

The Home Defence Problem of Regeneration

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This is the substance of a lecture given on 13 November 1981 at the Lancashire Training Centre, Hutton Preston, and stresses the Civil Defence role played by Public Analysts and Scientific Advisers, who, during their training, will have learned how to predict where nuclear fallout will occur, how to calculate the protective factors of buildings, working out population release times and solving questions connected with the movement of people in radioactive fallout contaminated zones. This paper deals with the regeneration period which would follow the phase of "keep your heads down" and suggests that *all* scientists who survive may be called on to assist.

Civil Defence is concerned with the prevention and remedying of the effects of attack upon civil populations in war. From the times of the ancient civilisations, throughout the ages, attacks on civil populations have been part of the deliberate action of fighting a war. Destruction of the enemy by killing the population and causing disruption of his society, was always the aim of the attacker. In some ways nuclear warfare is only a scaling up of such attacks. We would be deluding ourselves, however, if we regarded it only in that way. Past actions of such a kind could be thought of as a mere wound on a healthy body from which recovery would be certain. A nuclear attack would be a catastrophe which could completely destroy the fabric of society as we know it.

Instead of recovery meaning the restoration of the world we had known, a nuclear holocaust would involve the total rebuilding of an otherwise totally destroyed society in which all the mechanisms of social structure would need to be recreated.

One recognises three phases: (1) the actual attack, involving the impact of nuclear weapons, during which time very little can be done other than basic personal things for achieving survival; (2) the survival stage, a stage in which the attacked area might be generally immobilised by fallout. It is usually thought of as lasting a fortnight or three weeks. Action during this stage would need to be concerned with ensuring survival of the population left after the attack by the provision of food, water, shelter and health care from the resources left; (3) a period of three or four years during which the restoration of normal mechanisms of commerce, industry, trade, government, etc., would be striven for.

This last regeneration phase has only recently been considered. Scientific Advisers in particular have been encouraged to concern themselves almost exclusively with problems of fallout, but a great deal of hard thought now needs to be given to this later phase.

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No solutions are offered here, merely a discussion. One needs first to consider the problem of the resolution of the war? Almost all Civil Defence, thus far, has considered post-nuclear attack problems as if the conflict had ceased. There are a number of possible scenarios for this period. One of which is that the enemy has prevailed—that he has inflicted such damage that he is able to impose his political will. In such circumstances our own Central Government authorities just would not be functioning. Local authorities would continue to operate, but only under whatever pressures might be imposed upon them by the enemy.

Another scenario would be that the NATO powers had prevailed. There would be problems, because major consideration would still have to be given to such things as the prevention of the enemy from making damaging last minute gestures of defiance, the restoration of order in enemy territory, etc. Coping with the residue of the war could be a substantial drain on resources available for recovery.

Probably the most likely outcome would be stalemate, with both Eastern and Western blocks completely exhausted and with the original purpose of the war no longer playing a role in their political calculations. Much of the world outside the East/West blocks has a great deal of military power, and one could find that places like Argentina, the Middle East or the Far East could become important agents in the period of recovery, so even in those circumstances there would not be a complete political and military vacuum.

One of the first factors for regeneration would be the maintenance of some kind of government. The initial result of destruction would be the disintegration of society into independently acting individuals and family units. The household might be the self-sustaining entity attempting to survive in a hostile world. Nevertheless it is unlikely that the survivors will be able to develop the subsistence skills of primitive societies and they may soon find that their only effective hope of survival will involve co-operation and common action. Such action can only be organised by some form of government. All home defence plans are based on maintenance of a pattern of government, derived from the peacetime state and this can only be achieved by consent of the people. Fundamentally, government has extremely limited power. Basically, the only power it has is that people consent to be governed, and in a post-nuclear scene of devastation a very likely attitude in individuals will be to heap blame on the government for incompetence and war guilt.

The government, in order to maintain itself for purposes of common action and survival, would need to establish an immediate presence and immediate effectiveness. Unless some of the familiar agents of authority, like the police or the army, who appear to be disciplined, able to cope with the situation and in possession of information, can be injected into the scene, the governing bodies will sit in their controls unable to do anything. Plans for an immediate effective and pervasive presence, for good communications, and for handling information are therefore essential. It matters less that the control group should be of maximum immediate efficiency in the relief of suffering as that it should be seen to be informed and obviously in command of the situation, and to be doing something.

Such government should reduce its functions to the most primitive essential functions, and be highly devolved. It should be seen to be operating in a clear and decisive manner.

Another fundamental requirement is the maintenance of Law and Order. There has been a fair amount of fantasising in the past about the power to be given to the police and such matters as shooting looters, but these are peripheral matters. The principal objectives would be the consent of the community in the imposition of its collective will on its members. So an obvious continuation of existing government will go a long way toward the maintenance of law and order.

Perhaps it would be necessary to arm the police and to have sufficient of them in each place where they are needed, but most of all, the police would need to be seen to be there in support of law which could be seen to be reasonable, and which operated through a system of courts which were seen to be a continuation of peacetime precedents.

Our society is often criticised as having only material objectives. This is probably not true even in existing circumstances, but in times of stress it is even less likely to be true. People need an aim and a will. In survival circumstances people would wish to do the best they could for their own families, so their aims would at first be inclined to be self-centred. The government would need to persuade people to work together however, and toward that end they would need to present a clear set of aims and objectives and get the national will behind it. This is a political process. It is at least as important as material considerations.

The Economy is essentially a system of converting resources into benefits. The problems following a nuclear war would be threefold: (1) few resources; (2) a damaged infrastructure because industry, transport, and other facilities may have been completely destroyed and (3) the normal mechanism by which the economy is controlled, namely money, would have lost credibility.

The first essential consumption needs would be food and water. A diet would be required which ensured survival and gave enough strength for work. A margin would be required too, for enjoyment. Shelter would be required, not simply as protection from weather, but to give sufficient comfort to ensure health and a capacity for work. Fuel and power would be essential. Health care and sanitation may be restricted to what is possible by simple means, but it would be necessary to take some steps to guard against epidemics.

Consumption requirements would increase as regeneration progresses. Quality and variety of diet would increase in people's expectation, as they find questions of mere survival fading more and more into the background. The same would be true of housing and clothing and footwear. Some means of educating children would need to be provided as early as possible. One should never forget the psychological importance of comforts and luxuries such as tobacco and alcoholic drinks.

The most flexible and resilient resource that would be available, is manpower, and it would be available in large quantities. Unfortunately it would often be wrongly located, and people from an advanced technology faced with survival conditions may often find that they lack fundamental skills, like those

required in agriculture. Another priority would therefore be the planning of movement of labour and the training of unskilled people for the new occupations that would be required. Incentives for this would need to be devised.

A great part of our needs for food, water, etc., is provided in peace by centralised systems of machinery which require few operators. These are extremely vulnerable and are likely to be destroyed. The restoration of society is unlikely to be achieved on a basis of replacing existing plant of such kind, and an interim technology would be required, which relies on a lower level of sophistication than we are using at present. Manual methods and simple mechanical methods would have to be resurrected where at present we may be using electrical and electronic methods. It is unlikely that we would go all the way back to methods which were in use in the 19th century. It is more likely that existing scientific knowledge would be used to develop new but simple forms of technology.

The first problem that agriculture would have to face, would be its need to sustain a large population by primitive means. Modern agriculture is highly mechanised and places great reliance on fertilisers. Early agriculture relied on animal power and manual labour. Animal power could not be easily revived for lack of animals. The aim in post-nuclear circumstances would probably be toward some intermediate technology.

The second problem which comes up in every study, is the need to provide fuel and power. The present installations which provide primary power, coal, gas or oil, are extremely complex and depend on centralised arrangements. So does power distribution. These systems may be difficult to restore. There would be a need to improvise and use intermediate technology.

Industry is highly interactive, so the recovery of industry would be hampered by the availability of supplies. The small and intermediate sizes of factory, probably producing quite new kinds of products, may therefore be the key industries to encourage; so ingenuity of design, and adaptation of surviving machines would be come priorities in such a time.

To some extent, the degree to which these remarks are valid depends on what has happened in the rest of the world, and to what extent one would look to other countries for assistance. Industries might then be restored quickly to a pre-war technology provided that transport and building industries can be encouraged quickly to restore roads and vehicles and destroyed premises. If all the industrialised world had been involved, then one would need to start one's recovery at lower levels of technology. Germany was regenerated to a large extent after the war by means of help from the rest of the world. It might so happen that such external aid would need to be paid for, either at a commercial price (if so, what?) or at a political price (if so, what?).

One should further consider trade. A study of previous historical recoveries from collapse suggest that a vital method of such trade recovery would be Free Enterprise. Whereas the government would have a role in regulating strategic matters to do with trade, the quickest results occur when individuals seek personal gain. So one would foster the farmer, foster the small workshop, and foster the individual's self interest as soon as a certain minimum level of provision had been assured. It means that one would have to tolerate a certain

amount of unfairness, speculation, and even bribery as a cheap price for getting things moving again. We already know that in the days of uncertainty which follow a war, money is not useful. A very great deal is achieved by means of barter, and in post-war Germany cigarettes became an important currency, largely because even the people who had money were unable to buy anything with it. Those people with no tangible commodities to barter would have to be paid in goods or special ration entitlements to go with wages, for a time. As soon as there was a sufficiency of goods a new currency would be needed.

In peacetime we live within a very stable structure, where change is relatively slow. Management has relatively a lot of time to decide what it wants to do, and it has time to explore its way into new situations. In a post-nuclear regeneration phase there would be much greater need to make large adjustments and decisions in conditions with which the decision-makers are totally unfamiliar. Scientific management techniques such as systems analysis and Operational Research could form an appropriate approach. They would provide a major task for Home Defence Scientists.

There would be a long term radiological problem in the regeneration phase, and constant monitoring of a Health Physics kind would be required, in order to update that rather sparse knowledge of radiation injury which gathered so far in the first stage.

What can be done to prepare for regeneration within a framework of properly prepared Home Defence plans? In a small target country the cost of total protection of the population and material resources would be too great to contemplate. What can be done is relatively limited and confined to planning. There would need to be a range of adequate properly quantified plans for various scenarios. It would be possible to study in peacetime various forms of alternative technology that might be employed in the regeneration following a nuclear attack. A number of scientists need to be educated and trained in the problems of regeneration, and one needs ways of reaching a far larger number of scientists to put such considerations before them so that wherever a few scientists might survive they will, because they have given some thought to this matter, be in a better position to help in the problems of regeneration than they might have been if they crawled out of the wreckage of war and saw the devastation without having previously given any thought to these problems.

A nuclear holocaust is unacceptable. The only really effective way of protection is not to have war. However, an effective Civil Defence programme could do something to mitigate the consequences. In such a programme preparation for regeneration needs to be included.

