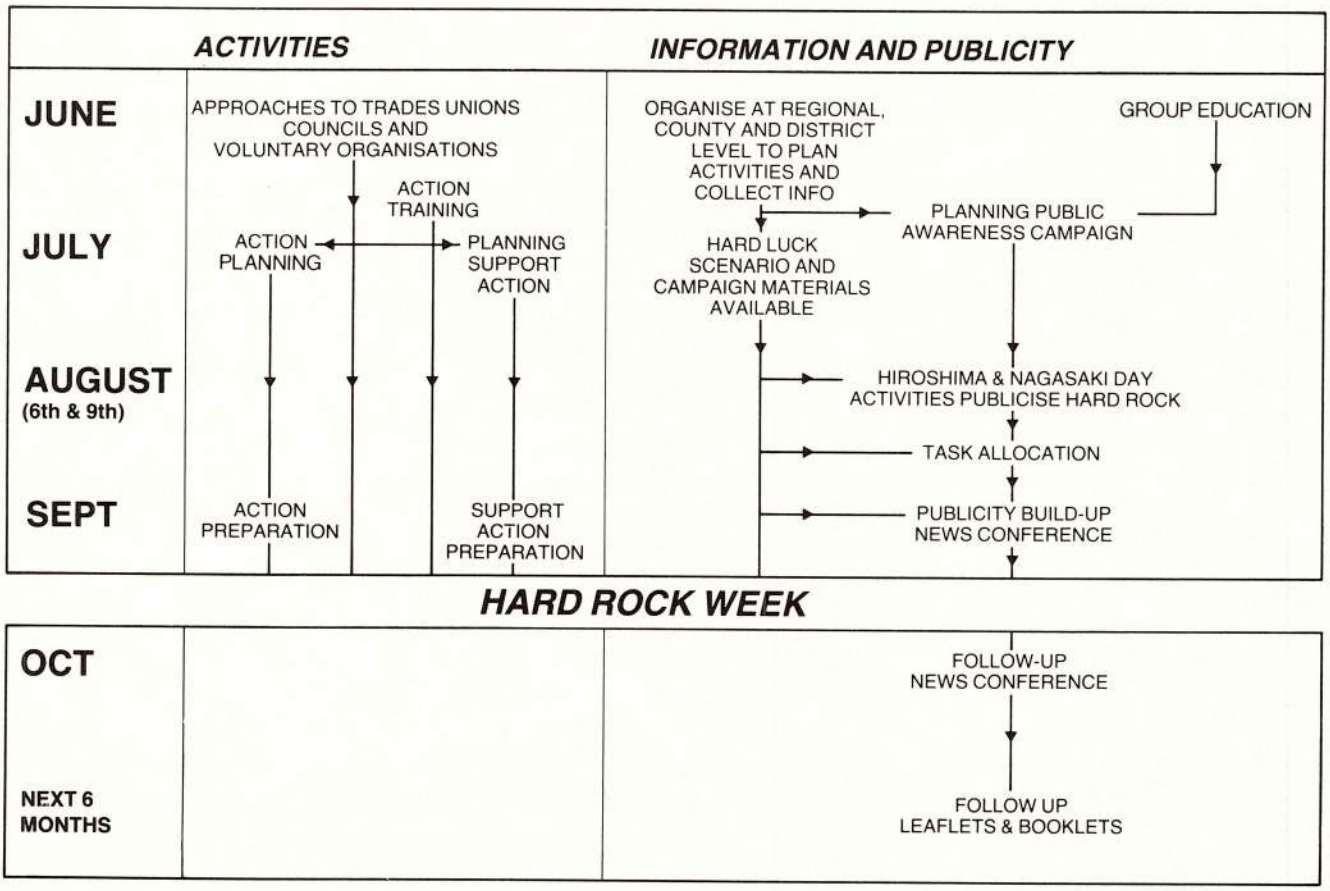
For convenience, Hard Luck can be looked at under the following headings:

1 Planning and introduction to membership.
2 Non-co-operation.
3 Information collecting.
4 Direct action and support action.
5 Hard Luck activities.

Planning

Although the Hard Luck scenario, the campaign materials and the SANA data will help to inform the public, there is still much local organisation to be done. Consultation, lobbying and advance planning will have to be started immediately.

The diagram will give you an idea of the time-scale.



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Points to note when planning

1) What are the main arguments you want to get over?
2) How do they relate to
   a) the installations in your area?
   b) the local information on Hard Rock?
3) Look out for possible misinterpretation by the public and plan accordingly.
4) Try to involve as many people as possible at a variety of levels, but be realistic about the workload.
5) Be prepared to change plans in the light of incoming information.
6) Plan publicity and press releases well in advance but be prepared to include last minute items.
7) What are the most effective points of contact with the public?
8) How does your group's activity tie up with what your neighbouring groups are doing? How can you co-operate to maximise publicity?
9) How are you going to relate action around Hard Rock with the public presentation of the Hard Luck scenario?
10) What types of action and events will successfully make this link?
11) How much specific information do you require to plan your action?
12) How much will information on Hard Rock feature in the presentation of the Hard Luck scenario?
13) When collecting information, link up with the other groups in your *county*, i.e. mirror the Hard Rock structure.

Introduction to membership

If you have not already done so, discuss the arguments against Civil Defence with the group and get them thoroughly acquainted with the subject. Sell some literature too. Also talk about the type of action the membership is willing to undertake: use this as a basis for planning. Perhaps discuss the paper on direct action presented in this pack. Things can go wrong if:

a) you are counting on support which does not materialise.

b) Members presenting the arguments at street level are unfamiliar with the subject.

It would also be useful to carefully brief those local group members who will be approaching trade unions and local authorities and other organisations to persuade them not to take part in Hard Rock. Organise speakers' schools.

HARD LUCK HARD ROCK

Campaign for Nuclear Disarmament
11 Goodwin Street London N4

Non-co-operation — finding allies.

Councils

Don't get so tied up in your activities for the day that you forget to put your political strategies into action now. There is still time to campaign for your council not to take part. A lot of people who aren't with us on unilateralism still think war-planning is a waste of time and money. There are others who could be persuaded if they had a chance to hear the arguments. Use the two Labour Party advice notes 'Civil Defence Home Defence and Emergency Planning' and 'Civil Defence — Labour's Policy' (both 20p from 150 Walworth Road, London SE17) to put pressure on Labour councils but don't assume only these will refuse to take part. Remember it is not compulsory for a council to take part.

Attitude of Local Authorities

The Home Office has admitted that 17 county authorities in England and Wales are not taking part in Hard Rock. These include Merseyside, Derbyshire, GLC, Cleveland, S. Yorks, W. Yorks and Gwent. Scottish Regional Councils come under the direction of the Scottish Home and Health Dept.

The Labour Party is also committed to a policy of non-co-operation with nuclear war planning and has written to Labour local authorities asking them not to take part in Hard Rock. There are over 170 authorities with policies against nuclear weapons; many also oppose nuclear-war planning.

Useful addresses

Labour CND, Joy Hurcombe, 11 Penbury Road, Worthing, Sussex.

Liberal CND, Bob Fyson, 19 Sydmouth Ave, Newcastle-under-Lyme, Staffordshire.

Please note that if your council is not taking part in Hard Rock, try to make sure that police and military liaison staff do not get into the bunkers to carry on the operation.

Trade unions

Now is the time to be approaching your local trade unions. The FBU (fire brigade) has a policy against war-planning involvement; NALGO (white collar local government officers) conference last year agreed to give support to members who refused to take part in these exercises. Other unions whose members might be involved in civil defence preparations are NUPE (local government and health), SCPS and FDA (civil service), COHSE (health), POEU (post office engineers) and UCATT (construction workers). The NUT also has an interest as schools will be made into 'Community Care Centres'.

All these unions, except the FDA are affiliated to CND or support unilateral nuclear disarmament. There are many other unions who are sympathetic and local branches may be helpful even if at national level they are not.

Offer speakers for meetings or lunchtime talks. Explain what your activites are intended to achieve, why we oppose home defence and how their members might be involved in war plans. Ask branches to send a special contingent to one or more of your Hard Luck activities. It is particularly important to get our arguments over to the NALGO officers from local government departments which might be involved. (See 'Who is involved' in 'What we know so far'.)

A few high-ranking Fire Brigade members will be involved in advising police and military fire-fighters who will be practising using Green-Goddesses. (Used during the Fire Service strike.)

Your local trades council or main head office may agree to circulate branches where their addresses are not in the phone book.

Useful address

Trade Union CND, Jenny Edwards, 11 Goodwin St. London N4.

Other organisations

Also offer information and speakers to local voluntary organisations which the Home Office hopes to draw into its war-planning: Red Cross, St John's Ambulance Brigade, WRVS, Radio Society of Great Britain. The Hard Luck scenario can be useful here.

Co-ordinate with the Medical Campaign and SANA in explaining carefully why home defence is not a humanitarian exercise.

Useful addresses

Medical Campaign Against Nuclear Weapons, 23A Tennyson Rd, Cambridge.

SANA (Scientists Against Nuclear Arms), 9 Braunston, Milton Keynes, Bucks. MK63AT.

Co-operation

In the same way that councils and unions can be asked to 'opt out' of Hard Rock — they can be asked to 'opt in' to Hard Luck, and perhaps, undertake to distribute the Hard Luck scenario literature amongst their members/officers/employees. Councils and unions might be interested in publicising the technical details and data — especially internally.

Another idea for groups whose local authorities are not taking part is to ask your council for permission to use the bunker during the week of the exercise. This not only prevents anyone else using it, but it could also provide a superb public information centre for operation Hard Luck.

Even those organisations taking part in Hard Rock can be approached with the Hard Luck scenario — explain the importance of having a 'balanced' viewpoint. Emergency planning officers should all receive a daily Hard Luck leaflet. Send 'Hard Luck' telegrams to SRHQs.

HARD LUCK HARD ROCK

Campaign for Nuclear Disarmament
11 Goodwin Street London N4

How do I find out what's happening in my area?

Home Office stated policy is that *all* information on Hard Rock will be available publicly.

County 'Warbook'

The first step is to establish the accurate organisation in your Region. The best place to start is at County level and work up and down. Each county should have a 'war book' usually under some euphemistic title such as 'A Community Survival Guide' (West Sussex) and these, as well as being located in county, district and parish HQs should also be in public libraries and records offices. As well as outlining chains of command they contain other useful information on duties and responsibilities, and as such they give us a useful insight into what will be going on during Hard Rock. Every group should obtain a copy as a matter of course.

Police annual reports also give information about home defence involvement. Also try reports of water authorities, health authorities and fire brigades — all of which have some involvement.

Information collection

LOCAL AUTHORITIES

Use contacts (councillors and staff) in county, district and parish councils to find out what is going on. Compile registers of council and chairpeople as well as emergency planning and home defence teams.

FIRE, AMBULANCE AND POLICE

In the case of fire and ambulance the various trades unions can be informally contacted. In the case of the police they might as well be approached directly. All of these organisations will be active during Hard Rock.

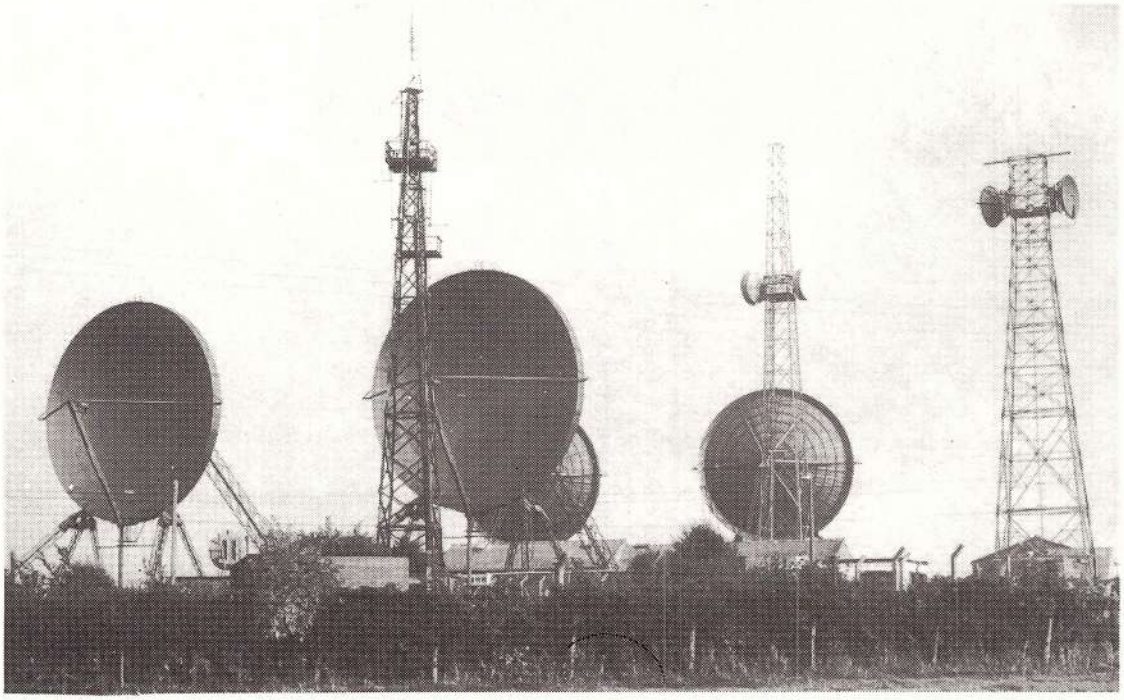
TRADES UNIONS

NALGO and NUPE (local government) and SCPS and FDA (civil service) are most likely to have members involved in Hard Rock. UCATT and POEU will be involved in the preparation of shelters and FBU, COHSE and NUPE members will be among those who are part of the plans for dispersal of health and fire services from population centres.

FIELDWORK

Compile a list of known and suspected installations. Photographs of such establishments will help you identify them.

'The Public has a right to knowledge of these (civil defence) matters' — Home Secretary, House of Commons, 7th September 1980.



Coldblow Lane, Kent. 'Ace-High' NATO Communications Repeater.

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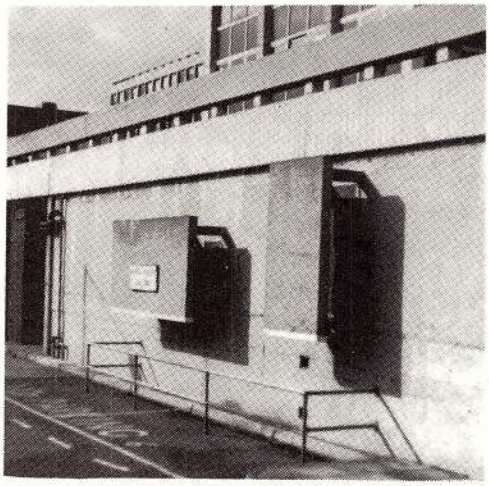
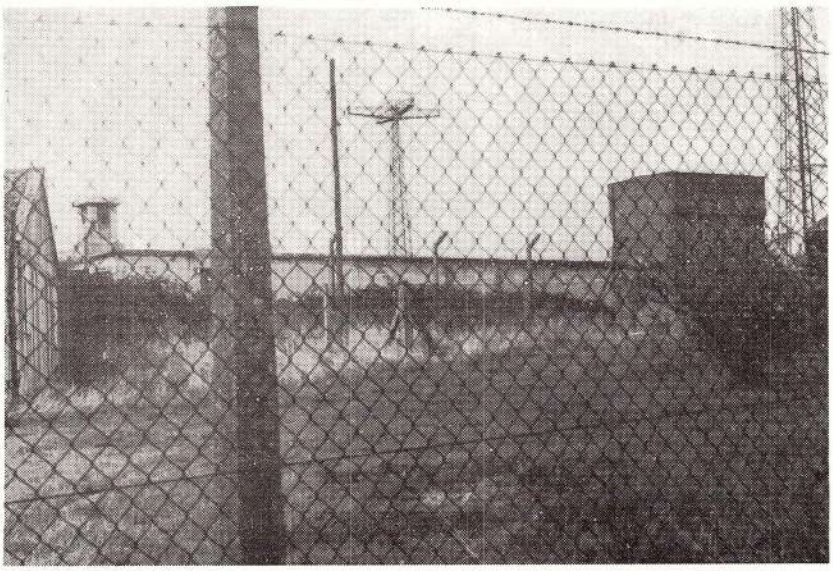
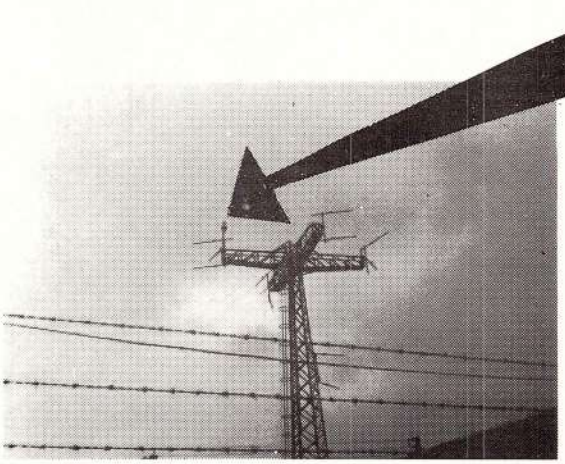
Alecon Link—Basingstoke.



Alecon Link, Basingstoke.
Blast shielded ventilators



Ullenwood, Gloucester. X head bunker SRHQ



CHINESE HAT

Ullenwood, Gloucester
Close-up of aerial with
'Chinese Hat' emergency
UHF aircraft signalling

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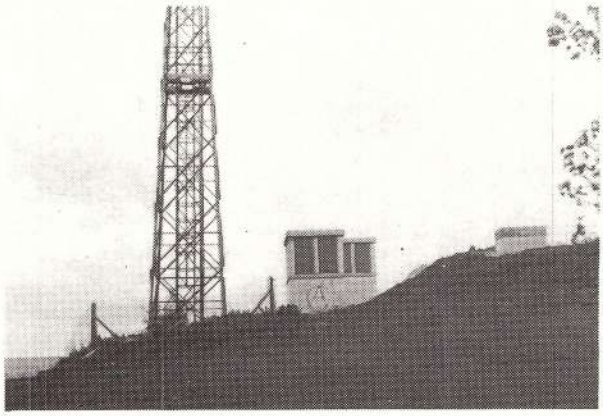
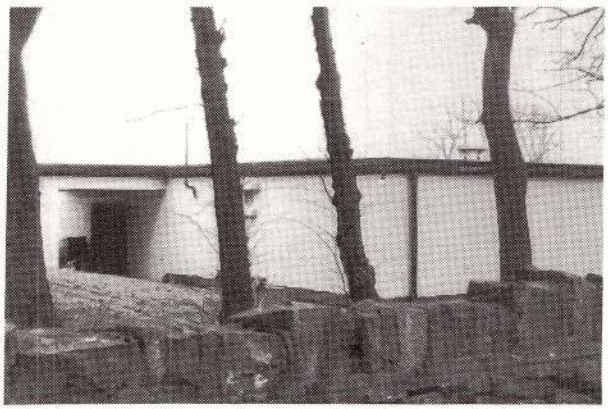
More photographs of installations



Ventilators at Skipton, Yorks. 'T' shaped bungalow is nearby.

Surrey Police control centre. A X headed bunker — unique as cross-headed aerials are located elsewhere (nearby)



Birkenshaw fire-brigade HQ
Note blast shield protecting double steel blast doors. Note ventilator.

New bunker at Langly Lane Preston. Probably ROC. Standard 'T' shaped house 'Rotor' bunker without bungalow. Expanded over past 6 months.

All photographs of installations by Cornelius

HARD LUCK HARD ROCK

Campaign for Nuclear Disarmament
11 Goodwin Street London N4

Hard Rock direct action and support action.

1. The main work of organising CND's intervention in Hardrock will be done in the regions, districts and local groups. It is nonetheless vital that central guidance be given on a number of difficult areas. This is important for two reasons: it will contribute to ensuring a co-ordinated series of activities around HR, and, from a longer term point of view, after a year in which a lot of effort has been put into establishing the organisational structure of the campaign, nationwide activity around HR will provide an important opportunity to test and consolidate the effectiveness of those structures.

2. Problem areas in which national planning would be especially helpful can be divided into two: the probable political effects (defining these in the broadest sense) and the selection of the correct type and level of direct action. These will be dealt with in order in the following paragraphs.

3. Careful discussion of the likely effects, on our membership and on the public of massive, widespread direct action, is necessary. Membership can be divided into two groups. Most CND groups have two kinds of members, an active core and a wider periphery of 'paper' members who support the organisation in name at least, but who do little. A majority of the 'core' are probably in favour of direct action in some abstract sense, but are also largely ignorant of precisely what DA is, and what consequences it implies. They are in most cases inexperienced in its use. The peripheral membership are even less aware, and, given the way these things go, even easier to alienate by DA mishandled.

4. The 'public' can also be divided into at least two groups. There are those with whom we are in more or less immediate contact, and whom we wish to recruit. We communicate with them through meetings, publications, leafletting, local events. In other words a potential membership whom we seek to activate and draw into the campaign. And in addition there is the public at large with whom we communicate through the national and local media which we do not control and which is not always noted for its fair representation of CND activities. This group we cannot influence directly, but seek to have some effect on by altering the 'balance of opinion' on nuclear weapons in the country at large.

5. The effects of taking direct action on these different groups of people depends largely on two things; what type and level of action is undertaken, and what preparatory work has been done.

6. The question of different types and levels of direct action is a difficult one, partly because the term itself doesn't really tell us very much. The much-used distinction between civil disobedience and direct action is probably useless, but it does at least indicate that there is a sliding scale of different types of action which vary in their consequences. At one end of the scale would be relatively innocuous mass actions of the kind already undertaken: demonstrations, 'die-ins', and so on. These could be undertaken in the general context of HR and linked to it by our propaganda. They could be focussed on key installations. Such actions are part of our 'normal' forms of protest and are unlikely to have serious negative effects. Peripheral membership would in any case be taking part in them, and members of the public would see them as natural extensions of our legitimate campaigning. Equally the legal consequences for groups and individuals would be light. At worst they would involve a minimum of arrests incurring relatively minor penalties such as small fines for public order offences like obstructing the highway (a die-in on a public road outside a bunker, for example).

Hornsey CND stopping operation Warmon (1981) ROC Alexandra Palace. (Photo N. London Herald)

At the other end of the scale are actions such as mass occupations of important Ministry of Defence or Home Office sites and small occupations of selected installations by groups of highly committed activists. In some such cases the legal penalties are likely to be very high: participants could be prosecuted under laws relating to criminal trespass and the Official Secrets Act (as well as conspiracy to break these laws) and this could result in prison sentences for individuals and leave groups with heavy burdens of fines and legal costs to pay off. At the outer limit of this particular scale of unpleasantness is the explicitly political use of the law by which the state seeks to put away troublesome activists and to disperse or demoralise entire sections of protest organisations.

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Somewhere between these two extremes are actions which in a sense combine them. A mass blockade, for example, by which large numbers would surround an installation, while a similar group of activists would either occupy it or actively prevent access or exit. This has the advantage that it is easy to involve different kinds of members, but can have nonetheless severe consequences for the daring few.

8. The sort of action chosen must follow from what is intended by taking DA. Some people argue that nuclear weapons are so evil that *anything* is legitimate in attempting to prevent their manufacture and deployment. This is often thought to be a morally admirable position, but is more often than not politically irresponsible. There seem to be two good reasons for taking direct action. One is essentially a publicity/attention drawing function, and the other is effective disruption of government preparations for nuclear war. In the case of a Home Defence exercise, the former rather than the latter seems most appropriate, for various reasons. We are not yet strong enough to actually prevent HR taking place, although minor disruptions might be possible here and there. And although it is important to let the authorities know how determined we are and what we *could* do, we should remember that Home Defence is not our main target. A year after HR we expect the first cruise missiles. That would be the appropriate time to put every effort into actually preventing their installation, fomenting strikes in the ports, blocking roads, blockading bases and so on. Part of our argument about Home Defence is that it is an absurdity and that therefore we ought to be exposing it to ridicule rather than taking it so seriously as to put our freedom on the line for it. For these reasons therefore we should be looking for forms of direct action which, even if their disruptive potential is low, have the maximum publicity pay off.

9. The selection of the type and level of direct action also depends, as mentioned above, on preparation of our membership and the public. A great deal of work needs to be done on educating ourselves about direct action and, indeed, about Home Defence. It is not always evident that even CND members are fully familiar with the reasons for our opposition to Home Defence, certainly not to the point of taking direct action against it. If this is so of members, it is even more true of the public who as of yet have never even heard of HR. If the next thing they hear is of mass arrests of CND members, the campaign could be set back months. Certainly the marginal satisfaction of having made life a bit difficult for a few County Council and Home Office officials should not be purchased at the price of alienating our peripheral membership, scaring off our potential membership, and branding ourselves in the eyes of the public as a wild minority of vandals and wreckers.

10. None of the above is an argument against co-ordinated, nationwide direct intervention in HR. On the contrary, it is vital that we take steps towards DA in view of the delivery of cruise a year later: we must use HR as a step in the education of ourselves and the public for DA and as a signal to the authorities that we are determined to stop them. But it must be a step in the process, rather than an all out spasm which could be disastrous for the campaign as a whole.

11.From the above, the following recommendations follow:

A: *In general DA against HR should be mass actions, involving the widest possible spectrum of the membership. They should have maximum publicity value, and if this entails a loss of disruptive value, so be it.*

They should take our campaigning a step beyond the methods adopted so far but not all the way to the 'hardest' forms of DA. Mild occupations which are evacuated before arrests are made (although this does not mean going immediately on being asked to), sit-down blockades of bunkers, die-ins obstructing public places, and so on, seem to be about the correct level for the present stage. These will all be linked of course to the myriad of other legal campaigning suggestions which are coming up: leafletting on the progress of the attack, street theatre shelters, defining the areas of total devastation and informing the residents, jamming government and media switchboards demanding information and places in shelters, spoof call-ups on County notepaper of local dignitaries to serve in bunkers, and so on and so on.

B: *Careful preparatory work must be done amongst the membership. This means not only DA schools and workshops, but also winning the anti-Home Defence argument.*

C: *Even more careful preparation of the public and the media must be undertaken.* The presentation of the necessity of DA needs great skill and care. Not only do we have to win the Home Defence argument there too, but in order to justify direct action it has to be clear that the legitimate means or protest simply will not work, that the authorities will not listen even to a majority opposed to, for example, US nuclear bases in this country.

D: *A set of parameters of the different kinds and types of direct action should be drawn up nationally,* and nearer the time of HR central guidance should be given over where on the sliding scale of DA actions should be pitched. This selection of the correct level of action should be based on an assessment of the political 'atmosphere' nearer the time. Although the latter may vary locally, in general it is clear that a lot depends on how the campaign is doing at large. For example: during the high point of last Autumn's Europeanwide protest, massive direct action at a fairly high level of militancy would have been appropriate (although CND was not internally prepared for DA). During such a 'ripe' political situation public gains would be made from this sort of demonstration of our determination to prevent nuclear war and weaponry. In addition, the legal consequences of DA are likely to be restrained when it is clear that there is wide public support for militant action against the bomb. But on the other hand, if the campaign happens to be at a lower ebb, such action would be incorrect, even disastrous. Hence the need for a political gauging of the situation, mainly at national level. (Even if the situation is very ripe for DA in September, we should not put all our direct action eggs into the basket of HR, when we still have cruise to come.)

E: *Every possible opportunity,* both in public and within the campaign, should be taken to publicise HR, to broach the idea of DA, and to explain and argue our opposition to the one and our use of the other. This work is beginning, but it must be intensified in the coming weeks. September will be too late. DA undertaken then, without having *campaigned* for it, will lead to political setbacks, and endanger groups and individuals out of proportion to the importance of HR itself. □

HARD LUCK HARD ROCK

Campaign for Nuclear Disarmament
11 Goodwin Street London N4

Hard Luck activities

(19th Sept—5th Oct)

The sequence of events

The Hard Luck scenario will be available from CND as a supplement to this pack. It will consist of a sequence of events covering the run-up to and aftermath of a nuclear attack, as well as the attack itself. There will be a series of 'daily Hard Luck' leaflets which will feature the main events and the probable reaction of the military and civil authorities to the state of affairs. The Hard Luck scenario is being drawn up by a group of scientists from 'Scientists Against Nuclear Arms' (SANA) based on a *realistic* estimate of the effects of a 200 megaton (i.e. very small) attack directed almost entirely against targets of military significance.

CND activity will be based on this information and activities should aim to show the public the reality of what is being planned in the underground bunkers during both the military and civil phases of the attack. Presenting the links and distinctions between Hard Rock and Hard Luck will be important both in the information and the choice of activities — including direct action. If we publicly act out the role of 'selfish and disgruntled' minorities, panic shocked crowds trying to leave cities; if we draw out all our savings and buy 'Protect and Survive' materials etc. during the military phase, this will increase public awareness and prepare them for the 'public relations' part of exercise Hard Rock.

Getting the information to the public

The British public delights in the long-running series (test matches, the Archers, the Falklands crisis) and once public interest is aroused, the Hard Luck scenario could create a lot of interest.

If there is a large commuting population in your area, leafleting should be at the same time and place each day. Where people have regular daily travelling patterns they could build up a complete picture of events over the period. There are also key places in the locality where a great number of people pass each weekday (stations, bus stations, entrances to supermarkets, the village shop etc.) Try to establish a presence there during the Hard Luck period. Use other activities: street theatre, exhibitions and stunts, to create interest. (See section 3)

Flyposting can be useful too. Build up the complete sequence in daily instalments at a number of prominent sites.

Find places that people look at every weekday; unions and local authorities should help. Use notice boards in staffrooms, public buildings, job centres, community centres, education centres, advice bureaux, law centres etc. etc.

Establish an exhibition somewhere in your locality where the whole sequence can be shown together. Sympathetic local authorities should provide space in public buildings or 'market stall' type space where an outdoor exhibition can be mounted.

Local papers and local radio should be very interested in this type of exercise — especially since it will involve detailed reference to the area. Use phone-in programmes to keep the subject in the public eye throughout the operation. Press work, of course, should be prepared in advance. Let local reporters know when and where interesting and photogenic events will be occurring — try to make sure that they cover the *reasons why* we are holding them!

Animating the sequence

Not all members of the public will take a leaflet and read it. Street theatre and other actions can 'animate' the information in the leaflets so that people stop and look. They can also bridge the gap between the abstract and the concrete reality of nuclear war from which many of the population try and shut themselves off.

There is a way of 'animating' each day of the scenario: public building of home defence shelters can accompany the pre-attack phase; a 'die-in' or concentric 'blast ring' flyposting could be appropriate for the day of the attack. Street theatre involving firing squads/refugees could accompany the post-attack phase followed by illustrations of the widespread fallout contamination (balloons).

These areas of activity and the spreading of information naturally link with symbolic action and support action. Simulation exercises, accompanied by the appropriate Hard Luck leaflet or information, will serve to consolidate the arguments and will not be open to misinterpretation or dismissal by the public.

Here is an ideas list for small-scale actions:

'Pre-strike': 19th Sept—2nd Oct (evening)

a) Organise a panic buy-in of one of the items in 'Protect and Survive' (preferably something you can use afterwards) to show how quickly it would disappear from the shops. You can organise stalls outside shops to sell the items back to shoppers with an explanation.

b) Explore and publicise your local 'underground' — anything from bunkers to tunnels.

c) Build 'Cruise Missiles' which can be transported around local roads.

d) Build mock ESR barricades across the roads which would be ESRs in your area and explain that people would not be allowed past this point;

e) Point out the location of private nuclear shelters, reserved hospital accommodation for the armed forces etc;

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f) Form (additional!) queues outside DHSS offices asking for extra money for 'special needs' — i.e. shelters.

g) Since fuel will be at a premium, traffic jams would form as cars run out of petrol *en route* out of urban areas. Ring up motoring organisations, leaflet at garages/motorway services etc. In Square Leg bus services only ran at 50% capacity.

h) Try to sell boxes of sand for people to put their heads into.

i) Print 'Hard Luck' ration books and distribute them.

j) Do market day 'black market' stunts trying to sell items which would be scarce (almost anything useful — tin-opener?) at highly inflated prices.

k) Set up an internment camp in the town centre.

'Strike' period: 2nd Oct (evening)—3rd Oct (morning)

a) Advertise the sale of 'absolutions' (accompanied by siren-type noises?);

b) Ring the Home Office/local council/police station etc and ask what they're doing during the nuclear attack and what they advise you to do.

c) Place signs near nuclear bunkers and targets saying 'Warning — you are now entering a nuclear death trap' (try and rent land from nuclear-free councils)

Post-strike period

a) Our role is to be interned, to build useless 'shelters' and to die — act this out, dress up as victims/disgruntled starving citizens etc. Wear bandages to work and when people ask why your arm's in a sling explain that you've been the victim of a nuclear attack!

b) Have a mock collection for Cruise and Trident or a raffle for the hospital beds which be left to treat all the post attack casualties.

c) Plant crosses in local parks and on bunker sites to commemorate the victims.

d) Put posters all over your area saying — you are now xx miles from a nuclear hit and you have been incinerated/crushed/fatally irradiated etc — ask nuclear free councils to help with sites etc.

e) Throw the ashes of 'victims' over the bunker sites, 'dress up' in plastic sacks as victims waiting for collection.

General

a) Make sure that every sympathetic member of the press takes advantage of the chance to explore, record and ask questions in, the bunkers locally.

b) Prepare regular bulletins for the local press, MPs, councillors, trade unions etc explaining clearly the reasons why CND opposes war-planning (send them the Hard Luck scenario).

c) etc etc etc etc — use your imagination and humour both to ridicule the measures for 'public protection' and to get over to the public the serious issues behind your activities and stunts.

Individual and group response

For those groups with readily available person-power, presenting and animating the Hard Luck sequence should provide few problems. For a lot of groups, however, most of the activists will be unavailable most of the week. It is therefore important to look at the most important ways that individuals can operate without departing too much from their daily routine. Modest tasks should be allocated to all non-activist membership —leafleting rotas can be worked out. Trying to organise more than one major group activity in the week could prove difficult. Plan carefully so that large numbers are only called upon when the nature of the action demands it — supporting the direct action for example. Small group or 'cell' operation could be the most effective way of proceeding.

Publicity

Publicise the release of Hard Luck scenario well in advance, through press, local radio and regional television. Hold a press conference before and after the Hard Rock Week. Also use flyposting to generate expectancy — a poster that doesn't explain everything can be useful: 'HARD LUCK SIR!' or 'HARD LUCK IS COMING'. Above all try to make people curious and inquisitive.

Follow up

Press will be allowed to cover Hard Rock, and afterwards they will probably want to compare Hard Rock with Hard Luck. It might be useful therefore, to organise a public discussion with the emergency planning officer that could help to draw attention to these comparisons.

Try to sustain the interest you have aroused — John Pilger's film 'The Bomb' will be on television this autumn and the new film by Peter Watkin should be appearing in early 1983.

Additional SANA information on the aftermath might be available in January. Look out for new books and publications.

N.B. Throughout the pack please read the terms **civil defence**, **home defence** and **nuclear deterrent** as if they were in inverted commas.

HARD LUCK HARD ROCK

Campaign for
Nuclear Disarmament
11 Goodwin Street London N4

Appendix 1
List of County HQs

Region 1 (North)

SUB-REGION	COUNTY	COUNTY WAR HQ	COUNTY WAR STANDBY HQ
11	CLEVELAND Municipal Bldgs, Middlesbrough, Cleveland. (0642-248155)	semi-basement in Old Town Hall, Middlesbrough.	in District Council buildings, Hartlepool.
	DURHAM County Hall, Durham. (0385-6441)	basement area in County Hall. "not hardened"	co-sited with District Council control, ground floor, Town Hall, Darlington.
	NORTHUMBERLAND County Hall, Morpeth, Northumberland. (0670-514343)	specially-designed semi-basement of new County Hall. ("with EMP protection"!)	
	TYNE & WEAR Sandyford House, Archbold Terrace, Newcastle/Tyne 2. (0632-816144)	basement of Civic Centre, Sunderland.[1]	"at another District Council HQ"

Region 2 (Yorks)

SUB-REGION	COUNTY	CWHQ	CSWHQ
21	HUMBERSIDE County Hall, Beverley, Hull 17. (0482-867131)	Wawne (nr Hull), formerly army HQ.	basement, Grimsby Town Hall.
	NORTH YORKS County Hall, Northallerton, N Yorks. (0609-3123)	basement of County Hall.	
	SOUTH YORKS County Hall, Barnsley. (0226-86141)	basement of civic bldgs, Barnsley.	basement of Cuswor Hall, Sprotborough, Doncaster.
	WEST YORKS County Hall, Wakefield 1. (0942-67111)	basement of County Hall.	Brighouse.

Region 3 (East Midlands)

SUB-REGION	COUNTY	CWHQ	CSWHQ
31	DERBYSHIRE County Offices, Matlock, Derbyshire. (0629-3411)	a normal office in the County Offices — "DEFINITELY for civil emergencies only".	
	LINCOLNSHIRE County Offices, Lincoln 1. (0522-29931)	Lincoln	
	NOTTINGHAMSHIRE County Hall, West Bridgeford, Nottingham 2. (0602-863366)	basement in County Hall.	under the Water Board, Mansfield.
32	LEICESTERSHIRE County Hall, Glenfield, Leicester 3. (0533-871313)	Leicester, County Hall.	
	NORTHAMPTONSHIRE County Hall, Northampton 1. (0604-34833)	on ground floor, County Hall.	in a Social Services bldg owned by the County Council, Kettering.

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Region 4 (East)

SUB-REGION	COUNTY	CWHQ	CWSHQ
41	CAMBRIDGESHIRE Shire Hall, Castle Hill, Cambridge 3. (0223-358811)	basement in the Shire Hall.	Peterborough.
	NORFOLK County Hall, Norwich 1. (0603-611122)	basement in County Hall.	basement in a County Council bldg, "in the Kings Lynn area".
	SUFFOLK County Hall, Ipswich 4 (0473-55801)	underneath Police HQ, Civic Drive, Ipswich. ("purpose built")	St Edmundsbury District Council office bldg, Bury St Edmunds.
42	BEDFORDSHIRE County Hall, Bedford. (0234-63222)	Bedford	
	ESSEX County Hall, Chelmsford 1. (0245-67222)	at County Hall.	a very large partly buried concrete bldg on County Council-owned playing field at Mistley, near Manningtree.
	HERTFORDSHIRE County Hall, Hertford. (0992-54242)	lower ground floor, County Hall.	basement rented in District Council bldg, Hemel Hempstead.

Region 5 (London)

SUB-REGION	
51	GREATER LONDON County Hall, London SE1 (01-633 5000) The structure here is different. Sub-Region 51 consists of only the 1 county (which therefore has a Sub-Regional Control all of its own — at Kelvedon Hatch). The equivalent level of organisation to the county elsewhere is the Borough Group in London. Greater London is divided into five Borough Groups, each with a Borough Group Control. They are: NW Group — under the new school, Beatrice Rd, Southall, Middx. N Group — Mill Hill Barracks (temp); due to move to Dollis Hill but GLC not undertaking necessary preparatory work. NE Group — Northumberland Ave, Wanstead, London E12. SE Group—Pear Tree House, crnr. Lunham Rd and Hawke Rd, Gipsy Hill, London SE19. SW Group — Church Hill Road, North Cheam, Surrey.

Region 6 (South-East)

SUB-REGION	COUNTY	CWHQ	CWSHQ
61	KENT County Hall, Maidstone. (0622-671411)	Maidstone. ("policy of not revealing whereabouts")	
	SURREY County Hall, Penrhyn Road, Kingston-on-Thames, Surrey.[2] (01-546 1050)	in a purpose-built County Council-owned bldg, Guildford.	
	EAST SUSSEX Pelham House, St Andrews Lane, Lewes, Sussex. (07916-5400)	basement in County Hall (not Pelham House), off Western Rd.	
	WEST SUSSEX County Hall, Chichester. (0243-785100)	cellar in County Hall	'60s purpose-built County Council-owned property, Horsham. (rear of old disused CC bldg)
62	BERKSHIRE Shire Hall, Shinfield Park, Reading. (0734-85444)	"purpose-adapted" basement, Shire Hall.	at District Council offices, Newbury. (may be relocated before long)
	BUCKINGHAMSHIRE County Hall, Aylesbury, Bucks.	basement, old County Offices, in County Hall complex.	"purpose-built 15-year-old shelter", Fire Station basement, Bletchley.
	HAMPSHIRE The Castle, Winchester, Hants. (0962-4411)	basement of fairly modern council bldg at the Castle.	
	ISLE OF WIGHT County Hall, Newport, IoW. (0983-524031)	rented ex-RAF site, Ventnor (shared with Air Traffic Control Centre).	
	OXFORDSHIRE County Hall, Oxford 1. (0865-722422)	underground, "alongside a County-owned bldg at Woodeaton".	

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HARD LUCK HARD ROCK

Campaign for Nuclear Disarmament
11 Goodwin Street London N4

Appendix 1 (contd.) Appendix 2 (over page)

Region 7 (South-West)

SUB-REGION	COUNTY	CWHQ	CWSHQ
71	AVON Avon House, The Haymarket, Bristol. (0272-290777)	Brislington	
	DORSET County Hall, Dorchester 1, Dorset. (0305-3131)	Dorchester	
	GLOUCESTERSHIRE Shire Hall, Gloucester 1. (0452-21444)	Gloucester	
	SOMERSET County Hall, Taunton 1, Somerset. (0823-73451)	Taunton	
	WILTSHIRE County Hall, Bythesea Road, Trowbridge, Wilts. (02214-3641)	in County Hall, semi-basement.	
72	CORNWALL County Hall, Truro 1, Cornwall. (0872-74282)	Truro	
	DEVON County Hall, Topsham Road, Exeter 2. (0392-77977)	Exeter	

Region 8 (Wales)

SUB-REGION	COUNTY	CWHQ	CWSHQ
81	CLWYD Shire Hall, Mold, Clwyd. (0352-2121)	Mold	
	GWYNEDD County Offices, Caernarfon. (0286-4121)	Caernarfon	
82	DYFED County Hall, Carmarthen. (0267-4251)	Carmarthen	
	MID-GLAMORGAN Mid-Glamorgan County Hall, Cathays Park, Cardiff.[3] (0222-28033)	Bridgend	
	SOUTH GLAMORGAN South Glamorgan County HQ, Newport Road, Cardiff 2. (0222-499022)	Cardiff	
	WEST GLAMORGAN Guildhall, Swansea. (0792-50821)	Swansea	
	GWENT County Hall, Cwmbran, Gwent. (0633-67711)	Abergavenny	
	POWYS Powys County Hall, Llandrindod Wells. (0597-3711)	Llandrindod Wells	

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Region 9 (West Midlands)

SUB-REGION	COUNTY	CWHQ	CWSHQ
91	WEST MIDLANDS County Hall, 1 Lancaster Circus, Queensway, Birmingham 4. (021-300 5151)	in Committee Suite, County Hall.	at County Council training centre, Sutton Coldfield. on surface; previously Warks CC-owned (earlier—AA Gun Control)
	STAFFORDSHIRE County Buildings, Stafford 16. (0785-3121)	basement, County Bldgs.	Stoke-on-Trent area.
	WARWICKSHIRE Shire Hall, Warwick. (0926-493431)	basement at Shire Hall.	basement rented at District Council office, Rugby.
92	SHROPSHIRE The Shirehall, Abbey Foregate, Shrewsbury 2. (0743-222100)	basement CD room in 10-year-old Shirehall bldg.	
	HEREFORD & WORCESTER County Hall, Spetchley Road, Worcester 5. (0905-353366)	basement in County Hall.	basement of old Shire Hall, Hereford.

Region 10 (North-West)

SUB-REGION	COUNTY	CWHQ	CWSHQ
101	CUMBRIA The Courts, Carlisle. (0228-23456)	Carlisle	
	LANCASHIRE County Hall, Preston 1. (0772-54868)	Preston	
102	CHESHIRE County Hall, Chester 1. (0244-602424)	under County Hall.	Municipal bldgs, Ratle St, Crewe.
	GREATER MANCHESTER County Hall, Piccadilly Gardens, Portland Street, Manchester. (061-247 3111)	Cheadle (nr. Stockport)	Bolton
	MERSEYSIDE Metropolitan House, Old Hall Street, Liverpool. (051-227 5234)	old "CD bunker" (poss dates from WWII), under Walker Art Gallery, Liverpool city centre.	in District Council "education premises", Southport.

Notes

1 *Tyne & Wear CC has just been offered, by the Home Office, the use of the old Kenton Bar RAF bunker just outside Newcastle, with the government paying 70% of the cost to convert it into a CHQ. Offer not (as yet) taken up.*

2 *Unusually, these headquarters are not within the administrative area they control; they're in Greater London. Northumberland was the same until April.*

3 *Another case of a county administrative centre out of its area; this is in South Glamorgan.*

Appendix 2
Source material and reading list

Nuclear Illusion and Reality — Solly Zuckerman, Collins

Beneath the City Streets — Peter Laurie, Panther

The Political Police in Britain — Tony Bunyan, Quartet

Technology of Political Control — Ackroyd et al, Pluto

Britain and the Bomb — Duncan Campbell et al, New Statesman

Phonetappers and the Security State — Duncan Campbell, New Statesman

As Lambs to the Slaughter — Paul Rogers et al, Arrow

Civil Defence — Phil Bolsover, CND

Nuclear War — Medical Campaign Against Nuclear Weapons, Edinburgh

Region 1 — Martin Spence, Days of Hope Bookshop, Newcastle

H-Bomb on Ogwr — CND Cymru, Cardiff.

Hard Rock — John Field, Sanity

Hard Rock Pack — Region 2, West Yorkshire Newsletter, 2, Lascelles Road, Leeds 8

Nuclear Numbers Game — Radical Statistics Nuclear Disarmament Group, Radical Statistics (especially the section 'how to construct your own scenario').

Activities Planning Map — CND

Essential Service Routes — CND

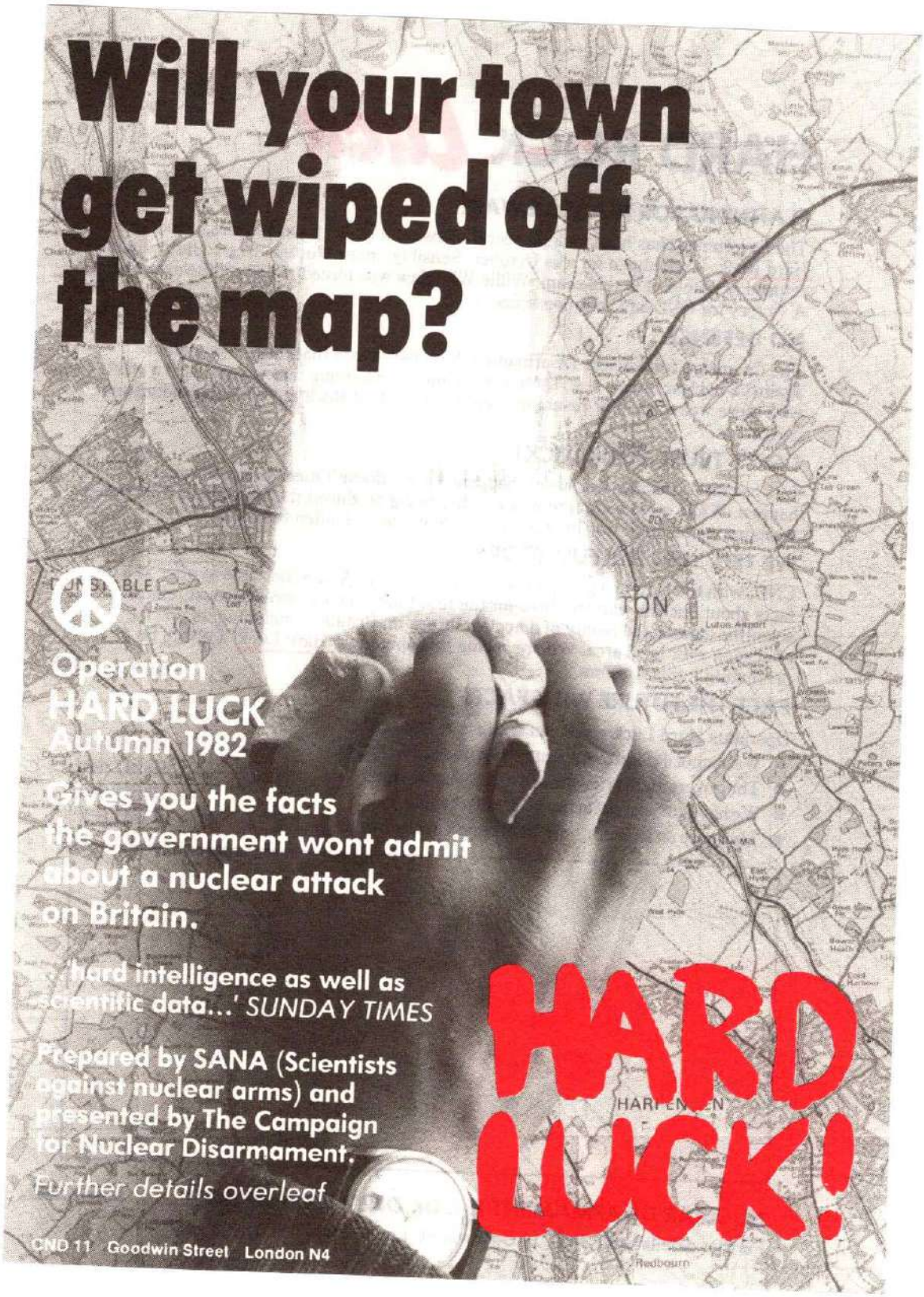
Crucible of Depsair — Tucker and Gleisner, Menard Press

UKWMO — HMSODd2238 07 3/74

London After the Bomb — Green, Rubin, Turok, Webber, Wilkinson, to be published in September 1982, Oxford University Press.

Fuller bibliography will be available in the Hard Rock/Luck supplement.

Will your town get wiped off the map?



Operation
HARD LUCK
Autumn 1982

Gives you the facts the government wont admit about a nuclear attack on Britain.

'...hard intelligence as well as scientific data...' *SUNDAY TIMES*

Prepared by SANA (Scientists against nuclear arms) and presented by The Campaign for Nuclear Disarmament.

Further details overleaf

HARD LUCK!

CND 11 Goodwin Street London N4

HARD ROCK *Luck*

PLANNING FOR NUCLEAR WAR!

The government has been making secret plans for a nuclear war rehearsal: codename Hard Rock — scheduled for this October. Sensibly, many Nuclear-free county councils refused to take part in this sham. Willie Whitelaw was forced to call off the exercise. A victory for CND and common sense...

NO DEFENCE !

The Campaign for Nuclear Disarmament has always said that there is no defence against a nuclear attack — so there is no point in pretending that we can fight a war with these weapons. War-planning exercises like Hard Rock are both misleading and dangerous.

DON'T TRUST YOUR LUCK!

Just because a nuclear war hasn't happened yet it doesn't mean that one won't happen. While more and more weapons are being produced the facts about what these weapons would do, if war breaks out, are deliberately hidden from us.

WE TELL YOU THE FULL STORY

CND, with the help of a group of scientists from SANA, are now able to offer you the facts about nuclear warfare. Now for the first time ever we have the most reliable scientific data on the reality of a nuclear attack on Britain — including its precise effects on your local area. We are calling this operation 'Hard Luck' and will be presenting it this Autumn.

FACE THE FUTURE WITH FACTS

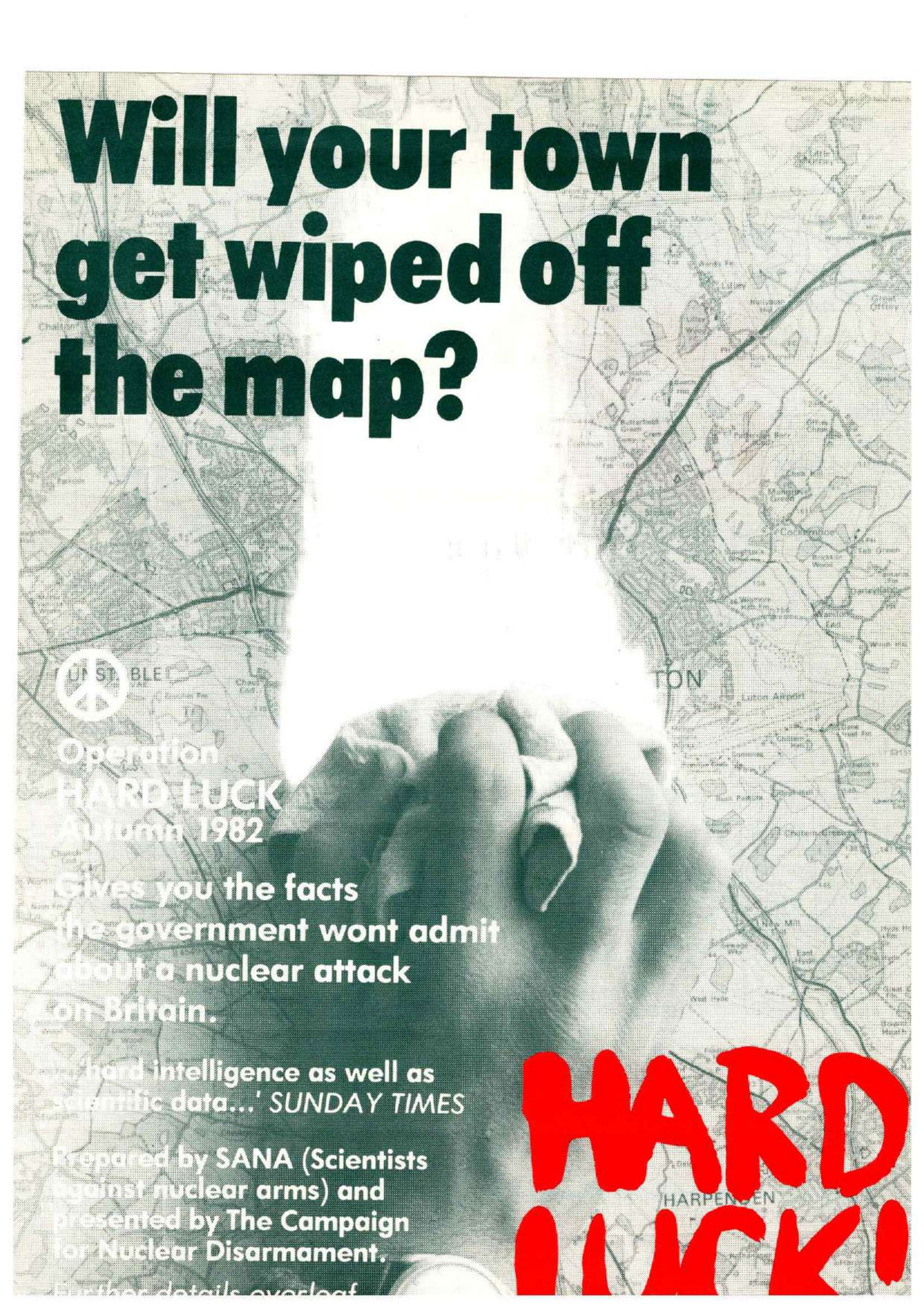
Operation Hard Luck gives you the firm evidence that:

- We cannot defend this country with nuclear weapons. Hard Luck!
- The government is frightened to tell you the truth. Hard Luck!
- We have all been put in the nuclear front-line. Hard Luck!
- There are no winners, only victims, in a nuclear war. Hard Luck!

NUCLEAR DISARMAMENT IS OUR ONLY SAFE OPTION ..... Join CND.

Further details from CND, 11 Goodwin St. London N4. Tel. 01 263 0977.

Will your town get wiped off the map?



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against nuclear arms) and
presented by The Campaign
for Nuclear Disarmament.

further details overleaf

HARD
LUCK!

WILL YOUR TOWN GET WIPED OFF THE MAP?

HARD LUCK!

CND

Operation HARD LUCK
Autumn 1982

TARGET BRITAIN

"The presence of Cruise missiles on British soil, together with the fact that the United Kingdom will provide the main air and sea bases for NATO reinforcements of men and equipment coming from North America to the European front, indicates we shall be target number one". Daily Telegraph 4 February 1980

Britain is littered with potential targets: military installations (including more than 100 US bases7; ports; power stations (especially nuclear); industrial centres; communications establishments, civil airports...

As the 'off shore' base for NATO, Britain risks total destruction of virtually the whole country.

HOW NUCLEAR WAR COULD START

a) Technological development has persuaded the superpowers to think about 'first strike' capability and this is leading to 'launch on warning' systems where missiles would automatically be released if an enemy missile was detected. The opportunity for war by accident is obvious.
b) A conventional war in Europe could easily become nuclear if the losing side employed tactical nuclear weapons to try to avoid defeat.
c) An uprising in a Middle East state which threatened the oil supplies of a superpower could quickly become a European conflict.

EFFECTS OF A NUCLEAR ATTACK

The Government believes that a nuclear attack on Britain would be of about 200 megatons, that is approximately equal to 13,000 Hiroshimas.

The largest nuclear weapons are 2,000 times as powerful as that which devastated Hiroshima.

Besides massive blast damage, nuclear weapons emit heat as intense as that at the centre of the sun, causing fires and burns up to 20 miles from the centre of the explosion. Radiation causes sickness and death for years after the explosion.

LIKELY CASUALTIES

Scientists Against Nuclear Arms (SANA) was formed by a grou of scientists brought together by their common concern abou nuclear arms. These scientists have produced a realistic scenari of a nuclear attack on Britain based on the Government's expectation of the strength of such an attack, but using their own highly specialised knowledge to estimate the damage and casualties.

Your local CND group will have accurate casualty figures for you locality and will be pleased to discuss them with you. Radiation alone could make Britain uninhabitable and there would be no hospitals left to help the millions suffering from serious burns or other injuries. Most of the country would also receive severe blast damage, enough to demolish brick houses. The national picture is one of almost total devastation and appalling loss of life. Details are available in the CND magazine 'Sanity'.

THERE IS NO CIVIL DEFENCE AGAINST NUCLEAR ATTACK

"There are no means of protecting the population against the consequences of nuclear attack."
Government White Paper on Defence 1957

Though nuclear weapons have become much more powerful and numerous the government now tries to convince us that civil defence against nuclear attack is possible. Their pamphlet *'Protect and Survive'* dangerously misleads us by offering glib advice and by grossly underestimating the destructive power of nuclear weapons. Those who make the decisions and press the buttons may be safe in their bunkers, but the rest of us will not survive. Sir Alec Douglas Home said: *'The British people are prepared to be blown to atomic dust if necessary.'*

Hard Luck!!

JOIN CND TODAY

Membership rates and categories Adult £6. 2 people living at the same address £9. Student (over 21) £3. Youth CND (21 and under) £1. Unwaged £2.

BANKERS ORDER FORM

To the Manager of ..... Bank Ltd.

Address .....

Please pay the Co-Operative Bank Ltd., 110 Leman Street, London E.1 (code 080308) for the account of the Campaign for Nuclear Disarmament (A/c No. 50036163) the sum of £ .....

on the ..... day of ..... 198..... and thereafter every Month/Quarter/Year* until otherwise notified.

Signed ..... (*Delete as appropriate)

Name ..... (BLOCK CAPITALS)

Address .....

Account No .....
We also have a Giro Account No. 525604006

CASH MEMBERSHIP FORM

I enclose £ ..... for one year's membership.

Donation £ ..... Total £ .....

Name .....

Address .....

Please return completed form to Campaign

What chance for health care

In the wake of the Hiroshima atomic bomb, the body count takes place.

after the bomb?

This paper, drawn up by members of the Medical Practitioners' Union Section of ASTMS, has been produced for two reasons.

Firstly, many of our community physician members have responsibilities for planning health services in preparation for the aftermath of a nuclear war. We believe that it is unethical for doctors to involve themselves in such planning without first ensuring that their health authority and their local community are properly advised as to the nature of the event for which plans are being made. We are therefore advising our community physician members that they should present detailed reports to their health authority of the health consequences of nuclear war, and we hope that they may find this paper helpful in preparing such reports.

Secondly, the MPU has always seen one of its roles as being to provide medical advice to the trade union movement.

We suggest that trade unions may care to draw it to the attention of their members, and that Labour councillors and trade union members of health authorities may care to table it for discussion in their authority.

astms

IE IMMEDIATE INSEQUENCES OF A JCLEAR EXPLOSION

Upon the detonation of a modern clear weapon, an area around the point detonation will be totally destroyed. ıe extent of that area would depend on the size of the weapon. However ficial Government contingency plans visage entire Health Districts in which ere would be no survivors. (1)
The population of a Health District is tween 150,000 and 500,000.
overnment advice continues by noting at in these Districts there would esumably be no remaining health care cilities either. This is one of the few stances where, after a nuclear olocaust, the need for health care cilities and the demand will be equal.
It is reasonable to suppose that the overnment is correct in projecting ntire Health Districts totally destroyed. he bomb which fell on Hiroshima was .02 megatons whilst modern weapons nge from 0.4 to 20 megatons i.e. 20 to ,000 times as destructive. Yet even the Hiroshima and Nagasaki bombs achieved ıe following casualties:

	Hiroshima	Nagasaki
Estimated population	300,000	87,000
Victims killed	78,000	27,000
Victims missing	14,000	2,000
Seriously injured	84,000	41,000

Modern bombs are far more powerful. Consider for example a 1 megaton bomb xploded 1,500 metres above the ground. ts destructive effect would derive from ieat, blast and radiation.

The heat effect would be such that 2 niles from the explosion metals would vaporise, 4 miles from the explosion netals would melt, 6 miles from the explosion rubber or plastics would melt or ignite, whilst even 10 miles from the explosion human beings would suffer full thickness burns.

The blast effect would knock down most UK houses 5 miles from the point of explosion and would still be causing 50 miles per hour winds 10 miles from the explosion.

Beyond the area of total immediate devastation there will be an area where the explosion is likely to cause widespread fires affecting most buildings. Experiences of Dresden tell us that in these areas a firestorm will be created with high velocity winds blowing through the streets between the burning buildings and with the production of large quantities of carbon monoxide.

Those who are not burned to death within the buildings are likely to die of carbon monoxide poisoning in the streets. Firestorms could affect towns several miles from the point of detonation (2).

Thus, either by the immediate effect of the explosion or by the firestorm there will be total devastation over an area of several miles radius around the point of impact. Further afield still there will be areas where there will be large numbers of casualties from burns.

If any form of medical relief can be provided to those casualties at all it will need to be based upon the triage principle by which casualties are divided into those whose injuries do not justify attention, those whose injuries require medical attention, and those whose injuries are so severe that there is no prospect of survival.

Only the second group would receive attention. Even this level of medical relief may be impossible. The levels of radioactivity from fall out may preclude any kind of rescue operation for three weeks. Millions of severely burned individuals would die in pain without any kind of medical attention — not even pain relief.

One third of the British population or even more could die in such an attack. Those who died instantly would be the lucky ones. Several millions would not be so lucky.

THE EFFECTS OF FALL OUT (OPTIMISTIC ASSUMPTION)

The effects of fall out depend on whether or not a nuclear power station has been targeted. We will discuss first of all the most optimistic assumption, that no nuclear power station has been a target.

In that case large areas of the country, probably most of the country, will be blanketed by radioactive dust.

The Government has given advice on the building of make shift fall out shelters (3).

However large numbers of people are likely to be outside such shelters. Materials for building such shelters may not be adequately available (2). Many, especially the elderly and the disabled, would be unable to build them. Many people would be away from home at the time of the explosion, especially if there had been little warning. Many people who had constructed such shelters in their homes would need to leave their homes as a result of damage caused by the explosion or because of their failure to stock adequate supplies of food and water.

It must be recognised therefore that large sections of the surviving population would not have been adequately sheltered from fall out, and would suffer the consequences of radiation sickness.

It is probably worth asking whether more than a small proportion of the population will in fact be protected. Quite apart from the elderly, the disabled, children at school, workers away at work and children out at play, how many of those who **are** at home and **do** have makeshift shelters will stay in them? How many women will go into shelters when their husbands are away at work or their children at school? How many people will stay in them whilst their neighbours are dying in the streets?

And will we have shelters at all — one very likely scenario is that a nuclear attack would have come without warning, as a pre-emptive, purely defensive, strike against Cruise missile sites.

Another horrifying possibility is that it may occur in error. A recent issue of 'New Internationalist' covered two pages with lists of such errors that have occured in recent years, some of which would have caused nuclear war if they had happened today.

Moreover the idea of sheltering is based upon the prospect of being able to emerge when the bombing is over. But what if successive waves of bombs, days or weeks apart, turns out to be the reality.

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Photos from
'Hiroshima-Nagasaki',
published by the Hiroshima-Nagasaki Publishing Committee, Tokyo.

And will people have the presence of mind to follow advice. Two thirds of the population of Hiroshima experienced fear and terror after the bomb had fallen.

The death reserved for those who fail to shelter is not a pleasant one. Symptoms of radiation sickness include vomiting diarrhoea, fever, blood changes, hair loss and (in severe cases) convulsions, and death can occur in hours, days, or weeks depending on dose.

Wound healing and resistance to infection are both affected, even in those whose dose was not fatal, and both of these consequences are serious for the injured, and for those exposed to infection in the post-holocaust community.

THE EFFECTS OF FALL OUT (PESSIMISTIC ASSUMPTION)

The preceeding section was based on the optimistic assumption that no nuclear power station had been targeted. In fact nuclear power stations could be targeted deliberately to cause maximum damage, or because they were seen as strategic targets, or unintentionally because they were close to cities which were targeted, or accidentally, by a stray missile.

Nuclear power stations are assumed to be safe on the basis that safety measures prevent the wholescale release of radiation from them. Such safety measures however are not proof against a nuclear bomb exploding on the power station.

If such an event occurred the fall out of the bomb would be supplemented by fall out from the power station. Initially this would add very little to the total fall out. But as Lindop (4) has pointed out the rate of decay of this fall out is much slower so that the fall out from the power station would be much more long lasting than that from the bomb. The areas affected by such fall out could be uninhabitable, not for the 3 weeks that is assured by Government plans (1) but for about a year.

None of the make shift shelters recommended by the Government could accommodate their occupants for anything like that length of time, so the only survivors in the affected areas would be the handful of politicians and civil servants in the deep shelters of the Regional Centres of Government.

The areas affected would depend on the nuclear power stations which had been the target and the direction of the wind. For example, Lindop (4) has demonstrated that if Windscale were targeted with a North West wind there would be hardly any survivors in Lancashire, Yorkshire, and East and West Midlands, London or Kent. If Hinckley Point were targeted with a West wind there would be hardly any survivors in Bristol, Oxford, London, Kent or the South Coast.

This photograph, also taken following the Hiroshima bomb, needs no caption, either for a medical person or any other human being.

THE HEALTH OF THE POST-HOLOCAUST COMMUNITY

Before discussing the state of health of the survivors of the holocaust, we must consider what health care facilities will be available to them. Government advice is that each Health District must see itself as self-sufficient.

Transport facilities, the pharmaceutical industry, the teaching hospitals and centralised Regional facilities will have been destroyed. Health Districts will need to function with no prospect of replenishing medical supplies or of obtaining help from elsewhere. We have no direct experience of the capacity of health care facilities to cope with this kind of situation.

At Hiroshima and Nagasaki medical help was rushed in from outside. At major natural disasters medical aid is usually made available from outside. This reflects the knowledge that the local community could not cope alone. After a nuclear holocaust there will be no 'outside' to provide help.

Whatever health care facilities remain will need to cope with the following health problems:

1) The usual health problems of the community

The community will have its usual health problems. Many of these will take on a new significance in a situation where medical supplies are not readily to hand. Without antibiotics, people will die of minor infections, as they used to do before the discovery of these drugs. Pneumonia, puerperal fever, and septicaemia from minor cuts will again become major killers. Without insulin,

diabetics (1 per cent of the population) will die. As anaesthetic supplies run out, surgery will become either impossible or agonising. Society will not have the resources to care for the disabled and the handicapped.

2) **Injuries from the explosion**

In those Health Districts around the periphery of the area of devastation — those that are, say, 5 to 10 miles from the point of an explosion — a large proportion of the surviving population will be injured or badly burned. Some injuries will have been caused even further afield. For example, the flash of a nuclear explosion would be bright enough to cause retinal burns in those looking directly at it as far as 40 miles away (2).

3) **Effects of fall out**

In all Health Districts a proportion of the population will be suffering the effects of fall out. In those Health Districts on the periphery of the devastated area this will include most of the population, the make shift fall out shelters will have been destroyed. It will include quite large proportions of the population in all Districts.

4) **Psychological disturbances**

The events of the holocaust will lead to serious psychological disturbances amongst those who have experienced it. Many will be in a state of acute anxiety, trembling constantly and unable to look after themselves. Others will be shocked, depressed, apathetic and inert. Others will be driven mad.

It is difficult to predict what proportion of the surviving population will be suffering from injuries, burns, fall out, or psychological disturbances but in many Districts it is likely to be somewhere between 20 per cent and 40 per cent.

5) **Epidemics**

Water supplies and sanitary facilities will have been disrupted. A further sanitary hazard will be caused by the decomposing corpses of human beings and wild life. Epidemics are the usual accompaniments of such devastation.

Typhus, typhoid, cholera, and other infectious disease are likely to occur. Vaccines will not be available to prevent them. Drugs will not be available to treat them.

6) **Starvation**

This country is not self-sufficient in food. Moreover the destruction of transport facilities will make it difficult to distribute what food there is. Malnutrition, vitamin deficiency and simple starvation will affect many Health Districts.

7) **Civil disorder**

The most rational policy to apply to the distribution of food would be to confine it to those who have some prospect of survival, withholding it from the injured, the mad, the disabled, and those who are dying of radiation sickness. However, it is likely to be impossible to institute such measures. Civil disorder is likely to occur as survivors fight for the limited food and medical supplies available (2). Such disorder will disrupt health care provision, and the victims of violence will be an added health problem.

8) **Pregnancy**

Because of the conditions in which people have been living during the fall out period, it is likely that the proportion of the female population who will be pregnant will be larger than usual. Even if it is no greater than usual, there will still be large numbers of pregnant women whose pregnancy will have been subjected to radiation followed by malnutrition. This is likely to produce an appalling toll of congenital abnormalities in the babies born in the year after the holocaust. Society will not have the resources to care for such babies and must decide whether it will allow them to live.

PLANNING HEALTH SERVICES

Even our present health care facilities would not be able to cope with the combination of ordinary health problems, injuries, fall out, psychological disturbances, epidemics, starvation, civil disorders and congenital abnormalities which will face the post-holocaust health care systems.

This system itself however will be severely disrupted. Many hospitals and large parts of the industry that supplies medical equipment, drugs and other supplies will have been destroyed. Health workers will be casualties in the same proportion as the general population. Those health care facilities that exist will be isolated from each other and from sources of supply.

This system will not be capable even of coping with ordinary health problems let alone the consequences of war.

There is a duty upon health authorities to make the best job they can of providing health care after the holocaust. But the facilities will be totally inadequate, and the health care system will be overwhelmed.

It would be unrealistic to pretend that medical facilities will be available for more than a small fraction of those who need them. It will be necessary to decide which categories of patient should receive priority, and which should be left untreated.

One question which must be considered is the question of euthenasia.

There are already those who do not wish to survive a nuclear war, who view the phrase 'preparation for survival' as implying something rather different from its usual meaning. They see it as a contingency to be guarded against, and they will not spend the last few weeks of peace building fall out shelters, but rather ensuing that they are provided with an adequate means of suicide.

These are at present a small (but not insignificant) minority. However after the holocaust their numbers are likely to be swelled by large numbers who find that the kind of existence which remains possible is not one which they relish. So long as there are high cliffs and fast flowing rivers no able bodied person need live who does not want to.

However for the moment we are concerned with those who will have even better reason for not wishing to live and may lack the means of suicide — those who will be dying slowly and painfully from injuries or the consequences of fall out, and for whom the overwhelmed health care system will be unable to offer even alleviation of their symptoms.

Society must decide whether it will provide a service of euthenasia to those individuals, or whether it will exact from them the full measure of possible suffering.

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