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# National Risk Register





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# Chapter One: Introduction

**1.1** The National Risk Register sets out *'our assessment of the likelihood and potential impact of a range of different risks that may directly affect the UK'* as promised in the National Security Strategy,<sup>1</sup> published earlier this year. The publication of information on these risks, previously held confidentially within government, is intended to encourage public debate on security and help organisations, individuals, families and communities, who want to do so, to prepare for emergencies.

**1.2** The Register provides an assessment of the most significant emergencies which the United Kingdom and its citizens could face over the next five years summarised into three categories: accidents, natural events (collectively known as hazards) and malicious attacks (known as threats).

**1.3** Much of the information in risk registers is unsurprising, but emergency planners have found them useful because:

- they bring together a great deal of information about potential risks that is relevant and consistent;
- the different risks can be compared on a broadly like for like basis; and
- in an age when there appear to be so many possible kinds of emergency, they help in making decisions about which to plan for and what their consequences are likely to be.

## What is the National Risk Register?

**1.4 The National Risk Register** is intended to capture the range of emergencies that might have a major impact on all, or significant parts of, the UK. It provides a national picture of the risks we face, and is designed to complement Community Risk Registers, already produced and published locally by emergency planners. The driver for this work is the Civil Contingencies Act 2004, which also defines what we mean by emergencies, and what responsibilities are placed on emergency responders in order to prepare for them. Further information about the Act can be found on the UK Resilience website<sup>2</sup>.

**1.5 Community Risk Registers** (CRRs) currently consider the likelihood and potential impact of a range of hazards occurring in specific areas of England and Wales<sup>3</sup>. They are approved and published by Local Resilience Forums<sup>4</sup> (LRFs) which have been established under the Civil Contingencies Act. They include representatives from local emergency services, and public, private and voluntary organisations. In order to produce the Community Risk Registers, LRFs use a combination of their own judgement about each risk, as well as guidance provided by central government drawn from the National Risk Assessment (NRA). Information on equivalent processes in Scotland and Northern Ireland can be found at the links in the Further Information section at the end of this chapter.

<sup>1</sup> [www.cabinetoffice.gov.uk/reports/national\\_security\\_strategy.aspx](http://www.cabinetoffice.gov.uk/reports/national_security_strategy.aspx)

<sup>2</sup> [www.ukresilience.gov.uk/preparedness/ccact.aspx](http://www.ukresilience.gov.uk/preparedness/ccact.aspx)

<sup>3</sup> Examples can be found via [www.preparingforemergencies.gov.uk](http://www.preparingforemergencies.gov.uk)

<sup>4</sup> [www.ukresilience.gov.uk/preparedness/ukgovernment/lrfs.aspx](http://www.ukresilience.gov.uk/preparedness/ukgovernment/lrfs.aspx)

**1.6 The National Risk Assessment (NRA)** is a classified cross-government document which incorporates expertise from a wide range of departments and agencies. It assesses the impact and likelihood of the major risks, both hazards and threats, that the country could face over a five year period, enabling prioritisation of the UK's planning for emergencies. Chapter Five of this document outlines this process in more detail. The National Risk Register is based on the NRA and this is the first time this information has been made public in this way.

**1.7** As with the NRA, the National Risk Register only includes risks which are of sufficient severity that they would require central government to be involved in the response.<sup>5</sup> It also includes information on what the Government and emergency services are doing to prepare for these emergencies across the country. In addition, it provides guidance on some measures of preparedness that organisations, individuals, families and communities might consider taking to prepare for national level emergencies.

**1.8** Understanding the risks and determining their relative significance in terms of potential impact is the starting point for emergency planning. The key to turning this into useful planning information is remembering that it is not the risks themselves that people have to deal with when things go wrong, but their consequences. In an increasingly complex and interdependent society, emergencies can have increasingly complex knock-on effects. The Register identifies both direct and indirect consequences, many of which are common to several risks, and provides information on how to prepare for them.

## The Nature of the Risks

**1.9** True catastrophes, on the scale of the recent earthquake in China, are thankfully rare in the UK. Over the past few years, however, we have seen various emergencies of one sort or another that may not be of that magnitude but still have a significant impact on our ability to go about our daily lives. In setting out the risks – their likelihood and their impact – this Register is not predicting that any particular type of emergency will materialise or that, if it were to do so, it would happen on a specific scale. Events have a habit of confounding predictions; and prudent emergency planning is based on consideration of a wide range of risks rather than on a forecast that any particular risk will occur.

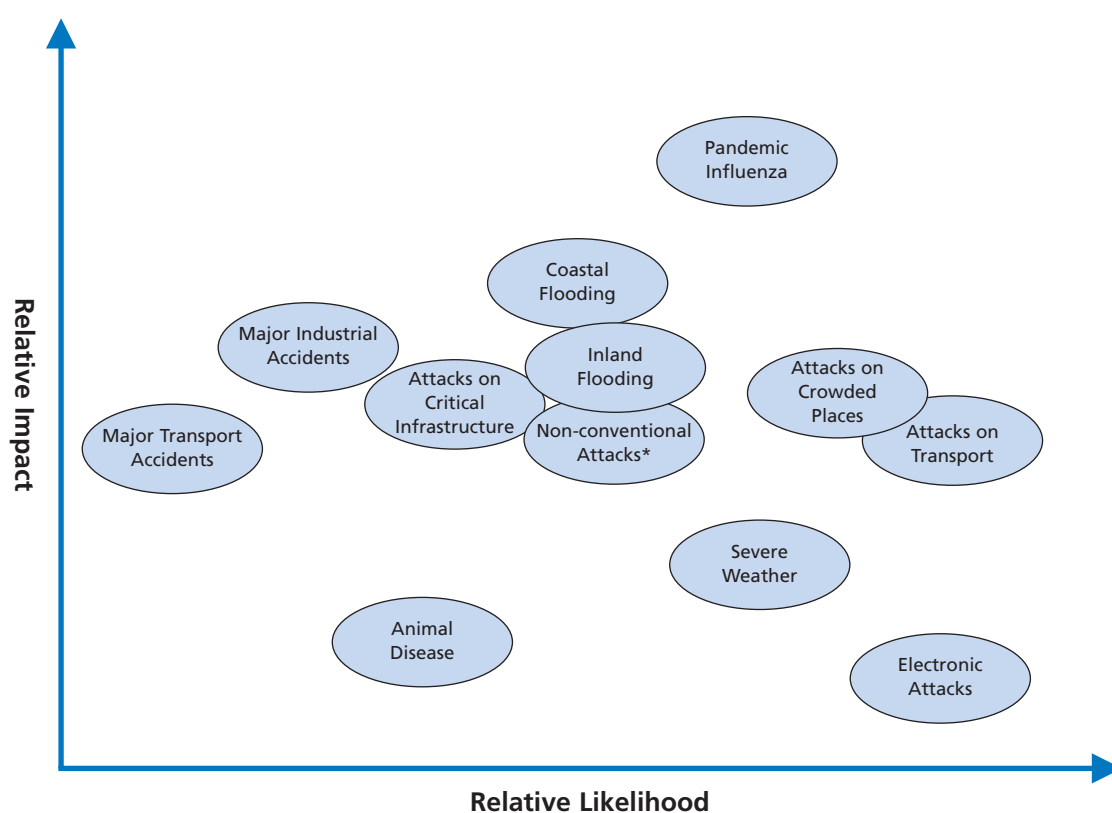
## Visualisation of the Risk Register

**1.10** Figure 1 gives an indication of the relative likelihood and impact of the high consequence risks that are outlined in the National Risk Register. Due to the nature of the risks contained within each grouping, it is not possible to represent an exact comparison but only to give an idea of the position of each group of risks relative to the others, in terms of likelihood and impact.

**1.11** It is also important to highlight that the risks shown in Figure 1 and detailed in Chapter Two are not the full range of possible risks to the UK, from the insignificant to the catastrophic. They are those risks that are deemed significant enough for inclusion due to their likelihood or impact or both.

<sup>5</sup> Further information on central government response to emergencies can be found at [www.ukresilience.gov.uk/response/ukgovernment](http://www.ukresilience.gov.uk/response/ukgovernment)

Figure 1: An illustration of the high consequence risks facing the United Kingdom



\* The use of some chemical, biological, radiological and nuclear (CBRN) materials has the potential to have very serious and widespread consequences. An example would be the use of a nuclear device. There is no historical precedent for this type of terrorist attack which is excluded from the non-conventional grouping on the diagram.

**1.12** The National Risk Register illustrates the kinds of contingency which primarily drive planning by government and the emergency services and for which organisations, individuals, families and communities can reasonably plan if they want to do so. The selection excludes some risks that are classified for reasons of national security and specific illustrative examples of risks where there are cases outstanding in the courts which may be prejudiced.

**1.13** The UK has been described as one of the pioneers in coordinated risk management for emergencies, because of the systematic way in which we assess the risks and use these assessments to help planning.

**1.14** The assessments:

- are relative – they aim to compare the likelihood and impact of events with each other;
- only look at risks of emergencies in the UK, not throughout the world;
- look at the risks to the country as a whole, and so do not take into account local conditions which may be different to the national picture;
- look at major emergencies – not at everyday occurrences that do not qualify as emergencies under the Civil Contingencies Act.

**1.15** Many of the risks outlined in this document, such as those arising from terrorism and major human or animal disease outbreaks, may have origins outside the UK. The UK works with international partners and institutions – for example UN agencies like the World Health Organisation, EU members, the G8 and the Organisation for Economic Co-operation and Development (OECD) – to mitigate the risks and to share best practice on how to respond. Further details of international cooperation in these areas can be found in the National Security Strategy, or on the websites of the Foreign and Commonwealth Office and other relevant government departments.

## How to use the Register

**1.16** The Government does not expect individuals or communities to tackle any of the risks described in the Register on their own. In all cases, the Government is working to reduce the risks to the UK from civil emergencies, ranging from a flu pandemic and serious flooding, to international terrorism.

It also aims to provide an effective response where emergencies cannot be prevented from happening.

**1.17** The National Risk Register is for those who may want to improve their own preparedness:

- Chapter Two provides a summarised assessment of the groups of risks, based on those contained within the National Risk Assessment. For local assessments of how far these and other risks apply in your area, consult your Community Risk Register or equivalent Devolved Administration website.
- Each risk grouping includes a section on further information sources for anyone who wants to find out more about a particular risk and what you can do to prepare for it.
- For organisations in the public, private and voluntary sectors interested in business continuity planning, read Chapter Three. This sets out business continuity planning considerations which are designed to complement business continuity planning under the new British Standard (BS 25999) – choose the ones that suit your circumstances and consult the BS 25999 website<sup>6</sup>.
- For members of the public interested in individual, family or community based emergency preparedness, Chapter Four sets out some suggestions as a starting point – choose the ones that suit your circumstances.
- If you want to find out how the Government carries out risk assessment, and how the National Risk Assessment is created, read Chapter Five.

<sup>6</sup> [www.bsigroup.co.uk/bs25999](http://www.bsigroup.co.uk/bs25999)



- Finally, the Register is a first attempt to inform the public more fully of the types of risks that we face. Use the feedback form on the Cabinet Office website to tell us what you did not and did find useful. We will consider your comments when we update the National Risk Register.

**Further Information:**

**For civil protection practitioners**

[www.ukresilience.gov.uk](http://www.ukresilience.gov.uk)

**Links to Community Risk Registers**

[www.preparingforemergencies.gov.uk](http://www.preparingforemergencies.gov.uk)

**National Security Strategy**

[www.cabinetoffice.gov.uk/reports/national\\_security\\_strategy](http://www.cabinetoffice.gov.uk/reports/national_security_strategy)

**Information on the Civil Contingencies Act**

[www.ukresilience.gov.uk/preparedness/ccact](http://www.ukresilience.gov.uk/preparedness/ccact)

**World Economic Forum Global Risk Report**

[www.weforum.org/en/initiatives/globalrisk/index.htm](http://www.weforum.org/en/initiatives/globalrisk/index.htm)

**Scottish Executive**

[www.scotland.gov.uk](http://www.scotland.gov.uk)

**Welsh Assembly Government**

[www.wales.gov.uk](http://www.wales.gov.uk)

**Northern Ireland Executive**

[www.ofmdfmi.gov.uk/emergencies](http://www.ofmdfmi.gov.uk/emergencies)

# Chapter Two: Risks

## Natural Events

### Severe Weather

#### Risk

**2.1** As experience has shown, severe weather can take a variety of forms and at times can cause significant problems and disruption to normal life. Over the coming years, we are likely to see rising temperatures and sea levels, and an increase in the frequency and severity of extreme weather events in the UK. There are many types of severe weather that can have a serious local impact in one area of the UK, such as dense fog. Some of these are outlined in Community Risk Registers but, since they do not have a national impact, they are not covered here. The main types of severe weather that we need to plan for at national level include storms and gales, low temperatures and heavy snow, heat wave and drought.

#### Background

##### *Storms and Gales*

**2.2** The most significant storms in recent decades were those of 16 October 1987 and 25 January 1990. The first brought down an estimated 15 million trees in the south-east of England. As the peak wind speeds occurred overnight, there were fewer deaths and injuries than there might have been, given that the storm crossed such a densely populated area.

**2.3** By contrast, the 1990 storm occurred during the daytime, was more extensive, and had higher peak wind speeds. The more northerly track meant

that the storm crossed areas that were on the whole less wooded than those affected by the 1987 storm. The net effect was a much higher death toll but less damage to trees and property.

**2.4** More recently, a storm battered many parts of the UK on 18 January 2007, with gusts of wind up to 77mph recorded at Heathrow. This caused 9 deaths and widespread damage to trees and buildings across the UK, along with power disruption.

##### *Low Temperatures and Heavy Snow*

**2.5** There have been a number of occasions recorded where snow has covered large areas of the country for over a week. A notable example was in Northern Ireland in February 2001 where strong north-easterly winds and heavy snow caused travel disruption for up to 5 days and brought down power lines (resulting in power cuts to 70,000 homes), mostly in Counties Antrim and Down. In February 1991 much of the UK, including Heathrow Airport, was covered in snow for a week, with many places recording 10cm or more.

**2.6** More recently, in February 2007 snow caused disruption across central areas of England and Wales, resulting in school closures, power outages and people being unable to get to work for 1 or 2 days depending on location.

**2.7** There have been other less recent but more severe events, such as the period of snow in 1947 and also in 1962/63, which was the coldest winter in over 250 years. As the climate continues to change, we expect the frequency of these sorts of events to continue to decrease in the future.

### **Heat Waves**

**2.8** Temperatures of 32°C or more (the threshold used by the Met Office to define a heat wave) were most widespread during the heat wave of August 1990, having been recorded in virtually all parts of England and some parts of Wales. The only other occasions when at least half of England experienced 32°C were in 1976 and 1911. In terms of persistence, 1976 ranks highest with 32°C being exceeded at one or more places in the UK on 15 consecutive days from 23 June to 7 July.

**2.9** The hot summer of 2003 is estimated to have resulted in 2045 excess deaths, mainly among vulnerable populations. Since then, the Heat Health Watch system<sup>7</sup> has been introduced and during the hot weather of July 2006 significantly fewer (680) excess deaths were recorded.

Other consequences of heat waves can be

- an increased number of admissions to hospital and consultations with GPs due to sunburn, heat exhaustion, respiratory problems and other illnesses such as food poisoning;
- more vehicle breakdowns due to overheating engines; and
- road surfaces deteriorating as tarmac begins to melt.

**2.10** As the climate changes, the frequency and intensity of heat waves is likely to increase.

### **Drought**

**2.11** Droughts are regular events and vary in intensity and duration across the country. A drought does not arrive without warning. Routine monitoring of drought indicators like river or groundwater sites by the Environment Agency (and equivalent bodies in the Devolved Administrations) picks up indications of any significant deficits developing.

**2.12** Periodic restrictions on non-essential water use are an integral part of water resource planning by water companies. The 2004/06 drought in south-east England was similar in severity to the worst droughts of the last 200 years, where nine droughts of similar severity have been recorded, but we got through it with little more than the inconvenience for domestic customers of hosepipe bans.

**2.13** Climate change may produce more droughts but not necessarily a more frequent use of restrictions. Water resource and drought planning is dynamic to meet the challenges.

### **Planning by Government and the Emergency Services**

**2.14** The Met Office has responsibility for providing weather warnings for the UK. Advisory messages are issued routinely on the Met Office website<sup>8</sup>, using a traffic light system which indicates how confident we can be that severe or extreme weather is due.

<sup>7</sup> [www.metoffice.gov.uk/weather/uk/heathealth/index.html](http://www.metoffice.gov.uk/weather/uk/heathealth/index.html)

<sup>8</sup> [www.metoffice.gov.uk](http://www.metoffice.gov.uk)

**2.15** Early warnings of severe or extreme weather are issued when the Met Office has 60% or greater confidence that severe weather is expected in the next few days. Flash warnings of severe or extreme weather are issued when the Met Office has 80% or greater confidence that severe weather is expected in the next few hours.

**2.16** The Heat Health Watch system operates in England and Wales from 1 June to 15 September each year in association with the Department of Health and the Welsh Assembly. The system comprises four levels of response, based on threshold maximum daytime and minimum night-time temperatures. These thresholds vary by region, but an average threshold temperature is 30°C by day and 15°C overnight.

**2.17** Water companies' statutory drought plans have trigger points to initiate a range of actions during the various stages of a drought to manage supplies and demand. Only emergency drought orders (EDO) can authorise supply interruptions through standpipes or rota cuts. EDO powers have only been exercised three times in England and Wales since 1945 and not since 1976 when they were used in north Devon and south-east Wales.

#### Further Information:

##### **Met Office website for up to date weather warnings**

[www.metoffice.gov.uk](http://www.metoffice.gov.uk)

##### **Advice on what to do when severe weather is forecast**

[www.metoffice.gov.uk/weather/uk/advice/index.html](http://www.metoffice.gov.uk/weather/uk/advice/index.html)

##### **Heat Health Watch**

[www.metoffice.gov.uk/weather/uk/heathealth/index](http://www.metoffice.gov.uk/weather/uk/heathealth/index)

##### **Information on water restrictions and what to do in a drought**

[www.environment-agency.gov.uk/subjects/waterres](http://www.environment-agency.gov.uk/subjects/waterres)

##### **Defra**

[www.defra.gov.uk/corporate/contingency/index.htm](http://www.defra.gov.uk/corporate/contingency/index.htm)

##### **Scottish Environment Protection Agency**

[www.sepa.org.uk](http://www.sepa.org.uk)

## Flooding

### Risk

**2.18** As the events of summer 2007 showed, flooding can take different forms and, at its most serious, can affect many different aspects of our daily lives. Over the coming years, rising temperatures and sea levels, and an increase in the frequency and severity of extreme weather events, are likely to raise the risk of flooding in the UK. The three main types of flooding are coastal or tidal flooding, river flooding and surface water flooding (caused by excess rainfall); the last two of which can be grouped under the general description of

'inland' flooding as they can and do occur simultaneously. A further scenario, major reservoir dam collapse or failure, could bring about almost instantaneous flooding and is included in the industrial accidents section.

## Background

### *Coastal Flooding*

**2.19** Of these types of event, large scale coastal flooding has the potential to have the greatest impact.

**2.20** The last significant event of this type to affect the UK was in January 1953 when the east coast of England suffered one of the biggest environmental disasters ever to have occurred in this country. Flood defences were breached by a combination of high tides, storm surge and large waves. Coastal towns in Lincolnshire, Norfolk, Suffolk, Essex and Kent were devastated as sea water rushed into the streets. Over 600 square kilometres of land were flooded and 307 people killed in that area. 200 industrial facilities were damaged by floodwater. Over 32,000 people were safely evacuated. A month after the flooding the estimated cost was £40 – £50 million, the equivalent of around £1 billion today, not including the cost of relocation and interruption of business activity. Since 1953, a lot of work has been done to improve flood defences. Consequently, the likelihood of defences failing or being overtopped by sea tides is now substantially lower. In particular, the construction of the Thames Barrier in London and associated flood defence systems along the East Coast of England now means there is a good level of protection against sea and tidal surges.

### *Inland Flooding*

**2.21** The frequency of inland flooding is increasing; this is evidenced by several examples of river and surface water flooding over the last few years. Of these, the events of summer 2007 were the most widespread. In June/July 2007 severe rainfall, during an extremely wet summer, led to some 48,000 households and 7,300 businesses being flooded across England. Other effects of recent flooding have included the closure of primary transport routes, the loss of some critical services such as electricity, telecommunications and water supplies, and large numbers of people requiring evacuation and alternative accommodation (in some cases for many months). Businesses as well as homes have been made inaccessible for many months while buildings dry out and damage is repaired.

### **Planning by Government and the Emergency Services**

**2.22** The Government has a programme of flood risk management, which aims to reduce the likelihood of flooding. Local Resilience Forums (LRFs) are required to have planning in place to assess the risk of flooding and develop appropriate contingency plans. These arrangements are constantly under review.

**2.23** Both the Met Office and the Environment Agency maintain sophisticated monitoring and forecasting systems for severe rainfall and river and sea flooding and, if severe rainfall is predicted, clear weather forecasts and warnings will be maintained. In relation to rivers and the sea, the Environment Agency maintains the free Floodline Warnings Direct<sup>9</sup> system, which you can sign up to in order to receive

<sup>9</sup> Available on the Environment Agency website

flood warnings and learn more about how to protect your home. Other warnings are also used such as sirens and door-knocking in some areas.

**2.24** We need to continue to learn the lessons each time a serious flooding event occurs. The Government is committed to taking forward recommendations from the Pitt Review<sup>10</sup> into the summer 2007 flooding in a programme to reduce the risk and impact of flooding in the future.

**2.25** Priorities include:

- developing better institutional arrangements for surface water management;
- improving overall emergency response capability to respond to flood events, including arrangements to protect critical infrastructure and essential services;
- ensuring that, where new development is necessary in areas at risk of flooding, appropriate measures are taken to minimise the risk.

#### Further Information:

##### Environment Agency flood pages

[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

##### Defra flood pages

[www.defra.gov.uk/envirom/fcd/default.htm](http://www.defra.gov.uk/envirom/fcd/default.htm)

##### Scottish Environment Protection Agency (SEPA)

[www.sepa.org.uk](http://www.sepa.org.uk)

##### Rivers Agency of Northern Ireland

[www.riversagencyni.gov.uk/index/flood-emergency.htm](http://www.riversagencyni.gov.uk/index/flood-emergency.htm)

##### Health Protection Agency guidance on risk to health

[www.hpa.org.uk](http://www.hpa.org.uk)

## Human Disease

### Risk

**2.26** Human diseases can take a variety of forms and consequently their impacts can vary considerably both in scale and nature. The main types of human disease that represent new or additional risks to the UK are outlined below. The examples have been chosen to give an impression of the range of possible diseases that would have a significant disruptive effect, but are by no means exhaustive.

### Background

#### *Pandemic Influenza*

**2.27** Influenza pandemics are natural phenomena that have occurred from time to time for centuries – including three times in the last century. The symptoms are similar to those of seasonal influenza

<sup>10</sup> [www.cabinetoffice.gov.uk/thepittreview.aspx](http://www.cabinetoffice.gov.uk/thepittreview.aspx)

but may be significantly more severe. Influenza pandemics arise as a result of a new influenza virus that is markedly different from recently circulating influenza viruses and therefore to which few people, if any, have immunity. As a result of rapid spread from person to person, pandemics have significant global human health consequences. In addition to the severe health effects, a pandemic is also likely to cause significant wider social and economic damage and disruption.

**2.28** The most notable influenza pandemic of the last century occurred in 1918/19 and is often referred to as 'Spanish flu'. It caused serious illness, an estimated 20–40 million deaths worldwide (with peak mortality rates in people aged 20–45) and major disruption. In the UK alone there were an estimated 228,000 additional deaths. Whilst the pandemics in 1957 and 1968 (often referred to as 'Asian' and 'Hong Kong' flu respectively) were much less severe, they also caused significant illness levels – mainly in the young and the elderly – and an estimated 1–4 million deaths worldwide between them.

**2.29** Experts agree that there is a high probability of another influenza pandemic occurring, but it is impossible to forecast its exact timing or the precise nature of its impact. Based on historical information, scientific evidence and modelling, the following impacts are predicted:

- Many millions of people around the world will become infected causing global disruption and a potential humanitarian crisis. The World Health Organisation<sup>11</sup> estimates that between 2 million and 7.4 million deaths may occur globally.
- Up to one half of the UK population may become infected and between 50,000 and 750,000 additional deaths (that is deaths that would not have happened over the same period of time had a pandemic not taken place) may have occurred by the end of a pandemic in the UK.
- Normal life is likely to face wider social and economic disruption, significant threats to the continuity of essential services, lower production levels, shortages and distribution difficulties.
- Individual organisations may suffer from the pandemic's impact on staff absenteeism therefore reducing the services available.

### ***New and Emerging Infectious Diseases***

**2.30** An emerging infectious disease can be defined as one that has recently been recognised. Alternatively, it could be a disease where cases have increased (or look as though they might be on the increase) over the last 20 years, in a specific place or among a specific population.

**2.31** Over the past 25 years, more than 30 new, or newly-recognised, infections have been identified around the world. The pattern of known infections also changes constantly, as the areas where disease is constantly present expand beyond traditional limits. Most of these cases are zoonotic infections, in other words, they are naturally transmissible, directly or indirectly, between vertebrate animals and humans. By their very nature, zoonotic infections can be more challenging to monitor.<sup>12</sup>

**2.32** Although it is unlikely that a new infectious disease would originate in the UK, it is possible that

<sup>11</sup> [www.who.int/csr/disease/influenza/pandemic/en/](http://www.who.int/csr/disease/influenza/pandemic/en/)

<sup>12</sup> For further information on zoonotic diseases, refer to the section on Animal Diseases

one could emerge in another country. Given the ease and speed with which people can travel around the world, it is possible that a new infection could spread rapidly before it is detected, and be transmitted to the UK. New diseases therefore pose a potential threat to the health of the UK population, and may present social and economic challenges.

**2.33** A recent example of a newly emerged infectious disease is SARS (Severe Acute Respiratory Syndrome). SARS appears to have originated in Asia in November 2002. Over the following months, the illness spread rapidly to more than two dozen countries across Asia, North America, South America, and Europe. Many of these countries were subject to travel restrictions. SARS posed a global threat, challenging the global public health community. By the time the disease was contained, in July 2003, over 8,000 people had been affected worldwide, of whom over 750 died. The majority of cases occurred among close family members associated with an initial case, and hospital workers who had cared for SARS patients.

**2.34** The likelihood of a new disease like SARS spreading to the UK is low, but if an outbreak of an emerging infectious disease occurred in the UK, and preventative measures were not put in place swiftly, the impact seen could be on the scale of the SARS outbreak in Toronto, Canada. Toronto had 251 cases of SARS in two waves over a period of several months. For every patient with confirmed SARS, 10 potential cases were investigated and 100 followed up.

**2.35** The emergence overseas of an influenza pandemic or other widespread infectious disease may result in a proportion of the British nationals who are not normally resident in the UK (approximately 12 million) choosing to return to the UK. Some returning British nationals would not have the means to support themselves and their return would have a short term but significant impact upon the areas in which they settle.

## **Planning by Government and the Emergency Services**

### ***Pandemic Influenza***

**2.36** These inter-pandemic years provide a very important opportunity to develop and strengthen preparations for the potentially serious impact of an influenza pandemic. The Government is collaborating actively with international partners on prevention, detection and research, and is taking every practical step to ensure that the UK is prepared to limit the internal spread of a pandemic and to minimise health, economic and social harm as far as possible. This includes purchasing and stockpiling appropriate medical countermeasures.

**2.37** A stockpile of the antiviral oseltamivir (Tamiflu) to treat up to 25% of the population is already in place. This should be sufficient to treat all those who fall ill in a pandemic of similar proportions to those that occurred in the 20th century. The level of stocks is kept under review in light of the scientific evidence.



**2.38** Advanced Supply Agreements for the supply of pandemic specific vaccine will allow for the purchase of vaccine for the entire population, if needed, although delivery of the first batch could not start until 4 to 6 months after the pandemic has started. This is because it will take time to identify the strain of influenza responsible and manufacture the appropriate vaccine.

**2.39** The UK Government published *The National Framework for Responding to an Influenza Pandemic* in November 2007. The *Scottish National Framework for responding to an Influenza Pandemic* was published in March 2007. These frameworks provide information and guidance to assist and support public and private organisations across all sectors in understanding the nature of the challenges and in making the appropriate preparations.

### ***New and Emerging Infectious Diseases***

**2.40** The Department of Health has developed a contingency plan for dealing with SARS and this would provide the basis for dealing with any future outbreaks should the disease re-emerge. This builds on our generic responses to outbreaks of infectious diseases and the specific lessons learned during the SARS outbreak. The containment of the SARS outbreaks globally reconfirmed that traditional public health and infection control measures can be successful in containing a new infectious disease.

Early recognition of a new infection is crucial and international collaboration and the deployment of surveillance and monitoring systems is key for tackling new and emerging diseases. The remit of the Health Protection Agency's (HPA) Centre for Infections includes infectious disease surveillance, detection and diagnosis, and the provision of specialist services. The HPA has plans in place for dealing with any new or emerging infections, whether arising abroad or in the UK, and would co-ordinate the investigation and management of national and unusual outbreaks. The HPA also advises government on the public health risks and the necessary preventative and control measures. The HPA collaborates with other international surveillance bodies and undertakes horizon scanning to enable us to respond rapidly to any international health alerts.

**2.41** Government departments work closely to strengthen plans to manage an influx of British nationals that may result from a number of scenarios. The Foreign and Commonwealth Office's website provides information on pandemic influenza for British nationals living overseas, as well as travel advice by country which includes up to date health advice sections.

**Further Information:****For Pandemic influenza**

[www.ukresilience.info/pandemicflu](http://www.ukresilience.info/pandemicflu)

**also****Department of Health**

[www.dh.gov.uk/en/PublicHealth/Flu/PandemicFlu/index.htm](http://www.dh.gov.uk/en/PublicHealth/Flu/PandemicFlu/index.htm)

**Health Protection Agency**

[www.hpa.org.uk](http://www.hpa.org.uk)

**Scottish Executive**

[www.scotland.gov.uk/pandemicflu](http://www.scotland.gov.uk/pandemicflu)

**Health Protection Scotland**

[www.hps.scot.nhs.uk/resp/index/asp](http://www.hps.scot.nhs.uk/resp/index/asp)

**European Centre for Disease Prevention and Control**

[www.ecdc.europa.eu/](http://www.ecdc.europa.eu/)

**European Union**

[http://europa.eu/index\\_en.htm](http://europa.eu/index_en.htm)

**World Health Organisation**

[www.who.int/csr/disease/influenza/pandemic/en/](http://www.who.int/csr/disease/influenza/pandemic/en/)

**Foreign and Commonwealth Office**

Information for British nationals living overseas, as well as travel advice by country which includes up to date health advice sections.

[www.fco.gov.uk/en/travelling-and-living-overseas/staying-safe/health/avian-and-pandemic-influenza](http://www.fco.gov.uk/en/travelling-and-living-overseas/staying-safe/health/avian-and-pandemic-influenza)

[www.fco.gov.uk/en/travelling-and-living-overseas/travel-advice-by-country/](http://www.fco.gov.uk/en/travelling-and-living-overseas/travel-advice-by-country/)

**NHS**

General information and advice on human health, including information about human diseases, can be found on the NHS Choices website.

[www.nhs.uk](http://www.nhs.uk)

**Animal Disease****Risk**

**2.42** There have been a number of cases of significant animal disease in the United Kingdom; Foot and Mouth Disease and Avian Influenza (Bird Flu) being the most notable recent examples. When considering the likelihood of such outbreaks, scale should be taken into account. There have been a number of more frequent but smaller-scale examples in recent years but the outbreaks depicted in the diagram in Chapter One are of a much larger scale than those we have seen recently.

**Background*****Non-zoonotic Notifiable<sup>13</sup> Animal Diseases (e.g. Foot and Mouth Disease)***

**2.43** Non-zoonotic diseases are those that cannot be transmitted to humans. Swift action is still needed, however, in order to contain the spread of certain listed or notifiable diseases. As well as Foot and Mouth Disease, other examples are Classical Swine Fever, Bluetongue and Newcastle Disease (of birds).

**2.44** Foot and Mouth Disease (FMD) is spread by direct and indirect contact – it can even be windborne. In countries like the UK, where the disease arises only as the result of imported infection, the accepted policy is to stamp it out by culling all affected stock and any others which have been exposed to such risk of infection that it is reasonably certain that they would develop the disease if left alive. Vaccination may be used in addition to control the outbreak. Measures for reducing the risk of introduction include effective control on imports of meat, other animal products and susceptible animals. Movement restriction regimes and on-farm controls will also limit the spread of disease.

<sup>13</sup> Definition – [www.defra.gov.uk/animalh/diseases/notifiable/index.htm](http://www.defra.gov.uk/animalh/diseases/notifiable/index.htm)

**2.45** There are two forms of swine fever: Classical Swine Fever, which has been recorded in the UK; and African Swine Fever, which has not. Classical Swine Fever is a very contagious disease of pigs and the measures for control and restriction are similar to those for Foot and Mouth Disease.

**2.46** Bluetongue was recorded in the UK for the first time in 2007. The disease is spread between susceptible animals by infected midges. Sheep are most severely affected by the disease. Measures to reduce the risk of introduction include controls on imports of cattle and sheep but these are less effective than for Foot and Mouth Disease since movements of midges obviously cannot be controlled. Vaccination is the most effective form of control and is currently being rolled out across England and Wales. The principles of a future Scottish Vaccination Campaign have been agreed and will be rolled out later this year.

***Zoonotic Notifiable Animal Diseases  
(e.g. Highly Pathogenic Avian Influenza)***

**2.47** Zoonotic notifiable animal diseases are those diseases that can be transmitted naturally between vertebrate animals and humans. They are named in section 88 of the Animal Health Act 1981 or in an Order made under that Act. The ease with which zoonotic disease transmission occurs varies by disease but, for Highly Pathogenic Avian Influenza, it is relatively uncommon and requires specific circumstances. For example, only intense exposure of a person to birds that are infected with Highly Pathogenic Avian Influenza is likely to allow transmission of this disease to humans.

**2.48** Highly Pathogenic Avian Influenza (e.g. H5N1) has been recorded in poultry in the UK several times over the last few years. Migratory wild birds can spread and introduce it by direct and indirect contact. It can also be introduced by mechanical transmission, that is, physically carried by infected material. For disease in poultry the control measures include culling of birds on infected premises. There is no policy to cull wild birds. Vaccination has not been used as a control option given the success of other means of eliminating the disease.

**2.49** West Nile Virus is a viral infection of birds, horses and humans, spread by the bite of infected mosquitoes that can cause encephalitis (inflammation of the brain) or meningitis (inflammation of the lining of the brain and spinal cord). Infection by West Nile Virus has never been identified in horses or humans in the UK. The virus historically occurs in Africa, mainland Europe, the Middle East, West and Central Asia and for the first time in the USA in 1999 where it is now considered endemic.

**2.50** Rabies is a fatal viral disease of the nervous system which can affect all mammals including humans. The disease is usually spread by saliva from the bite of an infected animal. Classical Rabies has long been eradicated from the UK. Controls on the import of susceptible animals, including the pet travel scheme and quarantine, help protect against infected animals entering the UK.

## Planning by Government and Emergency Services

**2.51** The UK Government works to provide effective guidance so as to prevent an outbreak of animal disease occurring in the first place but it also tries to predict local and global trends so that it can prepare effectively. This includes:

- monitoring disease outbreaks around the world, and reporting on the latest developments and risks;
- working with partners to provide warnings and rapid detection of UK disease threats; and
- talking face to face with businesses at livestock markets across the country.

### Further Information:

#### For animal health and welfare

[www.defra.gov.uk/animalh/index.htm](http://www.defra.gov.uk/animalh/index.htm)

[www.dardni.gov.uk/index/animal-health.htm](http://www.dardni.gov.uk/index/animal-health.htm)

#### For health issues relating to zoonoses

[www.hpa.org.uk](http://www.hpa.org.uk)

#### For food safety advice

[www.food.gov.uk](http://www.food.gov.uk)

## Major Accidents

### Major Industrial Accidents

#### Risk

**2.52** Much has been done in the UK both to help prevent industrial accidents and to minimise their effects, but they can still occur. Industrial accidents can take a wide variety of forms and consequently their impacts can vary considerably both in scale and nature. In most cases they will have no or very limited impact outside the plant and can be dealt with locally. But, as the examples from around the world detailed below show, in rare cases it is possible for there to be more significant consequences.

#### Background

##### Fires

**2.53** Fire can either be a risk in its own right, or because of the damage that it can cause.

- On 14 November 1990, a fire in a telephone exchange led to the failure of all lines in the Scarborough area, including those of the coastguard, other emergency services, and the public utilities. Some cash dispensers and computer systems linked to the telephone network also failed.
- In December 2005, the largest peacetime fire in Europe occurred at the Buncefield Oil Storage Terminal in Hemel Hempstead. There were no deaths but a number of injuries. In the short term, the surrounding area was evacuated.

Some businesses in the immediate vicinity as well as the site itself experienced much longer-term disruption to operations.

### **Contamination**

**2.54** Contamination can take many forms. While there are extensive arrangements in place to prevent and detect any contamination before it reaches the general public, accidents can still occur. Some of the more extreme examples drawn from around the world are detailed below:

- In 1997 in Scotland and 2006 in England there was accidental contamination of water supply areas with diesel. The event in February 2006 affected 2,500 properties in the Exeter area. The water company enacted emergency procedures and distributed alternative supplies of drinking water whilst the incident was investigated and resolved. The Drinking Water Inspectorate<sup>14</sup> conducted an assessment and made recommendations and suggestions for measures to mitigate against a repeat of such incidents.
- In 1976 an accident occurred at a chemical plant manufacturing pesticides and herbicides in Seveso, Italy. This led to the release into the air of dioxins which were poisonous and carcinogenic. The contamination affected some ten square miles of land and vegetation. More than 600 people had to be evacuated from their homes and as many as 2,000 were treated for dioxin poisoning.

- In September 1987 a lead canister containing caesium-137 ruptured in Goiania, central Brazil. The contamination was spread by human contacts, wind and rainwater runoff resulting in 4 deaths from exposure and 244 people, 7 major properties and 42 residences being contaminated.

**2.55** In some cases an accident may simply impact on local wildlife and the surrounding environment.

- In 1996 the crude oil tanker Sea Empress grounded off south west Wales, spilling around 72,000 tonnes of oil into the sea. This had a short term effect on some marine life. In 2007 the MSC Napoli was beached in Lyme Bay after suffering serious structural failure. A small amount of oil leaked into the sea, and some cargo washed ashore on nearby beaches. In March 2008 the Ice Prince sank off the Devon coast, shedding around 2,000 tonnes of timber, much of which subsequently washed up on beaches along the south coast.

### **Technical failure**

**2.56** Probably the most extreme scenario (but one of the least likely) in this section, is the nationwide loss of electricity. The high voltage electricity transmission network in Great Britain has never experienced a complete shutdown in its history. Nevertheless, because of our reliance on electricity for so many aspects of our lives, even localised losses of electricity can have a significant impact on those affected. A loss of gas supply could also be significant for those who rely on gas for heating and cooking.

<sup>14</sup> [www.dwi.gov.uk](http://www.dwi.gov.uk)

- On 27 October 2002 a storm swept across England and Wales resulting in interrupted electricity supplies to 2 million customers. Most were reconnected within 2 days but a very small percentage were disconnected for up to 10 days.
- A major accident at a gas processing facility on 25 September 1998 severely disrupted gas supplies to the State of Victoria in Australia. Householders lost their gas supplies for heating, cooking and hot water, as did hotels and restaurants. Industry which used gas had to close and their suppliers were also affected as there was less demand for their products. Gas supplies were restored to major users on 5 October and to householders in the following days.
- In April 2007 a major pumping component at a waste water treatment plant serving 800,000 customers in Edinburgh failed, causing 1,000 litres a second of partially diluted untreated sewage to be pumped into the Firth of Forth.
- The Malpasset dam on the Reyran River in Southern France was breached on 2 December 1959. The breach created a wall of flood water 40m high, moving at 70 km/h. It destroyed two small villages and in 20 minutes, reached Fréjus, 7km to the south, where it was still 3m high. The resulting flood killed over 400 people and caused widespread damage.

## Planning by Government and the Emergency Services

**2.57** The Government, industry, regulators and emergency responders work closely to reduce the chance of any incident occurring.

**2.58** Following the Seveso incident, detailed above, there were major changes to European law, which is now regularly reviewed. The current legislation is the Control of Major Accident Hazard Regulations 1999 (COMAH) and Control of Major Accident Hazard Regulations (Northern Ireland) 2000 under which major hazard sites are regulated and inspected in accordance with the regulations. Their main aim is to prevent and mitigate the effects of major accidents involving dangerous substances.<sup>15</sup>

**2.59** Following the accident at the nuclear power plant at Chernobyl in 1986, the Government prepared a National Response Plan for dealing with the effects of overseas nuclear accidents on the UK population and infrastructure<sup>16</sup> and set up the Radioactive Incident Monitoring Network (RIMNET).<sup>17</sup> The RIMNET system is designed to deliver the co-ordination of consequence management and the authoritative central science response to any overseas incident.

**2.60** The UK Government has also worked to reduce the opportunity for any accident involving radioactive sources to occur, such as the Goiania incident. The High-activity Sealed Radioactive Sources & Orphan Sources (HASS) Regulations 2005 mean sources are constantly tracked, and 6,000 surplus sources have been removed from circulation by a UK wide initiative.

<sup>15</sup> [www.hse.gov.uk/comah](http://www.hse.gov.uk/comah)

<sup>16</sup> [www.defra.gov.uk/corporate/contingency/topics/nuclear.htm](http://www.defra.gov.uk/corporate/contingency/topics/nuclear.htm)

<sup>17</sup> [www.defra.gov.uk/environment/radioactivity/emergencies/rimnet/index.htm](http://www.defra.gov.uk/environment/radioactivity/emergencies/rimnet/index.htm)

**2.61** In the event an incident does take place, there is a well developed capability amongst the emergency services to deal with industrial accidents involving hazardous materials. The emergency services receive specialist training and are provided with protective equipment and the relevant supplies in order to enable them to operate in hazardous environments and to rescue and treat any casualties. Both the Ambulance and Fire and Rescue Services have means to decontaminate people affected by such an incident and local authorities have plans in place to open reception centres for those caught up in the incident or displaced from their homes. Where necessary, decontamination of the area of any incident can be undertaken by contractors drawn from a framework established by the Government Decontamination Service<sup>18</sup> so that it can be returned to normal use.

**2.62** The response to any incident involving hazardous materials, whether accidental or deliberate, requires a well co-ordinated multi-agency response. Accordingly, there is planning for such events at national, regional, and local level and regular testing of the plans through exercises.

#### ***Sector specific planning includes:***

##### ***Electricity***

**2.63** There are comprehensive plans in place for handling both a complete national outage and regional outages. In the event of a national outage (which has never occurred), and provided there had been no damage to the system, the objective would be to restore supplies throughout Great Britain within three days.

##### ***Water & Sewerage***

**2.64** The Security and Emergency Measures Direction of 1998 places a series of statutory requirements on water companies in England and Wales (the Security and Emergencies Measures Direction 2002 applies in Scotland) in relation to their emergency planning functions. All water companies have plans in place to provide trained and experienced personnel, and suitably equipped permanent or mobile accommodation to act as command and control centres.

**2.65** Where the piped mains water cannot be used, supplies of drinking water which meet the prescribed standard are required. These may be provided from other parts of the company's network not affected by the emergency or from neighbouring companies. They may be supplied to customers in bowsers or bottles.

##### ***Gas***

**2.66** Most high pressure gas pipes form part of an overall network. This means gas supplies can often be rerouted, reducing the potential for national disruption to the domestic network.

##### ***Communications***

**2.67** Telephone companies have their own plans for dealing with disruption, and there are arrangements for them to work together where necessary and appropriate. Action to restore services following a major incident will begin immediately but the time to get services back on line will depend on the cause and severity of the loss of the telecommunications network and service.

<sup>18</sup> [www.gds.gov.uk](http://www.gds.gov.uk)

### **Fuel**

**2.68** The Government's National Emergency Plan for Fuel is designed to prioritise fuel resources in the event of major disruption to supply. It includes the possibility of rationing supply to retail customers, and prioritising emergency services and essential service providers. If there is sufficient diesel to supply emergency services and essential service providers then the surplus will be prioritised to truck stops and HGV motorway filling stations to help keep supply chains operational.

### **Marine Pollution**

**2.69** The Maritime and Coastguard Agency has well practised plans including all the relevant emergency services for both major and minor pollution incidents and procedures for handling vessels that are involved in accidents.

### **Planning for Dam Inundation**

**2.70** The Environment Agency enforces the Reservoirs Act 1975 which applies to more than 2,000 reservoirs in England and Wales. It is responsible for maintaining a register of these reservoirs and achieving compliance with the Act. In Scotland, Local Authorities enforce the Reservoirs Act.

#### **Further Information:**

##### **Government Decontamination Service**

[www.gds.gov.uk](http://www.gds.gov.uk)

##### **The Government's National Emergency Plan for Fuel**

[www.og.berr.gov.uk/downstream/emergencies/down\\_emerge.htm](http://www.og.berr.gov.uk/downstream/emergencies/down_emerge.htm)

##### **Maritime & Coastguard Agency's National Contingency Plan for maritime pollution**

[www.mcga.gov.uk](http://www.mcga.gov.uk)

##### **Radioactive Incident Monitoring Network (RIMNET)**

[www.defra.gov.uk/environment/radioactivity/emergencies/rimnet/index.htm](http://www.defra.gov.uk/environment/radioactivity/emergencies/rimnet/index.htm)

##### **Control of Major Accident Hazards (COMAH)**

[www.hse.gov.uk/comah/](http://www.hse.gov.uk/comah/)

## **Major Transport Accidents**

### **Risk**

**2.71** Transport accidents occur across the UK on a daily basis (mainly on roads involving private vehicles) and well practised plans are in place to deal with these at local and regional level. This section is focused on those rare major transport accidents which have such a significant impact that they require some form of national response. Thanks to modern safety regimes large-scale transport accidents are very rare, nevertheless they cannot be entirely ruled out as the following examples demonstrate.



## Background

### *Air*

**2.72** There have not been any major air accidents in the UK since the Kegworth incident in 1989, when a Boeing 737 crashed close to the M1 Motorway, resulting in the death of 47 passengers, with no loss of life on the ground. A more recent incident was the loss of power to a Boeing 777 on approach to Heathrow in January of 2008; this emergency landing caused one serious injury and no deaths.

### *Maritime*

**2.73** The last major accident involving a UK flagged ship was the sinking of The Herald of Free Enterprise in March 1987. The ferry capsized shortly after leaving Zeebrugge en route to Dover resulting in 187 deaths. The sinking of the Estonia in the Baltic Sea in 1994, which led to 850 deaths, also demonstrates the potential for loss of life on a massive scale when flooding of a vessel occurs.

**2.74** In December 2002 the Tricolor was hit by a container ship in French waters in the English Channel and sank. The hazard that this created in part of the Channel resulted in some disruption to shipping as other vessels were required to steer clear of the site.

### *Road and Rail*

**2.75** Whilst accidents do occur much more frequently on the UK's road networks than on other modes of transport, the scale of even the largest such incident would not be sufficient to warrant a co-ordinated central government response. Similarly, continuing improvements to rail safety regimes and infrastructure over recent years have seen a

substantial reduction in both the frequency and impact of rail accidents. As with road accidents, it is highly unlikely that an incident of this kind would require a co-ordinated central government response.

## Planning by Government and the Emergency Services

**2.76** Individual transport sectors are, mostly, subject to regulation of their provision of services. All transport sector operators have plans that cover a range of possible outcomes including those most likely to create a wider impact. These plans include the diversion of resources where possible (based on safety and operational requirements).

**2.77** The response by the emergency services to such events is covered by their existing arrangements for responding to other types of major incidents.

### Further Information:

#### Department for Transport

[www.dft.gov.uk](http://www.dft.gov.uk)

#### Civil Aviation Authority

[www.caa.co.uk](http://www.caa.co.uk)

#### Transport Scotland

[www.transportscotland.gov.uk](http://www.transportscotland.gov.uk)

#### Traffic Scotland

[www.trafficscotland.org](http://www.trafficscotland.org)

#### Northern Ireland Public Transport

[www.translink.co.uk](http://www.translink.co.uk)

[www.drdni.gov.uk/index/public\\_transport.htm](http://www.drdni.gov.uk/index/public_transport.htm)

## Malicious Attacks

**2.78** As the National Security Strategy outlined, the UK faces a serious and sustained threat from terrorism. At the time of publication the national threat assessment stands at ‘severe’, meaning that some form of attack is highly likely. Many of those networks and individuals who are judged to pose a terrorist threat share an ambition to cause large numbers of casualties without warning. Some have aspirations to use non-conventional weapons such as chemical, biological, radiological and nuclear substances. Others aspire to attack our national infrastructure using both traditional methods and more novel methods such as electronic attack.

**2.79** The Government’s counter terrorism strategy, CONTEST<sup>19</sup> is an integrated approach based on four main work streams, each with a clear objective to try and stop terrorist attacks occurring or, when they do, to mitigate their impact. The National Risk Register is focused on preparing for emergencies but the work in this area links closely with the CONTEST workstreams outlined below:

- Pursue: stopping terrorist attacks
- Protect: strengthening our protection against attack
- Prepare: mitigating the impact of attacks
- Prevent: stopping people becoming terrorists or supporting violent extremism

**2.80** As the National Security Strategy made clear, terrorism is not the only malicious threat we face. Organised crime is increasing across the world and

exploiting new opportunities including directly or indirectly supporting terrorism. While the Serious and Organised Crime Agency assesses the threat to the UK to be high, it is not the pervasive threat that it is in some parts of the world.

**2.81** The National Security Strategy confirms the assessment in the 1998 Strategic Defence Review that, for the foreseeable future, no state or alliance will have both the intent and capability to threaten the UK militarily. The UK does, however, remain subject to high levels of covert non-military activity by foreign intelligence organisations. They are increasingly combining traditional intelligence methods with new and sophisticated technical attacks, for example attempting to penetrate computer networks through the internet. In addition, malicious acts by individuals against essential services, whether for criminal or personal motives, can have the same effect as significant accidents.

### Further Information:

#### Security Service – MI5

[www.mi5.gov.uk](http://www.mi5.gov.uk)

#### Serious and Organised Crime Agency (SOCA)

[www.soca.gov.uk](http://www.soca.gov.uk)

#### SOCA – UK Threat Assessment

[www.soca.gov.uk/assessPublications/UKTA0809.html](http://www.soca.gov.uk/assessPublications/UKTA0809.html)

#### National Security Strategy

[http://interactive.cabinetoffice.gov.uk/documents/security/national\\_security\\_strategy.pdf](http://interactive.cabinetoffice.gov.uk/documents/security/national_security_strategy.pdf)

<sup>19</sup> Further information on CONTEST can be found in the National Security Strategy  
[http://interactive.cabinetoffice.gov.uk/documents/security/national\\_security\\_strategy.pdf](http://interactive.cabinetoffice.gov.uk/documents/security/national_security_strategy.pdf)

## Attacks on Crowded Places

### Risk

**2.82** Whilst there have been attacks against well protected targets around the world, terrorists also attack crowded public places because they have less protective security and therefore offer a higher likelihood of success.

### Background

**2.83** The most likely target for a crowded places attack is one which is easily accessible, regularly available and offers the prospect for an impact beyond the loss of life alone. Additionally, a crowded place with iconic status, or which has interests that are terrorist targets in their own right is likely to be preferred over similar venues with no such associations. Such attacks can be conducted by groups with a relatively limited level of expertise. Terrorists worldwide have for example targeted nightclubs (e.g. Bali, 2002) and hotels (e.g. Egypt, 2005 and Jordan, 2006).

### Planning by Government and the Emergency Services

**2.84** Longstanding and regularly activated major incident plans and structures are in place across government. The adaptability and expertise of the emergency services provides an extremely solid basis for handling a mass casualty incident. For example, Ambulance Trusts and other NHS organisations have an excellent track record in dealing with major incidents and regularly exercise their major incident plans. The Urban Search and Rescue<sup>20</sup> (USAR)

capability for the Fire and Rescue Service, provided through the New Dimensions programme, has now been fully rolled out across the service.

**2.85** Considerable work is underway, led by the Home Office, in conjunction with the National Counter Terrorism and Security Office (NaCTSO) and local police Counter Terrorism Security Advisers (CTSAs), and with the close engagement of local partners, to put in place a consistent framework for reducing the vulnerability of crowded places across the UK. This has included putting in place a standard way for CTSAs to assess vulnerability to terrorist attack of crowded places which will enable local partnerships to prioritise their work and evaluate its protective impact.

**2.86** In addition, a supplement to '*Safer Places – the Planning System and Crime Prevention*' will be published to provide a practical guide on how to design in counter terrorism measures in new developments.

#### Further Information:

**Fire and Resilience** – Urban Search and Rescue  
[www.communities.gov.uk](http://www.communities.gov.uk)

**National Counter Terrorism Security Office**  
[www.nactso.gov.uk/crowdedplaces.php](http://www.nactso.gov.uk/crowdedplaces.php)

**Home Office**  
[www.security.homeoffice.gov.uk](http://www.security.homeoffice.gov.uk)

<sup>20</sup> [www.communities.gov.uk/fire/resilienceresponse](http://www.communities.gov.uk/fire/resilienceresponse)

## Attacks on Critical Infrastructure

### Risk

**2.87** The national infrastructure comprises those facilities, systems, sites and networks necessary for the functioning of the country and the delivery of the essential services upon which daily life in the UK depends<sup>21</sup>. These fundamental services, such as electricity and water supply, underpin daily life and ensure the country continues to function socially and economically.

**2.88** Many of the impacts which could result from industrial accidents, technical failure or severe weather could also result from a terrorist attack on critical infrastructure. The risk and impact varies according to the importance of the specific infrastructure asset attacked.

**2.89** Electronic attacks on critical infrastructure and on transport systems are dealt with in subsequent sections.

### Background

**2.90** Terrorists in the UK have previously attacked, or planned to attack, national infrastructure. Attempts were made to attack electricity substations in the 1990s. Bishopsgate, in the City of London, was attacked in 1993 and South Quay in London's Docklands in 1996. These attacks resulted in widespread damage and disruption but relatively few casualties. Elsewhere in the world terrorists have carried out attacks against energy infrastructure (in Saudi Arabia and Yemen in 2006) and against financial institutions and government buildings (such as the attacks on the World Trade Centre in 1993 and 2001).

### Planning by Government and the Emergency Services

**2.91** As with attacks on crowded places, longstanding and regularly activated major incident plans and structures are in place across government. Planning for the impacts of attacks on critical infrastructure is in many cases the same as for accidents or technical failure. The previous section on major industrial accidents outlines a range of these plans which, in addition to businesses' continuity plans for losses of essential services, should help obviate the effects of any disruptions.

**2.92** A comprehensive and well established programme of work to protect the critical national infrastructure from terrorism and other national security threats is also in place, along with robust mechanisms to ensure an effective response by the range of government departments involved. This programme of work covers protective security measures for the nine national infrastructure sectors. Government arrangements for delivering advice were reorganised at the beginning of last year with the creation of the Centre for the Protection of National Infrastructure (CPNI) to provide integrated advice across the three security disciplines – physical, electronic and personnel security.

#### Further Information:

**Centre for the Protection of National Infrastructure**

[www.cpni.gov.uk](http://www.cpni.gov.uk)

<sup>21</sup> There are nine *national infrastructure sectors* which deliver essential services (Energy, Food, Water, Transport, Communications, Government, Emergency Services, Health, and Finance). Within the sectors there are certain 'critical' elements of infrastructure, the loss or compromise of which would have a major detrimental impact on the availability or integrity of essential services.

## Attacks on Transport Systems

### Risk

**2.93** Of the different malicious attacks outlined in this document, conventional attacks on transport systems are judged to be some of the more likely to occur; although the likelihood of them affecting any one individual is still very low. This assessment is supported by the many examples of this type of attack perpetrated by different groups across the globe. As the recent incidents outlined below indicate, attacks on transport systems can take different forms with different levels of impact.

### Background

#### *Rail and Underground*

**2.94** Stringent security measures are applied at airports. Rail and underground networks, however, are open systems, which is likely to make them attractive potential targets for terrorist attacks. As a result, there have been several successful attacks on rail networks worldwide.

**2.95** On 7 July 2005 the London transport system was attacked with 4 explosions (3 on underground trains, 1 on a bus). This was followed by unsuccessful attacks against the London transport system two weeks later. There have also been a number of recent examples in other countries of successful attacks against underground systems (e.g. Moscow, 2004) and mainline rail services (e.g. Madrid, 2004).

### *Air*

**2.96** Over the past 20 years there have been a number of attacks by terrorists against the aviation industry. These include the 1988 Lockerbie attack involving a Pan Am flight, the deliberate use of hijacked planes to attack the World Trade Centre and the Pentagon in September 2001, and the attempted attack using explosives concealed in shoes on a transatlantic flight in 2001. Despite this ongoing threat, the number of attacks has remained relatively small due in part to the work of the police, security and transport safety authorities and the development of appropriate security measures at airports.

### *Maritime*

**2.97** To date, no such attack has taken place against a British ship or in UK waters. If such an attack were to be successful, its impact could vary significantly depending, for example, on the spread of fire on board or whether enough damage was caused to lead to the vessel sinking.

### Planning by Government and the Emergency Services

**2.98** Individual transport sectors are, mostly, subject to regulation of their provision of services. All transport sector operators have plans that cover a range of possible scenarios including those most likely to create a wider impact. Those plans include the diversion of resources where possible (based on safety and operational requirements).

### **Rail and Underground**

**2.99** These remain popular targets for malicious groups due to the high number of people that travel on these systems each day and the ease of access to the general public. Security for the national rail network, as well as London Underground, the Docklands Light Railway and the Glasgow Subway, is regulated by the Department for Transport, which inspects and monitors compliances. As open networks, these systems will always be more vulnerable to attack than closed systems such as aviation. Both Network Rail and London Underground have robust plans in place to respond to emergencies and these are regularly tested and updated. The British Transport Police are responsible for policing British rail networks and are closely involved in contingency planning, as well as working with industry and the Department for Transport on security issues.

**2.100** Eurostar services through the Channel Tunnel are subject to a more stringent security regime similar to that which exists at airports, under which all passengers and their baggage are currently subject to screening.

### **Air**

**2.101** Stringent protective security measures exist at UK and EU Member State airports. Airlines and airports are required to carry out a range of specified measures. These include the following measures to mitigate the risk of attack:

- screening of passengers and their bags, as well as of all staff working in restricted areas;
- physical security measures including the separation of incoming international passengers from all outbound travellers; and
- background checks on staff in sensitive posts.

**2.102** Security measures are also in place to protect aircraft in flight, such as the compulsory locking of cockpit doors. These security regimes are regularly inspected by the Department for Transport's Transport Security & Contingencies Directorate (TRANSEC) to ensure compliance. In addition, TRANSEC provides advice to UK airlines operating overseas on measures needed at their foreign stations.

### **Maritime**

**2.103** Stringent protective security measures exist (including tightly controlled access) for cruise ships and ferries serving the UK and Northern Ireland. New rules for domestic ferries came into effect on 1 July 2007 as domestic sea-going ferries now fall within the scope of the EU regulation for enhancing ship and port facility security.

#### **Further Information:**

##### **Department for Transport**

[www.dft.gov.uk](http://www.dft.gov.uk)

##### **TRANSEC**

[www.dft.gov.uk/pgr/security](http://www.dft.gov.uk/pgr/security)

## **Non-conventional Attacks**

### **Risk**

**2.104** To date there have been relatively few examples of attacks perpetrated using non-conventional, or in other words chemical, biological, radiological and nuclear (CBRN) materials. However, we still need to plan for them. The potential scale and nature of any impact will be dependent on the type of substance used, as the following examples demonstrate.

## Background

**2.105** A cult in Japan made a number of attempted attacks using non-conventional substances. The most well known incident was the Sarin release in March 1995 on the Tokyo underground that killed 12, and affected many more. There was little direct impact upon the underground system, which was operational and with normal traffic levels as soon as police released the crime scene.

**2.106** In late 2001 anthrax attacks in the US, where letters containing anthrax spores were sent in the post, resulted in five deaths and increased an already heightened sense of public anxiety following the 11 September attacks. Senate offices and mail sorting areas were contaminated for long periods causing considerable disruption.

**2.107** The use of some CBRN materials has the potential to have very serious and widespread consequences. An example would be the use of a nuclear device. There is no historical precedent for this type of terrorist attack.

## Planning by Government and the Emergency Services

**2.108** There is a well developed capability amongst the emergency services and other responder agencies to deal with industrial accidents involving hazardous materials. Similarly the emergency services are well versed in dealing with terrorist incidents involving conventional explosives. In dealing with a potential terrorist incident involving unconventional materials therefore, many of the same procedures and equipment can be applied. One of the most significant differences between a conventional terrorist attack and one using chemical, biological,

radiological or nuclear material is the potential for contamination of people, and of buildings, infrastructure and the surrounding environment. The occurrence and nature of such attacks can also be difficult to detect and identify.

**2.109** The emergency services receive specialist training and are provided with protective equipment and the relevant supplies in order to enable them to operate in hazardous environments and to rescue and treat any casualties. Both the Ambulance and Fire and Rescue Services have means to decontaminate people affected by such an incident and local authorities have plans in place to open reception centres for those caught up in the incident or displaced from their homes. Where necessary, decontamination of the area of any incident, so that it can be returned to normal use, can be undertaken by contractors drawn from a framework established by the Government Decontamination Service.

**2.110** The response to any incident involving hazardous materials – whether accidental or deliberate – requires a well co-ordinated multi agency response. Accordingly, there is planning for such events at national, regional, and local level and regular testing of the plans through exercises.

### Further Information:

**Government Decontamination Service**  
[www.gds.gov.uk](http://www.gds.gov.uk)

**Home Office**  
[www.security.homeoffice.gov.uk](http://www.security.homeoffice.gov.uk)

**Cabinet Office**  
[www.ukresilience.gov.uk](http://www.ukresilience.gov.uk)

## Electronic attack

### Risk

**2.111** The risk and impact of electronic attacks on IT and communication systems varies greatly according to the particular sectors affected and the source of the threat. Electronic attacks have the potential to export, modify or delete information or cause systems to fail.

**2.112** There is a known risk to commercially valuable and confidential information in some government and private sector systems from a range of well resourced and sophisticated attacks. Electronic attack may be used more widely by different groups or individuals with various motives.

### Background

**2.113** IT systems in government departments and various organisations, including elements of the national infrastructure have been and continue to be attacked to obtain the sensitive information they hold. Some of these attacks are well planned and well executed.

### Planning by Government and the Emergency Services

**2.114** IT systems are increasingly interconnected with each other and with the citizen using internet technologies. This provides huge benefit in terms of convenience, efficiency and cost saving but also requires that departments effectively manage the associated risks. CESG, the Information Assurance arm of GCHQ (Government Communications Headquarters), uses its expertise in this fast moving

arena of internet security to provide help and support to government in dealing with these risks. The Centre for the Protection of National Infrastructure (CPNI) provides advice on protective security measures and direct technical support to organisations within the national infrastructure.

**2.115** Business continuity plans in all critical national infrastructure sectors obviate the effects of any disruptions as far as possible (see sections on government planning for industrial accidents and attacks on critical infrastructure).

#### Further Information:

##### Centre for the Protection of National Infrastructure

[www.cpni.gov.uk](http://www.cpni.gov.uk)

##### CESG (National Technical Authority for Information Assurance)

[www.cesg.gov.uk](http://www.cesg.gov.uk)

##### Get Safe Online

[www.getsafeonline.org](http://www.getsafeonline.org)

##### Central Sponsor for Information Assurance

[www.cabinetoffice.gov.uk/csia.aspx](http://www.cabinetoffice.gov.uk/csia.aspx)





# Chapter Three: Considerations for organisations

## General Advice on Preparing for Emergencies

**3.1** Incidents described in this document, whether natural, accidental or deliberate, can cause significant disruption to businesses and other organisations. Organisations may wish to put in place arrangements to mitigate the impact of this disruption. These arrangements can help them return to normal levels of business more rapidly, limit the volume of business lost to competitors, and reduce the chances of customers losing confidence in them. Not only is such planning widely regarded as good business sense, it could even be critical to an organisation's survival.

### BS 25999

In 2007, a British Standard for business continuity was introduced (BS 25999). It provides for the first time a yardstick that can be used to assess the suitability of an organisation's business continuity arrangements. For further information about the standard, visit the British Standards Institution's website ([www.bsigroup.co.uk/bs25999](http://www.bsigroup.co.uk/bs25999)).

**3.2** The process of developing plans to cope with disruptive incidents is known as Business Continuity Management (BCM). It involves identifying critical business activities and resources, and planning how to maintain them in the event of a disruptive incident.

**3.3** To implement BCM, organisations need to ask themselves the following questions:

- What are your key products and services?
- What are the critical activities and resources required to deliver these (e.g. personnel, technology, premises, information or supplies)?

- What are the risks to these activities and resources?
- How will your organisation maintain these critical activities in the event of an incident?

**3.4** In partnership with key stakeholders, the Cabinet Office has developed a BCM Toolkit<sup>22</sup> to help commercial, public sector and voluntary organisations develop appropriate business continuity plans. These should be exercised regularly to ensure they are workable and that adequate measures are in place to provide information to staff and key stakeholders in the event of an emergency.

## Specific Considerations for Organisations

**3.5** Employers may wish to consider the following questions when developing their business continuity plans.

### How would your organisation cope with significant reductions in staff?

**3.6** Organisations may wish to put in place measures to maintain essential business activities for several weeks in the event of high levels of staff absence. These measures could include:

- Identifying the activities that are critical to their business and those which could be curtailed or stopped during periods of significant staff shortages.
- Calculating the minimum number of staff required to carry out critical activities.
- Identifying the skills and expertise required to undertake the critical activities and develop an inventory of staff skills to assist with staff redeployment.

- Identifying staff who could be moved from non-essential to critical activities and possible training requirements.
- Introducing cross-training of skills across a number of individuals.
- Identifying essential posts and individuals whose absence would place business continuity at particular risk, and incorporating succession planning for key personnel.
- Carrying out mapping of business processes to allow staff to undertake different roles. This could involve:
  - describing the flow of materials, information and documents;
  - displaying the various tasks contained within the processes;
  - indicating the decisions that need to be made along the chain;
  - showing the essential relationships and interdependencies between the process steps.
- Developing or expanding self-service and on-line options for customers and business partners.

**3.7** Organisations may also wish to think about the specific consequences of an influenza pandemic upon their workforce. Relevant information can be found on the Department of Health's website.<sup>23</sup>

### **How would denial of access to a site or geographical area affect your organisation?**

**3.8** Denial of access to a site or area can arise from a variety of incidents and range from a few hours to many months. During an incident, the emergency

services will provide advice on what action should be taken. This advice should be followed at all times. However, organisations should consider developing evacuation and invacuation<sup>24</sup> plans in case staff, customers and visitors need to leave or shelter within premises in an emergency. When creating these plans, organisations may wish to:

- Consider in advance under what circumstances the organisation may need to evacuate or invacuate staff.
- Develop safety, first-aid or evacuation assistance teams and plans which can support staff during those circumstances.
- Develop plans to locate and account for those who were on site or in the immediate vicinity and any special arrangements required for vulnerable staff.
- Consider how to provide staff and customer communications and safety briefings in the event of an evacuation or invacuation.
- Think about how staff will be moved from the assembly point to an alternative site, transported home, or moved to a place of safety.
- Ensure there is a robust telephone and/or email cascade system for contacting staff (outside working hours if necessary). This could be used for providing information on where staff will be relocated in an emergency.
- Ensure that data is backed-up and kept off site and test that any backed-up data can be recovered.
- Think about the mechanisms in place to provide information to other stakeholders such as suppliers and key customers.

<sup>23</sup> [www.dh.gov.uk/en/Publichealth/Flu/PandemicFlu/index.htm](http://www.dh.gov.uk/en/Publichealth/Flu/PandemicFlu/index.htm)

<sup>24</sup> Moving staff, customers and visitors to a safe place within a building and away from danger.

- Prepare an 'emergency pack' of items that will help your organisation to implement its plans. This could include:
  - copies of business continuity plan(s), including staff contact information and customer/supplier details;
  - a building site plan;
  - insurance company details;
  - financial information;
  - equipment such as computer back up disks, USB memory sticks, spare keys and security codes;
  - a fully charged mobile telephone.
- Consider what other essential items may need to be moved to the alternative site(s) to ensure essential business functions are maintained.
- Ensure members of staff are familiar with evacuation and invacuation procedures and that these are regularly exercised.

**3.9** Where possible, employers may also want to arrange an alternative (back-up) site and consider:

- From what sites (locations or premises) the organisation currently conducts its critical activities.
- What plant, machinery and other facilities are required to carry out critical activities.
- Whether or not the organisation would be able to continue essential activities following denial of access to all physical assets in a particular area.
- What alternative sites the organisation has access to.

- Whether the alternative sites are susceptible to the same (or other) risks as the current site.

**3.10** Organisations may need to adapt working practices if premises were to be evacuated. This could involve:

- The displacement of staff performing less urgent business processes with staff performing higher priority activities.
- Remote working (e.g. staff working from home or other locations).
- Ensuring that essential information is stored securely (e.g. in a fire proof safe), and developing plans for salvaging assets and records.

### **How would your organisation cope with an unexpected loss of mains electricity?**

**3.11** Organisations may want to prepare for the possibility of total loss of electricity for a few days and planned temporary rota cuts<sup>25</sup> for several hours each day over a number of weeks or months.

**3.12** Loss of mains electricity can affect lighting, heating, air conditioning and electronic equipment, and could result in data loss or corruption. However, if the electricity outage is widespread, the secondary effects can also include:

- loss of mains water and sewerage after six hours;
- loss of mobile communications after one hour, depending on back-up arrangements;
- disruption to financial transactions;
- closure of petrol stations.

<sup>25</sup> Where consumers are cut off in rolling blocks of a few hours on a pre-planned rota, variable according to the scale of the supply shortage.

**3.13** Organisations can prepare for this disruption by considering:

- Alternative methods of working which do not require mains electricity.
- Rostering the workforce to match known rota cuts.
- Closing non-essential premises in the event of prolonged loss of electricity.
- Having back-up power supplies (e.g. standby generators or uninterruptible power supplies).
- Backing-up data regularly.

#### **How would a temporary disruption to gas supplies affect your organisation?**

**3.14** Organisations can prepare for a loss of gas supplies by considering:

- Availability of alternative heating sources.
- Alternative methods of working such as closure of non-essential premises and movement of essential services to unaffected locations.

**3.15** Loss of gas supplies could also lead to loss of electricity (with associated consequences as described above).

#### **Does your organisation have adequate business continuity measures in place to cope with significant disruption to transport?**

**3.16** Disruption to local, regional or international transport used by staff or for the delivery of supplies may affect critical activities, both directly and indirectly. To minimise the impact of this disruption, employers may wish to consider:

- Recording alternative routes and methods of transport available to staff to assess who may have difficulties getting to work, or travelling for business purposes, and who may be able to work remotely if necessary.
- Examining contingency options so that the impact of a disruption on the delivery of goods and services can be mitigated.

#### **How would your organisation be affected by disruption to the supply of mains water and sewerage?**

**3.17** Mains water and sewerage could be disrupted for several weeks. To prepare for such disruption, businesses may wish to consider:

- The health and safety needs of staff (e.g. the requirement for drinking water and sanitation).
- How water critical services would be affected (e.g. air conditioning or computer cooling systems).

#### **Is your organisation prepared for disruption to the availability of oil and fuel?**

**3.18** To prepare themselves for possible disruption, organisations may want to think about:

- The impact of lack of availability of fuel on their supply chains and operations.
- Limiting the use of existing fuel to critical activities.
- Whether you have access to existing back-up supplies.
- The impact on staff transportation arrangements.

- Encouraging flexibility in staff working practices; including:
  - increased working from home;
  - car sharing;
  - the use of public transport by staff.

**3.19** In the event of very significant fuel disruption, the Government may implement the National Emergency Plan for Fuel, which would prioritise transport fuel resources to blue light organisations and other essential service providers, with the possibility of rationing supply to retail customers.

#### **How would a loss of telecommunications affect your organisation?**

**3.20** Many organisations use telecommunication services that are reliant on the same physical infrastructure, technology and suppliers. They could therefore experience concurrent disruption to mobile phones and landline networks, messaging systems, internet access and video conferencing. Organisations can help themselves prepare for such disruption by:

- Avoiding reliance on a single technical solution (e.g. not relying solely on mobile phones for critical communications).
- Maintaining up-to-date contact details to ensure non-standard communication methods can be employed.
- Focusing on identification and maintenance of critical users' access to communications where possible.

#### **How would your organisation cope with the loss of, or disruption to, IT systems?**

**3.21** Most organisations today rely on some form of IT system to perform their critical activities. To prepare for possible disruption to these systems, organisations may wish to consider:

- Which IT systems are needed to carry out critical activities.
- What information is needed to carry out critical activities.
- How this information is stored and how it is accessed.
- Maintaining the same technology at different locations that will not be affected by the same disruption.
- Ensuring data is backed-up and copies are kept securely off site.

#### **Does your organisation have plans in place to cope with the disruption affecting key suppliers or partners?**

**3.22** Even if your organisation is not directly affected by an emergency, disruption to key suppliers or partners can have significant effects on your business. To minimise the impact of this disruption you may wish to consider:

- Identifying the key suppliers or partners who you depend upon to undertake your critical activities.

- Determining whether your business has any reciprocal arrangements with other organisations.
- Checking whether suppliers have arrangements in place to sustain their own service provision.
- Identifying alternative sources of supplies.

**3.23** Additional guidance on how to develop business continuity plans is available on the Government's *Preparing for Emergencies* website – [www.preparingforemergencies.gov.uk](http://www.preparingforemergencies.gov.uk).

**Further Information:**

More information on how businesses can prepare for emergencies is available on the following websites.

**General Advice:**

**UK Resilience**

[www.ukresilience.gov.uk](http://www.ukresilience.gov.uk)

**Wales Resilience**

[www.walesresilience.org](http://www.walesresilience.org)

**Scottish Preparing for Emergencies & BCM Guidance**

[www.scotland.gov.uk/Topics/Justice/emergencies](http://www.scotland.gov.uk/Topics/Justice/emergencies)

**Northern Ireland Civil Contingencies**

[www.ofmdfmi.gov.uk/emergencies](http://www.ofmdfmi.gov.uk/emergencies)

**British Standards Institution**

[www.bsigroup.co.uk/bs25999](http://www.bsigroup.co.uk/bs25999)

**Specific Advice across the UK:**

**Road Traffic**

[www.highways.gov.uk](http://www.highways.gov.uk)

[www.trafficscotland.org](http://www.trafficscotland.org)

[www.roadsni.gov.uk](http://www.roadsni.gov.uk)

**Rail**

[www.nationalrail.co.uk](http://www.nationalrail.co.uk)

[www.translink.co.uk](http://www.translink.co.uk)

**Fuel & Gas**

[www.berr.gov.uk](http://www.berr.gov.uk)

[www.detini.gov.uk](http://www.detini.gov.uk)

**Electricity**

[www.berr.gov.uk](http://www.berr.gov.uk)

[www.detini.gov.uk](http://www.detini.gov.uk)

**Water Supply**

[www.defra.gov.uk](http://www.defra.gov.uk)

[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

[www.sepa.org.uk](http://www.sepa.org.uk)

[www.drdni.gov.uk](http://www.drdni.gov.uk)

[www.niwater.com](http://www.niwater.com)

**Food**

[www.food.gov.uk](http://www.food.gov.uk)

**Human Diseases**

[www.dh.gov.uk](http://www.dh.gov.uk)  
[www.nhsdirect.nhs.uk](http://www.nhsdirect.nhs.uk)  
[www.scot.nhs.uk](http://www.scot.nhs.uk)  
[www.dhsspsni.gov.uk](http://www.dhsspsni.gov.uk)  
[www.hscni.net](http://www.hscni.net)  
[www.ukresilience.gov.uk/pandemicflu/guidance/business.aspx](http://www.ukresilience.gov.uk/pandemicflu/guidance/business.aspx)

**Animal Diseases**

[www.defra.gov.uk](http://www.defra.gov.uk)  
[www.dardni.gov.uk](http://www.dardni.gov.uk)

**Telecommunications and IT**

[www.cpni.gov.uk](http://www.cpni.gov.uk)

**Health and Safety**

[www.hse.gov.uk](http://www.hse.gov.uk)

**Schools**

[www.teachernet.gov.uk/emergencies](http://www.teachernet.gov.uk/emergencies)  
[www.deni.gov.uk](http://www.deni.gov.uk)

**Severe Weather**

[www.metoffice.gov.uk](http://www.metoffice.gov.uk)

**Flooding**

[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)  
[www.riversagencyni.gov.uk](http://www.riversagencyni.gov.uk)

**Fire**

[www.communities.gov.uk/fire](http://www.communities.gov.uk/fire)

***Useful telephone numbers:***

**Floodline (England and Wales)**

0845 988 1188

**Highways Agency – 24 hours traffic**

08700 660 115

**Highways Agency Information Line**

08457 50 40 30

**Traffic Scotland**

0800 028 1414

**Traffic Watch (Northern Ireland)**

0845 712 3321

**National Rail Enquiries**

08457 48 49 50

**Translink (Northern Ireland)**

028 9066 6630

**Foreign Office & Commonwealth Office  
Travel Advice**

0870 606 0290

**NHS Direct (England & Wales)**

0845 46 47

**NHS 24 (Scotland)**

08454 24 24 24



PREPARING FOR EMERGENCIES  
WHAT YOU NEED TO KNOW

# Chapter Four: Considerations for individuals, families and communities

**4.1** As described in the preceding chapters, incidents can have widespread and long term consequences. The risks to life and property can be significantly reduced by preparing for these consequences. This chapter provides some basic considerations for individuals, families and communities on how they might prepare.

## General Advice on Preparing for Emergencies

**4.2** The Government has previously published advice on preparing for emergencies. A booklet was distributed to households in 2004 and further general advice is available on the *Preparing for Emergencies* website<sup>26</sup>.

**4.3** The website encourages people to prepare for an emergency by taking time to find out:




- Where and how to turn off water, gas and electricity supplies in your home.
- The emergency procedures for your children at school.
- The emergency procedures at your workplace.
- How your family will stay in contact in the event of an emergency.
- If any elderly or vulnerable neighbours might need your help.
- How to tune in to your local radio station.

**4.4** If you find yourself in the middle of an emergency, your common sense and instincts will

usually help you to determine what to do. However, it is important to:

- Make sure 999 has been called if people are injured or if there is a threat to life.
- Not put yourself or others in danger.
- Follow the advice of the emergency services.
- Try to remain calm and think before acting, and try to reassure others.
- Check for injuries – remembering to help yourself before attempting to help others.

**4.5** If you are not involved in the incident, but are close by or believe you may be in danger, in most cases the advice is:

-  **GO IN** Go inside a safe building
-  **STAY IN** Stay inside until you are advised to do otherwise
-  **TUNE IN** Tune in to local radio or TV for more information

**4.6** There are, of course, particular occasions when you should not 'go in' to a building and in all cases you should follow the advice of the emergency services in the area.

## Specific Considerations

**4.7** As with the considerations for organisations outlined in the previous chapter, there are various measures individuals and communities can take to help them prepare and respond to specific impacts

<sup>26</sup> [www.preparingforemergencies.gov.uk](http://www.preparingforemergencies.gov.uk)



which may arise from different types of emergencies. Some of these measures are shown below:

### Loss of Mains Electricity or Gas

**4.8** Power cuts can affect household appliances, lighting, and other electronic equipment. Prolonged loss of electricity can also result in loss of mains water, sewerage and mobile communications. Nationally, schools and offices may close temporarily unless they can find alternative power sources or may have to alter their hours to accommodate rota cuts. You may want to think about the following points to minimise disruption:

- If you have children, you may wish to discuss back-up arrangements for childcare with neighbours/friends in the event of schools being closed.
- Storing key contact details separately from your mobile phone.
- Creating a core stock of essential supplies. This could include bottled water, a battery powered radio, torch, tinned food and alternative heating sources.

### Fuel Shortages

**4.9** There are several ways in which drivers can use less fuel. They may wish to consider:

- Using alternative methods of transport.
- Alternating driving with others whose children attend the same school or activities as your children.
- Offering to share a ride with another colleague living nearby or a neighbour working close to you when commuting to and from work.

- Planning ahead to try and avoid travelling at peak times when congestion is likely. Sitting in traffic will reduce the vehicle's fuel economy.
- Trying to avoid allowing your car to idle. No matter how efficient the motor vehicle, idling consumes fuel. One minute of idling uses up more fuel than restarting your engine.
- Considering ways of using your car's electrics less. Car electrics impose an extra load on the engine, making it work harder and burn more fuel. Air conditioning can increase fuel consumption considerably.
- A poorly tuned engine can also increase fuel consumption. By properly maintaining your car and by following the recommended maintenance schedule in your owner's manual, you can maximise fuel efficiency.

### Disruption to Telecommunications

**4.10** It is important to consider how you might cope if your land line and mobile phone were out of action. You could prepare for this happening by taking the following steps:

- Work out how your friends and family can stay in contact in the event of any disruption.
- Consider developing default arrangements (e.g. for meeting people or collecting children from school) which people can follow if you are unable to contact them.

### Disruption to IT

**4.11** Simple measures can help prevent data loss or corruption on your computer (e.g. using up-to-date anti-virus software or a firewall). Similarly, some

basic steps can be taken to reduce the impact of losing access to data:

- Consider making back-up copies of important electronic files and storing them in a safe place.
- Think about creating paper versions of the important documents stored on your computer.

### **Disruption to Mains Water Supplies**

**4.12** There are several measures that can be taken to prepare for disruption to mains water supplies. These include:

- Ensuring you have some bottled water in your home.
- Making arrangements to use friends' or relatives' facilities if you can't use your own.
- Considering how to use water more sparingly (e.g. by taking showers rather than baths).

### **Transport Disruption**

**4.13** The following considerations may help you prepare for disruption to transport:

- Putting in place back-up/alternative arrangements for getting to work and for other essential journeys (e.g. taking the children to school).
- Putting in place arrangements so that you can work from home if required.
- If driving, working out alternative routes to get to your destination before you set off on your journey.
- Listening to the local radio, switching on the television or searching the internet for travel advice before you set off.

### **Human Diseases**

**4.14** People can adopt simple and basic hygiene measures to protect themselves against disease and to reduce the risk of spreading viruses. Measures may include:

- Staying at home when ill provided there is no need to go to hospital or visit a doctor. You may wish to contact NHS Direct or NHS 24 for further advice on what to do.
- Covering the nose and mouth with a tissue when coughing or sneezing.
- Disposing of dirty tissues promptly and carefully.
- Washing hands frequently with soap and warm water to reduce the spread of the virus from the hands to the face, or to other people, particularly after blowing the nose or disposing of tissues or coming in from outside.
- Regularly cleaning frequently touched hard surfaces, such as kitchen worktops and door handles.

**4.15** In the event of a pandemic, the Government will provide clear and considered messages to the public to advise them on other required action.

### **Denial of Access or Damage to Property**

**4.16** Considering the following points may help you prepare for possible loss of access or damage to your property:

- Do you have copies of important documentation stored at another location?

- Do you know anyone who is particularly vulnerable in your local community and would you be able to help them if they were denied access to their accommodation?
- Have you thought about how you might be able to move valuable items to a higher floor/different location where they would not be damaged?
- Have you considered where you might move your car to avoid it being damaged?
- If you needed to leave the house, do you know where you would go and how you would get there? Do you have friends/family who could provide you with accommodation? What provision could you make for the family pets? What would you need to take with you if you had to be evacuated from your home?
- Preparing a list of useful numbers (e.g. the emergency services and your insurance company).
- Preparing an emergency kit. This could include personal documents, insurance policy, emergency contact numbers, a torch, a battery or wind-up radio, mobile phone, rubber gloves, waterproof clothing, first aid kit and blankets.
- Making a list of other items that may be vital to you in the event of an emergency. These may include family medication or items for your children (e.g. milk, baby food, sterilised bottles and spoons, nappies and wipes).

**4.17** Specific information on how to prepare for flooding is available on the Environment Agency's website<sup>27</sup>. It includes guidance on creating a personalised flood plan and explains how you can register your home (or business) on Floodline Warnings Direct to have telephone warnings sent to your mobile phone or home address.

### **Further Information:**

Information on how to prepare for and respond to emergencies is available on the following websites.

#### **General Advice:**

[www.preparingforemergencies.gov.uk](http://www.preparingforemergencies.gov.uk)

#### **Specific Advice across the UK:**

##### **Road Traffic**

[www.highways.gov.uk](http://www.highways.gov.uk)  
[www.trafficscotland.org](http://www.trafficscotland.org)  
[www.roadsni.gov.uk](http://www.roadsni.gov.uk)

##### **Rail**

[www.nationalrail.co.uk](http://www.nationalrail.co.uk)  
[www.translink.co.uk](http://www.translink.co.uk)

##### **Fuel & Gas**

[www.berr.gov.uk](http://www.berr.gov.uk)  
[www.detini.gov.uk](http://www.detini.gov.uk)

##### **Electricity**

[www.berr.gov.uk](http://www.berr.gov.uk)  
[www.detini.gov.uk](http://www.detini.gov.uk)

##### **Water Supply**

[www.defra.gov.uk](http://www.defra.gov.uk)  
[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)  
[www.sepa.org.uk](http://www.sepa.org.uk)  
[www.drdni.gov.uk](http://www.drdni.gov.uk)

##### **Human Diseases**

[www.dh.gov.uk](http://www.dh.gov.uk)  
[www.scot.nhs.uk](http://www.scot.nhs.uk)  
[www.nhs.uk](http://www.nhs.uk)  
[www.dhsspsni.gov.uk](http://www.dhsspsni.gov.uk)  
[www.hscni.net](http://www.hscni.net)

<sup>27</sup> [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

**Animal Diseases**

[www.defra.gov.uk](http://www.defra.gov.uk)  
[www.dardni.gov.uk](http://www.dardni.gov.uk)

**Telecommunications and IT**

[www.cpni.gov.uk](http://www.cpni.gov.uk)

**Severe Weather**

[www.metoffice.gov.uk](http://www.metoffice.gov.uk)

**Flooding**

[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)  
[www.cabinetoffice.gov.uk/thepittreview](http://www.cabinetoffice.gov.uk/thepittreview)  
[www.riversagency.cymru.gov.uk](http://www.riversagency.cymru.gov.uk)

**Fire**

[www.communities.gov.uk/fire/](http://www.communities.gov.uk/fire/)

***Useful telephone numbers:***

**Floodline (England and Wales)**

0845 988 1188

**Highways Agency – 24 hours traffic**

08700 660 115

**Highways Agency Information Line**

08457 50 40 30

**Traffic Scotland**

0800 028 1414

**Travel Watch (Northern Ireland)**

0845 712 3321

**National Rail Enquiries**

08457 48 49 50

**Translink (Northern Ireland)**

028 9066 6630

**Foreign & Commonwealth Office**

**Travel Advice**

0870 606 0290

**NHS Direct (England & Wales)**

0845 46 47

**NHS 24 (Scotland)**

08454 24 24 24

# Chapter Five: The risk assessment process

## National Risk Assessment

**5.1** Since 2005, the Government has carried out a classified assessment of the risks facing the United Kingdom: this is the National Risk Assessment (NRA), and it is the basis for the public National Risk Register.

**5.2** The NRA process uses historical and scientific data, and the professional judgements of experts to analyse the risks to the UK. There are three stages to this analysis: identification of risks; assessment of the likelihood of the risks occurring and their impact if they do; and comparison of the risks.

## Local Risk Assessment

**5.3** The National Risk Assessment considers the whole of the UK and that means that the risks it assesses do not apply equally to all parts of the country. Each region and community has its own risk profile, different to that of other regions and communities, just as the United Kingdom itself is subject to different risks of emergencies than other countries.

**5.4** As explained in Chapter One, in addition to the National Risk Assessment, Local Resilience Forums (LRFs) in England and Wales are required<sup>28</sup> to carry out and publish local assessments of the risk of non-malicious emergencies occurring in their area: these are known as Community Risk Registers. There are also equivalent processes in the Devolved Administrations.

## Identifying risks

**5.5** The first stage in the National Risk Assessment process is to identify the risks. This is done by consulting a wide range of experts across government, so as to ensure a comprehensive picture of the

potential accidents, natural events (hazards) and malicious attacks (threats) that could cause significant harm and disruption to the UK.

## Assessing risks

**5.6** The next stage is to assess the likelihood and impact of each risk. To assess the likelihood of hazards, historical, statistical and scientific data are used. Where possible, the assessment looks forward to take account of known or probable developments over the next five years that would affect the likelihood.

**5.7** The likelihood of terrorist or other malicious attacks is assessed more subjectively. The willingness of individuals or groups to carry out attacks is balanced against an objective assessment of their capacity – now and, as far as possible, over the next five years – and the vulnerability of their intended targets.

**5.8** In each case, the question being asked is: how likely is it that this type of emergency will happen, somewhere in the country, sometime over the next five years. The NRA does not calculate the chances of these events happening in one particular place, or to one particular community or individual.

**5.9** In terms of impact, the National Risk Assessment takes account of the following effects:

- **The number of fatalities** that are directly attributable to the emergency
- **Human illness or injury**, over a period following the onset of an emergency
- **Social disruption** – the disruption to people's daily lives. Ten different types of disruption are taken into account, from an inability to gain

<sup>28</sup> Under the Civil Contingencies Act 2004

access to healthcare or schools, to interruptions in supplies of essential services like electricity or water, to the need for evacuation of individuals from an area.

- **Economic damage** – the effect on the economy overall, rather than the cost of repairs.

**5.10** In addition, the National Risk Assessment (but not – at present at least – Community Risk Registers) also attempts to estimate the psychological impact that emergencies may have. This includes the anxiety, loss of confidence or outrage that may be felt by communities throughout the country as a result of an emergency, or widespread changes to patterns of behaviour.

### Comparison of the risks

**5.11** In planning for emergencies, local responders have to decide what types of risk, and what levels of consequence, to plan for. Putting a lot of effort into preparing for risks that are either very unlikely to happen, or are likely to cause relatively minor damage, is unlikely to be the best use of the time available to prepare. Priority is instead given to high risks: risks that are both relatively likely and could have a serious impact.

**5.12** Apart from identifying the highest risks, the Government also provides guidance at national level and to LRFs called planning assumptions, on the range and type of damage and disruption that might result from a selection of the higher risks. This ensures that planning is mostly non-specific and can be adapted to different scenarios when necessary.

**5.13** Different types of planning assumptions are needed by different groups.

- For emergency responders, and regional and local Government, to help them plan for and carry out their duties in an emergency. Planning assumptions are issued to provide information, for example on the numbers of casualties that might need treating, or how many people might need to be evacuated or found shelter. These are on a restricted distribution because some of the information they contain is classified for national security reasons.
- For government departments and agencies who lead on improving the resilience of the country to particular types of emergency. They receive classified planning assumptions designed to provide the basis for assessing whether existing plans, infrastructure, equipment, supplies and training are adequate; and, if not, for introducing capability enhancements in the areas for which they have national responsibility.
- Chapters Three and Four of this document now provide similar information for organisations, individuals, families and communities on an unclassified basis.

**5.14** At the national level the planning assumptions are used to set the parameters for the UK Resilience Capabilities Programme which co-ordinates planning and capability building for resilience across the UK (more information on this programme can be found on the UK Resilience website<sup>29</sup>).

### What the National Risk Assessment does not cover

**5.15** The National Risk Assessment and hence the National Risk Register do not cover:

- longer term or broader global risks – like climate change or competition for energy – that might affect the safety and security of citizens of the United Kingdom in the period beyond the five years of the National Risk Assessment. These are the subject of separate programmes of work.
- risks of major emergencies occurring overseas unless they have impacts that directly and seriously damage human welfare or the environment in the United Kingdom, in accordance with the definition of emergency in the Civil Contingencies Act.<sup>30</sup>
- everyday occurrences – like street crime – that can cause extended misery and damage over a long period of time, but are not emergencies that require central government to be directly involved in the response.

### Risk assessment in other countries

**5.16** An increasing number of countries are undertaking national risk assessments of various types but as yet few, if any, are as well established and wide in scope as the UK approach.

**5.17** The World Economic Forum (WEF) report on “Global Risks 2008”<sup>31</sup> describes the United Kingdom as one of the pioneers in coordinated risk management for emergencies, and recognized the National Risk Assessment as the keystone for national risk management. Publication of this National Risk Register will mean that the UK will meet most of the principles of country risk management established by the WEF’s Global Risk Network.<sup>32</sup>

**5.18** The UK will continue to work with other countries and organisations to share expertise and learn from others’ experiences in developing risk assessments.

<sup>30</sup> [www.ukresilience.gov.uk/preparedness/ccact.aspx](http://www.ukresilience.gov.uk/preparedness/ccact.aspx)

<sup>31</sup> [www.weforum.org/pdf/globalrisk/report2008.pdf](http://www.weforum.org/pdf/globalrisk/report2008.pdf)

<sup>32</sup> The five principles are:

- i **Accountability:** the need for accountability of risk assessment as a condition of the legitimacy of assessment as a basis for concerted government action both within and across departments of government.
- ii **Integrated Assessment:** establishing common procedures across government departments to assess risks reduces the chances of exaggeration of the risks and understatement of the more positive aspects of risks.
- iii **Devolved Implementation:** integrated assessment of the risks should not imply centralised implementation of risk management and mitigation.
- iv **Separation of analysis and policy:** analysis is best kept within a separate structure from policy implementation, to prevent pressures from policy makers from impinging upon the independence of the analysis.
- v **Disclosure and transparency (if possible):** the Global Risk Network recognizes that Governments are caught between pressure to disclose risk assessments and the need to keep some assessments confidential so as to avoid panic, protect sources, and maintain resilience. But it considers that disclosure is to be preferred to avoid a situation in which incomplete or inaccurate information causes a popular reaction that may be worse than the risk itself.











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