

Introduction

The primary purpose of the Government's defence policy is to prevent war. While on current assessments nuclear war between the major powers is unlikely, scientific achievements in nuclear weaponry, delivery and defence systems, coupled with changes in the international political scene mean that the possibility, however remote, of nuclear attack on this country cannot be entirely dismissed.

It is essential that every police officer should be familiar with the effects of nuclear weapons, the organisation of the emergency services, the scheme of government in war, the increased responsibilities of the police in war and the planning measures to be taken to enable the police service to meet these new responsibilities. This pocket manual has been compiled to that end.

A manual of this nature is essentially a handy reference book of facts and points of guidance. It gives no more than a bare background; more comprehensive information and explanation will be given during training. For convenience, a contents list setting out the headings of paragraphs (and where necessary, sub-paragraphs) within chapters has been included. In cross references within the text of the manual, the first number indicates the chapter, the second is the paragraph number in that chapter and the third shows the appropriate sub-paragraph.

The manual reflects policy current at the time of publication. Amendments and additions may be issued from time to time to keep the contents abreast of policy changes.

This edition replaces the 1966 edition of the *Police War Duties Manual (Scotland)* which should now be destroyed.

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CHAPTER 1

Government in War

1.1 Government Control System

1.1.1 In the event of a nuclear war, damage on a vast scale could be expected—but there would be millions of survivors and they would be in urgent need of the bare essentials of life. Plans have been made to control surviving resources. Broadly the object of these plans would be to maintain a framework of government; to preserve law and order; and to ensure that food, fuel, drugs and other resources would be used to the best advantage.

1.1.2 As long as central government could continue to function from its normal peacetime locations, wartime arrangements would not take full effect. When central government could no longer operate from its customary locations, a new form of government, on a zone basis, would immediately assume control of domestic and internal affairs. In this concept of government-in-war the statutory assignment of responsibilities which differentiates central from local government and which separates, within local government, the region and the district, would be ignored. In peacetime the region or district have separate functions imposed on their respective councils by Parliament but, in war, all the essential functions of internal government would be vested in a Commissioner for Scotland, assisted by Zone Commissioners. Below the Commissioners, there would be two further tiers, the Regional (including Islands Area) Controllers and below them (except in the case of Islands Areas) District Controllers, both appointed after the passing of emergency legislation. This would constitute a wartime integrated command structure for survival: while there might be variations in the nature and degree of responsibility at the four levels, the concept of all-embracing functions essential to the life of the surviving community would be applicable at each level.

1.2 Zone Government

1.2.1 In any future war involving the widespread use of nuclear weapons, it would be impossible to rely on the exercise of powers of

central government. The basis of the wartime machinery of internal government would be the decentralisation and concentration of all functions within three zones. Zone boundaries are shown in Appendix A. Wartime government would be headed by Commissioners having full authority to govern internally. Their authority would derive from emergency powers approved by Parliament in the latter stages of a deteriorating situation before an attack.

1.2.2 Zone Commissioners and their staff would be appointed and take post before an attack but would have no pre-attack executive functions. Government on a zone basis would begin to function immediately after an attack which made normal central government impossible. It would function from special buildings with special communications each designed to make them less vulnerable.

1.3 Scottish Central Control

1.3.1 With nationwide disruption of essential services and communications a form of government approaching that of the present day could not generally be effective for many weeks after a nuclear attack. The powers of civil government, therefore, would be exercised from a Scottish Central Control whose staff would have assembled before attack. However, during the immediate post-attack period Scottish Central Control would have only a co-ordinating role on the grounds that the lower the level at which decisions could be taken, the better they would fit the local situation. The primary task of Scottish Central Control (with help from the zone controls) would be the production and administration of a strategic plan for the continued survival and eventual restoration of Scotland to a more normal pattern of life. In time, these plans would be modified to conform with any United Kingdom strategy which might emerge.

1.4 Regional and District Wartime Headquarters

1.4.1 Emergency legislation would provide for the delegation of local authorities' peacetime powers to a small emergency committee of elected members, and for the nomination of a person (normally the Chief Executive of the authority) to be the Controller.

1.4.2 The Controller of a region (and islands area) would be answerable to the Zone Commissioner and would be empowered to exercise within his own area not only the regions' (or islands') peacetime functions but also those of zone government, in, for example, setting priorities in the restoration of essential services, the allocation of labour, materials, food and transport. The staff at regional wartime

headquarters would be reinforced with representatives from government departments, the police, armed forces, nationalised and private industry to enable the Controller to carry out his wide ranging tasks. At the lower level, District Controllers and emergency committees would likewise be appointed for the administration of their areas and to undertake additional responsibilities laid on them by the Regional Controller. The general effect of these arrangements would be to weld regions, islands and districts executive levels into an integrated system of wartime government.

1.4.3 Regions, islands and district authorities plan to operate from protected accommodation. In addition, regions and islands areas will have communications links to the zone control.

1.4.4 In the post-attack period, a heavy burden would fall on the local authorities. The immediate tasks would be to prevent further loss of life and to provide water, food, shelter and medical attention for survivors. Regions, islands areas and districts would have to provide the administrative structure necessary to restore and maintain the really essential services and to co-ordinate the best use of resources for the continued survival of the community. It would be vital to maintain the closest working relationship between the Regional and District Controllers' organisation and the police in the maintenance of public order.

CHAPTER 2

Police Preparation for War**2.1 Police Organisation**

2.1.1 The Secretary of State for Scotland has designated Her Majesty's Chief Inspector of Constabulary for Scotland to be the adviser on police matters at Scottish Central Control and has designated three Chief Constables to be Zone Police Commanders. In peacetime the Zone Police Commanders (designate) co-ordinate police war planning and the training of police officers in home defence duties. Each Zone Police Commander, when formally appointed to his wartime role, will assume overall command of all police forces within his zone; however, this command will be exercised through Chief Constables and normal force systems of command and control will continue to operate. The Zone Police Commander will derive his authority from his Zone Commissioner who will have power, under emergency legislation, to give directions to the police.

2.1.2 Police forces will remain under the command of their own Chief Constable operating from force wartime headquarters. Chief Constables will be responsible for all operations in the force area and for maintaining police mobility in order to facilitate internal and mutual aid reinforcement. There will be close operational links with the appropriate local authority at Chief Constable and Divisional Commander level.

2.2 Manpower and Recruitment

2.2.1 Special tasks coupled with day to day work will impose big demands on all forces. At the same time police manpower will, as far as possible, have to be conserved for the vital law and order tasks which will follow a nuclear attack.

2.2.2 Police forces will therefore need a considerable increase in manpower to carry out these additional duties. Police strengths will be enlarged by the enrolment of police auxiliaries who will have the full powers of regular police officers. Their training and uniform will be a matter for improvised arrangements at the time.

2.2.3 Chief Constables will have powers to prevent police officers from leaving the service; this will apply both to officers who wish to resign and to those who have reached the age of compulsory retirement.

2.2.4 The Special Constabulary will be called upon for extended periods of service in war.

2.2.5 Members of the public who volunteer will, if suitable, be invited to join the Police Auxiliaries or Special Constabulary. Applicants already engaged on work essential to the national interest will not be eligible for enrolment.

2.3 Mutual Aid

2.3.1 In order that the available manpower may be used to the best advantage, police forces will have to be prepared, at short notice, to aid each other in accordance with section 11 of the Police (Scotland) Act 1967 and as advised and directed by the Zone Police Commanders. With their own transport facilities supplemented by dormant vehicle hire contracts, together with power (when available) to requisition and use other motor vehicles, forces will be fully mobile.

2.4 Mobilisation

2.4.1 The flexibility needed to balance manpower requirements before and after attack will be provided by Police Support Units (PSUs) which are mobile contingency units, raised on a force basis. They remain under force control up to and beyond the time of attack, leaving Chief Constables with the maximum resources and operational discretion to react to, and control, events in their own areas. PSUs will comprise about 20% of the regular male police strength of each force. Chief Constables, on receipt of a message from the Scottish Home and Health Department, will take steps to mobilise police support units in accordance with pre-arranged plans.

2.4.2 Those units in potential target areas will as far as possible be deployed and housed at or near a divisional headquarters with a good protective factor (see paragraph 2.6.1). The time at which such deployment is ordered will be a matter for the Chief Constable's judgement in the light of guidance from government sources and the needs of the local situation.

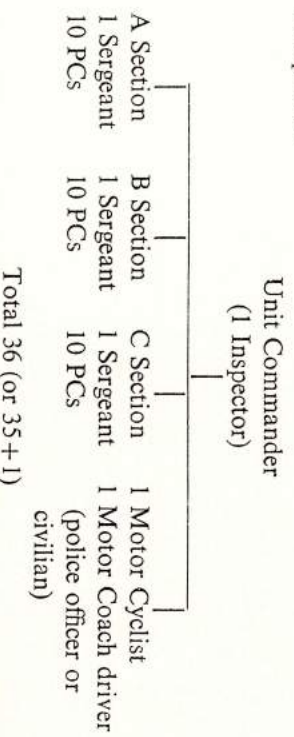
2.5 Police Support Units (PSUs)

2.5.1 **Establishment** A police support unit consists of 35 regular male police officers and a civilian driver. Alternatively, by local

arrangement, a police officer may replace the civilian driver. The organisation of personnel and vehicles is shown in later paragraphs. It will be seen that the units rely largely on existing resources of police transport.

2.5.2 Manpower and Vehicles The following organisation is recommended for each support unit:

a. Manpower:



b. Vehicles:

One personnel carrier (40 seater coach) to transport the unit in its entirety; one traffic car of the recommended type as the command control vehicle for the Inspector in charge; one to three vehicles (dependent on availability) of the Panda car type for deployment of separate sections of the unit; one 500 cc motorcycle with radio for reconnaissance and despatch rider duties.

2.5.3 Administration Each force will be responsible for all matters connected with the efficiency of its police support units—accommodation, food, petrol, oil, communications and vehicle replacements. Supply and support, when operating away from their own bases, will be the responsibility of the divisional headquarters in whose area each PSU is deployed.

2.5.4 Training No additional war duties training will be given to personnel designated for police support units.

2.5.5 Command and Control Units will be deployed on a divisional basis under the operational control of the Divisional Commander. The Unit Commander will be responsible for orders to his men to ensure that tasks are carried out. If units are deployed before attack on tasks outside their own force boundaries, then the existing peacetime arrangements for control of mutual aid reinforcements will apply. Individual support units will not be amalgamated to make zone formations although circumstances could arise when several units are required for a major incident. In such circumstances the

Chief Constables involved would appoint a more senior officer to command the operation.

2.6 Protection of Police Buildings and Security

2.6.1 Steps will be taken to increase, where necessary, the protective factor of police premises against radioactive fall-out (see also paragraph 4.8). As far as possible personnel at police stations will be accommodated in buildings affording good fall-out protection. Additional protection will be given to important rooms such as communications centres. Windows will be treated against flash and combustible materials will be removed from vulnerable places. Water will be conserved for fire fighting. Equipment for fire fighting will be augmented and distributed. Additional protection will be given to petrol and other fuel supplies.

2.6.2 Security arrangements at police premises, including the safeguarding of documents, will be reviewed and strict security discipline within the service will be observed.

2.7 Accommodation, Equipment and Supplies

2.7.1 Food, Fuel and Power Stocks of food, water, sanitary necessities, fuel, batteries and other lighting equipment will be necessary for personnel on duty for prolonged periods. Additional stocks of food and fuel will be required at divisional headquarters for the provisioning of PSUs. Steps will be taken to secure fuel supplies for the police and other essential users. To provide against the failure of electricity supplies and to preserve communications, generators have been installed at selected points.

2.7.2 Additional Premises, Vehicles and Stores Requisitioning powers will be available under the Emergency Regulations and these powers will be used, when necessary, to obtain additional premises, vehicles and other equipment for police use.

2.7.3 Radiac Instruments Arrangements have been made for the collection of radiac instruments in an emergency from Scottish Home and Health Department Stores, and for their distribution within police forces. Further information about radiac instruments is contained in Chapter 5 and the planned scale of issue is set out at Appendix I.

2.7.4 Firearms It is envisaged that only members of police forces assigned to certain special duties may have to carry firearms.

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2.8 Other Services and Organisations

2.8.1 **Essential Services** Government departments, nationalised and private industry and all forms of essential services which are accepted in peacetime as part of our daily lives have their own special contributions to make to the survival of the nation after nuclear attack. There will be three services with which the police can expect to work closely.

2.8.2 **The Fire Service** Plans provide for the deployment of the fire service in a large number of small units, called companies. A company equipped with peacetime appliances will be known as a 'red company': a company equipped with emergency appliances withdrawn from Scottish Home and Health Department Stores will be known as a 'green company'. Companies will remain under control of the Brigade Firemaster subject to any direction from the Zone Commissioner.

2.8.3 **The Hospital Service** Plans are under preparation which are designed to make the best use of the resources available in the country as a whole. The aim is to provide as much casualty accommodation as possible by restricting the admission to hospital of other patients to urgent cases only, and by the early discharge of patients. In addition, First Aid Posts and Casualty Collecting Posts will provide facilities to screen casualties, to give emergency and supportive treatment to the seriously injured, to hold those who cannot, or need not, be sent on to hospital, and to treat and discharge any lightly injured.

2.8.4 **Armed Forces** At all times, whether in peace or war, the armed forces support the civil authority in the United Kingdom: elements of all three services not committed to other military duties will be available for home defence. On completion of their operational tasks all surviving members of the armed forces will be reorganised to carry out home defence duties. In order to command and control armed forces personnel allocated to home defence a Military Commander will be appointed in Scotland with a subordinate Zone Military Commander at each zone control. At region and islands area level, there will be a Joint Service Liaison Officer (JSL.O) whose duty will be to advise the Controller and the Chief Constable on the availability and capabilities of armed forces resources. Although in an emergency the peacetime procedures of mutual aid and co-operation between the armed forces and the police will generally apply, the decision to give specific military support to the police will be made at Zone Commissioner level. The most likely forms of support will be

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the takeover of tasks, such as static guard duties, to release the police to their primary role, and when the situation calls for it, to support the police in the maintenance of law and order. Armed forces units will function under their own officers: any alteration to the allocated tasks must be made through the officer in charge of the unit. Units will normally be formed as companies consisting of 3 Platoons of 25-30 men under the command of a Major or equivalent rank. Each Platoon commanded by an officer, will be divided into 3 sections under command of a non-commissioned officer.

2.8.5 **Co-operation** In a war situation police will have to work more closely with other services and organisations at all levels of command. To attain the co-operation and co-ordination which will be needed, valuable time, effort and resources must not be wasted by vague or incomprehensible communications. Appendix B gives some simple guidance on the preparation of orders, instructions and briefings which, in addition to being useful at all times, are particularly pertinent to inter-service communications. It is most important that police officers should be able to read maps correctly and to locate and state map references accurately. Appendix C gives guidance on map reading and the preparation or interpretation of map references. Symbols for use in plotting on maps to signify police premises and boundaries are illustrated at Appendix D. These symbols are much used for planning and exercise purposes in peacetime and would be employed extensively for war operational tasks by other services and organisations as well as the police.

Communications in War

have at its disposal any surviving line and radio links from the networks of essential services such as the police, fire service, other local authority services, armed forces, UKWMO and public utilities (gas, electricity, coal).

3.3 Police War Communications

3.3.1 Police would continue to use, so far as practicable, their own peacetime communications systems.

3.3.2 Police officers at the various levels of home defence controls and war headquarters would be able to utilise the exclusive network referred to in paragraph 3.2.1. The Zone Police Commander would have access to the inter-force radio network to maintain contact with the Chief Constables in the zone.

3.3.3 Apart from total loss in the vicinity of a nuclear explosion, all communications systems would be liable to disruption by physical damage to switching centres and control points, failure of electric power and the immobilising effect of fall-out. Alternative methods of communications (radio, field telephones, messengers and despatch riders) might have to be brought into use.

3.3.4 Messages whether spoken or written should be brief and contain only necessary detail. The NATO phonetic alphabet (see Appendix E) would be used on all occasions.

Communications in War

3.1 Police Peacetime Communications

3.1.1 Very High Frequency (VHF) systems are used for Headquarters to Mobile communications and in most forces Ultra High Frequency (UHF) systems are used to provide Personal Radio networks. Many forces have mobile radio equipment which can be brought into use to provide emergency networks at major incidents or when there is a temporary breakdown in line communications (speech and teleprinter). In most areas there is inter-force communication by radio. Telex, the Post Office public teleprinter system, is used throughout the United Kingdom for inter-force purposes.

3.2 Home Defence Communications

3.2.1 To enable wartime government to function more effectively, an emergency system of communications has been developed to supplement the peacetime networks. This system consists of an exclusive speech and teleprinter line network and a special radio system. Private wires have been specially routed to avoid likely target areas so as to reduce their vulnerability to damage. The system links Scottish Central Control with the Zone Controls and the Zone Controls with Regional Wartime Headquarters. Scottish Central and the three Zone Controls are each linked to the United Kingdom Warning and Monitoring Organisation (UKWMO), and to Armed Forces Headquarters. In general, District Wartime Headquarters will have to rely on surviving peacetime Post Office lines for communication links to their Regional Wartime Headquarters, supplemented by any networks improvised at the time.

3.2.2 To reduce congestion and provide some service to essential users, the Post Office will invoke a previously arranged preference scheme. Each force provides the General Manager of the local telephone area with a list of the telephone numbers to receive preference.

3.2.3 After attack, priority would be given to the restoration of links in the government communications network which would also

Effects of Nuclear Explosions

4.1 Nuclear Explosions

4.1.1 Nuclear explosions result from the sudden release of the vast amount of energy locked up in the core of the atom. The term 'nuclear' includes both atomic and hydrogen weapons. The atomic bomb dropped on Nagasaki in Japan at the end of the last war had a power of twenty thousand tons (20 Kilotons (KT)) of high explosive (HE), but thermo-nuclear weapons may have an energy release equivalent to the explosion of many millions of tons (Megatons (MT)) of HE.

4.1.2 When a nuclear weapon explodes, its contents are transformed into a white-hot, radioactive 'fireball' with a temperature as hot as the sun's interior. The point on the ground vertically beneath the point of explosion is referred to as Ground Zero (GZ).

4.2 Immediate Effects

4.2.1 **Heat** A nuclear explosion in the megaton range creates a huge white-hot fireball lasting for about 20 seconds which gives off tremendous heat. This heat is so intense that it can kill people in the open up to several miles away. It can also burn exposed skin much further away. Striking through unprotected windows many miles away it can set houses on fire.

4.2.2 **Immediate Radiation (Neutrons and Gamma Rays)** Radiation is emitted instantaneously from the fireball and lasts for about one minute. Gamma rays have great powers of penetration and can cause death if a large quantity enters the body. This immediate radiation does not, however, extend more than about 2½ miles from the explosion and anyone close enough to be affected by the radiation from megaton bursts would be likely to be killed by heat or blast.

4.2.3 **Blast** Following the heat effect, there is a blast effect caused by shock waves of beyond hurricane force which displace the surrounding atmosphere. Buildings will be destroyed or severely

damaged for several miles around Ground Zero, and there can be lighter damage for many miles beyond. In areas further away, although houses may not suffer structural damage, windows will be broken and there will be danger from flying glass.

Data on nuclear weapon effects, excluding radioactivity from fall-out, are shown in Appendix F.

4.3 Delayed Effects (Fall-out)

4.3.1 Apart from the immediate radiation caused by a nuclear explosion, there may be delayed, but continuing, danger from residual radioactivity due to fall-out.

4.3.2 'Fall-out' is dust sucked up from the ground by the explosion and made radioactive in the rising fireball. It rises high in the air and is carried down-wind, falling slowly to earth over an area which may be hundreds of miles long and tens of miles wide. Within this area everything in the open will be exposed to radioactive fall-out. Fall-out will start to reach the ground in the heavily damaged areas near the explosion in about half an hour. Further away it can take longer and about one hundred miles away, depending on the wind speed, the fall-out might not begin to come down for four to six hours. The existence of such delayed danger depends primarily on whether or not the fireball touches the ground when the explosion takes place, and this in turn depends on the height of the burst and the power of the bomb.

4.3.3 Like X-Rays, radiation given off from the fall-out cannot be seen, felt, heard or smelt. It can be detected only by radiaic instruments with which the police and other essential services will be equipped (see Chapter 5). Exposure to radiation can cause sickness or death. The unit of measurement of radiation dosage is the roentgen (r). The rate at which radiation is emitted (the dose-rate) is measured in roentgens per hour (rph).

4.4 Principles of Radioactive Decay

4.4.1 The intensity of radiation from fall-out decays with time. (A simple analogy is the cooling of a red-hot poker). This decay cannot be hastened, nor can radioactivity be reduced other than by the passage of time. The basis of a formula by which the rate of fall-out decay can be calculated is that the intensity of radiation decreases by a factor of ten for every sevenfold increase in time, where time is expressed in hours from bomb burst.

For example:

If at H + 1 (ie one hour after bomb burst) the dose-rate is 100 rph, *and falling,*

$$\text{at H + 7 the dose-rate will be } \frac{100}{10} = 10 \text{ rph}$$

$$\text{at H + 49 the dose-rate will be } \frac{100}{10 \times 10} = 1 \text{ rph}$$

Radiation may decay in an irregular manner so that predictions based on the formula can only be approximate: levels of intensity must be checked from time to time and predictions modified accordingly.

4.4.2 This formula can be applied to any time after bomb burst provided that the fall-out maximum (FOM) has occurred. If at H + 2 the dose-rate is 100 rph, and falling, then

$$\text{at H + 14 (ie 2 hours } \times 7) \text{ it will be } \frac{100}{10} = 10 \text{ rph}$$

4.4.3 Paragraph 5.6 deals with the measurement of radiation and recording of dose-rates while paragraph 5.7 describes the Radiac Calculator No. 1 with which dose-rate predictions can be computed.

4.5 Effects of Radiation on Individuals

4.5.1 The general conclusions emerging from research in recent years are that the body exhibits a two-stage response to radiation:

- a. the first stage is a relatively quick response to radiation doses received within about one day, which awakens a dormant tolerance to an initial exposure, making the body insensitive to the first dose of radiation up to about 150 r;
- b. the second stage is a slow response, consisting of the gradual replacement of cells killed by previous radiation, by virtue of the division and growth of neighbouring cells. This slow dead-cell replacement phase represents recovery from injury in the normal sense. It is estimated that the recovery rate is at least equivalent to 10 r per day.

Doses of radiation which exceed the body's response can cause irreversible damage to cells and can lead to long term illnesses, including anaemia and leukaemia as well as tumours and cancers of the bone or tissues. These excessive doses are said to endanger the 'Radiological Life' of the individual.

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4.5.2 Radiation doses of over 150 r will produce incapacity varying from general malaise at the lower ranges to more severe symptoms such as nausea and vomiting in the higher ranges. This is known as 'Radiation Sickness'.

4.5.3 Doses greatly in excess of 150 r would be matched by heavy mortality and in all surviving cases there would be an increasing risk of long-term fatal illness.

4.6 War Emergency Dose of Radiation

4.6.1 As a general rule a War Emergency Dose (WED) of 75 r will be the maximum permitted in the execution of essential operational tasks *except* in the circumstances outlined below.

- a. People engaged on vital tasks may undertake a second period of duty which could involve an additional dose of 75 r (making a maximum total dose of 150 r), provided there is a rest period of about 8 hours between the two duty periods;
- b. People who have remained in shelter for several days and have accumulated radiation doses while in shelter, may undertake essential tasks provided the total dose acquired in shelter *and* in performing the task does not exceed 150 r and provided further that this maximum of 150 r is acquired in a period not exceeding 7 days.

Every person performing operational duties should, if possible, maintain a record of radiation dosages received: the form which this record should take is set out at Appendix G.

4.6.2 The dose of 150 r must be regarded as a maximum to be permitted only when the result of working in the open justifies the expenditure of peoples' radiological life; every effort must be made to confine the dose to as low a figure as possible. No police officer should continue to work in the open after he has received the total dose of 150 r. (See also paragraph 9.4).

4.7 Radioactive Poisoning

4.7.1 Radioactive poisoning may occur when radioactive contamination, usually harboured in dust, is taken into the body, either in breathing, eating and drinking, or through wounds and abrasions. This will give rise to symptoms similar to those of radiation sickness. Where, however, it is possible to control exposure within reasonable limits, the hazards from radioactive poisoning alone are not likely to be serious.

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4.8 Protective Measures

4.8.1 Guidance will be given through national and local news media at an appropriate point in the pre-attack period. This guidance will include advice against a mass movement of the public on the grounds that, since the pattern of any attack and subsequent fall-out cannot be predicted, better protection can be obtained by staying in their own houses. Movement to a different area could result in people being caught out of doors with little or no protection. Further, any influx of population from another area would inevitably strain local authority resources to cope with essential services. Police officers will be called upon to interpret and supplement national announcements in their own areas.

4.8.2 Any form of screening between the body and a nuclear explosion provides protection to some extent against heat, immediate radiation and blast.

4.8.3 Speed in reaching cover is all important.

4.8.4 The penetrating rays of radiation are reduced by heavy and dense materials such as brick walls, concrete or hard-packed earth. The denser and thicker the materials the greater the degree of protection. Basements and ground floors of buildings offer better protection than upper storeys, and a room in the centre of a building is better than one with an outer wall. Thus, buildings with very large windows, which cannot readily be blocked, would be the least desirable for protective purposes. Trench shelters covered by the equivalent of 18 inches (45 cms) of earth also afford very good protection.

4.9 Food and Water

4.9.1 Gamma radiation of the intensity emitted in nuclear explosions has no harmful effect upon either food or water. The main problem is to protect household supplies against contaminated dust which might eventually find its way into the body. Food should be kept in sealed tins, cartons or plastic bags. In the first few weeks after attack it is likely that the provision of meals by householders over a large part of the country would need to be supplemented by local authority emergency feeding services.

4.9.2 Water supplies will be of special importance since, although people can survive for a while on little or no food, they must have water. Water supplies could be disrupted in or near damaged areas and might be contaminated by sewage or radioactive fall-out. Emergency reserves of drinking water, stored in stoppered or covered containers, are vitally important.

CHAPTER 5

Detection and Measurement of Radiation**5.1 Radiac Instruments**

5.1.1 Radioactivity cannot be detected by any of the senses: special instruments, known as radiac instruments, are necessary. The instruments used for detection and calculation are:

- a. Dosimeter
- b. Charging unit
- c. Survey meter
- d. Radiac calculator No 1.

5.2 Dosimeters

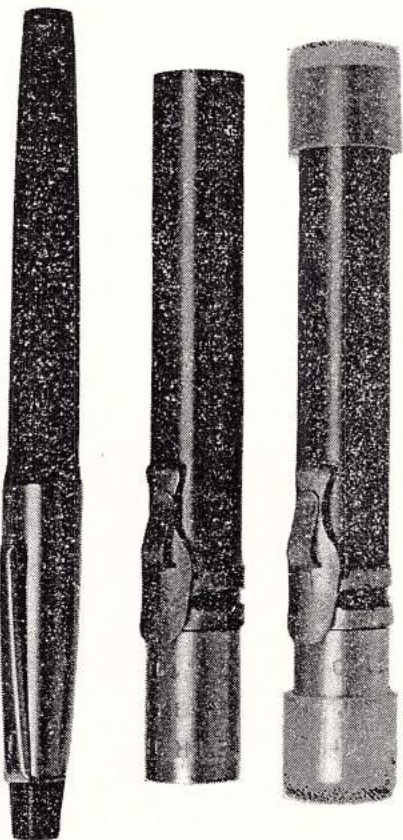
5.2.1 These measure the cumulative dose of radiation which its holder absorbs. The main operational version, known as dosimeter No 4 gives readings from 0 to 150 r. Other versions, which are mechanically the same but having scales with different readings may also be in use. A dosimeter is used by looking through it—like a telescope—and a reading is obtained by noting the position of a hairline on the scale. This gives the amount of radiation received by the *instrument* since last charged and set to zero.

5.2.2 Dosimeters can conveniently be carried in a pocket. (See Figure 1 which shows dosimeters, with and without protective end caps, in comparison with a fountain pen).

5.3 Charging Units

5.3.1 The dosimeter has to be charged before use in order to bring the hairline to the zero position on the scale; when exposed to radioactivity it is gradually discharged causing the scale reading to increase. There are two types of charging unit for dosimeters; a dynamo type, operated by a few turns of the handle and independent of batteries; and a battery operated version, which is transistorised, more compact and simpler to use than the dynamo type, but, of course, dependent on its battery. Dosimeters may be recharged at

Figure 1. Individual Dosimeters.



the nearest charging unit, regardless of ownership. Thus, the police will make their units available to other organisations and *vice versa*.

5.3.2 Figure 2 illustrates a battery operated transistorised type of charging unit, and Figure 3 illustrates the dynamo type.

Figure 2. Battery Operated Charging Unit.

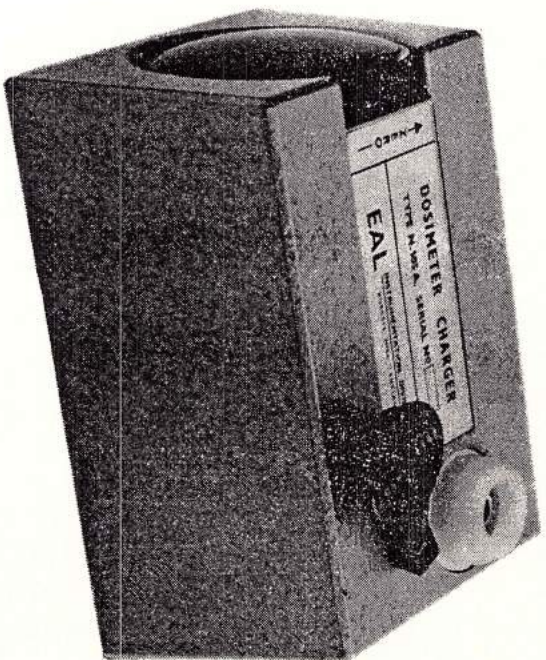
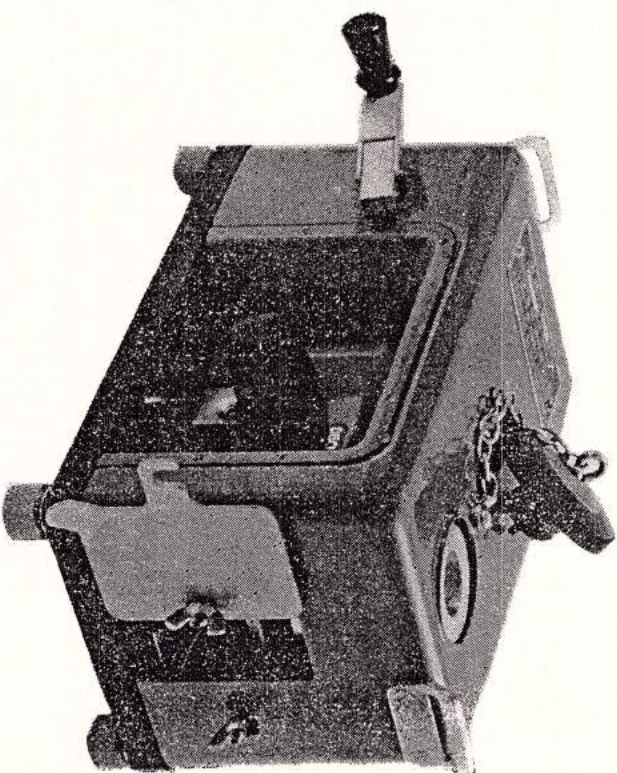


Figure 3. Dynamo Type Charging Unit.



5.4 Survey Meters

5.4.1 A survey meter detects the presence of fall-out and measures the rate at which radiation from fall-out is received. Three versions will be issued to the police:

- a. Survey meter No 1—single scale range: 0-3 rph
- b. Survey meter No 2—three scale range: 0-300 : 0-30 : 0-3 rph
- c. Lightweight survey meter AVO—scale range: 0-100 rph.

5.4.2 Figure 4 illustrates the survey meter No 2 and the accompanying carrying case, and Figure 5 illustrates the lightweight survey meter. Survey meter No 1 is not illustrated as it is similar to the No 2 model.

5.5 Operating Instruction

5.5.1 Police officers should receive training in peacetime in the operation of radiaac instruments. In addition, when radiaac instruments are issued from store for operational use there would be an accompanying issue of the necessary operating instructions.

Figure 4. Survey Meter No. 2 (with Carrying Case).

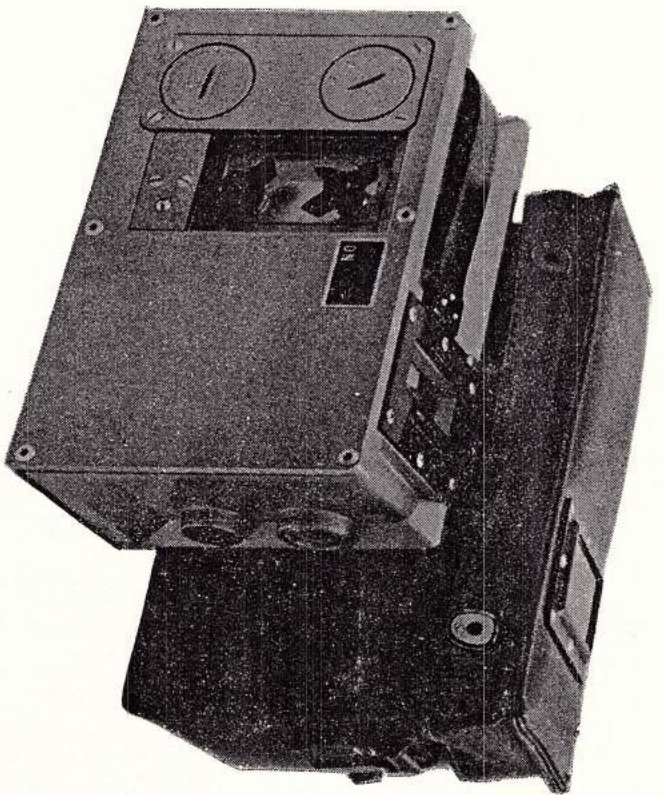
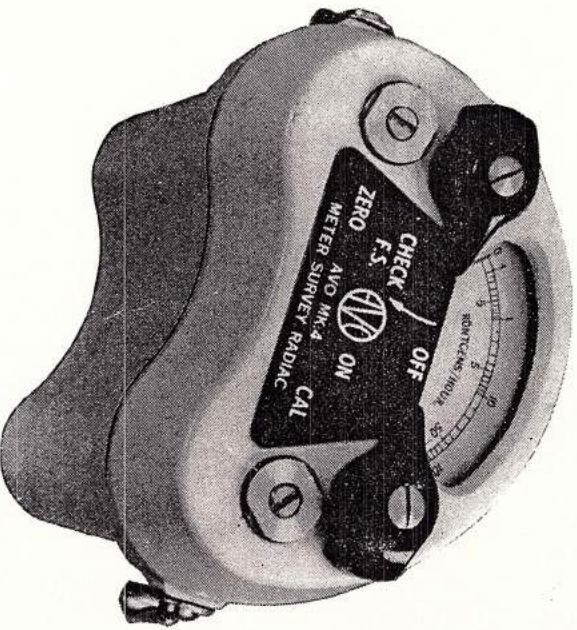


Figure 5. Lightweight Survey Meter.



5.6 Measurement of Dose-rate

5.6.1 When a fall-out Warning (BLACK Warning) is received (see paragraph 8.4.2) readings on a radac survey meter should be taken in the open air at ten minute intervals. The meter should be switched off between readings to conserve the battery. As soon as the meter registers the arrival of fall-out it should be monitored continuously and readings at five minute intervals should be recorded on a radac log (see Appendix H). If a dose-rate of 3 rph in the open is reached the operator should retire into a building, keeping the survey meter switched on, and should seek a position at which the reading goes down to 0.3 rph. This spot should be marked to indicate that here the building is giving protection to a factor of ten, i.e. that the Protective Factor (PF) is about 10. Using the survey meter the operator should then investigate where within the building the best possible protection can be obtained. Having done so the operator should return to the meter, still switched on, to the marked spot and then withdraw to the position of best possible protection. The operator should return to the meter at ten minute intervals to take and record a reading before again retiring to the best protection area.

5.6.2 As the dose-rate rises it may be desirable, for greater protection to the person reading the meter, to move the survey meter further inside the building. Such a move should in any case be made when the survey meter reading, at the spot where the PF is 10, reaches 3 rph (that is, an external dose-rate of 30 rph). The meter should then be moved to a second position where the reading is 0.3 rph or the nearest approach to that figure. Provided that no time is wasted between readings, the ratio between this second figure and 30 (the estimated external figure) will indicate the PF for the second position. Later readings taken at the new spot can therefore be converted into external dose rates.

5.6.3 For example, if the first position with a PF of 10 has an internal reading of 3 rph the external dose-rate is 30 rph. By moving to a new position where the internal reading is 0.3 rph (a tenth of the original internal reading, or a hundredth of the external reading), the PF of the new position is ten times greater than the original internal position or a hundred times better than the external figure, i.e. the new PF is 100. If the new position reading is 1 rph it is a third of the old internal reading (or a thirtieth of the external reading) therefore the PF is three times better than the first internal position (or thirty times better than the outside reading) giving a PF of 30.

5.6.4 The instrument readings should continue to be recorded at ten minute intervals and external dose-rates calculated. When readings begin to show a lower intensity it will mean that fall-out in the immediate vicinity has reached (and passed) its maximum. The maximum reading is referred to as the Fall-out Maximum (FOM) reading. Once this point has been reached the meter should be switched off and readings taken only at half hourly intervals. Readings should continue to be made (a) in case as a result of further attack fall-out shows an increase and (b) so that estimates can be made as to current external conditions. When the estimated external dose-rate is less than 100 rph a quick check out of doors should be made to obtain an accurate external dose-rate reading with which to confirm the protective factor (PF) of the refuge.

5.7 Radiac Calculator No 1

5.7.1 This is a circular form of slide rule based on the decay law for radioactivity described in paragraph 4.4. Given the dose-rate at a known time after a nuclear burst (once fall-out maximum has been reached) a number of calculations may be made. For example, the dose-rate at any future time; the time at which a certain dose-rate will be reached through decay; or the total dose which would be accumulated by people staying in a radioactive area can be worked out. Instructions are printed on the back of the calculator.

5.7.2 Figure 6 illustrates both faces of the Radiac Calculator No 1.

Figure 6(a). Radiac Calculator (front).

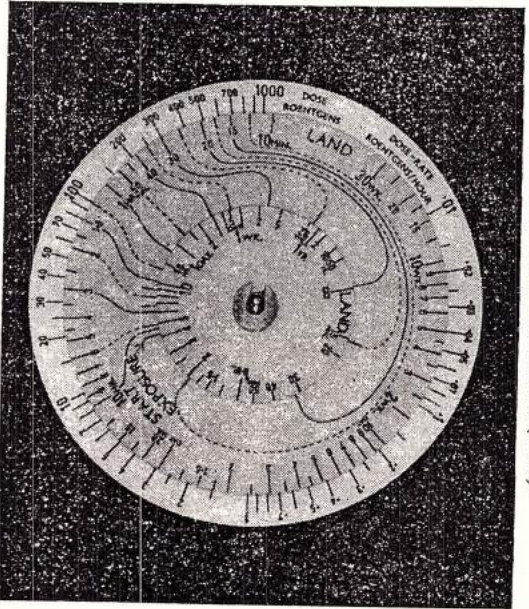
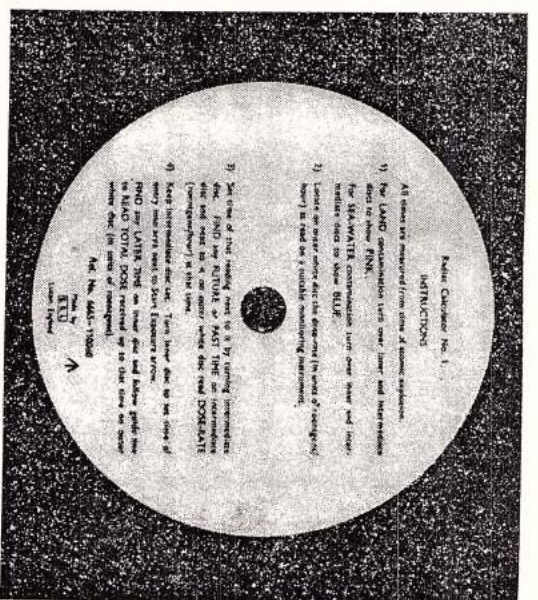


Figure 6(b). Radiac Calculator (reverse).



5.7.3 A number of other radiac calculators which have been developed to provide for special operational requirements are in use. In all cases operating instructions are printed on the reverse side of the calculator.

5.8 Issue of Radiac Instruments

5.8.1 As stated in paragraph 2.7.3, it is planned that radiac instruments will be issued to the police in a war emergency on the scale set out at Appendix I.

Public Survival under Fall-out Conditions

6.1 Assessment of Fall-out Hazards

6.1.1 Current attack assessments suggest that, following a nuclear attack, large parts of the country would be covered by fall-out. Radiation strengths initially would be lethal in many places, reaching thousands rather than hundreds of roentgens per hour (rph). In this kind of situation, it is no longer sensible to plan for the movement of people from places of high radiation to places of little or no radiation, even assuming it would be physically practicable to do so. 'Safer' areas (if any) will be few and far between and exposure to intense radiation on the way would almost certainly outweigh any benefit derived from movement to a place where the radiation might be less intense. Generally speaking people would be better sheltering in their own homes or in other suitable nearby buildings.

6.2 Public Protection from Fall-out

6.2.1 The public would be advised before and after attack to stay in their homes or, if caught away from their homes, to take cover in the nearest building offering protection. They would be told repeatedly how to increase the protection offered by their homes. The protective factors of houses, even when increased by improvised means, vary considerably. The table in Appendix J is based on an average protective factor of 15. If an area were known to have a significantly higher average factor, release procedures could be correspondingly speeded up. Conversely the procedures could take more time in areas with an average factor of less than 15.

6.3 Advice to Householders about Fall-out Hazard

6.3.1 Before attack, householders would be advised to accumulate supplies of food and water and there should be no general need for the repositioning of households to be organised during the first few days after attack when radiation would be at its highest. Except for the areas in which there is no problem from fall-out, operations

would be planned on the basis that the public remained under cover for at least the first two days after attack. Knowledge gained from recent experiments suggests that several days in close confinement would be acceptable provided essential supplies and, importantly, authoritative information were made available to the occupants.

6.3.2 In an area where the dose-rate seven hours after bomb burst (DR7) is 300 rph or more the Controller would not, without prior orders from the Zone Commissioner, advise the public to emerge from refuge until at least six full days had elapsed.

6.4 Release from Shelter

6.4.1 As soon as the threat of further attack has passed, All Clear messages (WHITE Message) would be given by the United Kingdom Warning and Monitoring Organisation to those areas which had not received fall-out and were no longer under threat of fall-out. The All Clear would be sounded by the steady siren note and could be supplemented by other means such as announcements on the radio (see also paragraph 8.3).

6.4.2 Total release from movement restrictions outdoors would be authorised locally when the radiation level had fallen to 0.5 rph. On the assumption that everyone would spend no more than 18 out of 24 hours in the open, the daily dose of 9 r absorbed under these conditions would not itself give rise to further serious injury (see paragraph 4.5.1).

6.4.3 Appendix J describes a scheme for release from shelter for limited periods which could be implemented in the interval before total release is reached.

6.5 Accumulated Doses of Radiation

6.5.1 The radiological condition of people at the end of 7 days is illustrated in the following table. Within this period the greater part of the total dose which would be accumulated while fall-out occurred would have been absorbed and those exposed to heavy doses would begin to show obvious symptoms (see paragraph 4.5.1).

Accumulated Dose (r)	Radiation Injury
up to 220	
220-320	No mental or physical deterioration
320-420	Radiation sickness but no deaths
420-520	Deaths rising to 50%
	Deaths rising to 100%

6.5.2 It should not be inferred from this table that 220 r could be safely absorbed in any period of time, however short. A dose of that order would be relatively harmless only if spread over 7 days in shelter.

CHAPTER 7

Police Responsibilities in a War Emergency

7.1 Peacetime Responsibilities in War

7.1.1 The principal peacetime responsibilities of the police—prevention of crime, preservation of life and property, maintenance of law and order and detection of offenders—would continue in a war emergency situation and indeed would make greater demands on police manpower.

7.2 War Emergency Legislation

7.2.1 **Regulations and Orders** A war emergency would also produce many other duties and responsibilities which would arise from the implementation and enforcement of regulations and orders made by the Government. These additional responsibilities would include:

7.2.2 **Internal (National) Security** The police would be required to undertake special measures to maintain internal security with particular reference to subversive activities.

7.2.3 **Guard Duty** The police would have to undertake guarding of vital installations and the protection of areas of special security. This would include safeguarding of food, fuel and other essential supplies. The armed forces would co-operate in this activity.

7.2.4 **Warning Duties** The police would provide personnel to man National Warning System equipment at Carrier Control Points and would ensure manning of carrier receivers at Warning Points (see paragraph 8.1.3). Messages to the public would also have to be supplemented by police sources using loudspeakers and other means. This might include augmenting Government-directed national or area messages concerning movements of the public or other vital matters.

7.2.5 **Co-operation with Armed Forces** Close co-operation would exist between police and armed forces. The police might be called upon to assist the armed forces in the following ways:

- a. *Mobilisation of Reserves*—It will be particularly important to ensure that no public demonstrations or other anti-war activities disrupt or retard mobilisation.
 - b. *Movement of Personnel and Equipment*—The armed forces would require to make large-scale movements of both men and materials during a war emergency situation and police would be concerned in both the choice of routes and the control of movements.
 - c. *Billeting and Requisitioning Orders*—Buildings, vehicles and materials essential for war emergency use have been earmarked for requisitioning by Government orders. The police can be expected to participate in the service and authentication of billeting orders and other requisitioning orders.
 - d. *Military Offenders*—The police would be required to assist the armed forces in the apprehension, detention and transfer of deserters and other military offenders to military custody.
 - e. *Prisoners of War*—If the police capture a prisoner of war the nearest military unit should be contacted. The unit concerned would then arrange for an escort to collect the prisoner of war and take him into military custody.
- Detailed instructions about the action to be taken while prisoners of war are in police custody are given in Appendix K.

7.3 Police Role in War

7.3.1 *Relations with Public* After a nuclear attack the importance of the disciplined police manpower to national survival will be immense. The public will look to the police as a source of guidance, example and authority. It is vital to restore public morale and to maintain in society a respect for law and order. All police actions must be conducted with a view to obtaining the active co-operation of the public. Without public co-operation measures for national survival, however well conceived and planned, would have little chance of success. In a post-attack situation priority tasks for police would be:

7.3.2 Control of Public

a. *Movement of Population* It would be a major police responsibility to control the public and to minimise mass movements of homeless and others which would congest roads and hamper movements of essential vehicles and equipment. Because of danger from fall-out after nuclear attack, the public should, so far as is possible, be advised to remain under cover at their own homes,

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but it is anticipated that there could be problems of uncontrolled public movement.

b. *Essential Service Routes* Certain motorways, trunk roads and other Class A roads throughout the country have been designated as Essential Service Routes (ESRs) for use by essential traffic both before and after attack. Priority would be given to keeping these roads free of refugees and non-essential traffic to ensure the free flow of essential services. Police would have to regulate all traffic on these routes in co-operation with the armed forces and in accordance with instructions from higher authority. Modification of routes after attack would be necessary as a result of damage and fall-out. Police would also be concerned with planning, co-ordination and reporting of large-scale movements of traffic on ESRs.

7.3.3 *Rescue and Lifesaving* It must be accepted that, in many affected areas, the surviving public would need to do as much as possible for themselves since it might be many hours or even days before assistance from other areas could be brought into action. In these conditions the police, without unnecessarily endangering themselves, would play a leading part in organising the population in self-help.

7.3.4 *Treatment of Casualties* Mass casualties on a scale unknown in peacetime can be expected to result from nuclear explosions while, at the same time, peacetime medical and hospital services would be disrupted. It is probable that, in many areas, there would not be sufficient medical/nursing services or trained first aiders to give treatment to casualties. In the absence of these services the police should advise and guide the surviving population on measures to give first aid treatment to casualties. To assist in this task Appendix L sets down some points which, though they in no way replace full peacetime first aid training, may help to alleviate suffering and improve chances of survival until medical attention can be obtained.

7.3.5 *Care of Homeless* The main burden of responsibility for providing food and shelter for the homeless rests upon the local authorities but the police would play a major part in directing the homeless to find shelter. Because of fall-out dangers, this might be no more than providing temporary refuge in some adjacent half ruined building. All planning for dealing with the homeless is based on the principle that, to minimise epidemics, to avoid potential law and order problems and to maintain morale, people should be collected into small groups for the shortest possible time. This principle

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applies equally to those being collected for transit to rest centres and to those in rest centres.

When the fall-out situation permits, local authority services may plan to move homeless out of damaged areas to places where rest centres could be operated. People might be collected in damaged areas and moved to rest centres which would be established in undamaged areas. Rest centres would provide shelter and warmth, refreshments, sanitation and ablutions, first aid, clothing, information and advice.

7.4 Health Hazards in War

7.4.1 Until other services and organisations can be reorganised after nuclear attack, the police should assist the surviving population to safeguard themselves against the dangers to public health which must follow from nuclear explosions. Appendix M sets out some of the primary hazards and suggests steps which can be taken to counter them.

7.5 Intelligence and Information

7.5.1 The immediate effects of a nuclear attack, together with the restrictions on movement imposed by fall-out, would make the collection and transmission of accurate information difficult, if not impossible in the early stages, but every effort must be made to establish communications and to pass intelligence which would enable the situation to be assessed. Without information, plans cannot be made and operations cannot be started.

7.5.2 Police and local authorities would require urgent information about, among other things, the following subjects:

- a. damage, especially as it affects roads, bridges, etc;
- b. radioactive fall-out data such as
 - (i) direction of Ground Zero (GZ)
 - (ii) time of arrival of Fall-out (FOA)
 - (iii) current Dose-rate in vicinity (DR)
 - (iv) time and Dose-rate at Fall-out Maximum (FOM)
 - (v) radiological state of personnel available for operations;
- c. the fire situation;
- d. the state of public behaviour and the movement of people and vehicles;
- e. the communications position.

7.5.3 Where communications still existed with police or other forces on the ground, much information could quickly be forthcoming and fed back to police and local authority wartime headquarters.

7.5.4 Where communication had been lost, police radio vehicles equipped with survey meters would be able to carry out reconnaissance and provide communications links. By close liaison between police and local authority, duplication of effort in reconnaissance would be avoided.

7.6 Air Support

7.6.1 In a war emergency the Royal Air Force would form Home Defence Squadrons consisting of light aircraft whose services might be made available on request from Zone Commissioners.

7.6.2 Air reconnaissance, which would provide a rapid means of obtaining comprehensive information in circumstances where ground forces movements are restricted by the effects of nuclear attack, would be one of the major roles of these squadrons.

7.6.3 Police and fire service officers, who have received peacetime training in air observation duties, have been earmarked to work with the Squadrons. In order that this scheme can operate effectively, police officers should know the internationally accepted ground to aircraft panel code (set out at Appendix N) which enables people on the ground to pass simple messages to aircraft by laying out sheets, blankets or other visible objects. Police officers should be aware of the meaning of manoeuvres to control the movement of vehicles performed by aircraft: Appendix O sets out those in common use.

The National Warning System

8.1 The Warning System

8.1.1 Public warning against attack from the air will be given by siren before any attack develops, whether it is delivered by missile or manned aircraft. No particular warning time can be guaranteed but it is expected that the warning will be not less than three minutes before the attack commences. The attack warning (RED Warning) will be based on intelligence from appropriate military sources and early warning information from all allied detection systems, including the Ballistic Missile Early Warning System (BMEWS), received at United Kingdom Regional Air Operations Centre (UKRAOC). Officers of the United Kingdom Warning and Monitoring Organisation (UKWMO) stationed at UKRAOC will initiate attack warnings, whether against missile or aircraft attack, and pass them by a telephone line broadcast system directly from UKRAOC to some 250 Carrier Control Points (CCP) installed in major police stations throughout the United Kingdom.

8.1.2 Each carrier control point will immediately issue a warning message to all carrier receivers installed at warning points, including the premises of individual warning recipients (such as hospitals and selected industrial premises) in the carrier area. Simultaneously all the mains-driven sirens within its area will be sounded by remote control. For these two purposes a unidirectional carrier line broadcast system has been developed which superimposes additional signals upon the existing Post Office local telephone cable network. In a few areas in the North and West of Scotland, the carrier system cannot be used but the warning messages will be issued through the telephone system via district distributing centres.

8.1.3 For attack warnings power-operated sirens have been installed in the more densely populated areas and hand sirens elsewhere. Warning points have been established at monitoring posts, police, fire and coastguard stations, armed services establishments and other places which are either normally occupied twenty-four hours a day or

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can be swiftly manned in an emergency. Additional warning points have been established at selected private premises where occupiers are prepared to co-operate.

8.1.4 The attack warning (RED Warning) will be reinforced by messages broadcast by radio and television services.

8.2 The Monitoring Service

8.2.1 Warnings to the public to indicate that fall-out is imminent (BLACK Warning) will be given. Cover should be taken immediately and no-one should emerge until further advice is received. Services, including the police, having their own radiac instruments, may continue operations after the public fall-out warning has been given (see paragraphs 9.6.2 and 9.8.2).

8.2.2 The UKWMO maintain a network of monitoring posts throughout the United Kingdom, manned by the Royal Observer Corps, which are equipped with instruments to record nuclear burst details, to detect the arrival of fall-out and to measure its intensity. This information will be passed by monitoring posts to the associated UKWMO Group Controls (there are five in Scotland) where it will be processed, with information from other sources. Processed information will be passed on to the Caledonian Sector Control, UKWMO—one of five sector controls in the United Kingdom—from which, after further processing, data and predictions will be disseminated to civil and military authorities at Home and in other NATO countries. At the same time Warning Officers at UKWMO Group Controls will originate fall-out warnings (BLACK Warning) and relay them to carrier control points for transmission to warning points. Warning points will be equipped with maroons to give fall-out warnings. Additional warning could be given by improvised means such as gongs or whistles (three bangs or blasts in quick succession). If, for any reason, a warning point finds itself isolated, or if fall-out arrives without warning, the warning point operators will have radiac survey meters and will sound the warning when the local level of radiation reaches 0.3 roentgens per hour (rph).

8.2.3 The fall-out warning will be reinforced by information messages broadcast by radio wherever possible.

8.3 All Clear

8.3.1 The all clear (WHITE Message) to cancel the attack warning (RED Warning) will be issued when it is considered that there is no

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further threat of air attack and provided that no fall-out hazard exists or is likely.

8.3.2 In many areas where fall-out has occurred it will not be possible to issue a general all clear to the public since some hazard persists. Release procedures referred to in paragraph 6.4 and at Appendix J will be operated by Controllers in areas where the all clear cannot be issued.

8.4 Types of Warnings

8.4.1 **RED WARNING** (Imminent Danger of Attack from the Air).

Siren, rising and falling note, and by BBC broadcast.

8.4.2 **BLACK WARNING** (Imminent Danger of Radioactive Fall-out).

Maroon, gong or whistle sounding three bangs or blasts in quick succession, and, possibly, by radio broadcast.

8.4.3 **WHITE MESSAGE** (All Clear—No Further Danger from Air Attack or Fall-out).

A steady note of the siren.

8.4.4 The action to be taken on receipt of warning messages is specified in paragraph 9.6.

8.5 Police Responsibilities for National Warning System

8.5.1 Chief Constables have undertaken responsibility in peacetime for selecting sites for carrier control points and warning points and for testing, care and maintenance of power operated sirens and associated control equipment.

8.5.2 In an emergency Chief Constables would be responsible for ensuring that local warning arrangements are brought to a state of readiness to transmit warning messages received from UKWMO over the Carrier System. Police forces would be responsible for issuing equipment (radial instruments and maroons) to carrier control points and warning points and for ensuring the manning and training of operators for these points.

Police Action During and After Attack

9.1 Attack Situation

9.1.1 The forms of attack which might occur can be divided into three broad categories:

- a. conventional weapons—high explosive and incendiary;
- b. nuclear weapons;
- c. biological or chemical warfare.

9.1.2 The current assessments, to determine the preparations to be made for home defence in the United Kingdom, clearly point to nuclear war as the overriding consideration. While it is possible that chemical warfare and, to a lesser extent, biological warfare, could be used against selected civil and military installations the use of these forms of warfare against the population as a whole is considered unlikely at the present time. The use of aircraft and missiles to deliver non-nuclear high explosive and incendiary devices against selected targets cannot be discounted.

9.2 Attack by Conventional Weapons

9.2.1 Conventional weapons, if used extensively, would cause widespread damage which could seriously disrupt the life of the nation. Action during and after such attacks would, however, not be hampered by the presence of fall-out; lifesaving and recovery measures could be undertaken immediately after or even during attack (see paragraphs 9.7.1 and 9.7.2).

9.3 Nuclear Attack Situation

9.3.1 A nuclear attack would leave in its wake casualties and damage on a vast scale. There would be nationwide disruption of communications and essential services. Radioactive fall-out, covering large tracts of the country and of lethal intensity in places, would prevent the movement of essential supplies, would delay restoration of essential services and would add to the death toll. Nevertheless,

on informed scientific assessment, there will be millions of survivors who would be in need of the basic essentials of life.

9.3.2 The police service as a source of disciplined manpower must help to provide the leadership and guidance which the public will desperately need. It is therefore essential that police officers should know the basic actions which they should take, wherever they may happen to be, in the varying circumstances which may occur during and after a nuclear attack.

9.4 Conservation of Radiological Life

9.4.1 All police actions during and after a nuclear attack must be governed by the need to conserve the radiological life of the individual, ie to avoid exposing personnel to doses of radiation which could be harmful, or even lethal, in the long term (see paragraph 4.5). Police officers are to take cover during an attack and remain under cover until fall-out maximum has been reached (see paragraph 5.6) and the dose-rate has fallen to 10 rph or less, or unless instructed by a senior officer to emerge.

9.4.2 No police officer should be exposed to avoidable radiation beyond the War Emergency Dose (see paragraph 4.6) unless there are most exceptional operational circumstances and, even then, every effort must be made to ensure that a total dose of 150 r is not exceeded. Every police officer should look to his own safety by constant reference to his individual dosimeter and by using a survey meter if available. Senior officers should use the minimum number of men for operations in areas of radioactivity and, by providing reliefs at regular intervals, should minimise individuals' exposure to radiation.

9.4.3 It is possible that, following a nuclear attack, fall-out may occur without the public warning (described in paragraph 8.4.2) being given in every locality. Police must therefore constantly bear in mind the danger from fall-out and monitor frequently with radiaac instruments to ensure that they are not subject to unsuspected exposure.

9.4.4 Records of radiation doses absorbed must be maintained by all police personnel on the standard form prescribed at Appendix G. This record of radiation exposure will be used to determine working availability for operational purposes. The record must include doses absorbed before reporting for duty, when going off duty and when dosimeters are recharged.

9.5 Behaviour in Refuge

9.5.1 In areas heavily contaminated by radioactive fall-out, everyone, (including police personnel) would be required to remain under cover for some days. It is essential that steps are taken at an early stage in refuge to maintain morale at a high level and to sustain the well-being of the people. Police personnel, as members of a disciplined force, would be expected to take the lead in organising shelter life.

9.5.2 The stocks of food and water should be checked and, if the level of radioactivity can be assessed, an estimate of the duration of time to be spent in refuge should be made. Supplies should be rationed accordingly, making provision, if possible, for other people who might later seek shelter in the refuge, and for other contingencies. Water is the most important requirement for life—as a general guide each person needs a minimum of two pints (approximately 1 litre) per day for drinking and the same quantity per day for personal cleanliness—but if possible a daily ration of eight pints (4½ litres) per person is desirable.

9.5.3 It is intended that, during the pre-attack period, advice would be given to the public about the preparation of fall-out refuges including improvement of protective factors and the stockpiling of essential items. Prepared refuges in peoples' homes should, in addition to food and water, be stocked with a transistorised radio (including spare batteries), torches, paraffin lamps or candles for lighting, and other social and recreational necessities. In the event, not all buildings, in which people might be forced to seek shelter, would be equipped to the advised standard. Where little or no preparation had been made people would have to improvise from the resources available within the building.

9.5.4 To prevent contamination by airborne radioactive dust particles shelters should be sealed. This means that the oxygen in the shelter is not being replaced and must be conserved. Consequently the use of lamps and candles should be minimal and excessive physical activity or smoking should be prevented. Refuge rooms should be ventilated only after fall-out dust has settled and external dose-rates have declined to a safe level.

9.5.5 Where possible, use should be made of existing toilet facilities provided that this does not involve exposure to the outside atmosphere. If no other means are available, it may prove necessary

to pierce holes in the floor of some other enclosed parts of the building to provide for disposal. It should be borne in mind that, while the general tidiness of shelter accommodation and the occupants themselves have a great effect on morale, there will be a need to limit the use of water for washing and sanitation.

9.5.6 The advice and guidance set out in this paragraph is supplementary to, and does not replace, announcements which may be issued to the public about fall-out refuge rooms. Police should make themselves thoroughly familiar with any such general advice so that they can assist the public.

9.6 Action on Receipt of Warnings

9.6.1 **RED Warning** (Imminent Danger of Attack from the Air)

Outdoors—on foot

Take cover and direct the public to do the same.

—in vehicle

Park the vehicle (off the road if possible)—direct the public to do the same—take cover.

At Police Station

Continue manning communications but reduce other duty personnel to a minimum—the remainder to take cover in the basement or other protected shelter.

Off Duty

Take nearest cover—direct others in the vicinity to do so as well.

9.6.2 **BLACK Warning** (Imminent Danger of Radioactive Fall-out)
Outdoors

Direct the public not already in suitable refuge to take cover immediately. Police take cover wherever they may be as soon as practicable after the BLACK WARNING. Unless directed otherwise, cover must be sought immediately the radiation level reaches 0.3 rph.

At Police Station

Police and civilians will remain under cover unless otherwise instructed. If not under cover, they must take cover as soon as the intensity of radiation reaches 3 rph.

Off Duty

Police who are off duty will remain under cover, preferably at home or in a place where they can be contacted.

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9.6.3 **WHITE Message** (All Clear—No Further Danger from Air Attack or Fall-out)

All police officers will communicate with their station.

9.6.4 Paragraph 8.4 describes the types of warnings and the methods by which they would be given.

9.7 Conventional Weapon Attack Action

9.7.1 **Action during Conventional Weapon Attack (RED Warning)**
When a RED Warning is in force, police will stay under cover unless it is safe or necessary to emerge.

9.7.2 **Action after Conventional Weapon Attack (WHITE Message)**
In an undamaged area, police duties would be resumed but all personnel will be placed on standby to render assistance in any adjacent damaged areas. In a damaged area, priority tasks would be to restore communications and submit situation reports to higher authority. On receipt of a RED Warning police should always assume that a nuclear attack has taken place somewhere in the country unless and until advised to the contrary.

9.8 Nuclear Weapon Attack Action

9.8.1 **Action during Nuclear Weapon Attack (RED Warning)**
While a RED Warning is in force, police should stay under cover unless it is safe or necessary to do otherwise. Before coming out of shelter, police personnel must always check against the presence of fall-out.

9.8.2 **Action during Nuclear Weapon Attack (BLACK Warning)**
The receipt of the BLACK Warning, or the detection of fall-out, will be the signal to seek cover as quickly as possible, and to remain in shelter until monitoring reveals that the level of radiation has fallen sufficiently for the release scheme, described at Appendix J, to apply or until the ALL CLEAR is received. All Police officers, unless engaged on urgent tasks and specifically instructed to complete them, would take cover when radiation reaches 0.3 rph. Officers in charge of local authority emergency services and senior police officers have the discretion to keep personnel at work on vital tasks until it is completed or until the dose-rate reaches 10 rph. When this level is reached all must go to refuge.

9.9 Post Nuclear Weapon Attack Action

9.9.1 **Action in an Area without Fall-out (WHITE Message)**
A WHITE Message (ALL CLEAR) will be issued to release people from shelter in areas where there is no fall-out hazard (see paragraph

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8.3). All police personnel should communicate with their appropriate station for further instructions: Police Support Units could be deployed very quickly after receipt of the ALL CLEAR. There could be problems of movements of survivors from other areas.

9.9.2 Action in an Area with Fall-out (BLACK Warning) All activity in areas affected by fall-out must be governed by the need to conserve radiological life (see paragraph 9.4). Consequently no one, and particularly police, should be exposed to avoidable radiation beyond the War Emergency Dose (prescribed in paragraph 4.6), except in the most exceptional circumstances. Police officers will be supplied with individual dosimeters and should use them to take constant readings to ensure that their accumulated dosage remains within safe limits.

Life saving operations and other vital tasks in a damaged area affected by fall-out should not be undertaken until the dose-rate falls below 10 rph. Since even a damaged building affords greater protection than being in the open, it would often be safer not to evacuate a damaged building until the external dose-rate has declined sufficiently to apply the emergency provisions of the release scheme (see Appendix J).

Officers in police stations, and other officers with access to radiac survey meters, will be able to monitor the level of radiation and to calculate when conditions existed for the release scheme to be operated.

While the BLACK Warning is in force, reports about the local situation should be submitted through normal chains of control by whatever form of communications survives. If communications have been destroyed during attack, all attempts (short of endangering radiological life) should be made to find alternative means of contact.

9.9.3 Action after Release from Shelter Priority should be given to restoring the police command structure. All personnel should communicate with a police station as soon as possible after release giving any information about casualties, damage, public morale and radiological factors so that local operational tasks and priorities can be determined.

Contact with local authority and other essential services to identify problems and to assess manpower and other resources is another priority. Local co-operation and co-ordination will be necessary to

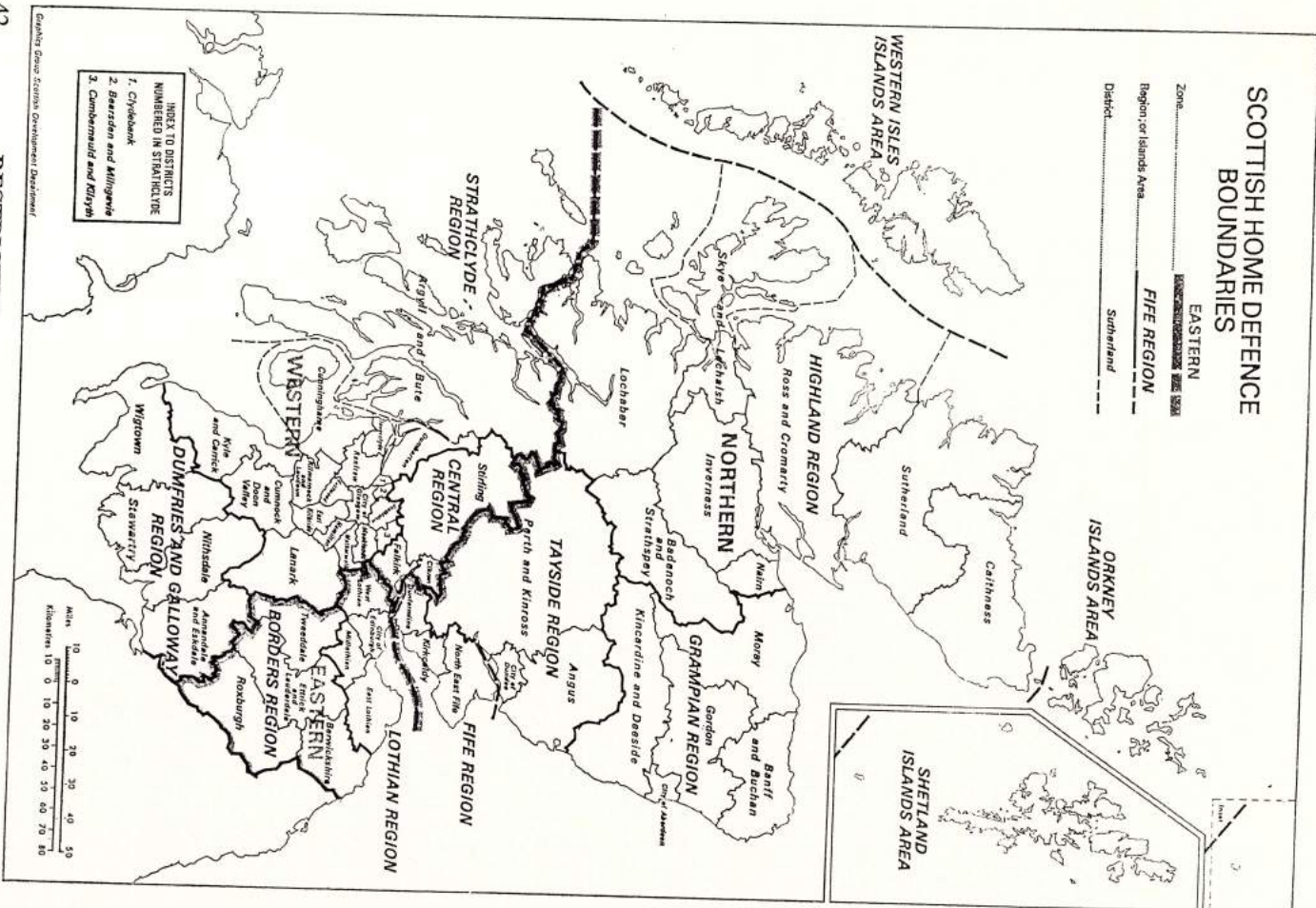
enable plans for continued survival to be formulated and for essential recovery tasks to be allocated.

9.9.4 Action after ALL CLEAR (WHITE Message) WHITE Messages (ALL CLEAR) will be issued only when there is no longer any radiation risk in a particular area or any threat of further attack. As the intensity of the fall-out will vary from place to place, so a greater or lesser time may elapse before the WHITE Message can be authorised. In most areas the release scheme will have been used by the Controller for some time and police action, in accordance with paragraphs 9.9.1 and 9.9.3, already initiated.

Appendix A

(paragraph 1.2.1)

SCOTTISH HOME DEFENCE BOUNDARIES



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Appendix B

(paragraph 2.8.5)

ORDERS AND BRIEFING

B.1 Introduction

Success in any operation involving action by others depends largely on the clarity and conciseness of the orders given by the person directing the action to be taken and, if the orders are given orally, the manner in which they are given.

B.2 Build-up of an Order

An order develops logically from the following sequence of thought:

- an appreciation of the situation;
- the plan decided on as a result of the appreciation;
- the translation of the plan into the form and sequence of an order.

B.3 Methods of Issuing Orders

An order may be issued—

- as a written order:
 - formal directive
 - message form for transmission;
- orally, directly, or by telephone or wireless.

In an emergency situation, most orders would be passed orally but written instructions could and would be issued as the situation demanded—usually to provide for complicated comprehensive action involving co-ordination by several services or organisations.

B.4 Essentials of an Order

The essential ingredients of a good order are that:

- it contains only such information as the recipient needs to execute his task;
- it is unmistakably clear about the task(s) to be carried out;
- it is expressed in short simple terms;
- it is arranged in a logical sequence;
- it has been thought out on the above lines *before* delivery.

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The sequence is particularly important. The delivery of an order is a two-way process of giving and receiving, both of which are made easier if all parties are trained to anticipate the contents of the order in an accepted sequence. An approved sequence is a valuable aid to ensuring that the order develops logically, omits nothing essential and includes nothing superfluous.

B.5 Briefing

Briefing is a term used to signify the giving of information to others in order that a decided plan of action can be followed. The aim of briefing is to ensure that a particular task is performed in the speediest and most efficient manner.

B.6 Main Headings of a Briefing

The information in a briefing is grouped under five main headings, the categories and sequence of which have been agreed for common use by all members of NATO, and will always be used when briefing commanders of all forces placed in support of the civil authority. These headings are:

SITUATION

MISSION

FACTORS AFFECTING THE MISSION

ADMINISTRATION/LOGISTICS

COMMAND AND SIGNALS

B.6.1 Situation The recipient may be a complete stranger to the locality in which he is to act. The aim of the SITUATION paragraph is to give a description in *general* terms of the situation in the locality and a background to the tasks required of him. It is not the place for details.

B.6.2 Mission The tasks to be undertaken must be clearly defined, listed in order of priority and stated in concise terms.

B.6.3 Factors affecting the Mission It is not the business of an order given by the briefing method to tell the recipient how the order is to be executed. He must, however, be given *detailed* information on the facts affecting his tasks, including, where necessary, information of the situation on the way to the area in which he is to act. This is to enable the recipient to frame his own executive orders to his own personnel on the task to be done.

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ADMINICLED

B.6.4 Administration/Logistics This heading is for the inclusion of details on such matters as the arrangements for refreshments, rest periods, lodgings, and replenishment of equipment and transport.

B.6.5 Command and Signals This heading should cover the details of the location of control headquarters with whom the recipient is to work, and of any special communication arrangements.

B.7 Questions

At the conclusion of a briefing an opportunity must always be given for questions to be asked thus ensuring that the recipient has full understanding and that any uncertainty is clarified.

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Appendix C

(paragraph 2.8.5)

MAP READING

C.1 Map References

C.1.1 In a war emergency, it is likely that much greater use will be made of maps and that map references will have to be quoted more frequently than occurs in peacetime. References are likely to be required particularly for messages reporting locations of places or incidents, which are to be transmitted beyond immediate peacetime local levels of control, or which involve other services or agencies, such as the armed forces, who might not be familiar with local conditions.

C.1.2 Map references are obtained by reference to National Grid lines overprinted on all Ordnance Survey (OS) Maps. Grid lines divide a map into squares each of which can be identified. A specific place can be located by measuring (or estimating) divisions of one tenth within the grid square. Dependent on the scale of the map it is possible to pinpoint a place to within very narrow limits.

C.1.3 The most commonly used OS Map for operational purposes is 1" to 1 mile (1:63360) which has a grid interval of 1 kilometre and gives normal references accurate to 100 metres. The grid reference at this scale would have six digits eg 971477. To obtain the grid reference, the first half of the group is composed of *EASTINGS* which are read off the divisions at the top and bottom of the map-sheet marking *VERTICAL* grid lines. The second half of the group is composed of *NORTHINGS* which are read off the divisions at the sides of the mapsheet marking *HORIZONTAL* grid lines.

C.1.4 The rule to remember is

FIRST ALONG, THEN UP

C.1.5 Great care must be taken to prepare a reference properly, otherwise an incorrect location will be obtained. Mistakes can lead to confusion and could have serious operational consequences. Figure 1 gives an example of point ALPHA which has a correct reference of NP415495 and point OMEGA which is referenced

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NP495415. It will be appreciated that transposition of *EASTINGS* and *NORTHINGS* give entirely incorrect locations.

C.1.6 Figure 2 illustrates the basic grid squares which cover the United Kingdom: the grid lines are 100 kilometres (km) apart (approximately 62 miles). Each of these squares bears a separate two letter designation. In each 100 km square the same numerical reference numbers recur so, to obtain a unique reference, it is necessary to prefix the numerical reference with the correct letter designators.

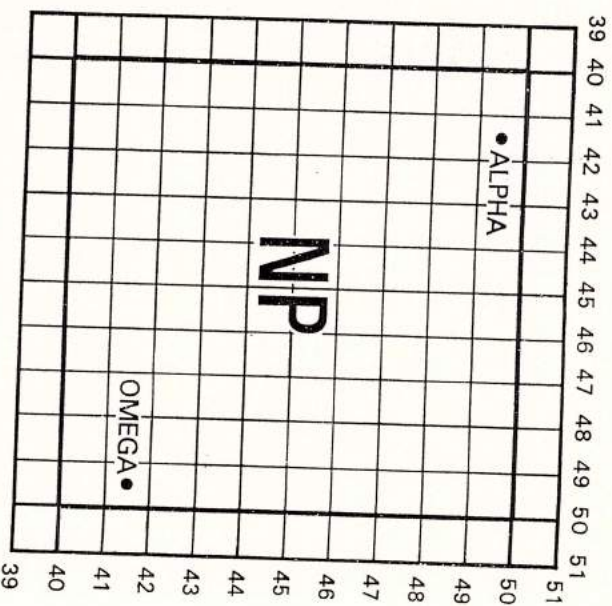
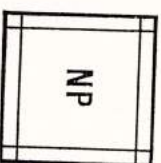


Figure 1.

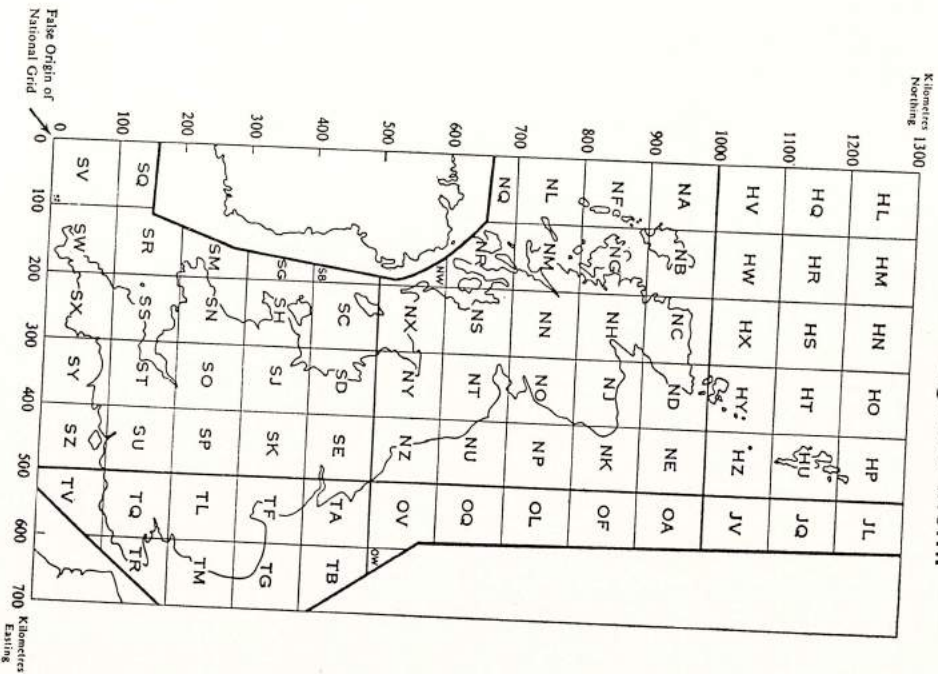


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Appendix D

(paragraph 2.8.5.)

Figure 2
THE NATIONAL GRID
Diagram showing 100km squares and the letters used to designate them.



POLICE SYMBOLS FOR MAPS

For use in connection with Police War Planning, Exercises and Operations.

DESIGNATION	SYMBOL	BOUNDARIES AND REMARKS
1. FORCE HEADQUARTERS		
2. DIVISIONAL HEADQUARTERS		
3. SUB DIVISIONAL HEADQUARTERS		
4. SECTION STATION		
5. OUT STATION		Includes 1 and 2 Man Stations and Motorway Stations
6. MOBILE POLICE STATION		
7. POLICE SUPPORT UNIT		
8. POLICE BASE		
9. POLICE CHECK POINT		Use by PSU Vehicles or for other Police Groups
10. POLICE VEHICLE		
11. RADIO STATION		

NOTE:

- A. Colour BLUE throughout
- B. Exact locations should be indicated by a line drawn from the symbol to the spot required.

Appendix E

(paragraph 3.3.4)

NATO PHONETIC ALPHABET

Letter	Phonetic Equivalent
A	Alfa
B	Bravo
C	Charlie
D	Delta
E	Echo
F	Foxtrot
G	Golf
H	Hotel
I	India
J	Juliett
K	Kilo
L	Lima
M	Mike
N	November
O	Oscar
P	Papa
Q	Quebec
R	Romeo
S	Sierra
T	Tango
U	Uniform
V	Victor
W	Whiskey
X	X-ray
Y	Yankee
Z	Zulu

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Appendix F

(paragraph 4.2.3)

DATA ON NUCLEAR WEAPON EFFECTS

F.1 Approximate Ranges of Main Fire Zone

The Table below gives the approximate extent of the fire zones in miles for bombs of various powers.

Table A: Ground Bursts

Description of Fire Effect	Extent in Miles from Weapon Powers of:					
	20 KT	200 KT	500 KT	1 MT	3 MT	10 MT
Main fire zone*	$\frac{3}{4}$ -1	1-2 $\frac{1}{2}$	1 $\frac{1}{4}$ -3 $\frac{1}{2}$	1 $\frac{1}{2}$ -5	2 $\frac{1}{4}$ -7 $\frac{1}{2}$	3 $\frac{1}{2}$ -12
Outer limits of isolated fires	2	4 $\frac{1}{2}$	6	7 $\frac{1}{2}$	11	17

Table B: Air Bursts

Main fire zone*	$\frac{1}{2}$ -1 $\frac{1}{2}$	1-4	1 $\frac{1}{2}$ -6	1 $\frac{1}{2}$ -8	2 $\frac{1}{2}$ -12	4-20
Outer limit of isolated fires	3	6 $\frac{1}{2}$	9	11	16	24

*Within the inner ring of total destruction fires would most probably be extinguished by the general destruction of the houses and buildings. The main fire area would therefore form a band around the central area of total destruction and the figures shown in the tables are the inner and outer limits of these bands. The wider thermal effect of a fireball would be likely to be produced on a clear day. Within the bands something like one building in twenty would be set on fire by the heat flash, and, on average, fire spread would be expected to double this figure. There would be isolated fires outside the main fire area.

F.2 Approximate Ranges of Blast Damage

The Table below shows the ranges in miles of various categories of damage and the degree of street blockage expected to result from ground burst weapons of different powers. The estimates are based on an assumption of typical British houses and streets. It can be

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Appendix H

(Paragraph 5.6.1)

RADIAC LOG

Date Police Station
 Sheet No

Time	Actual Meter Reading	Protective Factor (PF)	External Dose-rate (DR)	Remarks (inc. Fall-out Max. (FOM))

Notes:
 When the reading is taken outside the police station the same figures should be inserted in both the second and fourth column, but an 'X' should be entered in the third column. The Protective Factor (PF) need only be noted when there has been a change of meter position or if the PF has been reassessed.

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Appendix I

(paragraphs 2.7.3 and 5.8.1)

RADIAC INSTRUMENTS (Planned Scale of Issue)

Instrument
 Dosimeter No 4

Planned Scale

- One per police officer, special constable and cadet.
- An additional number equal to 20% of regular peacetime strength.
- An issue for certain operational civilians, including traffic wardens.

Charging Units

- One per police station.
- One per Police Support Unit.
- One per building (other than a police station) housing operational personnel.

Survey Meter No 2

- One per police station.

Lightweight Survey Meter

- An issue for certain operational buildings other than police stations.
- One per 2 motor vehicles including motor cycles (ie based on 50% force vehicle strength).

Radiac Calculator No 1

- One per police station.

Survey Meter No 1

- One per warning point: except those already equipped with Survey Meters No 2 (above).

Appendix J

(paragraph 6.4.3)

RELEASE SCHEME FROM SHELTER

J.1 Introduction

J.1.1 Controllers would advise the public that all restrictions on movements outdoors had been lifted in a particular locality affected by fall-out only when the local radiation level had fallen to 0.5 rph (see paragraph 6.4.2). Since the public could not be expected to stay under cover for prolonged periods, and as the external dose-rate in many areas is unlikely to fall quickly to this level, a scheme has been prepared which will allow people in shelter to emerge for limited periods.

J.1.2 The scheme will be operated on available data about fall-out and radiation levels assessed by scientific advisers working at Islands Area and District Wartime Headquarters. The scientists will advise the Controller where, and for how long, there might be restricted movement in the open. The periods of limited release from shelter have been arbitrarily selected as 20 minutes, 1 hour, 3 hours and 9 hours, and the areas in which they will operate have been designated Bands A, B and C respectively for 1 hour, 3 hour and 9 hour release.

J.2 Emergency Release

J.2.1 The 20 minute release period is intended to be used for the direct emergency when the risk of exceeding the daily recovery rate of 10 r (see Paragraph 4.5.1) would have to be accepted. It is an exceptional measure which would be exercised by the Controller only when the external dose-rate has fallen below 8 rph and there are special reasons, such as a total lack of drinking water or a grave medical emergency, for individuals to emerge from shelter. It is emphasised that individuals must only be granted this release on one occasion while the external dose-rate is between 8 rph and 4 rph.

J.3 Planned Release (Release Bands)

J.3.1 The release period of 1 hour in every 24 hours (Band A), would be sufficient to provide for the re-supply of refugees with the

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necessities of life and the issue or receipt of self help advice from local sources. The longer release periods (Bands B and C) would enable essential tasks to be undertaken both out of doors and in vehicles, or in buildings which have a low protective factor. During these periods, many steps could be taken to help the survival of the public, and to plan and initiate recovery from the attack effects.

J.3.2 The data for each recommended release band, indicating the dose absorbed as a consequence of operating the scheme, is as follows:

Release Bands

Band	External Dose-rate Limits	Duration of Release per 24 Hours	Total Dose Absorbed in 24 Hour Period
A	4 rph 2 rph	1 hour	10 r 5 r
B	2 rph 1 rph	3 hours	9 r 4 r
C	1 rph 0.5 rph	9 hours	10 r 5 r

J.4 Control of Release

J.4.1 It is recognised that it is physically impossible to control the day-to-day activities of the surviving public. It is no part of the release scheme that people should be forced to remain under cover or that, if they emerge or stay out, despite contrary advice, they should be regarded as law-breakers. For these arrangements to succeed, the public must be persuaded that their best chance of survival depends on following official advice.

J.4.2 It is planned that the widest possible use would be made of press and broadcasting facilities before an attack to advise the public on improving home protective factors, stocking up with food, water and other essentials and the action to be taken should the fall-out warning be given. After an attack surviving broadcasting and other facilities such as mobile public address systems and loud hailers would be used to keep the public informed.

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Appendix K

(paragraph 7.2.5(e))

PRISONERS OF WAR

K.1 Capture

K.1.1 As soon as prisoners of war are taken into custody by the police the following action is to be taken:

- a. search the prisoners;
- b. separate prisoners, particularly officers from other ranks, and ensure that there is no communication between prisoners;
- c. inform the nearest military unit giving the following particulars:
 - (i) number and rank of each prisoner held;
 - (ii) service to which they belong;
 - (iii) circumstances of capture;
 - (iv) where they are held, and by whom;
 - (v) any details (possession of forged civilian identity papers, or special communications equipment, use of civilian clothes, etc) which give rise to suspicions that a particular prisoner has an espionage, subversion or sabotage mission in the United Kingdom.

K.2 Custody

- K.2.1 Police having custody of prisoners of war should ensure that:
- a. prisoners are not allowed to smoke or consume stimulating drinks except on the orders of a medical officer;
 - b. necessary medical attention is provided;
 - c. all articles removed during search are securely packaged and dispatched with the prisoners by hand of escort.

Note: The United Kingdom is a signatory to the Geneva Convention on the Treatment of Prisoners of War, 1949: the terms of this Convention must be strictly observed at all times.

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Appendix L

(paragraph 7.3.4)

FIRST AID HINTS

L.1 General

L.1.1 It is not the purpose of this appendix to give detailed instruction about First Aid. Many of the injuries suffered by casualties in a war situation would be similar to those which occur daily in peacetime and with which police officers are familiar. Nevertheless, in a post-attack situation, normal peacetime services and facilities would be disrupted and it cannot be expected that casualties would be given medical and nursing attention as quickly as normal. Indeed, in an area affected by fall-out it might be some days before proper medical aid could be obtained. Furthermore a nuclear attack would produce, simultaneously, many times more casualties than are ever likely to be encountered in even the largest peacetime disaster. In these circumstances a casualty's chance of recovery will depend on the first aid treatment given.

L.1.2 The public can be expected to look to the police for help and guidance and the following hints are designed to meet this need. It must be emphasised that these notes are by no means exhaustive and do not replace peacetime first aid training. They are intended to enable the police to advise and give aid in circumstances where no trained first aiders or nursing/medical personnel are available.

L.2 Shock

L.2.1 The casualty appears pale and frightened, feels cold, is clammy to the touch and may be shivering. Lay him down, make him as warm and comfortable as possible, and reassure him. Make sure he can breathe easily. Attend to any bleeding and injuries. Give him sips of drinks such as tea, but do not give fluids of any kind if there are suspected abdominal injuries.

L.3 Burns

L.3.1 Within a wide area around a nuclear explosion everyone out of doors or near unprotected windows may suffer some degree of burning of the exposed skin. Generally the effects would be fairly

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superficial, similar to sunburn. For such burns no special treatment is required.

L.3.2 For large and more serious burns, do not try to clean the areas affected; cover them with a dressing, clean sheets or towels. *DO NOT* prick or cut out the blisters. *DO NOT* apply oil or any kind of ointment to the burned areas of the body. If the eyelids are burnt, smear a little vaseline or face cream on their edges.

L.3.3 In the case of large burns covering the whole of the arm or any areas which together total as much as 10 times the size of the patient's palm, it is important that the fluid, which the body loses by oozing from the injured areas, should be replaced. If possible, give the person a special drink made by adding 1 level teaspoonful of common salt and half a level teaspoonful of bicarbonate of soda to 2 pints (approximately 1 litre) of water. This drink, to be taken in small sips, can be sweetened or flavoured by sugar or cordial. In the first 8 hours the total amount should however not exceed one half pint (approximately $\frac{1}{2}$ litre) for infants, $1\frac{1}{2}$ pints (approximately $\frac{3}{4}$ litre) for small children, 3 to 4 pints (approximately 2 litres) for school children or 5 to 6 pints (approximately 3 litres) for an adult. Similar quantities should not be exceeded in the following 16 hours and, during the second day, not more than half these quantities should be allowed. If a doctor has not been contacted by the third day, continue the special drink at a level sufficient only to satisfy the thirst.

L.4 Obstruction to Breathing

L.4.1 Casualties who are unconscious, badly shocked, vomiting or suffering particularly from injuries to the face, neck or chest, whose breathing becomes very difficult or ceases, may have obstruction to the flow of air into their lungs. If cleaning out of the mouth and throat and the removal of foreign material and false teeth, along with holding the jaw up and forward, fails to restore normal breathing, 'mouth to mouth' respiration is required. This respiration is given by placing the casualty on his back, holding his jaw up and forward, closing his nostrils and breathing firmly into his mouth once every 3 seconds until normal breathing returns. The person should then be turned on his side and his head tilted so that any secretion can easily dribble out and so that his tongue does not fall back into his throat.

L.5 Bleeding

L.5.1 Uncover the wound, if necessary by cutting the clothing. If any foreign body, such as a piece of glass or fragment of brick or

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wood, is lying on the wound remove it; but do not try to remove objects which are deeply embedded. Do not dig for small fragments in the wound. Press a dressing firmly on the wound until the bleeding is controlled. Use a sterile dressing, if available. If not, use a clean handkerchief, cloth or towel. Fix the dressing in position by firm but not too tight bandaging. Raising an injured limb, provided that there are no broken bones, will restrict the flow of blood to the limb, and thus reduce bleeding.

L.6 Stomach Wounds

L.6.1 Lay the casualty down. Cover the wound with a sterile dressing or clean folded cloth, towel or handkerchief fixed in place with a bandage or adhesive plaster. *DO NOT* give anything to drink; if he becomes very thirsty wash out his mouth. If medical attention cannot be obtained, small quantities of water may be swallowed from the second day.

L.7 Chest Wounds

L.7.1 If the lungs are penetrated, breathing is difficult and sucking of air may be heard or blood-stained froth coming from the open wound may be seen. Cover the wound with a large clean dressing fixed firmly by a bandage or adhesive plaster. Prop the patient up with pillows, cushions, etc, into a sitting position.

L.8 Fractures

L.8.1 If a bone has penetrated the skin, apply a sterile dressing or clean cloth. If a broken bone has not pierced the skin, a fracture can usually be detected by deformity or by the unnatural position of the affected limb. In some cases there may be no outward sign beyond some local swelling but the patient will complain of pain when the limb is moved. Handle the injured limb very carefully and place the limb in its natural position. Do this very gently, and on no account use any force or further damage may be caused. Support the limb, including the joints above and below the fracture to relieve the pain and prevent further injury. A lower limb may be fixed by tying it to the opposite leg and supporting it by rolled blankets or firm pillows.

L.8.2 If the person himself cannot move, his spine may be fractured. Do not move him unless it is absolutely necessary. If he must be moved, try to avoid disturbing the position in which you found his body.

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L.9 Radiation Sickness

L.9.1 Those who have been exposed to a moderate amount of radiation may, after 3 hours or more, feel sick and even vomit. Usually this feeling passes off. Reassure the person, get him to rest and give plenty of sweet drinks. If the dose of radiation has been more severe he may, after a further 3 to 8 days, complain of sickness and suffer from vomiting and diarrhoea. Medical aid should be sought as soon as it is safe to leave the shelter.

L.10 Basic Needs

L.10.1 The basic needs of the sick and wounded are:

- a. sleep, rest and reassurance;
- b. nourishment;
- c. attention to personal hygiene;
- d. attention to sanitary needs.

L.10.2 Rest Rest, and particularly sleep, are very important. Hot drinks will help.

L.10.3 Feeding Three pints (approximately 1½ litres) of fluid in each period of 24 hours should be given, a little at a time and as often as possible. It may be given with milk powder, whipped eggs, thin gruel or a thin soup. Small quantities of other foods may be given if desired.

L.10.4 Personal Hygiene Personal cleanliness is of great importance. Sponge the patient daily from head to foot with warm water, if available. Dry well and dust sweaty areas with talcum powder.

L.10.5 Care of the Mouth If a person is very ill or unconscious, rub the lips gently with vaseline or skin cream. Clean the inside of the mouth twice daily with a small piece of cotton wool or clean cloth wrapped round a thin piece of wood, such as an orange stick, dipped, if possible, in a weak solution of bicarbonate of soda.

L.10.6 Bladder and Bowels A person unable to stand up will need help in urinating or defaecating. Brown paper and newspaper should be used as disposable bedding where there is a loss of control of the bladder or bowel. After a movement the patient should be cleaned carefully, if possible with soap and water.

L.11 Observation and Reporting

L.11.1 Keep notes of the following for the use of the medical services when available:

- a. the amount of food or drink taken;
- b. the amount of sleep and rest;
- c. the location of any pain;
- d. any unusual bowel and bladder action;
- e. any bleeding or vomiting.

Appendix M

(paragraph 7.4.1)

HEALTH HAZARDS IN WAR

M.1 Public Health

M.1.1 In a post-attack situation when normal peacetime services and installations would inevitably be disrupted or inadequate, the health of the surviving public would be at risk from disease. The responsibility for providing public health services rests upon the authorities who deal with these sanitary services in peacetime. Nevertheless, the police should be aware of health hazards in war, and how to avoid or reduce these dangers, by observing basic standards of public and personal hygiene, not only to protect themselves but also to give guidance to the public.

M.2 Health Risks

- M.2.1 The greatest risks to health are most likely to arise amongst:
- people in inadequate shelter who may be unable to move because of hazards from radiation;
 - survivors, in large groups, on the move to, or having reached, less damaged or undamaged areas.

M.3 Services

M.3.1 Peacetime public services which will be disrupted in a war emergency will include:

- water supplies (necessary for drinking, cooking, washing and toilet facilities);
- electricity, gas, oil and solid fuels (necessary for cooking and heating);
- medical, hospital and casualty services (necessary for prevention, diagnosis and treatment of sickness and injuries);
- refuse and sewage disposal (necessary for the removal and treatment of waste products);
- mortuary and undertaking services (necessary for disposal of dead).

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M.4 Transmission of Disease

M.4.1 Although diseases are largely contained and controlled in peacetime, they are always present. In a post-attack period, with the disruption of normal services, they would thrive unless active steps could be taken quickly to combat them. There are two main methods by which diseases spread between people:

- Infections by which airborne germs are transmitted by coughing, sneezing, etc.;
- Contagions by which contaminated agents (such as towels, clothing, bedding, eating or drinking utensils or materials) transmit germs by contact with the body. Contagious diseases are also transmitted (directly or indirectly) by diseased or disease-carrying animals and insects (such as rats, flies or other vermin) and by contaminated food and water.

M.5 Hygiene

M.5.1 If epidemics are to be avoided strict public and personal hygiene must be observed during the post-attack period. Police officers should themselves practise, and should encourage the community to follow the basic principles of hygiene.

a. Personal Hygiene

Personal hygiene must be maintained as far as possible within the limitations which the situation may impose. Indeed because of the greater dangers of disease and epidemic which will exist even greater care than normal should be taken. Particularly, if at all possible, hands should be washed or disinfected before preparing or eating meals, after visits to latrines, or after touching any potentially contaminated object. Further, cooking and eating utensils should be washed or disinfected after use and covered when not in use. Contaminated or verminous bedding, clothing or accommodation should be treated with disinfectant or destroyed.

b. Water

An adequate supply of water for drinking is essential for the maintenance of life: human beings can go short of food for surprisingly long periods but they must have water. Therefore drinking water must be protected and conserved at all times. The public will be advised, during any preliminary period before attack, to store at least three days' supply of drinking water in sealed containers (allowing a minimum of 1 quart (approximately

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1 litre) per person per day). Sealed, or at least covered, containers will prevent contamination by particles of radioactive fall-out. After the hazard of contamination by radioactivity has passed, all water for drinking should be sterilized by boiling. In this connection, it should be noted that, while boiling will kill bacteria, it has no effect on contamination by radioactivity.

After an attack, water supplies are likely to be disrupted and such supplies of uncontaminated water as remain will possibly have to be rationed for drinking; therefore supplies of water for personal and domestic purposes and for sanitation are likely to be restricted or unavailable in many areas. To make the best use of such stocks of water as are available, it may be necessary to create communal bath houses, washing centres for domestic laundering, feeding centres for emergency meals and latrines for toilet facilities.

c. *Food*

Food supplies, like drinking water, should be protected from radioactive fall-out in sealed or covered containers. The greatest care should be exercised to protect food supplies from contamination from fall-out or infection by disease from flies and vermin. Any items which are a potential danger to health should be destroyed. In the post-attack period it will be advisable to eat only prepacked and tinned goods until advised to the contrary.

M.6 Sanitation

M.6.1 Sewage and Refuse Disposal Sewage systems are likely to be unusable not only because of water shortages but also because of damage to the installations or lack of power. Similarly, refuse disposal services are likely to lack the means of rendering refuse inert and harmless. There will therefore be disposal problems for both solid and liquid waste.

M.6.2 Solid Waste Solid waste should so far as possible be burnt—it is usually safer to incinerate food waste and garbage rather than bury it—but if it has to be buried care must be taken to select sites which are sufficiently isolated not to be offensive or, worse still, a danger to health. Where available, disinfectants should be used on buried waste and plenty of soil or rubble placed on top.

M.6.3 Latrines Latrines also must be carefully situated having regard to wind direction and ground contours to prevent them from being a public nuisance. They need immediate and constant attention

to bury excreta and prevent them becoming a breeding ground for disease. Wherever possible, disinfectants should be used to neutralise excreta, and earth added to cover. When a latrine is full, soil and stones should be heaped on top and the site signposted to prevent accidental, and unnecessary, reopening.

M.6.4 Liquid Waste Liquid waste requires careful disposal to prevent contamination of water supplies through the soil. Where possible, liquid waste should be filtered through grease-traps constructed of layers of sand and rock to remove any solid elements and to prevent undue souring of adjacent lands. Urine can be allowed to soak away into the soil, but steps should be taken to neutralise it with disinfectants if possible.


























M.7 Disposal of the Dead

M.7.1 Quick action is necessary to dispose of bodies (both human and animal) to prevent them from becoming a hazard to health and a danger to morale. Cremation (provided it is complete) is normally the safest method of disposal from the health point of view but it may sometimes be more practicable to bury bodies. If so, sites for graves should be selected as far as possible from human habitation and so positioned that soil drainage does not infect or contaminate water supplies.

Appendix N

(paragraph 7.6.3)

GROUND TO AIRCRAFT PANEL CODE

	Require food and water		Require firearms and ammo		Require doctor serious injury		Require medical supplies		Casualty requiring immediate evacuation
	I have a message for you		Message received		Are you receiving my signal		Probably safe to land here		Temporary landing delay
	Do not land here		Helicopter touchdown		Drop here		Land in this direction. (Direction from base to head of 'Y')		Cancel supply drop
	Require radio and batteries		Require radio batteries		Unable to proceed		Going in this direction		No
	Not understood		All well		Nothing more to communicate		Yes		Require fuel and oil

Notes: Ground panels must be as large and conspicuous as possible; they can be improvised by using bed sheets, newspapers or other material which will readily be seen from the air. When laid out panels must be secured down by stones, bricks or other means to improve recognition by aircraft. A smoke fire should be lit near ground panels to indicate wind direction when it is intended that an aircraft should land or drop supplies. Aircraft will acknowledge Ground to Air Signals by overflying the signal and "blipping" the aircraft engine (ie opening and closing throttle).

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Appendix O

(paragraph 7.6.3)

MANOEUVRES BY AIRCRAFT TO CONTROL VEHICLES

1. Roof markings on vehicles under control



Roof markings should be of a contrasting colour to the vehicle so as to be readily visible to the controlling Aircraft.

2. Aircraft manoeuvre

- | | |
|-------------------------------------------------------------------------------|--------------------------------------|
| 1. Flies low over vehicle and climbs away wagging wings | Meaning
I have directions for you |
| 2. Flies low over vehicle and climbs away in front | Follow me |
| 3. Flies over low, turns right/left and pulls up steeply in direction to turn | Turn right/left |
| 4. Flies head on to vehicle | Stop |
| 5. Flies head on with landing light on and wagging wings | Turn around |

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