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## Fire and Rescue Service Operational Guidance

**GRAs**  
generic risk assessments  
introduction

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guidance for fire services

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**Occupational health, safety  
and welfare:**

Guidance for Fire and  
Rescue Services

Generic Risk Assessments

Introduction

August 2009

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## 1. Introduction

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### Purpose of generic risk assessments (GRA)

Owing to the size and nature of the Fire and Rescue Service (FRS) and the wide range of activities in which it becomes involved, there is the potential for the risk assessment process to become a time consuming activity. To minimise this and avoid having inconsistencies of approach and outcome, Communities and Local Government have produced a series of generic risk assessments (GRAs).

The GRAs in this series have been produced as a tool to assist FRSs in drawing up their own assessments to meet the requirements of the Management of Health and Safety at Work Regulations 1999 (MHSWR).

Within this volume the GRAs are arranged into five sections:

<b>Section 1</b> Responding to emergencies	An assessment covering the initial response, turning out and proceeding to incidents, arriving and getting to work.
<b>Section 2</b> Carrying out rescues	Assessments covering the key rescue situations, including trench/pit collapse, and the rescue of animals.
<b>Section 3</b> Fighting fires	Assessments to deal with fire fighting activities in a number of key areas, for example, in buildings, use of ventilation, (including Positive Pressure Ventilation), in rural areas etc.
<b>Section 4</b> Incidents involving transport	Assessments that cover roads (including fires and road traffic collisions), shipping, railways and aircraft.
<b>Section 5</b> Generic hazards	Individual assessments covering the common significant hazards that firefighters face on a day to day basis, these include flashover and backdraught, electricity, working in confined spaces and working at height.

The GRAs in this volume form part of the comprehensive suite of guidance on health, safety and welfare listed below.

- Volume One                      A Guide for Senior Officers
- Volume Two                      A Guide for Fire Service Managers
- Volume Three                    A Guide to Operational Risk Assessment
- Volume Four                    Training Model

They are supplemented with a guide to Dynamic Management of Risk at Operational Incidents.

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## Risk assessment and the Fire and Rescue Service

FRSs will be aware of their duties as required by the Management of Health and Safety at Work Regulations 1999 (MHSWR).

Essentially, they are required to identify and record significant risks to their employees and to other persons arising out of the activities of their undertaking – (Regulation 3).

FRSs should ensure that the GRAs are valid within the context of their own systems, practices and procedures given the risks within their statutory area of responsibility and the wider regional/national arrangements.

FRSs should also be aware that other health and safety regulations<sup>1</sup> might require additional risk assessments to be carried out.

FRSs should note that recording of risk assessment alone will not reduce risks, particularly if risk assessment is seen as the solution to all occupational health and safety problems. However, employing the risk assessment process to identify hazards and direct the FRS to the appropriate control measures will reduce risks.

Risk assessments must therefore be used to support the organisations overarching occupational health, safety and welfare strategy.

Active engagement in the process of risk assessment, with a view to gaining an understanding of the risks and their relative priorities, is to be encouraged at all levels of the workforce.

Guidance on consultation with employees on health and safety matters is contained in the regulations listed below:

- Health and Safety (Consultation with Employees) Regulations 1996, SI 1996/1513
- Safety Representatives and Safety Committees Regulations 1977, SI 1977/500 as amended by The Management of Health and Safety at Work Regulations 1992 S.I.1992/2051.

Additional guidance on using risk assessment as part of an integrated occupational health and safety programme can be found in:

- *Health and Safety guide: Five steps to risk assessment*. INDG 163  
[www.hse.gov.uk/pubns/indg163.pdf](http://www.hse.gov.uk/pubns/indg163.pdf)
- *Health and Safety Guidance Number 65 (HSG65) – Successful Health and Safety Management*, produced by the Health and Safety Executive (HSE)  
[www.hse.gov.uk](http://www.hse.gov.uk)
- *British Standard OHSAS 18001: 2007 Occupational health and safety management systems – Requirements*

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<sup>1</sup> e.g. the Personal Protective Equipment Regulations and the Provision and Use of Work Equipment Regulations etc.

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- *British Standard OHSAS 18002: 2008 Occupational health and safety management systems – Guidelines for implementation of BS OHSAS 18001: 2007*
- *British Standard 18004: 2008 Guide to achieving effective occupational health and safety performance.*  
[www.bsi-global.com/en/Standards-and-Publications/Industry-Sectors/Health-and-Safety/](http://www.bsi-global.com/en/Standards-and-Publications/Industry-Sectors/Health-and-Safety/).

## The Risk Assessment process

The five basic principles of all risk assessments are the same.

- 1 Identify the hazards
- 2 Decide who might be harmed and how
- 3 Evaluate the risks and decide on precautions
- 4 Record the findings and implement them
- 5 Review the assessment and update if necessary.

The risk assessment process should include the actions below:

- whether or not the FRS is required to undertake a particular activity
- what specific activities employees have to carry out
- the hazards present whilst these activities are being undertaken
- both the likelihood of an injury occurring and its severity arising from exposure to each hazard (i.e. the risk)
- and implement control measures to reduce the risk to a level that can be considered as low as is reasonably practicable.

Control measures for FRSs will inevitably involve some or all of the following:

- standard operating procedures (SOPs)
- operational equipment
- personal protective equipment
- realistic training and exercising commensurate with the organisations identified risks
- competence
- communications systems
- levels of supervision and command structures.

Although many FRSs will already have devised their own systems and methods of recording risk assessments to ensure consistency across the services, it is suggested that FRSs in future consider the use of the model risk assessment process described in this volume.



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This is particularly relevant in today's working environment as FRSs are now collaborating more at regional and national level than when the original guidance was issued.

The structure and contents of the GRAs contained within this volume have been formulated to:

- accord with the risk assessment principles set out in health and safety legislation
- be authoritative and simple to use
- utilise the wealth of accumulated knowledge of the FRS
- provide a framework that:
  - can be correlated to existing risk information
  - can be adopted and adapted to local needs by each FRS
  - can be developed for the future
  - has a review process
  - is a sound basis for the development of additional control measures
  - is effective in helping FRSs to optimise safety at operational incidents.

## The model risk assessment process

The Health and Safety Executive (HSE) recommends that industries develop their own specific work related hazard identification prompts to assist in making their risk assessments. An example of a hazard prompts list (Fire and Rescue Service Specific Non-Exhaustive Hazard List) is given at Table 1.

Health and safety legislation requires risk assessments to be “suitable and sufficient” (i.e. suitable being relevant to the matter at hand; sufficient being that it identifies significant risks and what needs to be done to reduce them).

The assessments need to be undertaken by competent persons, i.e. those who have an understanding of the activities being carried out, and are able to make an assessment of the risks that arise from these activities.

For large or complex risk assessments FRSs may wish to consider convening a risk assessment panel. Such a panel may comprise personnel responsible for delivering a service, subject matter experts and health and safety professionals

The representative bodies must be consulted and utilised in the risk assessment process.

It is useful to break the assessment into manageable parts or steps. These are described below.

### Step 1 Scope

Describe the extent and limitations of the risk assessment.

### Step 2 Activities

List the activities to be undertaken. This should be detailed enough to identify the key activities but not so detailed as to become unwieldy.

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## Step 3 Hazards

Identify which hazards are present against each activity.

## Step 4 Describe and assess the risks

Only significant risks or those with potential to become significant risks need be recorded and it is relatively simple to discount minimal or insignificant risks at this stage.

Describe the risk. Identify reasons for being concerned about the risk and do this within the context of current systems, practices and procedures. Identify who is at risk.

Accident data, and professional judgment, will help in deciding what reasonably foreseeable injuries may occur if the risk is realised.

Similarly, identify the likely frequency of such an occurrence. The product of the identified severity of injury and frequency of occurrence provides a risk factor. This should be recorded if significant. Various models and matrices can be used to arrive at this risk factor. Services should adopt the one that best suits their needs.

**Note: The GRAs contained within this volume have had no risk factor applied.**

**This is to be completed by each FRS based on their local circumstances e.g. risk information, availability of equipment and resources etc.**

Identify any control measures currently used to control the risk.

## Step 5 Risk Mitigation

Implement any additional control measures necessary to control the risks identified in Step 4 and enter their details in the summary table.

Risks should be reduced to a level that can be considered “as low as is reasonably practicable” (ALARP). The measure of ALARP is a balance of the time, effort and resources necessary to mitigate a risk against its severity. From this it is clear that significant risks merit considerable attention, whereas minor risks may be dealt with as a matter of routine.

Develop an action plan for each risk that details the steps necessary to reduce the risk.

FRSs must ensure that an audit process to measure the effectiveness of applied control measures in reducing risk is in place. Any necessary adjustments should be made following the audit process.

There is a statutory requirement to review risk assessment when significant changes in circumstances occur (e.g. findings from operational debriefs or investigations). In addition, there should be a pre-determined periodic review of all assessments.

## Definitions

### *Hazard*

A hazard is anything that may cause harm.

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## *Risk*

Risk is the chance, high or low, that somebody could be harmed by these and other hazards, together with an indication of how serious the harm could be.

**The GRAs in this volume are usually comprised of two sections:**

### **Section 1**

Provides a description of the:

- scope of the activity covered
- significant hazards and risks
- key control measures
- technical references.

### **Section 2**

A summary of the GRA in table form.

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## 2. How to use these generic risk assessments

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### Integration into the FRS risk assessment strategy

FRSs should use these assessments as part of their own risk assessment strategy not as an alternative or substitute for it. The GRAs are designed to help FRSs assess their specific risks, and should be considered as part of the FRSs normal planning process. It is suggested that competent assessors:

- check the validity of the information contained in the GRA against their FRSs current practices and identify any additional/ alternative hazards, risks and control measures
- evaluate the severity and likelihood of hazards causing harm, and the effectiveness of current controls, for example, operational procedures, training and PPE etc., by using the FRSs methodology
- consider other regulatory requirements
- identify additional measures which will be needed to reduce the risk, so far as is reasonably practicable
- put those additional measures and arrangements in place.

GRAs provide a guide to the type of information, arrangements and training that should be given to the incident commander, firefighters and any other personnel likely to be affected.

### Implementation of the assessments

When the assessments have been completed it is essential that:

- the assessment outcomes are incorporated into the FRSs management systems
- any remedial action identified, is prioritised and included into the FRSs Health and Safety Plan

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- arrangements are in place for the ongoing review and the continuous improvement of the following:
  - hazard identification
  - risk assessments
  - the FRS health and safety management systems.

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## 3. Arrangements for monitoring and review

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The Health and Safety Executive will continue to conduct statutory inspections, to ensure good health and safety practice is being developed and maintained within the FRS.

The Risk Assessment process forms an important part of the overall health and safety plan within each FRS. Risk assessments should be subject to continuous monitoring and review, the purpose of which is to:

- assess their effectiveness
- review their quality and currency of content
- amend as necessary in light of lessons learned.

The Department for Communities and Local Government will provide the lead for this process, which will be achieved through the work of a focus group representing:

The Office of the Chief Fire and Rescue Adviser  
The Chief Fire Officers Association  
The Representative bodies  
Co-opted specialists.

Comments on the style, structure or any other matter should be sent to

Office of the Chief Fire and Rescue Adviser  
Eland House  
London  
SW1E 5DU

**TABLE 1**

## Fire and Rescue Service Specific Non-Exhaustive Hazard List

Table 1: Fire service specific non-exhaustive hazard list	
Hazard Identification	
<b>Generic Hazard: 1. Temperature</b>	
Specific Hazards	Further subdivision
(a) Heat	<ol style="list-style-type: none"> <li>1. Conducted heat</li> <li>2. Convective heat</li> <li>3. Radiated heat</li> <li>4. Steam contact (<i>combination of above</i>)</li> <li>5. Reactive chemicals (<i>exothermic</i>)</li> </ol>
(b) Cold	<ol style="list-style-type: none"> <li>1. Cryogenic and endothermic materials</li> <li>2. Decompressing gases</li> <li>3. Evaporating liquids</li> <li>4. Ice</li> <li>5. Cold water</li> <li>6. Wind chill</li> <li>7. Very cold metal objects</li> </ol>
<b>Generic Hazard: 2. Atmosphere</b>	
(a) Oxygen deficient	<ol style="list-style-type: none"> <li>1. Oxygen deficient</li> </ol>
(b) Normal oxygen content	<ol style="list-style-type: none"> <li>1. Toxic</li> <li>2. Dust/particulate</li> <li>3. Flammable</li> <li>4. Stench</li> <li>5. Bio-hazard</li> <li>6. Submersion</li> <li>7. Aerosols</li> <li>8. Heat &amp; steam</li> <li>9. Cryogenics</li> <li>10. Radiation</li> </ol>
(c) Oxygen Enrichment	<ol style="list-style-type: none"> <li>1. Oxygen Enrichment</li> </ol>

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Table 1: Fire service specific non-exhaustive hazard list	
Hazard Identification	
Generic Hazard: 3. Environmental Conditions	
Specific Hazards	Further subdivision
(a) Weather	<ol style="list-style-type: none"> <li>1. Hot humid weather</li> <li>2. Cold, dry weather</li> <li>3. High winds</li> <li>4. Wind chill</li> <li>5. Rain, sleet, hail, snow, ice.</li> <li>6. Fog</li> <li>7. Day/Night (<i>Visibility</i>)</li> </ol>
(b) Terrain	<ol style="list-style-type: none"> <li>1. Water hazards</li> <li>2. Soft ground</li> <li>3. Undergrowth</li> <li>4. Poor underfoot conditions</li> <li>5. Inadequate hard standing for appliances or equipment</li> </ol>
(c) Height	<ol style="list-style-type: none"> <li>1. Ladder work</li> <li>2. Aerial appliances</li> <li>3. Working at height</li> <li>4. Loopholes</li> <li>5. Holes in floors</li> </ol>
(d) Unsafe structures	<ol style="list-style-type: none"> <li>1. Falling structural materials</li> <li>2. Collapse due to structural overload</li> <li>3. Imposed loading (<i>fire-fighting water or overloaded floor spaces</i>)</li> </ol>
(e) Confined spaces	<ol style="list-style-type: none"> <li>1. Sewers</li> <li>2. Tunnels</li> <li>3. Convoluted construction</li> <li>4. Collapse</li> </ol>
(f) Topographical	<ol style="list-style-type: none"> <li>1. Hills</li> <li>2. Rivers</li> <li>3. Tidal features</li> </ol>
Generic Hazard: 4. Collisions	
(a) Personnel striking objects	<ol style="list-style-type: none"> <li>1. Motor vehicle or rail accidents</li> <li>2. Falls from height</li> </ol>
(b) Objects striking personnel	<ol style="list-style-type: none"> <li>1. Motor vehicle or rail accidents</li> <li>2. Items falling from a height</li> <li>3. Unrestrained vehicular loads (<i>stowage</i>)</li> </ol>



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Table 1: Fire service specific non-exhaustive hazard list	
Hazard Identification	
Generic Hazard: 5. Hazardous materials	
Specific Hazards	Further subdivision
(a) Flammable liquids	<ol style="list-style-type: none"> <li>1. Contained (<i>storage, piped, transportation</i>)</li> <li>2. Leaking</li> </ol>
(b) Poisonous substances	<ol style="list-style-type: none"> <li>1. Solids</li> <li>2. Liquids (<i>see also toxic gases</i>)</li> </ol>
(c) Flammable solids	<ol style="list-style-type: none"> <li>1. Finely divided (<i>storage, piped, transportation</i>)</li> <li>2. Course grained bulk storage</li> </ol>
(d) Corrosive substances	<ol style="list-style-type: none"> <li>1. Solids (<i>storage, piped, transportation</i>)</li> <li>2. Liquids (<i>storage, piped, transportation</i>)</li> <li>3. Gases (<i>storage, piped, transportation</i>)</li> </ol>
(e) Flammable gases	<ol style="list-style-type: none"> <li>1. Pressurised containers</li> <li>2. Dissolved</li> <li>3. Piped</li> <li>4. Vaporised from liquids</li> <li>5. Sublimated from solids</li> <li>6. Product from reactants</li> </ol>
(f) Organic peroxides	<ol style="list-style-type: none"> <li>1. Organic peroxides</li> </ol>
(g) Toxic gases	<ol style="list-style-type: none"> <li>1. Pressurised container</li> <li>2. Dissolved</li> <li>3. Piped</li> <li>4. Vaporised from liquids</li> <li>5. Sublimated from solids</li> <li>6. Product from reactants</li> </ol>
(h) Oxidising substances	<ol style="list-style-type: none"> <li>1. Various physical forms</li> </ol>
(i) Spontaneously combustible substances	<ol style="list-style-type: none"> <li>1. Various</li> </ol>
(j) Biological Hazards	<ol style="list-style-type: none"> <li>1. Air borne pathogens</li> <li>2. Water borne pathogens</li> <li>3. Inoculum's</li> <li>4. Carried by vector (<i>animal/human</i>)</li> </ol>
(k) Ionising and non-ionising radiation hazards	<ol style="list-style-type: none"> <li>1. Alpha and Beta particles (<i>Radiation</i>)</li> <li>2. High intensity Ultraviolet/Infrared</li> <li>3. X ray/Gamma Ray/Neutron</li> <li>4. High flux microwaves</li> <li>5. Lasers</li> </ol>

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Table 1: Fire service specific non-exhaustive hazard list	
<b>Hazard Identification</b>	
<b>Generic Hazard: 5. Hazardous materials (<i>continued</i>)</b>	
Specific Hazards	Further subdivision
(l) High Intensity Magnetic Field	1. Magnetron apparatus ( <i>medical equipment</i> )
(m) Explosives	1. High explosives 2. Deflagrating explosives
(n) Strobe light source	Epileptic fit
<b>Generic Hazard: 6. Mechanical/Machinery</b>	
(a) Moving machinery parts	1. Disk cutting wheels 2. Cutting jaws 3. Rotating shafts/wheels/pulleys 4. Pulley belts 5. Pistons 6. Cutting blades 7. Presses 8. Escalators/travelators 9. Conveyor belts 10. Vibrating equipment
<b>Generic Hazard: 7. Reduced visibility</b>	
(a) Smoke	1. Visibility reduced which prevents other hazards being recognised
(b) Physical barrier	2. Object screening another hazard
<b>Generic Hazard: 8. Electricity</b>	
(a) Electricity	1. Lightning strike 2. Static discharge 3. DC currents 4. AC currents 5. Uninterrupted power supplies
<b>Generic Hazard: 9. Animals/People</b>	
(a) Animals/people	1. Physical injury ( <i>bites, stings, scratches</i> ) 2. Infective agents ( <i>pathogens</i> ) 3. Psychological impact 4. Incapacity from illness 5. Illness due to heat stress 6. Physiological loading 7. Human factors and decision making

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Table 1: Fire service specific non-exhaustive hazard list	
Hazard Identification	
<b>Generic Hazard: 10. Moving heavy or awkward objects</b>	
Specific Hazards	Further subdivision
(a) Ergonomic effects of weight of object on body	<ol style="list-style-type: none"> <li>1. Bulk of object</li> <li>2. Weight of object</li> <li>3. Location/position of object</li> </ol>
<b>Generic Hazard: 11. Equipment</b>	
(a) Operational equipment	<ol style="list-style-type: none"> <li>1. Incorrect selection</li> <li>2. Incorrect use</li> <li>3. Failure</li> <li>4. Stability</li> </ol>
<b>Generic Hazard: 12. Noise and vibration</b>	
(a) Noise – short term effects	<ol style="list-style-type: none"> <li>1. Exposure to noise over a short period of time resulting in short term hearing effects e.g. ringing in the ears.</li> </ol> <p>The noise regulations provide detailed guidance.</p>
(b) Noise – long term effects	<ol style="list-style-type: none"> <li>1. Exposure to noise over a longer period of time resulting in permanent hearing loss.</li> </ol> <p>The noise regulations provide detailed guidance.</p>
(c) Noise – peak exposure	<ol style="list-style-type: none"> <li>1. Exposure to a peak level of noise e.g. explosion. This can cause permanent hearing damage.</li> </ol> <p>The noise regulations provide detailed guidance.</p>
(d) Hand arm vibration	<ol style="list-style-type: none"> <li>1. Regular exposure to hand-arm vibration can cause a range of conditions known as Hand Arm Vibration Syndrome (HAVS) which includes the condition known as vibration white finger and carpal tunnel syndrome.</li> </ol> <p>The vibration regulations provide detailed guidance.</p>

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Table 1: Fire service specific non-exhaustive hazard list	
Hazard Identification	
Generic Hazard: 13. Sharp/Protruding objects	
Specific Hazards	Further subdivision
(a) Trip hazards	<ol style="list-style-type: none"><li>1. Rubble</li><li>2. Hose</li><li>3. Uneven ground</li><li>4. Stairs</li></ol>
(b) Cut hazards	<ol style="list-style-type: none"><li>1. Blades</li><li>2. Sharp edges</li><li>3. Broken glass</li></ol>
(c) Penetration hazards	<ol style="list-style-type: none"><li>1. Sharps (<i>hypodermic needles</i>)</li><li>2. Nails</li><li>3. Building materials</li><li>4. Blades</li><li>5. Sharp edges</li></ol>
(d) Catch hazards	<ol style="list-style-type: none"><li>1. Any protruding object with hard physical presence</li></ol>

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Notes

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