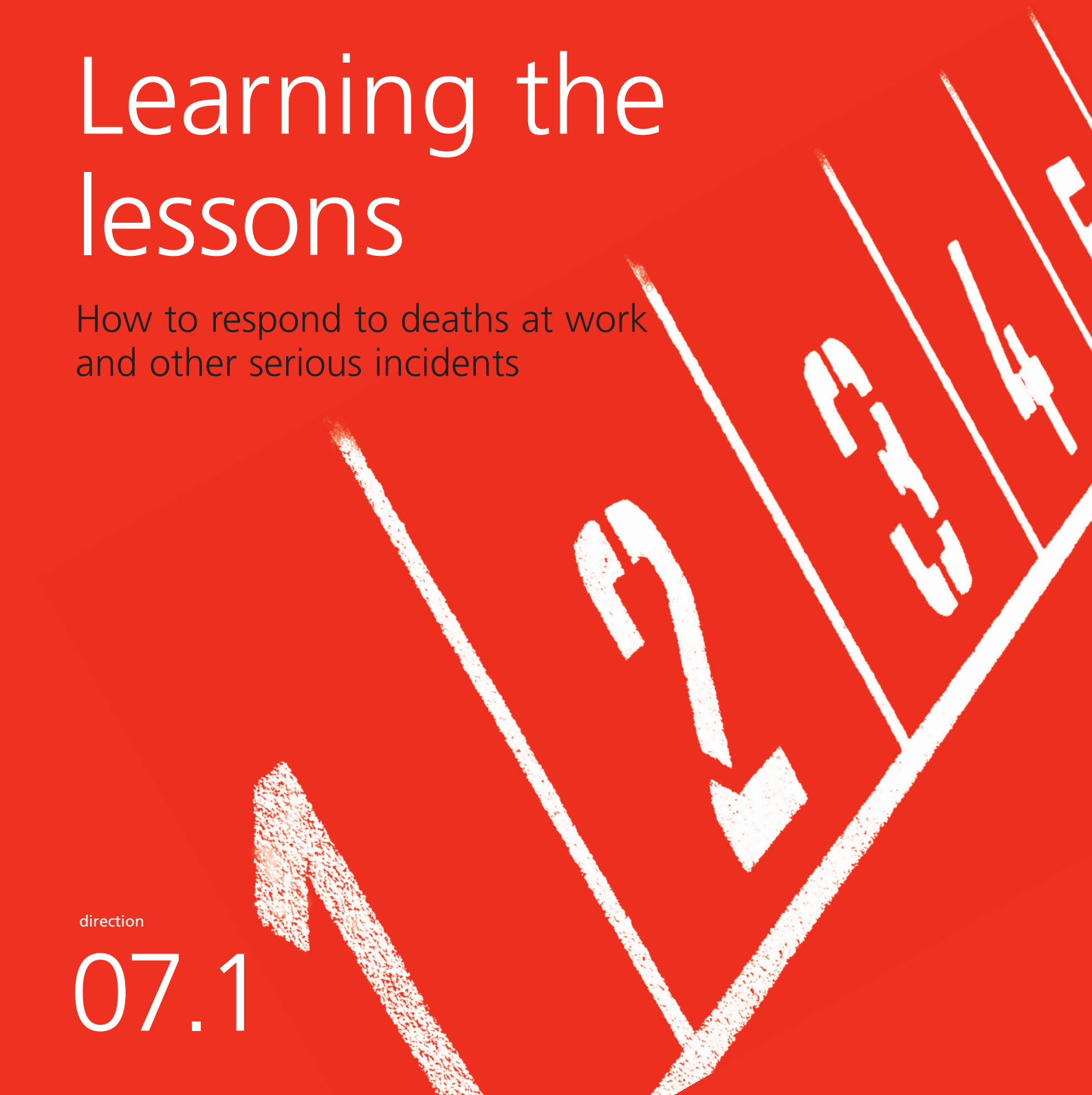
Learning the lessons

How to respond to deaths at work and other serious incidents



direction

07.1

IOSH publishes a two-tier range of free technical guidance. Our guidance literature is designed to support and inform members and motivate and influence health and safety stakeholders.

Direct info

Brief, focused information on health and safety topics, typically operation or sector-specific.

Direction

Strategic corporate guidance on health and safety issues.

> Contents

When someone loses their life in a serious work-related incident, organisations can be in a state of shock and disbelief. Invariably, where a death occurs in the workplace or as part of a work-related incident, the police – on behalf of the coroner – will be involved as part of their duty to investigate unexpected death. On a few occasions, this investigation may need to be more extensive if questions of culpability arise. All those involved at the initial stages of an incident must be aware of the need to preserve and gather information and keep everyone safe. This will allow others to make well-founded decisions as to what led to the worker's death.

Thankfully, for most employers, workers and health and safety advisers, work-related deaths are rare. But preparation and co-operation are key to successful investigations and knowing who does what and when can be invaluable. The important issue here is finding out the truth of what happened.

This guide tackles a difficult subject well and is important to law enforcement investigators, managers and internal investigators alike.

Steve Watts MSc DPM D.Crim (Cantab) FCIM
Assistant Chief Constable
Hampshire Constabulary

The death or serious injury/illness of a colleague is a cause of sadness and regret and may also raise concerns among employees about their own health and safety at work. Prevention and protection are obviously key, but where this hasn't happened, and someone has been seriously harmed or killed, it's essential that a thorough investigation takes place and that lessons are learned for the future. Fatal accident investigations are always very serious, may involve various enforcement authorities, and can also be lengthy, inevitably raising fears and uncertainties within organisations. By clearly explaining some of the key issues and agencies involved, this guide will help internal investigators to understand what is likely to happen and what their role in the process is.

Peter Brown
Head of Health and Work Division
Health and Safety Executive

> Glossary

Body mapping
An information gathering technique that uses a chart with large outline drawings of both front and back views of a body. Groups of workers who do similar tasks are asked to mark on the chart any parts of their body that are affected by their work. Colour-coding is often used, for example red for aches and pains, blue for cuts and bruises, green for illness. The data are used to identify if there are any trends or problem areas associated with particular tasks.

Dangerous occurrence
An undesired event that causes significant damage to plant, premises, equipment or the environment. Dangerous occurrences don't harm people, but they have the potential to. (The term includes, but is not limited to, items listed under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR), www.hse.gov.uk/riddor/index.htm.)

Hazardous event
A generic term for an undesired event that causes or has the potential to cause harm or damage, such as serious occupational accidents, near misses, cases of ill health and dangerous occurrences. Hazardous events include fatal, major and lost-time injuries, exposure to health hazards, occupational diseases, fires, explosions, accidental releases or exposures, structural collapses and near misses.

Near miss
An undesired event that doesn't lead to death, serious harm to people or damage, but has the potential to.

Serious occupational accident
An undesired event leading to death or reportable cases of ill health and injury (see Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR), www.hse.gov.uk/riddor/index.htm).

Traumatic incident
A critical, undesired, work-related event that causes psychological distress. Indications of the distress may include 'flashbacks' ('re-experiencing' the event) or avoiding stimuli associated with the event. Traumatic incidents involve experiencing or witnessing catastrophic damage, severe injuries, dead bodies or body parts, the death of colleagues, road traffic accidents, verbal or physical assault, armed raids and hostage taking.

1 Introduction

This guide aims to help organisations respond to 'hazardous events', such as accidents, cases of ill health, work-related violence and 'dangerous occurrences'. We've tailored the advice to cover fatalities, exposure to life-threatening health hazards and high incidence rates of chronic ill health problems. Apart from sections 5.2 and 5.4, the advice also applies to less serious events, especially those with the potential for high loss.

We outline good practice when a serious event happens, and give information on:

- why you should hold internal investigations
- preparation and planning
- the initial response
- internal investigations: roles, inter-relationships, information gathering and techniques
- how to make sure investigators are competent
- how to avoid common failings in investigations
- good practice in investigation reporting.

The guide is aimed particularly at employers and health and safety practitioners. It's not intended as a practical guide on how to investigate – we refer to other publications that can offer more detailed advice on this. We've based our advice on current arrangements and regulatory practices in England and Wales, although there are some important legal differences in Scotland and Northern Ireland. While the objectives and processes of internal investigation may be similar in other countries, the legal system and roles of the police and labour inspectorates may well be different – so be aware of the possible differences while reading this guide. Throughout, we've used the term 'internal investigator' to mean in-house investigators or consultants used by an employer to investigate serious incidents on the employer's behalf. We use 'external investigator' to mean only investigators acting on behalf of the police or regulatory authority, for example a government inspectorate. We don't cover the role of insurers, although they are also 'external' and often investigate serious events.

2 Why do you need internal investigations?

Serious hazardous events, or those with the potential for a serious outcome, can indicate failures in your organisation's risk control system and need to be investigated. It's important to understand why the risk assessment and control measures didn't prevent the event and what needs to be done to make sure it doesn't happen again. Investigations also give you the chance to examine how well your organisation's emergency response system worked, so that you can learn lessons for improvement.

Serious events naturally cause concern and anxiety throughout an organisation. A thorough and effectively communicated investigation will help everyone understand exactly what went wrong and what's been done, or needs to be done, to protect people in the future. Shareholders, investors, clients, insurers and other stakeholders will also want assurance that proper controls are in place to prevent similar events. You may also want to produce an investigation report as a legal defence – this may be covered by 'legal privilege', a situation not covered in this guide (see Appendix B, page 18).

There are also legal drivers for investigation. Arguably, there's an implicit duty in Britain under the Health and Safety at Work etc Act 1974 for employers to investigate work-related hazardous events to prevent them happening again and to protect the health and safety of employees and others. This implicit duty to investigate is also contained in regulation 3 of the Management of Health and Safety at Work Regulations 1999,[1] which requires a review of risk assessments if there are changes, for example an accident. Under 'monitoring', the approved code of practice for regulation 5 specifically points out that employers should adequately investigate incidents and accidents. There's also an explicit legal duty to investigate work-related hazardous events where organisations operate under 'permissioning regimes', such as British safety case legislation applying to major hazard industries (except offshore). Additionally, British law gives a right to investigate to enforcers and union-appointed safety representatives, and there's also legislation covering gathering and disclosing criminal evidence (see Appendix A, page 16).

To get the maximum business benefit for your organisation in terms of minimising future losses, an investigation should take account of the realistic worst consequences of the event, not just what actually happened.

3 Preparing and planning your response to hazardous events

When there's a serious hazardous event, your management team will be expected to act quickly and decisively in a situation that may be entirely new to them. It's therefore helpful to devise and test a set of 'emergency preparedness' plans to cover the various possible types of serious event, such as death, serious damage, injury and ill health. Your emergency planning should include appointing an investigator (or investigation team) – either specific people or those in specific posts. It's vital to make sure you have an investigator who's competent and has access to adequate resources (see section 6, page 12). There's information on preparing for and planning to manage occupational hazardous events in BS 8800[2] and in guidance prepared for the railway industry[3,4] – this may also be useful in other sectors.

Your emergency plans should include clear arrangements for immediately alerting the emergency services, senior people in the organisation – for example, a director or manager responsible for health and safety – and the person in charge of the site or work affected. In practice, more than one employer may be involved, and it's usually the employer in control of the premises who should take the lead in the internal investigation, unless you agree otherwise by contract.

4 Initial response

This section covers the first actions you need to carry out when responding to serious accidents and dangerous occurrences (section 4.1), and cases of actual or potential occupational ill health (section 4.2). Where appropriate, they're the same as the actions that the first police officer must take when they attend the scene of a workplace death – these actions are listed in the 'Investigators guide'.[5] As well as incident-specific actions, you also need to decide whether there's a risk of a similar occurrence elsewhere in the organisation or beyond, and to alert those concerned.

4.1 Accidents and dangerous occurrences

If there's a serious accident or dangerous occurrence, your first priority, as the employer, is to implement any emergency plan you have, including:

- identify the location and extent of the incident scenes
- identify any remaining hazards, assess the risks and make the scenes safe
- provide first aid if needed and call the emergency services, including the police and the regulator (in Britain, call the Incident Contact Centre on 0845 300 9923; in Northern Ireland, follow the advice in www.hseni.gov.uk/riddor-2.pdf)
- secure the scenes – you can do this by taping or fencing off the area or even posting sentries. You should also identify, preserve and secure any other sites (secondary scenes) or evidence that are separate from the main scene but may be relevant to the investigation, such as control rooms, site logs, CCTV footage and software records. If someone has been killed, you need to know where the body is. If a body has been moved, you need to secure its current location
- prevent disturbance to the accident scenes, except to avoid more injury or damage, until the regulatory authority gives its permission. Usually, an inspector will visit the scene before letting you start to clear up. In Britain, where there's been a fatal accident, the police will give the all-clear; in cases where there are no deaths, this will be done by the relevant regulatory authority. As long as you don't disturb the scenes and evidence, and you don't compromise the privacy of people who've been injured, you can take photos, video footage or sketches
- make sure key people in the organisation are told, such as senior managers, health and safety advisers, workers' representatives or communications department
- begin a written record of events at the scenes, including a list of visitors
- identify witnesses, including people:
  - involved in or present at the time of the event
  - who may have seen, heard, smelt or felt something relevant
  - who have knowledge of the event or circumstances
  - who can confirm the actions of others or the data that's been gathered
- agree with the police (who normally take the lead on behalf of all the emergency services) – or, where they're not involved, the regulator – how you'll handle communications with your workforce, relatives of the dead or injured, and the media
- in co-operation with the emergency services, make arrangements for supporting anyone who's been affected by the incident (see page 08, 'Support for employees after a traumatic incident').

Your next priority is to authorise someone to look after your interests at the scene. For serious hazardous events, this person's primary role at this stage will be to work with the emergency services and regulatory authority, provide any support they ask for and make sure the scene stays secure.

The person you choose may be the same person who'll later lead the internal investigation ('the investigator'), but 'incident responder' and investigator are different roles and can be carried out by different people. To retain independence and objectivity, it's often best to select a competent investigator from somewhere in the organisation that has had no direct involvement in what's happened.

The lead internal investigator will usually be an experienced health and safety practitioner or a senior manager with access to competent advice. If there isn't someone at this level, you should identify another suitable person – say, a local manager supported by health and safety adviser – who can take charge and lead the initial event management (securing the scene, preserving evidence, recording information) until the designated investigator can take over.

The people and equipment involved in the hazardous event may be the responsibility of several different employers, and they all may have a procedure for dealing with and investigating this sort of event. As each employer will have specific interests and concerns, joint 'internal investigation' is unlikely, although it can save time and duplication if they can agree to share information (see section 5, page 09).

The police and the regulatory authority (in Britain, usually the Health and Safety Executive (HSE) or local authority) will attend the scene of a fatal accident and may visit the scene of other serious hazardous events. Either the police or the regulatory authority will take the lead in a criminal investigation (what's known as 'taking primacy') – referred to as the 'external investigator' in this guide.

If there's been a work-related death, the first police officer to arrive will take initial responsibility and control of the scene. However, the police may pass this responsibility onto the regulatory authority at an early stage. Sometimes, the police and the regulatory authority will carry out a joint investigation. *Work-related deaths: a protocol for liaison*[8] gives details of the arrangements that exist between the police and regulatory authorities in England and Wales, and in Scotland. There's also a circular aimed at HSE and local authority inspectors, which covers liaison arrangements and guidance relating to potential manslaughter and homicide cases.[9]

As soon as the initial response is complete, the internal lead investigator should:

- take control of the internal investigation
- set up a link with the police and/or the regulatory authority to avoid impeding any criminal investigation – remember that the external investigation takes precedence over internal inquiries. When the police are involved, the key contact is the senior investigating officer (SIO). It's important to make contact with the SIO early on and maintain good communications throughout
- plan and outline to relevant employees how the internal investigation will be carried out, noting that the timing may depend on what the external investigation requires.

The internal investigation may then continue alongside the external inquiry. In section 5, we give guidance on the potentially complex area of liaison between the two.

The internal investigator should aim to work with the external investigators and find out how much information they can share with each other. For example, everyone may benefit from access to the same forensic report (which gives a description and analysis of physical evidence from the site). Working together will also help the gathering of other information, for example witness statements and documents.

You shouldn't give out any information about the investigation to third parties without the formal permission of the external investigator. The media may expect briefings and updates, so the investigating parties should agree a strategy for releasing information. There's detailed guidance on media management after occupational accidents in the Railway Group Standards prepared for the rail industry[3,4] – the advice may also be helpful for other occupational accidents where there's likely to be media interest.

If the external investigators suspect that an offence has been committed and they're considering criminal prosecution, they have to tell the duty holders concerned as soon as they have enough reason to support their suspicion. In these circumstances, the rules of the Police and Criminal Evidence Act 1984 (PACE) will apply in England and Wales. Northern Ireland is covered by the Police and Criminal Evidence (Northern Ireland) Order 1989.

The external investigators will decide when the scene(s) of the accident can be released. At this point, the lead internal investigator should take responsibility for returning the scene to the site's usual management. This can only happen when the investigators are satisfied that they've gathered all the evidence relating to the accident and that the site is safe to use. If there's been significant damage, it may be necessary to appoint a 'recovery team' to oversee repairs and tests before work can start again in the affected area.

4.2 Occupational ill health and exposure to serious health hazards

People can become ill as a result of their work some time after the exposure or event that caused the illness. The delay is called the 'latent period'. The length of the latent period depends on the illness and its cause, the amount and length of exposure, and the victim's individual susceptibility.

If the latent period is long, it's unlikely that you'll have to act as quickly as you would for an accident. In general, you'll need to:

- implement an emergency plan, including anticipating interest from the media, employees and the public if the illness is potentially widespread, for example food poisoning or cancer
- preserve relevant 'scenes' and evidence, for example dust extraction equipment, documented risk assessments, health records
- authorise someone to take charge of the internal investigation.

Also, if the illness or condition is legally reportable, tell the regulatory authority.

If you're dealing with a case of acute occupational ill health, such as after exposure to asthmagens, allergens and toxic or biological agents,* you'll need to take emergency action that's similar to what you'd do for an accident. In other words, you need to put in place onsite and offsite emergency plans, which normally include:

- assessing the risk and making the scene safe, including evacuation if necessary
- making sure that first aid has been given where needed
- contacting the emergency services and working with them
- securing the scene(s)
- agreeing how you'll communicate with your workforce, relatives of the sick, and the media.

The investigation should then continue as we describe in section 5 (page 09).

You should also investigate events where there's a significant risk from physical, chemical or biological health hazards, such as exposure to radiation, excessive noise or vibration, asbestos fibres or pathogens. This kind of exposure should be investigated even if no-one has reported any symptoms or made a complaint. It's also important to remember that fears that people have been exposed to a serious health hazard, and any resulting media attention, need careful management, reassurance and clear communication. If you identify possible cases of occupational ill health by looking at sickness absence trends or other indicators – such as the results of 'body mapping' (see 'Glossary', page 03) and biological monitoring – you should investigate these too.

Support for employees after a traumatic incident

You should provide practical support to employees immediately after an incident. Things they might need help with include:

- contacting their families
- dealing with the police and investigators
- preparing witness statements
- accident reporting and other paperwork.

It's also important for the manager to show empathy,[6] and get advice about the normal range of emotional responses to traumatic events. In Britain, guidance for health professionals from the National Institute for Health and Clinical Excellence (NICE) on post-traumatic stress disorder (PTSD) recommends 'watchful waiting' in cases with mild symptoms that have lasted fewer than four weeks.[7] The symptoms often disappear by themselves, and the benefits of intervening in the early stages are unclear. It can be helpful to give information on symptoms of PTSD and where to get support in the longer term, but you need to consider how best to pass this advice on. Victims and witnesses of accidents may not be able to take in extra information immediately after the event, so it may be better to give this kind of help at a follow-up session.

In the longer term, you may want to offer evidence-based therapy to someone who's deeply affected, but this isn't appropriate as an immediate response. For anyone still experiencing serious symptoms one month after the accident, NICE recommends 'trauma-focused' psychological treatment.[7] Remember – many people not directly involved in a traumatic incident can be affected and need support, including investigators. Also, legal cases can take years and people can have the threat of prosecution hanging over them for a long time.

* In certain countries, some infectious diseases have to be notified to the authorities (for the UK, see www.hpa.org.uk)

5 Internal investigations

This section is about in-house investigations. It doesn't cover basic investigation skills – there's plenty of information on this available elsewhere (see section 5.5). Nor does it cover in detail what external investigators may do. You can get guidance from the HSE's website[10] on external investigations in Britain, and on the HSE's investigation procedure for major incidents.[11]

5.1 Investigation team and remit

Internal investigations into serious hazardous events will normally need the skills and time resources of more than one person, so a team approach is normal. In the early stages, when you still don't understand the root causes or sometimes even the immediate causes, it may not be clear exactly what resources you need. At this stage, it may be enough to appoint an experienced line manager as the team leader and an experienced health and safety professional to advise him or her (see section 6, page 12 for more details about team resources and skills).

We recommend that you give your internal investigators a written remit specifying:

- the purpose of the investigation
- who they should send their initial report to
- a timescale for producing their report.

At least at the start of their inquiry, you shouldn't expect your investigators to do their normal jobs as well.

A key role for managers and supervisors is to prevent loss of control and/or minor losses escalating into serious ones – so the root causes of serious hazardous events are likely to include areas of management and supervisory deficiency. That's why the people who lead the internal investigation should be independent of local line management, but still have a good grasp of the work being done and the usual controls for the relevant hazards. This can be difficult in smaller organisations, but it's essential to make sure investigators are competent, and this includes considering how independent they are (see section 6, page 12).

5.2 Roles and relationships

Different bodies investigate accidents and cases of ill health for different purposes – examples include the employer, the police, the regulatory authority and the employer's insurer. All investigating bodies should have the same long-term objective of making sure the events don't happen again. Nevertheless, as there are different shorter term reasons for investigating (such as law enforcement, liability mitigation or risk management), people may be reluctant to share information.

Other people and groups will also be interested in the progress and results of the investigations, including injured or ill staff and their families, other employees, health and safety representatives, trade unions, clients, suppliers or contractors, and legal and medical advisers. As a result, various issues can affect information gathering and sharing, including:

- **self-recrimination** – people may feel, rightly or wrongly, that they could have done more to prevent the event. If people are reluctant to share these feelings with the investigators, it may be difficult to get hold of important information about their actions or knowledge
- **self-rationalisation** – over time, people may justify to themselves what they did or didn't do, and 'alter' their memories so that they no longer accurately recall what happened. This subconscious 'forgetting' of important facts is a primary reason for interviewing witnesses as soon as possible after the event. Interviewing people without delay also helps prevent their memory being corrupted by the passage of time or by discussing events with their colleagues
- **physical and psychological trauma** – you'll need advice from doctors about when you can interview people who've suffered serious injury, illness or psychological harm as a result of the event. Waiting for them to recover may delay your investigation. When you do interview them, keep your questions to the facts and avoid asking them about their emotional responses
- **survivor guilt** – a common reaction where people experience psychological trauma is a strong feeling of guilt at surviving or escaping when others haven't. Recognising this will help you direct your investigation
- **contractual issues** – there may be commercial implications which make someone reluctant to accept (or imply that they accept) liability
- **insurance issues** – normally some of the costs resulting from work-related death, illness or serious damage are covered by insurance. Normally, a condition of insurance policies is that the policy holder shouldn't admit liability, and this requirement is often interpreted as an instruction to volunteer as little information as possible
- **involvement of law enforcers** – most people caught up in work-related deaths and other serious events have little previous experience of dealing with the police or other enforcers. They may be unsure of their rights and responsibilities, and may be particularly worried about how they could be implicated in any 'criminal act' which may have been committed. Even if they're not directly involved, they may be concerned about being asked to give evidence in court. As a result, they may be reluctant to volunteer information

- **legal issues** – there may be legal restrictions on the evidence that external investigators are allowed to share with you
- **production and business issues** – you'll want to identify the causes of the event and take action to prevent it happening again. But management will also want to minimise disruption to their business, limit damage – including loss of reputation if any management failings are openly reported – and restore normal operations as soon as possible. They may be reluctant to disclose information if it reflects badly on their organisation
- **employment issues** – employees may be reluctant to pass on information because they fear that they, or their workmates, will be 'blamed', and that they could be disciplined or lose their jobs.

Finding ways to help reluctant people give evidence and help is a key skill for a competent investigator (see section 6, page 12).

Investigations by different groups may progress at the same time or at different times (insurers' investigations frequently occur later), but where the police or other enforcers are involved, their investigations must take precedence. In the case of occupational ill health, the 'event' may actually be a longer term series of events. It may have happened some considerable time ago or still be going on.

5.3 The investigation

All investigators will aim to identify the human factors and organisational failures ('root causes') that allowed the incident to happen. The investigation should be a three-stage process:

1 collect information
2 analyse information
3 report and make recommendations for controlling risk in future.

If investigators identify gaps in the coverage of their investigation, they'll need to repeat stages 1 and 2. And if they fail to carry out any stage of the investigation fully, they'll get incomplete results and may lose an opportunity to prevent the event happening again. It's important for investigators to make sure that:

- the investigation is objective – it should have the clear aim of identifying the immediate and root causes of the event (*why* the event happened, not just *what* happened and *where*)
- the workforce and any relevant witnesses, including clients, contractors or suppliers, are involved in the investigation and told about relevant findings
- the recommendations they make as a result of their investigation are 'SMARTT' – specific, measurable, agreed, realistic, time-bound and tracked. Normally, line management, rather than the investigator, decides some of these details (see section 7, page 12)
- they review all relevant risk assessments – if they don't do this, they'll seriously undermine the value of the investigation
- you publicise the results of the investigation, so that the lessons can be learned as widely as possible – as well as giving the results to those working in the area directly affected, give them to other sites doing similar work, and perhaps your trade association. The UK offshore oil and gas industry has a website known as 'SADIE' – the Safety Alert Database Information Exchange – to share this kind of information.[12]

5.4 Information gathered by external investigators

When there's an external investigation that's expected to lead to criminal proceedings, you're obliged* to co-operate with the external investigator to establish what happened. In cases involving the British police, they'll expect you to tell them the likely locations of key evidence and witnesses, but not to interview witnesses or collect any evidence – including at secondary scenes – until they've finished and told you that you can.

At times, information may be shared and agreed by all parties. However, external investigators are unlikely to give you information they've collected if they plan to use it in a criminal prosecution. Once a summons is issued, or the authority decides not to prosecute, this information will be given, as appropriate, to enquirers if they ask for it.

The police or HSE will interview witnesses under PACE, and the content of these interviews and statements is confidential. It's unlikely that internal investigators will be allowed to be present at these interviews. You'll be expected to help identify internal witnesses to the external investigators, and to arrange times for interviews.

* Co-operating with external investigators is covered by section 20(j) of the Health and Safety at Work etc Act 1974. The common law offences of obstructing the police and perverting the course of justice may also be relevant.

In Scotland, where reports are submitted, statements are the property of the Procurator Fiscal. Witnesses in England and Wales may ask for a copy of their statements and the external investigators will consider the request. Whether they agree to it depends on a number of factors – if they think that the investigation may be compromised by releasing a statement, they can refuse. Witnesses can ask to be accompanied at voluntary interviews by someone of their choice, and the investigating authority can't refuse this without good reason. However, the investigators will consider whether the chosen person may influence the witness or cause a conflict of interest. Where witnesses are legally required to give a statement, they have a right to have someone with them.

External investigators must give receipts for anything they take away during their investigations (police in Scotland don't have to give receipts, but may be willing to). If the authorities take something away, always ask for a receipt and keep it safe. Make copies of any documents that you hand over to investigators, and where possible keep samples of any material the external investigators gather, in case there's a dispute.

External investigators can ask for a copy of the internal investigation report.

In England and Wales, coroners may be involved in investigating work-related deaths. They are independent judicial officers, responsible for enquiring into the medical causes of deaths that are sudden and unexpected, unnatural, violent or suspicious. These can include deaths:

- caused by violence or accidents
- in prison or police custody
- resulting from industrial diseases, such as asbestosis
- during an operation or under anaesthetic
- caused by a medical condition not previously recognised or treated by a doctor.

If there are questions surrounding the cause of death, the coroner may arrange for a post-mortem. If this shows that the death wasn't due to natural causes, the coroner will hold an inquest. The inquest is an inquiry to find out who has died, how, when and where they died, together with information needed by the registrar of deaths, so that the death can be registered. The purpose of the inquest is not to attribute blame. There are different arrangements in Scotland, where the role of the coroner is performed by the Procurator Fiscal, who may ask for a 'fatal accident inquiry'.[13] See section 10 (page 15) for links to information on the role of coroners.)

5.5 Investigation and analysis techniques

There are several hazardous event investigation and analysis techniques. These range from straightforward approaches – such as the HSE's guidance in HSG245, *Investigating accidents and incidents*[14] – to complex 'logic tree' systems, which are often more useful for serious events. There's no universally applicable method. Investigators should have a working knowledge of the available techniques and choose one that's appropriate to the organisation and event. Our publication *Health and safety: risk management* (chapters 6 and 20)[15] contains a good practical summary of the techniques and their attributes, and there's more detail in *Root causes analysis: literature review.*[16] You can also get free downloads on specific techniques, including events and conditional factors analysis (formerly known as 'events and causal factors analysis'[17]) and fault tree analysis.[18] See section 10 (page 15) for more sources of information on accident investigation.

Our Continuing Professional Development courses use the following 'basic risk factors' (potential areas of organisational or management failure, derived by Groeneweg[19]) as a starting point for systematically investigating a hazardous event. We've included an example of each failure:

- design, for example failing to apply ergonomic principles
- tools and equipment, for example poor quality or condition
- maintenance, for example inadequate or reactive only
- housekeeping, for example poor standards leading to obstructions or trip hazards
- error-enforcing conditions, for example factors leading to stress or distraction
- procedures, for example impractical, not known or not followed
- training, for example not enough for the task or role
- communication, for example inadequate at any level in the organisation
- incompatible goals, for example output targets given priority over health and safety
- organisation, for example poor policies, arrangements or management
- defences, for example inadequate alarms or protective equipment.

The final choice of which technique to use lies with the lead investigator – the chosen technique should be systematic, structured, and appropriate for the event. The same technique is unlikely to be right in all cases.

It's important that you give the investigation team enough resources, including time, to complete all three stages of the investigation successfully.

6 Competent investigators

Investigation is often a team activity, with members contributing their own knowledge, experience and skill. In all cases, the investigation should include input from management and the workforce. The competence of investigators is fundamental to the effectiveness of the investigation.

The lead investigator and all supporting team members should have the analytical, interpersonal, technical and administrative skills needed to carry out the investigation. They should be able to form an independent view and work well with other people and organisations who have an interest in the investigation.

In Appendix C (page 18), we offer some guidance on the attributes a competent investigator should have and how to evaluate them. As part of your emergency planning, you can use the factors outlined in Appendix C to assess the competence of potential investigators.

The NEBOSH Diploma and all degrees recognised by IOSH include basic knowledge about accident, incident and illness investigations. There are also NVQ qualifications which include basic competence in accident investigation:

- NVQ Health and Safety Level 4, Element H10 – Reactive Monitoring (primarily for in-house advisers)
- NVQ Health and Safety Level 5, Element R3 – Investigating Accidents and Ill Health (primarily for regulators).

We offer two Continuing Professional Development courses in accident investigation – 'Incident investigation and risk control' (two days) and 'Loss investigation and evidence gathering' (four days). Have a look at section 10 (page 15) for more details.

As we discussed earlier, competence requires a range of skills, experience and knowledge. None of these qualifications on its own provides the competence you need to investigate hazardous events – you also need to have been significantly involved in a range of minor and major investigations.

7 How to avoid common failings in investigations

Organisations can fail to benefit from investigations for a number of reasons. These often boil down either to not completing the investigation properly or failing to learn the lessons from the investigation report. Other common problems include:

- not appointing a suitably competent investigator or team
- not involving relevant management and workforce representatives
- not setting an adequate timetable for completing the investigation
- not giving the investigation enough resources, including time and specialist knowledge
- not maintaining an independent and objective view
- not reviewing risk assessments as part of the investigation
- not using a recognised analysis method to move from immediate to root causes
- not identifying the root causes, including management failures
- not making sure that the recommendations are proportionate, address the root causes, and that the action plan is SMARTT
- not implementing recommendations or reviewing their effectiveness in tackling the identified root causes
- not adequately communicating the findings of the investigation, including developing ways to make sure they stay in the 'organisational memory', such as during inductions of new employees, including senior managers, and amending policies and procedures.

If you follow this guidance, together with the more detailed information we've referred to, you can make sure your organisation responds well to accidents and incidents. In Appendix D, there's a checklist to help you avoid the common pitfalls of investigations.

8 Good practice in investigation reporting

Your investigation report should have the clear aim of preventing a similar incident from happening again. Your report should:

- describe the events that led to the hazardous event and its immediate consequences. For serious events, where the report is likely to be used in future by people who don't have a good knowledge of your workplace, it's important to include clear photographs and diagrams. You should also attach copies of relevant documents, and keep the originals in case of future legal actions
- make sure that names, dates and measurements (in metric) are recorded accurately
- make a clear distinction between what is established fact and what is opinion or hearsay
- identify the immediate and root causes of the hazardous event
- comment on any contradictory or missing evidence, and how this affects the identification of root causes
- give clear, prioritised, cost-effective and SMARTT recommendations to address the identified causes and prevent the event happening again.

Make sure that someone in the local management team is responsible for timetabling, tracking and applying the recommendations. If disciplinary action is needed, it can be linked to the agreed findings of the investigation, but it should be done by the appropriate line manager.

You can get more detailed advice on making recommendations and on the content of investigation reports from guidance targeted at the rail industry,[3] and also from our book *Health and safety: risk management* (chapter 6).[15]

9 References

1 Health and Safety Commission. *Management of health and safety at work. Management of Health and Safety at Work Regulations 1999 – approved code of practice and guidance* (L21). Sudbury: HSE Books, 2000.

2 British Standards Institution. *Guide to occupational health and safety management systems* (BS 8800:2004) – Appendix G, 'Hazardous event investigation'. London: BSI, 2004.

3 Railway Group Standards. *Incident response planning standard*. GO/RT 3471, and associated guidance note GO/GN 3671; and *Incident management and evidence gathering standard.* GO/RT 3472, and associated guidance note GO/GN 3672. London: Railway Safety, 2002. www.rgsonline.co.uk.

4 Railway Group Standards. *Accident and incident investigation standard.* GO/RT 3473, and associated guidance note GO/GN 3673. London: Railway Safety, 2007. www.rgsonline.co.uk.

5 Health and Safety Executive. *Work-related deaths – investigators guide.* 2004. Available at the HSE Enforcement web page, www.hse.gov.uk/enforce/index.htm.

6 Rick J, Kinder A and O'Regan S. *Early intervention following trauma: a controlled longitudinal study at Royal Mail Group.* (IES 435). Brighton: Institute of Employment Studies, 2006. www.bohrf.org.uk/downloads/traumrpt.pdf.

7 National Institute for Health and Clinical Excellence. *Post-traumatic stress disorder (PTSD): the management of PTSD in adults and children in primary and secondary care* (Clinical Guideline 26). London: NICE, 2005. www.nice.org.uk/CG026NICEguideline.

8 For England and Wales, see Health and Safety Executive. *Work-related deaths: a protocol for liaison* (MISC491). Sudbury: HSE Books, 2003. www.hse.gov.uk/PUBNS/misc491.pdf; for Scotland, see Health and Safety Executive. *Work-related deaths: a protocol for liaison* (MISC733). Sudbury: HSE Books, 2006. www.hse.gov.uk/scotland/workreldeaths.pdf.

9 Health and Safety Executive. *Work-related deaths: liaison with police, prosecuting authorities, local authorities, and other interested authorities including consideration of individual and corporate manslaughter/homicide.* OC 165/9. 2007. www.hse.gov.uk/foi/internalops/fod/oc/100-199/165_9.pdf.

10 Health and Safety Executive. HSE enforcement guide (England & Wales) web page, www.hse.gov.uk/enforce/enforcementguide/index.htm; for guidance on investigation priorities for breaches of section 3 of the Health and Safety at Work etc Act 1974, see www.hse.gov.uk/enforce/hswact/index.htm.

11 Health and Safety Executive. *Document G – Major incident response and investigation policy and procedures.* 2001. Available at the HSE Enforcement web page, www.hse.gov.uk/enforce/index.htm.

12 UK offshore oil and gas industry. Safety Alert Database Information Exchange (SADIE). step.steel-sci.org/SADIE/main_sadie_fs.htm.

13 Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act. London: HMSO, 1976.

14 Health and Safety Executive. *Investigating accidents and incidents – a workbook for employers, unions, safety representatives and safety professionals* (HSG245). Sudbury: HSE Books, 2004.

15 Boyle A. *Health and safety: risk management* (2nd edition). Wigston: IOSH, 2002 (revised 2005).

16 Livingston A D, Jackson G and Priestly K. *Root causes analysis: literature review*. HSE Contract Research Report 325/2001. Sudbury: HSE Books, 2001. www.hse.gov.uk/research/crr_pdf/2001/crr01325.pdf.

17 Noordwijk Risk Initiative Foundation. *Events and conditional factors analysis manual*. Delft: NRIF, 2004. www.nri.eu.com/NRI4-beta.pdf.

18 US Department of Energy. *Workbook: conducting accident investigations (Rev 2).* Chapter 7: 7.3.4 'Events and causal factors analysis'; and 7.4.1 'Analytic trees'. Washington DC: DOE, 1999. www.hss.energy.gov/CSA/CSP/aip/workbook/Rev2/chpt7/chapt7.htm.

19 Groeneweg J. *Controlling the controllable: the management of safety* (3rd edition). Leiden: DSWD Press, 1996.

10 More information

Dekker S W A. *The field guide to human error investigations*. Aldershot: Ashgate Publishing Co, 2006.

Department of Health. *Guidelines for the NHS: in support of the Memorandum of Understanding – Investigating patient safety incidents involving unexpected death or serious untoward harm: a protocol for liaison and effective communications between the National Health Service, Association of Chief Police Officers and the Health & Safety Executive*. London: DoH, 2006. www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_062975.

Health and Safety Executive. *Need help on health and safety?* (INDG322). Sudbury: HSE Books, 2002. www.hse.gov.uk/pubns/indg322.pdf.

IOSH. *Consultancy – good practice guide*. Wigston: IOSH, 2007. www.iosh.co.uk/technical.

IOSH. *Getting help with health and safety.* Wigston: IOSH, 2007. www.iosh.co.uk/technical.

Johnson C W. *Failure in safety-critical systems: a handbook of accident and incident reporting*. Glasgow: University of Glasgow Press, 2003. www.dcs.gla.ac.uk/~johnson/book.

Norton-Doyle J. *Accident management and investigation – a practical guide to managing and reducing workplace accidents.* London: GEE Publishing Ltd, 2003.

For more information on the work of coroners in England and Wales, visit www.dca.gov.uk/corbur/coronfr.htm. To find out more about the role of the Procurator Fiscal in Scotland, visit www.crownoffice.gov.uk/About/roles/pf-role/investigation-deaths/sudden-deaths.

IOSH offers accident investigation training courses for members and non-members. For details, see www.iosh.co.uk/professional or call +44 (0)116 257 3100.

If you need professional help during an accident investigation, you can use a health and safety consultant, but you need to be satisfied that they're competent, suitable and fully insured. We operate a Register of Health and Safety Consultants and can help you choose one who meets your needs. For more information, visit www.iosh.co.uk/consultancy, call +44 (0)116 257 3199 or email techinfo@iosh.co.uk.

Appendix A – Some relevant UK legislation

For background information to legal requirements, have a look at section 2 (page 05).

General legislation

Health and Safety at Work etc Act 1974
(See *Health and safety regulation: a short guide.* Sudbury: HSE Books, 2003. **www.hse.gov.uk/pubns/hsc13.pdf**)

Sections 2 and 3 require employers to do all that's reasonably practicable to protect the health and safety at work of their employees or others who may be affected by their organisation's activities. It can be argued that this implies a duty to investigate the causes of health and safety incidents, so that future failures can be prevented. Section 14 gives the Health and Safety Commission the right to direct investigations and inquiries; sections 18 and 19 give authority to enforcers; and section 20 gives inspectors their powers, including 20(2)(a), which grants authority to carry out investigations.

Management of Health and Safety at Work Regulations 1999
(See *Management of health and safety at work. Management of Health and Safety at Work Regulations 1999 – approved code of practice and guidance* (L21), HSE Books, 2000.)

Regulations 3 and 5 are particularly relevant. Paragraph 26(a) of the approved code of practice (ACoP), on risk assessment, requires that relevant risk assessments should be reviewed following near misses, plant or equipment defects, accidents, ill health and so on. Arguably, you need to understand the sequence of events and root causes to be able to review how relevant and adequate your existing hazard identification (ACoP paragraph 20) and associated controls (ACoP paragraph 22(c)) are.

Paragraphs 36(b) and 37 on 'monitoring' advise you to investigate accidents and incidents to establish the immediate and root causes, so that remedial action can be taken and lessons learned for prevention. It also advises you to record and analyse your findings to identify underlying themes or trends.

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995
(See *A guide to the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995* (L73), HSE Books, 1999)

Part G ('Describing what happened') of the accident form F2508, which you must submit for every reportable event, requires you to describe events that led to the incident, the part people played and actions you've taken to prevent a similar event happening again. To provide this information, you'll need to carry out some kind of basic investigation, no matter how informal.

Safety Representatives and Safety Committees Regulations 1977
(See *Safety representatives and safety committees – Approved Code of Practice and guidance on the regulations* (L87 – the 'Brown Book' – 3rd edition), HSE Books, 1996)

Under regulation 4(1)(a), an appointed safety representative's function includes the right to investigate potential hazards and dangerous occurrences at the workplace (whether or not they're drawn to their attention by the employees they represent), and to examine the causes of accidents in the workplace. Regulation 6 gives safety representatives the right to carry out an inspection after a notifiable accident, occurrence or diesase, so that they can determine its cause.

Specific and 'permissioning' regulations

Control of Major Accident Hazards Regulations 1999 (as amended)
(See *A guide to the Control of Major Accident Hazards Regulations 1999 (as amended)* (L111), HSE Books, 2006)

Gas Safety (Management) Regulations 1996
(See *A guide to the Gas Safety (Management) Regulations 1996* (L80), HSE Books, 1996)

Nuclear Installations Act 1965
(See *The licensing of nuclear installations.* 2007. Only available at **www.hse.gov.uk/nuclear/notesforapplicants.pdf**)

Railways (Safety Case) Regulations 2000 (as amended)
(See *Railways (Safety Case) Regulations 2000 including 2001 and 2003 amendments: guidance on regulations* (L52), HSE Books, 2003)

These four sets of regulations cover some UK 'permissioning regimes' – in other words, where a formal safety case or report must be submitted to and reviewed by the HSE before a new facility can be used. Every safety case must be regularly reviewed and updated. The guidance for both duty holders and HSE reviewers on what the safety case should contain covers the need for a structured health and safety management system, including procedures for reporting, investigating and recording incidents, and following up on lessons learned from them.

Ionising Radiations Regulations 1999 (See *Work with ionising radiation: Ionising Radiations Regulations 1999 approved code of practice and guidance* (L121), HSE Books, 2000)

Regulation 25 requires duty holders to investigate and notify the authorities where possible overexposures have occurred, so that they can work out any measures they need to take to prevent it happening again.

Railways (Accident Investigation and Reporting) Regulations 2005 (See *Guidance on the Railways (Accident Investigation and Reporting) Regulations 2005*, Rail

Accident Investigation Branch, 2005) Regulation 5 requires the Rail Accident Investigation Branch to investigate serious accidents and incidents, or those with serious potential that it decides should be investigated.

Evidence used by police and regulators

Police and Criminal Evidence Act 1984 (Chapter 60), HMSO, 1984; and Police and Criminal Evidence (Northern Ireland) Order 1989, HMSO, 1989

These are the main pieces of legislation that deal with police powers in the investigation of offences. They define arrestable offences and cover the manner and circumstances in which criminal evidence can be gathered in order to be admissible in court; among other things, they require suspects to be cautioned before they're questioned about an alleged offence.

Criminal Procedure and Investigations Act 1996 (Chapter 25), HMSO, 1996; and Criminal Procedure (Scotland) Act 1995 (Chapter 46), HMSO, 1995

These cover procedures for disclosing criminal evidence relating to police investigations and criminal court proceedings.

Appendix B – Legal privilege

This appendix is for information only. If you have any doubt about the issues raised here, get competent legal advice.

Legal privilege describes the status of some documentary evidence used in legal proceedings. If a document is 'privileged', a party committed to legal proceedings doesn't need to disclose it to the other parties involved. Legal privilege can only exist at the point where a legal adviser believes that the party he or she is defending is 'at jeopardy' (in other words, when they've been cautioned by an enforcer or have received a civil claim).

Examples of possibly privileged documents include:

- correspondence between someone and their legal adviser
- other information, letters, emails and documents written 'in contemplation of proceedings', ie once legal proceedings have begun and the parties have hired legal advisers.

Whether documents associated with an incident are subject to legal privilege is a matter for expert legal opinion. Simply declaring a document to be legally privileged doesn't mean that it is – employers who try to use 'privilege' where it doesn't apply can be challenged by other parties in the proceedings. Internal incident investigation reports aren't generally privileged because, although civil and criminal actions may take place, the purpose of an internal investigation report is to describe how and why the incident occurred and to give recommendations on how to stop it happening again (as we outlined in section 2). Therefore, the investigator's objectives aren't related in any way to legal proceedings that may result from the incident.

Although we don't generally recommend it, there may be situations in which organisations don't conduct formal investigations – perhaps because they believe they already know the cause of the incident. However, if they're then taken to court and need evidence for their defence, they may use an investigator to provide an account of events for their legal team. If their legal team believes them to be 'at jeopardy', this account may be legally privileged and marked accordingly.

Solicitors who want to use privilege may suggest particular wording in a report to protect against unfair incrimination if it becomes disclosable to a third party. Investigators can choose whether or not to accept such suggestions and need to exercise professional judgment to make sure they maintain technical accuracy and objectivity.

External investigators and prosecutors are legally entitled to ask for a copy of a non-privileged internal investigation report. But they're unlikely to do this, as they have their own investigation report and recognise that demanding access to internal reports can damage the value of future internal investigations, and breach the trust between internal investigators and their witnesses.

Appendix C – Competence checklist

A competent investigator needs:

- **analytical skills** – independence, sound judgment, clear and logical thought processes, good observational skills
- **interpersonal skills** – the ability to communicate effectively and appropriately, good interview technique
- **technical skills** – effective investigation and analysis skills, legal and technical knowledge
- **administrative skills** – in time management, reporting, evidence preservation and recording, document drafting, editing.

We've created the table on the next page as a checklist for managers responsible for selecting and instructing investigators. You need to be satisfied that a potential investigator is competent in all the areas covered. You could ask potential investigators to review the issues and demonstrate their competence to handle them.

Remember – it's your responsibility for making sure the investigator is competent.

> Competence checklist

Skill area	Can the investigator demonstrate that they:	Yes/no/ comments
Analytical skills	can form an independent, unbiased opinion, not unduly influenced by their relationship to the organisation they're investigating?	
	can stay independent and if necessary criticise peers and/or senior management?	
	can make meaningful observations, notice relevant environmental factors and recognise when detail is important?	
	can gather and analyse information effectively?	
	can look beyond the immediate causes of an event to identify the root causes?	
	can identify what evidence is missing and evaluate contradictory evidence?	
Interpersonal skills and characteristics	can communicate effectively at all levels of the organisation, and with external parties, such as bereaved relatives, the police and regulatory authority, the media and contractors?	
	can use effective interview techniques, including gaining the confidence of 'reluctant' witnesses?	
	can manage their own stress when dealing with highly emotive situations?	
	can use tact and sensitivity when communicating?	
	can identify barriers to communication and overcome them?	
	can summarise and explain the objectives, methods, progress and results of the investigation?	
	can influence decision-makers?	
	are assertive enough to express their unbiased professional opinion?	
Technical knowledge and skills	can use appropriate accident causation theories and associated checklists and analysis tools?	
	can use hazard and risk management techniques?	
	know and understand the activities going on at the time of the event?	
	can apply and interpret relevant legislation and guidance?	
	understand the roles and interactions of the police and regulatory authorities?	
	understand the laws on gathering/using evidence, and other relevant legal issues?	
	are aware of sources of evidence (eg equipment, sites, people and documents) and know how to identify, preserve, gather, analyse and record objects and data?	
	can photograph, video or sketch a scene to an adequate quality, or source such expertise at short notice?	
Administrative skills	can manage and/or work within a team?	
	can work effectively with other professionals (eg medical staff, HR professionals and lawyers)?	
	can report their findings concisely and accurately?	
	can record and preserve evidence appropriately?	

Completed by:	
Name:	Job title:
Date:	Signature:

Appendix D – Hazardous event investigation checklist

Use this checklist to avoid some of the common pitfalls of investigations. We recommend that you complete it in two parts – Part A at the time of the event and Part B when you've finished your investigation.

Part A: Complete at the time of the hazardous event	Yes	No
Are the investigators competent? (See the 'Competence checklist' in Appendix C)		
Have you included arrangements for involving the workforce in your investigation plan?		
Have you included arrangements for involving the management in your investigation plan?		
Have you set a remit and timescale for the investigation?		
Is the timescale realistic – can the investigation be completed without rushing or delays?		
Have you allocated enough resources (staff, time and money) to the investigation?		
Completed by:		
Name:	Job title:	
Date:	Signature:	

Part B: Complete after the investigation	Yes	No
Does the investigation report show that the investigator kept an open mind?		
Does the report identify what led to the event?		
Does the report clearly identify the root causes, including any management failures, of the event?		
Have you reviewed all relevant risk assessments in light of the investigation's findings?		
Are the recommendations SMARTT?		
Have you made plans to implement the recommendations?		
Have you made arrangements to monitor the implementation of the recommendations?		
Have you communicated the recommendations to the staff who'll be directly affected?		
Have you considered passing on an anonymised version of the investigation results to relevant trade organisations?		
Completed by:		
Name:	Job title:	
Date:	Signature:	

> Acknowledgments

Our Technical Committee would like to thank the working party that produced this guide:
Ian Waldram (Chair) – Director, SHEQuality Ltd
Martin Allan – Managing Director, Martin Allan Partnerships Ltd
Ian Glendenning – Consultant, Pragma Consulting
DS Henry Harper – Strathclyde Police
Ian Langston – Director, Kinaston Associates Ltd
Jonathan Russell – Director of Health and Safety, Department for Work and Pensions (former Head of Policy Enforcement, HSE)
ACC Steve Watts – Hampshire Constabulary
Richard Jones (Administrator) – Director of Technical Affairs, IOSH

Thanks also to consultees for their contributions:
Dr Tony Boyle – Consultant, HASTAM
DI Nigel Niven – Major Crime Department, Hampshire Constabulary
Dr Jo Rick – Programme Director, Institute of Work Psychology, University of Sheffield
Institute of Industrial Accident Investigators

IOSH
The Grange
Highfield Drive
Wigston
Leicestershire
LE18 1NN
UK

t +44 (0)116 257 3100
f +44 (0)116 257 3101
www.iosh.co.uk

IOSH is Europe's leading body for health and safety professionals. We have over 31,000 members worldwide, including more than 11,500 Chartered Safety and Health Practitioners.

The Institution was founded in 1945 and is an independent, not-for-profit organisation that sets professional standards, supports and develops members and provides authoritative advice and guidance on health and safety issues. IOSH is formally recognised by the ILO as an international non-governmental organisation.

TA/RJ/161007/P

Institution of Occupational Safety and Health
Founded 1945
Incorporated by Royal Charter 2003
Registered charity 1096790