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FIRE RISK
Fire Safety Law and its Practical Application
ALLAN GRICE

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Fire Risk

Fire safety law and its practical application

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During the greater part of 20 years he served through the ranks on some of the capital's busiest central stations and districts and attended numerous fire and rescue emergencies in a wide cross-section of premises which included hotels, boarding houses, hostels, garment and furniture manufacturers, offices, shops, department stores, factories and massive dockside warehouses.

As deputy head of operational and fire safety departments for North East London, including the historic square mile of the City, as well as the densely populated inner suburbs, he gained massive experience in observing the ravages of fire on person and property. These experiences informed many of his decisions when advising on the most effective systems for protecting premises' occupants from fire and smoke, and when enforcing the fire safety legislation designed to ensure life safety in commercial premises.

The regeneration of the former London docklands saw a leading personal involvement in the fire protection of the many prestigious developments constructed, including those of Canary Wharf and London City Airport.

The appointment as Principal Fire Safety Officer in the Devon Fire and Rescue Service saw seven years' involvement with carrying the responsibility for all aspects of fire safety enforcement and advisory policy across the nation's third largest county with its numerous hotels, guest houses and holiday accommodation, in which well over a million tourists stay each year.

Since his retirement from the fire service, Allan, who holds an honours degree from the Open University, has shared his considerable experiences by being a visiting lecturer in applied fire safety law at the University of Leeds as well as working as an independent advisor on all aspects of fire protection to a wide variety of organisations.

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Introduction

This book has been written primarily to assist all of those within places of work and other premises who are caught by the definition **'responsible person'** within the **Regulatory Reform (Fire Safety) Order 2005**, which came into force on 1st October 2006. It will also be of use to anyone who has any responsibility in connection with carrying out risk assessments and fire safety audits such as fire officers, building control officers, environmental health inspectors, police and forensic officers. Finally, it could be of interest to those studying such subjects as fire and safety law.

The Fire Safety (FS) Order 2005 is the most sweeping change to UK fire safety legislation for over 30 years. It brings some hundred plus pieces of fire safety law under one umbrella and places the unconditional responsibility for the safety of premises' occupants upon those who are caught within the embrace of responsible person.

Although the local fire service (fire authority) is responsible for enforcement, it is for the responsible person(s) to ensure that they self-comply with all the duties which this new Order places upon their shoulders. The fire authority can give advice, but cannot carry out the work for those holding this unconditional legal duty.

The concept of placing full responsibility for fire safety on those who create it is not new. Since 1974, the Health and Safety at Work Act has followed this route, as did the Fire Precautions (Workplace) Regulations 1997. However, the fact that the concept is not novel, and the fact that guidance documents from both Central Government and the Health and Safety Executive exist, do not in themselves provide the sort of specialised knowledge which can only properly be provided by practical experience.

The author has extensive practical experience in the fields of firefighting and rescue, the vast bulk of this gained on the busiest fire stations and districts of the capital where he served for almost 20 years out of a 30-year career in local authority fire and rescue services. He used this solid foundation to apply the principles of fire prevention and fire protection whilst serving as a Fire Safety Manager for over a decade in some of the nation's largest fire authorities and in a wide range of premises.

The author today draws on this extensive experience to help employers and managers achieve adequate and reasonably practicable levels of fire safety. This book is written with a knowledge born of long involvement with public safety from fire, and which informs that there are many employers who will overlook their legal responsibilities that are mandated by the 2005 Order.

This is often a result of a failure to properly appreciate how devastating fire can be to persons and property, or from a reluctance to finance the outside assistance of persons properly competent by experience to assist them in understanding and implementing the law's requirements.

A number of reliable sources discovered that more than 50% of employers caught by the 1997 Fire Precautions (Workplace) Regulations had never raised one finger to ensure compliance in almost a decade of its existence. The author, being acutely conscious of this, therefore poses the question 'why risk lives?' when reasonably adequate fire safety solutions can often be found without incurring great expense.

Furthermore, such expense can pale into insignificance if a fire casualty or casualties lead to an expensive civil action, or a lifetime's effort in building a viable business is destroyed in half an hour of fire and smoke.

This new fire law is there to protect the life safety of all occupants of premises within its scope, but sound measures to achieve their safety from fire can also provide the added value of the protection of property and business.

So what will this book do for those caught by the definition 'responsible person'?

It will do the following:

a) Leave the reader in no doubt as to the importance of having adequate fire safety measures in place before an emergency occurs.

b) Use historical accounts of life-loss fires within this country to demonstrate key facts and to use these to avoid a repeat of these tragedies.

c) Provide an easy-to-understand resumé of how the intelligent application of reasonably adequate fire safety provisions as required by the law saves lives.

d) Explain in layperson's terms legal wordage and definitions.

e) Clarify what the Regulatory Reform (Fire Safety) Order 2005 requires and the offences, penalties and appeals process available under the law.

f) Give guidance and explanations on the definitions and terms used in the Order.

g) Explain the terms 'hazard' and 'risk' as applicable to fire safety of persons.

h) Give comprehensive easy-to-follow guidance on carrying out Fire Risk Assessments.

i) Simplify the principles in respect of means of escape requirements.

j) Provide clear guidance on fire prevention, fire protection, fire detection and alarm systems – including the purpose of fire drills.

k) Provide clear guidance on basic firefighting, emergency evacuations and roll-call procedures.

l) Provide clear guidance on staff training in basic and specialist fire safety.

m) Provide clear guidance on liaising with the fire and building regulation authorities and explain the enforcement powers of the fire authority.

n) Provide clear instruction on liaising with the fire service in an emergency.

o) Assist in cost-effective decisions on safety requirements so as to best ensure people's safety without overspending on the organisation's overall budget.

p) Better ensure, in an increasingly litigious society, that all that which is reasonably practicable to do to ensure safety has been done, so as to withstand external scrutiny including the need for adequate records to be in place.

q) Reduce the hazards from fire to a level at which the risk of death or injury is as low as is reasonably practicable and kept that way over time as a consequence of the implementation of adequate and regularly maintained fire safety provisions.

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Part 1

Basic principles

Case Study

Key Points

Reference

Introduction

How to make the best use of this book

This book does not concentrate on the overtly technical side of fire protection. There is a wealth of such information available in the publications of the British Standards (BS) organisation and other publications that can, and if of direct safety relevance to premises' occupants, be made use of unreservedly.

What the book does concentrate on is providing information and advice to those caught by the 2005 Order, so that they are clear as to what this new law requires of them and of what the enforcing authority is likely to be expecting of employers, owners and all others who are charged with managing fire safety.

But the existence of safety legislation alone cannot bring about reasonable standards of life safety. This can only be achieved by the sense of responsibility and the duty of care held by employers for their employees and other occupants of the premises, and by the fire and rescue and other safety authorities who are charged with enforcing this new Order which, if not effectively and widely enforced, could make the law a dead letter.

The information and advice provided in this book has been drawn from extensive practical, front-line involvement in firefighting and rescue, and in enforcing and advising on how to protect human life in a very wide range of premises over many years.

Fire safety and fire protection can be quite a complex technical subject, but those holding the position of responsible person are often pushed for time because of the day-to-day pressures of managing their organisation or business.

Accordingly, and where it has been possible to do so, a pragmatic approach has been adopted. This author has provided the sort of information and advice that should assist with compliance in a practical and systematic way, rather than spending too long on the purely technical side of fire dynamics and fire protection.

This book gives the responsible person the background to the key elements involved in achieving reasonable standards of fire safety relative to the hazards existing, and bolsters this with practical pointers drawn from heavy field experience.

Time is money within business, which is why fire safety specialists and advisors are often appointed to assist. However, no matter how many specialists are taken on, the responsibility for ultimate safety rests with the responsible person unconditionally.

Those employers and owners who choose to self-comply without external assistance will do well to absorb all chapters before carrying out the Fire Risk Assessment, during which they can refer back to the specialist sections for advice.

Those who do appoint external specialists are able to use the book as they see fit, either as a solid foundation of knowledge which will help in their appreciation of what the specialist will need to do, or as a ready reference and guide when involved in discussions on fire safety, including the selection of competent assistance from outside the organisation.

Within the smaller, lower risk premises, an employer may not do much more than read the chapter on carrying out the Fire Risk Assessment, plus whatever specialist section pages are needed to better ensure compliance with the Order.

Whatever route is chosen, the advice in this book will, if implemented and maintained over time, be instrumental in helping to achieve reasonably practicable levels of fire safety for all who resort to the premises embraced by the FS Order 2005.

Chapter 1

The reasons for adequate fire safety measures in non-domestic premises

The concept of adequate fire safety and our expectations of it

Fire laws to protect the safety of persons within non-domestic premises in the United Kingdom have not come into being by chance.

They have, in the main, arisen as a result of the public and parliamentary clamour that has followed multiple life-loss fires in places to which the public can resort. Although the majority of fire fatalities and fire casualties occur within domestic properties, we must remember that fire deaths and casualties within non-domestic premises would have been much higher within these shores if the local authority fire services had not diligently enforced the fire laws in such places over many years.

It is right and proper that all UK fire authorities strive to reduce and eventually eliminate fire casualties within the home and, indeed, since 2004, local authority fire and rescue services (FRS) have a statutory legal obligation to ensure community safety.

However, whilst fully accepting this, we should not forget that once we step out of our homes and onto public transport, into department stores, cinemas and theatres, football and sporting stadia, hospitals, nursing and residential care homes, hotels and boarding houses, and our places of work to name but a few, we are no longer masters of our own fate nor captains of our own destiny as we invariably are when in our own homes.

Consequently we have a right to expect that those owners, employers and managers of buildings to which the public as well as employees resort, will have constantly exercised their duty of care in order to ensure that our lives are not placed at risk.

As students of that branch of law known as jurisprudence are so well aware, history teaches that human nature being what it is, there will often be a wide chasm between what persons actually do, and what the reasonable man or woman will expect them to do. It can be stated quite categorically, therefore, that fire casualties are, in the vast majority of cases, the end result of a human act or omission.

The concept of self-compliance, in which those who create a risk have to bear the ultimate responsibility and accountability if they breach any legal duties placed upon them, sits at the core of the FS Order 2005.

The local fire and rescue service (the fire authority) is required by the Order to enforce its requirements. However, this new legislation places a great amount of trust and faith in non-fire expert persons to bring about the fire safety of persons by 'self determination' and seemingly assumes that this self-compliance will be as effective in saving lives as the prescriptive regime, employed for decades by the fire service. For those unaware, prescriptive fire safety is a 'recipe' of fire safety ingredients: a recipe derived from a collective and developed practical experience of decades of firefighting and rescue work, which soundly informed its practitioners as to the level and adequacy of the fire safety provisions prescribed by them.

Fire service fire safety staff, the vast majority of whom had been practical firefighters, used their expertise and experience of fire to demonstrably good effect in terms of major reductions in fire casualties in those premises which came within the scope of the existing fire safety laws.

The most effective fire safety law in which a prescriptive concept was used was that of The Fire Precautions Act 1971/87 certification process which was repealed on 1st October 2006. It had its detractors but, with only a few exceptions, it saved lives.

The FS Order 2005 that replaces it applies to virtually all non-domestic premises in which persons, including the self-employed, are at work at any one time. Unless those charged with their responsibilities under this Order fully understand what terms and words mean, they will find it difficult to effectively fulfil their legal duties.

This makes it all the more imperative that the law, and the terms and words used within it, can be understood as much as possible. We all should know that in English law, ignorance of legislation cannot be used as an excuse.

Wherever possible in this book, terms and words will be clarified, but a caveat must be given in respect of any fire safety law discussed which is that **it is only the courts who can ultimately interpret what those who drafted the legislation actually meant**.

However we can still clarify as far as it is possible to do, based on practical experience and past case histories, the likely meaning of a term or word. If any doubt exists as to whether a 'misinterpretation' might place occupants of a premises at undue risk, it will be prudent to err on the side of caution.

Because an appreciation and understanding of terms are so important, a comprehensive glossary has been provided at the rear of this book.

NB: It is imperative that all persons to whom Statutory Instrument 1541-2005 applies, read the full text of the SI which is relevant to them and to the premises with which they are concerned and within which they hold any responsibility for the fire safety of persons.

The objectives of fire safety provisions

The Fire Risk Assessment (FRA) and its findings determine the degree of fire safety provisions assessed by a competent person as being reasonably adequate relative to the circumstances of the case and which will ensure that employees in premises will be able to:

- Know how to prevent fires occurring
- Know what to do on hearing the fire alarm
- Know what actions to take on discovering fire or smoke
- Know which fire extinguishers to use on different types of fire and how to use them
- Know the location of all fire exits and how to direct non-employees to safety
- Know where the assembly point is after safely evacuating the premises
- Know that they must not use lifts or re-enter a building until authorized

The end result of the above is that the potential for fires to occur is reduced or eliminated but, if fire does break out, all occupants will be able to escape from any premises by their own unaided efforts and reach a place of safety outside of the premises without sustaining any physical injury from fire and smoke.

A key point to always remember

The absence of incident does not necessarily indicate the presence of safety OR the fact that your premises have not ever had a fire does not mean that there are no fire risks and that fires will not happen.

The following chapter provides accounts of the sorts of tragic and costly fires from which our world-renowned fire safety reputations have arisen. All employers, company directors, managers and anyone who is caught by the definition 'responsible person'

under the FS Order 2005, would do well to remember that the only way in which the potential for a repetition of those fire disasters can be reduced is to **never become complacent** about any aspect of fire and safety.

'*But we have been here in business for 30 years and never had a fire,*'

said the proprietor to the fire service officer.

'*Then, Sir, you are 30 years nearer to having one,*'

the fire officer replied.

Chapter 2

A potted history of significant life-loss fires in the UK

As mentioned above, our fire safety laws have not been plucked out of thin air so that enforcers can go around feeling important. They are the consequences of historical fires over many years in which lives were lost in commercial buildings and they arose from society's desire to see regulations put in place to try and prevent a repetition of these earlier tragedies.

There have been many life-loss fires over the last half a century, and we will look at the most significant in respect of this country over that period.

However, to better appreciate how public clamour and the bright spotlight of public enquiry in the cold light of day have been engines of legislative change for over a century, we will look first at a tragic fire that occurred in the historic square mile of the City of London.

Queen Victoria Street, London – 1902

The premises involved were of five storeys, with the top floor being more than 60 feet above the street. The top three floors belonged to the General Electric Company where 13 office staff and packers of goods worked.

The fourth floor was used as a workshop in which artificial flowers were made using a range of flammable materials in the manufacturing process.

The only access to the top floor was via a timber spiral staircase which was unenclosed. There were no fire exits up to the roof area.

A fire believed to have started in a waste paper basket on the fourth floor rapidly spread and the fire and smoke cut off workers on the top floor.

Because an earlier company instruction in the fire routine to call the fire brigade had been erased, it was only after passers-by saw the smoke that the brigade were called.

Although they arrived within minutes, their rescue ladders were too short. By the time a 100-foot turntable ladder arrived, eight persons were dead – several by leaping from the upper floors rather than being burned alive.

The subsequent inquiry showed that:

- the company making the artificial flowers had been earlier refused a licence to store rubber but had continued to do so;
- there were inadequate fire safety provisions given the flammable materials used;
- the building fell outside of the scope of the definition of workshop within the 1901 Factories and Workshops Act;
- the 1894 amendments to the London Building Acts which laid down strict codes in respect of buildings over 60 feet high could not be applied retrospectively;
- had there been fire exits provided up onto the roof area, all the lives lost would have been saved.

Although over a century ago, this tragic blaze highlighted the vital importance of:

- **fire-resisting enclosures around staircases, especially when they provide the only means of escape from upper floors;**
- **fire exits of adequate number and dimensions which enable occupants to make their own unaided escape to a place of safety;**
- **sound fire emergency routines being present with all employees trained in their use, including the importance of early calls to the fire brigade;**
- **fire safety provisions reasonably adequate for the fire hazards and risk existing;**
- **fire safety laws which embrace all places of work and which are not 'frozen in time', which permit premises with inadequate fire safety provisions to still operate legitimately;**
- **enforcement agencies with the resources to inspect premises for the adequacy of fire safety provision before any fire occurs.**

The Queen Victoria Street fire also illustrated the link between fire safety and the operational response and rescue capabilities of the local fire brigade.

This appalling tragedy also highlighted yet again how the fires of earlier years seem to get forgotten by politicians and society at large. Such a collective amnesia has occurred decade after decade within this country.

Unless a person has himself been involved in a serious fire or emergency which threatened their life, or were part of a family who lost loved ones, it appears to be a weakness of human nature to relegate such tragedies to the trash can of history, only to rear up in the future when a major life-loss incident occurs again.

If this is not the case, how can it be that in spite of such tragedies as Queen Victoria Street, other multiple life-loss fires and non-fire disasters still continue to happen?

It is suggested that one reason could be the capacity for the human mind to anaesthetise itself against things that are horrific and unpleasant. This can lead people to form the often extremely erroneous conclusion that 'the absence of incident indicates the presence of safety', a facet of human thinking where life safety is concerned which can prove fatal – as many emergency service staff will testify.

We should, therefore, never forget that the following incidents were supreme examples of this 'stable door' legislation: an introduction of fire laws *after* the fatal events, rather than legislation introduced proactively as a result of the lessons learned from earlier fire tragedies, which could have prevented such needless loss.

Eastwood Mills, Keighley, West Yorkshire – 1956

In February 1956, a fire started by a blowlamp spread its heat and smoke via unenclosed staircases and eight persons inside the building died.

Like so many other fires which have occurred over the years, the absence of means to protect building occupants from toxic smoke and to prevent lung-searing heat and flames from spreading both vertically and horizontally, together with the absence of a proper fire warning system, led to serious loss of life.

At the time of this blaze there was already some safety law in being. This was the **1937 Factories Act**, but it did not call for very much in the way of fire safety protection and was amended in 1959.

The Eastwood Mills fire led to the 1937 and 1959 legislation being incorporated into the **Factories Act of 1961** as a means of better regulating fire safety in those workplaces that came within the legal definition of a factory.

The 1961 Act made fire authorities (FAs) responsible for the issuing of means of escape certificates under Section 40 and this required owners/occupiers to provide adequate means of escape and a number of other provisions designed to safeguard occupants from the effects of fire and smoke.

There was an anomaly in terms of the most effective process of consistent enforcement of the Factories Act as a result of it being the fire authority who issued the certificate, but the Factories Inspectorate who had the enforcement powers.

Experience over time has clearly demonstrated that where fire safety enforcement is split between different agencies, a potential for serious confusion exists as a consequence of the different value judgements and mindsets held by the different parties.

What was not confusing to any seasoned fire service inspector whose decisions were, in the main, informed by attendance at fire and rescue emergencies, was the fact that when a fire breaks out within a building, smoke and heat will spread rapidly through

open doors, holes in floors and walls, open lift shafts and unenclosed stairways and escalators and so on.

It is for these reasons that the installation of active and passive fire safety provisions are essential if lives are not to be lost and property destroyed.

These facts were reinforced in 1960 when a fire broke out in a major store in Liverpool.

Henderson & Sons Department Store, Liverpool – 1960

Ten persons died in these premises, again victims of heat and smoke that had rapidly spread through suspended ceilings and to upper floors via unenclosed escalators. These were trapped inside, unable to make good their escape because of inadequate fire safety provisions. An eleventh person also died after falling from a parapet onto which they had climbed whilst trying to assist another person.

As we have seen, the Factories Act was introduced a year after this tragedy and five years after the Eastwood Mills fire, but the fire safety situation within stores like this and other offices and shops was not adequately catered for by legislation.

Henderson's was, therefore, a major influence in respect of the introduction in 1963 of the **Office, Shops and Railway Premises Act (OSRA)**, which augmented the control applicable to factories via the Factories Act of 1961.

Any of these categories of premises in which more than 20 persons were employed anywhere in the premises, or more than ten persons were employed elsewhere than on the ground floor or, in the case of factories, an amount of combustibles/explosives greater than any limits laid down by the state or the fire authority was used or stored in, on or under the premises, were required to be provided with adequate fire warning, firefighting equipment, fire-resisting doors, stairways and partitions, and adequate means of escape to the satisfaction of the fire authority.

The Top Storey Club, Bolton – 1961

A year after the Liverpool tragedy, 19 persons died following a blaze that broke out in a joiners' shop on the ground floor of a building in Bolton and cut off the means of escape for members of the drinking club on the top floor. Some of the deaths resulted from injuries sustained by leaping from upper windows into an adjacent canal.

As in earlier life-loss fires, it was the lack of fire separation and warning that contributed to the high loss of life, and this tragic incident influenced the introduction of the **Licensing Act 1964.** In subsequent years after 1964 and up to the present day, the licensing authority is required to consult the fire authority to establish whether the premises from which a licence application is made to serve or sell alcohol are fit for the purpose in terms of fire safety.

The Rose and Crown Inn, Saffron Walden, Essex – 1969

On Boxing Day 1969, the nation's attention was drawn, during this period of festivities, to a report of a tragic fire that had broken out in this guesthouse/hotel.

The fire was thought to have started in a faulty television set in a ground floor lounge and was first noticed by two guests who went downstairs to investigate. These were two out of a total of 33 residents, most of whom were in their bedrooms on the three floors above ground level. The fire and smoke spread was such that although the two guests sounded the alarm before evacuating the building, it was later discovered that the fire had quickly burned through the fire alarm control panel and this cut off the alarm's warning bell.

Although fire doors between the lounge and stairs existed, other doors did not close fully – permitting toxic smoke and great heat to travel upwards rapidly. It was later concluded that the 11 people who died on the second and third floors had been killed by this massive surge of fire, heat and smoke. The local fire service rescued 12 guests from the upper floor via ladders, three other guests jumped to safety, two walked away and local residents rescued five others, making this one of the worst losses of life in this category of premises ever seen in this country.

Yet again, the absence of adequate fire protection and fire warning provisions were major factors in the fatalities that occurred.

The public clamour which followed this fire in particular, impelled events which led to the introduction of **The Fire Precautions Act 1971 (FPA).**

This Act remained on the statute books until being repealed on1st October 2006 when the **FS Order 2005** was introduced.

Two designating Orders were made during the 35-year life of the FPA.

The **Hotel and Boarding Houses Order** was introduced in 1972 and the **Office, Factories, Shops and Railway Premises Order** in 1976. The central concept of the FPA was a certification process in which the fire authority would only issue a fire certificate after an application from the owner/occupier and after a fire authority survey had been carried out and fire safety provisions, prescribed by the fire authority, had been completed to its satisfaction.

The criterion for hotels and boarding houses was essentially the provision of sleeping accommodation for more than six guests or staff, or the provision of some sleeping accommodation for guests or staff above the first floor or below the ground floor of the premises.

The criteria for the second designating order reflected that already existing within the 1963 OSRA legislation, as already discussed.

The FPA required owners/occupiers to provide:

- suitable and adequate means of escape;
- means for raising an alarm of fire;

- firefighting equipment for use by persons on the premises;
- ways to ensure that the means of escape could always be used (fire doors, emergency lighting, fire exit signs, etc);
- staff training and fire drills;
- a logbook recording fire drills, alarm tests, etc.

They were also required to notify the fire authority in advance should they propose to carry out any alterations that might jeopardise the means of escape.

The fire certificate and the floor plans of the premises (the plans enabled inspecting officers to check if unauthorised alterations had taken place) had to be kept on the premises and the fire authority held a range of powers designed to ensure owner/occupier compliance with this legislation.

In 1979, 1985 and 1987, three other major life-loss fires occurred which drove further modifications and amendments to the fire safety law.

These were fires at:

Woolworths Department Store, Manchester – 10 deaths

The Manchester fire involved furniture filled with polyurethane foam and this incident, along with other fires, led to the introduction in 1988 of the **Flammable Furniture and Furnishings (Fire Safety) Regulations.**

Valley Parade Football Club, Bradford – 56 deaths

The tragedy at Bradford led to a public inquiry by the late Justice Popplewell and resulted in the introduction in 1987 of major amendments to the FPA with the **Fire Safety and Safety at Places of Sports Act.**

Kings Cross Underground Station, London – 31 deaths

This fire led to a public inquiry by Mr Desmond Fennel QC and brought about the **Sub Surface Railway Regulations 1989.**

One of the most significant improvements in terms of fire protection of premises' occupants arose from the 1987 amendment to the FPA. This was in respect of Section 10 Prohibition Notice procedures, a legal mechanism that is probably the strongest discretionary fire safety power available to the fire authority.

Whereas, previously, any appeal against the fire authority's decision to prohibit the use of premises on the grounds of serious risk caused the notice to be lifted until the outcome of the hearing, the 1987 amendment left its requirement in force until the court either upheld the appeal or dismissed it.

CASE STUDY – Section 10 Prohibition Notice

Very shortly after the 1987 amendment to the FPA, a large clothing cash and carry warehouse in East London was the subject of a report from a member of the public who alleged that there were serious fire hazards in the premises.

The tragic fire which occurred at Bradford Football Club and which had led to the 1987 amendment was related to a report of a fire hazard under the slatted timber footboards below the stands.

These were seen by a council engineer to be covering a large amount of combustible rubbish, which had been dropped over a long period by spectators and had not been cleared.

Although the engineer had sent a note to the fire authority on the hazard, it was not marked urgent and the tragic fire happened before any action had been taken.

This highlighted the vital importance of the fire authority being in a position to respond forthwith to all reports received of alleged fire risks. Clearly, until a fire safety expert has inspected the allegation, there is no way of knowing how serious the allegation is.

However, there would be little point in the fire authority responding, discovering a serious public danger and issuing a Prohibition Notice on a premises, if the owner's appeal caused the notice to be lifted until the appeal hearing which might be weeks ahead, as was the case prior to the 1987 amendment.

After the amendment, most fire authorities modified their policy in respect of responding to allegations of serious fire risk to ensure that the matter was dealt with immediately.

An immediate visit was therefore made to this cash and carry warehouse which was in a high fire risk district, had five storeys and was of large cubic capacity.

In addition to large amounts of cloth rolls and clothing, the premises had no fire alarm system and the fire compartmentation was severely inadequate.

A Prohibition Notice was prepared and served on the proprietor and this informed of the reasons why the fire authority considered the risk to persons to be so serious that a restriction in the use of the premises to the ground floor only had to take instant effect.

Reluctantly, the proprietor agreed but stated his wish to appeal against the restriction which would lose him custom.

Prior to the FPA amendment, the appeal would mean that the notice was invalid with the public (and firefighters) being placed in danger because the notice would have to be lifted until, perhaps, several weeks later when a magistrate would make a ruling.

Because of the amendment, the notice stayed in force and local fire safety inspectors visited the premises to ensure that its requirements were being adhered to. Less than 72 hours later, a serious fire broke out with heavy smoke and great heat spreading to upper floors where shoppers would have been had the pre-FPA Section 10 appeals system still applied.

It was clear that the Section 10 notice, and the on-site enforcement monitoring of its requirements, prevented a large loss of life.

Some conclusions

The case histories briefly described were, of course, not the only ones to have occurred and other multiple fatality fires have happened.

However, some conclusions can be drawn which should be of value in gaining a proper appreciation of the vital importance of certain key elements which must exist if repetitions of multiple life-loss fires are not to reoccur in the future. So important to life safety are these elements, that they will be repeated later within this book.

- **Fire prevention allied to hazard recognition and remedying of that hazard is crucial to life safety**
- **Effective fire-resisting compartmentation, relative to hazard and risk, is crucial to life safety by providing protection from fire products**
- **Effective fire warning audible throughout premises, and of a type and coverage relative to the hazard and risk, is crucial**
- **Adequate means of escape to a place of safety is crucial**
- **Effective regular staff training in emergency routines, especially where sleeping risks and impaired agility occupants are concerned, is crucial**
- **Regular servicing and maintenance of fire safety provisions are of critical importance to life safety**
- **It can be a grave error to assume that the absence of incident indicates the presence of safety**
- **Fire safety regulations and requirements that are not enforced by on-site inspections can cause the law to become a dead letter**
- **The accuracy of value judgements as to what constitutes fire hazard and risk are directly related to the depth of practical knowledge of fire held by those who make the judgement**
- **In commercial and industrial concerns, the financing of adequate safety provisions may be relegated down the priority list, especially if the prospects of being inspected by the enforcement agencies are low**

The effectiveness of fire safety law in the prevention of life loss

Before we turn to the self-complying concept of the Regulatory Reform (Fire Safety) Order 2005 in Chapter 3, we should be clear as to the answer to this question: did those fire safety laws introduced following the multiple life-loss fires described reduce fire deaths and injuries, and could similar incidents occur in the future now that 'self-compliance' has replaced fire service prescription?

The potential for those incidents to occur today still exists if there is no effective fire safety ethos and culture within a workplace or if the enforcement agencies have not perceived correctly the fire risks within different categories of premises.

We will examine the enforcement responsibilities of the fire authority later, but the effectiveness of its fire safety audit regimes and the way in which such surveys are selected and prioritised can play a key role in enhancing or detracting from public and employee safety.

Given that the 2005 Order removes from the fire authority the time-tested benefits of fire safety provisions which it had prescribed and replaces them with a regime in which employers and their managers take over this critical role, it will be useful to see how the legislation enacted in the wake of those historical incidents described might have saved lives had it been in force before those tragic fires occurred.

The improvements in fire safety law, and the involvements by the fire authorities in the inspection of those premises which fell within the scope of the new law, made use of the following factors that would have been instrumental in reducing the life loss in those historical fire tragedies had such legislative control been in force in those periods.

Essentially, these have been the existence, up to October 2006, of a progressively developed prescriptive system of fire authority and building control authority (BCA) fire safety law and continuing improvements in both passive fire protection (fire doors, fire-resisting walls etc), and active fire protection technology (such as state-of-the-art automatic fire detection and warning systems).

Many of the premises involved in the historic tragedies described would have met the criteria for enforcement by the fire authority via the Factories Act, OSRA and, later, the FPA. Accordingly, a certificate would have been issued once the authorities were satisfied that the fire safety provisions that it had prescribed had been implemented, and it was the on-site inspection and auditing regime of the fire authority which ensured that adherence to the fire safety legislation was being achieved. Had these laws existed in respect of these fire tragedy premises and had the fire authority's prescribed requirements been implemented and maintained, then it is very probable that those fire deaths would not have occurred.

What should also be borne in mind is that over time up to October 2006, fire safety laws – along with building regulations – were being strengthened and fire protection systems vastly improved, especially in the arena of fire detection and fire alarm installations.

Post 1972 and 1976, when the two categories of premises designated under the FPA came onto the statute books, the fire safety potential of occupants within the scope of the 1971 Act was increased by the requirement for more extensive fire protection provisions and measures. However, over the years after 1972/1976, an unsatisfactory situation arose as a result of the non-retrospective nature of the UK fire safety law. This permitted an owner/occupier of premises with an OSRA certificate, or a fire certificate issued shortly after the introduction of the designating Orders, to be deemed to be fire certificates, even though the standards within the premises would not have been acceptable in later years. This 'frozen in time' situation in which businesses could trade within the fire law but with inferior safety standards, is one of the reasons that the 2005 Order employs a dynamic process of the Fire Risk Assessment and ongoing review. This is perhaps the strongest element of the new Order.

In further answering the question as to whether those historic life-loss fires could have had happier outcomes, we must remember that the recently repealed FPA not only required owners/occupiers to apply to the fire authority for a fire certificate (which alerted the FA to their existence), but required them to submit plans to the fire authority and building control authority.

Furthermore, the diligence of most fire authorities in carrying out annual re-inspections of the highest life risk premises in order to ensure that the requirements of the fire certificate were being met, would have played a major part in ensuring that those historic multiple fatalities would not have occurred.

We also need to remember that, over the last three decades, considerable developments have taken place in respect of the national building regulations, which bear heavily on fire safety in both new and structurally modified buildings.

By contrast, it would seem that the repealing of the Fire Precautions Act has diluted those historic and time-tested 'safeguards' and 'protective mechanisms', which were integral parts of the FPA, and has placed huge faith in employers and owners to self-determine the levels of fire safety required in a vastly greater number of premises.

It should be stated, therefore, that given that the new Order places this great trust and faith in employers/responsible persons to self-comply with the fire and building regulations, occupants' safety will be only as good as the standards of fire safety provisions implemented and maintained, and enforced by the enforcement agencies.

With only a few notable exceptions, the FPA – thanks to the on-site enforcement re-inspections carried out over the years by the fire authorities – was very successful in reducing the incidence of multiple life-loss fires within those premises that came within its scope.

It is the belief of more than a few 'fire and smoke seasoned' safety practitioners that if these historic fire tragedies are always kept in mind, along with the conclusions which derive from them, then those employers and others who come within the term 'responsible person' will be better equipped to understand why they must ensure that adequate fire safety provisions always exist, so as to protect the lives of all premises' occupants from the effects of fire.

The long title of the former Fire Precautions Act was: *'An Act to make further provision for the protection of persons from fire risks; and for purposes connected therewith.'*

The FS Order 2005 exists for the same purpose, but has the added advantage of requiring responsible persons to take measures to **prevent fires in the first instance** and we should learn more about this major change to UK fire law now.

Chapter 3

The Regulatory Reform (Fire Safety) Order 2005, SI 1541

Clarifying the concepts of the Order and the concept of self-compliance with its requirements

It must be understood from the outset that the Regulatory Reform (Fire Safety) Order 2005 is a mammoth change to anyone who has had any intensive involvement with the previous fire safety legislative regimes that applied in this country up to 1st October 2006 when this new Order came into force.

It ought not to be such a huge change to anyone who has been involved with general health and safety, because the concept of the creator of the hazard being fully responsible for their acts or omissions, has been a central tenet of the Health and Safety at Work Act since 1974, although many have ignored its requirements.

However, it is precisely because the 2005 Order is so all-embracing compared with earlier fire safety legislation that there will be many employers and business owners to whom complying with fire law to the involved level which will be required within many premises, will be a new and nerve-straining experience. It is true, of course, that the 2005 Order is an extension of the 1997 Fire Precautions (Workplace) Regulations which preceded it but, as was stated earlier, some 50% of employers had never lifted a finger in self-complying with those regulations. So, in the absence of any meaningful past involvement, or real awareness of what contemporary fire safety law exists for, how can employers properly understand the very real differences between the mechanics of this new law and the mechanics and processes of what existed up to 1st October 2006? In short, how will they know whether being responsible for self-determining the level of fire safety under the 2005 Order will be any more or less effective than what existed with proven good effect in the past, when owners/occupiers were still responsible for fire safety but with measures prescribed by the fire authority?

So, the old regime has been vanquished, but that does not mean that all of the sound principles which helped maintain excellent levels of fire safety under this now repealed legislation have to become redundant under the new Order. Indeed, given that the recommendations and requirements made in the past were, in the main, demonstrably effective in casualty reduction, it would be an act of folly if these were not made use of today by those who are responsible persons under the 2005 legislation. The following chapters draw heavily on these principles so as to best ensure that every help is given to responsible persons charged with self-complying with the Order.

However, to make the best use of those time-tested, life-protecting principles, all those who hold the burden of responsibility and accountability under the law, need to be clear as to what the Order is requiring within the 53 Articles contained in SI 1541 (remember, all responsible persons should read the relevant full text).

We must not forget the earlier caveat that it is only the courts that can interpret the precise meaning of the words and terms used in legislation. However, it might be a long time before a case of such substance comes to court and results in a judicial interpretation. This being the case, employers/responsible persons should not be deterred from the forming of an opinion as to the probable meaning of what expressions are likely to mean. Unless this is done, how on earth can the self-determination concept possibly work? The fire safety provisions and measures implemented will be those that follow on from the findings of the Fire Risk Assessment (FRA), which sits at the heart of the FS Order 2005.

The Order calls for these measures to be those considered reasonably practicable, relative to the safety case in question. But what is reasonably practicable to one person may not be to the other. Even seasoned fire safety specialists in the fire service will differ in their opinions because such opinions are the end product of a number of factors; one of the most telling being individual value judgements which arise from the amount of empirical experience gained from witnessing at close hand what fire and smoke can do to people and property.

If this can be the case with fire experts, how much more challenging will it be for the non-fire expert responsible person when required by law to make fire safety judgements in anything but lower risk situations?

One of the main reasons for writing this book was to provide a level of guidance which will assist responsible persons in complying with the Order in a cost-effective way, by passing on information which has been gained from a long involvement of not only advising and enforcing fire safety law, but of being exposed regularly to the ravages of fire heat and smoke during fire and rescue operations. The skill is in knowing what the enforcement agencies and the courts are likely to consider as being reasonable and practicable levels of fire safety provision. It is all too easy to spend far too much by using a belt, braces and piece of string approach, and it is all too easy to do too little and place occupants at unnecessary risk from fire.

Incidentally, and this is the time to say it, an employer/responsible person cannot ask the fire service to validate their risk assessments – they are not able to do this because they are the enforcement agency.

The fire authority has a statutory duty to give advice – which is free at the time of writing – but, since 2004, it need only give this if it considers it 'reasonable to do so' and, given the authority's workloads, you might have to wait for a response.

To assist, therefore, in this overall process of achieving reasonable and practicable levels of fire safety, the first step is to give some clarification as to what the terms and expressions used in the Order are likely to mean. These clarifications are based upon a lengthy involvement with studying fire safety legislative drafting, and with the practical application of the fire law to achieve reasonably practicable fire safety solutions to a wide range of occupancies and categories of business premises. However, it needs to be noted that, for a variety of reasons, there is relatively little case law regarding fire authority fire safety enforcement decisions in respect of the fire laws within the UK.

At this point, it is appropriate to identify what is perhaps one of the most significant shifts between past legislation and the 2005 Order.

Onus on responsible person to prove what is not practicable or reasonably practicable

In the past, if the owner or occupier of any premises falling within the scope of the FPA failed to comply with any of the requirements of that Act and the case proceeded to the courts, it was for the fire authority, **not** the owner/occupier, to prove why they had made the requirements within the fire certificate and why they were necessary in the premises concerned. In contrast, Article 34 of the 2005 Order states that: *'In any proceedings for an offence under this Order consisting of a failure to comply with a duty or requirement so far as is practicable or so far as is reasonably practicable, it is for* ***the accused to prove*** *[*my emphasis] *that it was not practicable or reasonably practicable to do more than was in fact done to satisfy the duty or requirement'.*

This would appear to be saying that if the enforcement authority takes you to court for not doing what it considers needs to be done to satisfy the duty or requirement, it is up to the accused to prove that it was not practicable or reasonable to do it.

It is the awareness of this part of the Order that led me to the comments made earlier about the non-fire expert having to make fire safety judgements. How, in the absence of advice from an expert on fire safety matters, would an employer/responsible person with little or no knowledge of fire safety, be able to make such a judgement in respect of the more fire safety-complex premises which exist and which are within the scope of the Order?

Clearly, the fire safety provisions and value judgements in connection with, for example, a small single-storey retail shop such as a newsagents, are going to be far less complex than what would be the case in larger, more hazardous premises, especially if in multiple occupation and of several storeys in height.

The information and guidance which follows in this and later chapters will be of assistance when pondering on whether to carry out the self-complying duties unaided, or to seek external help from a competent source. Let us now look at the key terminology of SI 1541.

Key terminology within the Order

The first point to make is that virtually all non-domestic premises are caught, even those in which persons are self-employed. In premises that are places of work, you need to know whether all parts of your premises come within the definition of workplace. For example, is a store room that is only visited once a day to collect stock considered to be a workplace? Set out below is a simplified form of words that reflects what the definition within SI 1541 states. In addition to these clarifications, a separate glossary of definitions can be found in the appendices to this book (but remember also to read the relevant text in SI 1541).

'Workplace'

The whole or part of a non-domestic premises in which an employer's undertaking is situated and which is made available to workers, and includes:

'Any place, other than a public road, within the premises to which the worker can go into whilst at work, plus entrances and exits to the place of work which use or pass through any room or lobby, corridor or staircase or other place, and in which facilities in connection with the workplace are provided.'

From this, it would seem that canteens, toilets, kitchens, gatehouses and reception areas, and any other part of the premises available to workers, are included.

Even if a store or stock room is visited only once a day, if it is a place in which an employer's business is carried out, then this room could be within the definition of workplace. It appears also that parts of the premises through which entrances and exits pass are also a workplace.

So, if a fire escape route from a store room passes through a room or lobby, corridor, staircase or other part and there are facilities there in connection with the workplace such as toilets, offices, ancillary rooms etc, then these would appear to be within the workplace and the Order will apply.

Let us now examine who holds the ultimate accountability for compliance with the Order.

'Responsible person'

Is normally the employer if s/he is to any extent controlling the workplace.

If this is not the case, the responsible person will be another person such as an occupier who has control in connection with a profit or non-profit making trade, business or other undertaking. In those cases where the person controlling the premises does not manage a trade, business or other undertaking, the responsible person would normally be the owner of the premises.

It should be noted that a close reading of SI 1541 reveals that the 'responsible person' definition embraces **more than one person**, who is normally the employer in a workplace as stated (also see Appendix 3 'Effective Management of Fire Safety').

It would appear that the key duties under Articles 8 to 22 of the Order (which will be covered later) apply to other persons in addition to the employer/responsible person, whether the premises are within a workplace or not.

This is evident from Article 5(3) that states:

'Any duty imposed by articles 8 to 22 or by regulations made under article 24 (Powers of Secretary of State) on the responsible person in respect of premises shall also be imposed on every person, other than the responsible person … who has, to any extent, control of those premises so far as the matters relate to matters within his control.'

It does therefore appear that managers, health and safety officers, supervisory staff in hospitals and care homes etc who hold control of the premises to any extent, do also have to bear responsibility for the duties imposed by Articles 8 to 22, in addition to that held by the responsible person who will usually be the employer in a place of work.

This can, perhaps, be illustrated by the following two examples. If the employer gives a member of staff the responsibility, say, for overall health and safety within the premises, then to the extent that this safety officer has control of specified matters that relate to the premises, or part of the premises, they would also appear to be caught by this duty to take general fire precautions.

Similarly, if we take the example of staff who work only at nights within, say, a nursing or care home, that is outside of the normal office hours when the employer and other managers are present, it would appear that these staff are caught by Article 5(3).

To illustrate this point we can take a practical example. It is good practice to close automatic fire doors at night and, if our night staff in the nursing home failed to close these doors, or failed to ensure that escape routes and fire exits were free of obstructions, they would seemingly hold responsibility also.

As such, they would be liable to be held to account should there be shortfalls that could place persons in serious danger by their omission, because they have a managerial control over safety within the premises.

If such a system of responsibility and accountability in respect of the duties imposed were only placed upon the employer or owner, and not these other persons, it would be an unsatisfactory fire safety situation without proper accountability trails as staff could take the view that they did not need to worry as they could not be held responsible (also see Appendix 3 'Effective Management of Fire Safety').

When we look at the offences that can be committed under the Order, it is very important to be aware that a fire does not have to occur and persons do not actually have to be injured for the offence to be committed. It can be an offence if persons are placed at risk of death or serious injury if a fire occurred. The principle behind Article 5(3) would appear to be one of lessening such risks via a broader field of accountability.

Articles

We mentioned the duties imposed by Articles 8 to 22. What are these duties?

- Article 8 is the duty to take 'general fire precautions'
- Article 9 relates to the Fire Risk Assessment
- Article 10 specifies that principles of prevention and protection are required
- Article 11 concerns fire safety arrangements
- Article 12 concerns the elimination or reduction of risks from dangerous substances
- Article 13 concerns firefighting and fire detection
- Article 14 concerns emergency routes and exits
- Article 15 concerns procedures for serious and imminent danger and danger areas
- Article 16 concerns additional measures in respect of dangerous substances
- Article 17 concerns regular maintenance of safety facilities and equipment
- Article 18 relates to the appointment of competent persons to assist with safety
- Article 19 concerns the provision of information to employees
- Article 20 concerns the provision of information to outside contractors
- Article 21 concerns the provision of training
- Article 22 concerns co-operation and co-ordination between persons

We now need to look at each Article in turn and the expressions used. **For all Articles, remember also to read the full text in SI 1541.**

Article 8: General fire precautions

What does the term 'general fire precautions' mean?

- Measures to reduce on the premises fire risk and fire spread
- Measures for being able to escape from fire
- Measures for ensuring that all escape routes and exits are safely usable when premises are occupied
- Firefighting measures
- Measures for fire detection and warning
- Measures in respect of staff instruction on emergency routines including training and mitigation of a fire's effects

All of the above are concerned with the safety of 'relevant persons' which, simply put, means any person including the responsible person who is or may be lawfully on the premises, and any person in the immediate vicinity of the premises who may be at risk from a fire in those premises.

The Order is there to ensure life protection, not property protection per se, although measures to protect life such as fire doors and compartmentation can increase the protection of the property.

The practical application of the duties imposed by Articles 8 to 22 will be covered in Chapter 4.

Article 9: Fire Risk Assessment

Lying at the heart of this Order is the carrying out of a '*suitable and sufficient*' Fire Risk Assessment (FRA). What is deemed '*suitable and sufficient*' will be discussed later but, simply put, the FRA is a survey of the workplace carried out to determine:

- the nature and location of any fire hazards existing;
- the number of persons likely to be placed at risk from those hazards;
- the presence of combustibles and explosives;
- the level (if any) of existing fire safety provisions;
- the number of fire exits and the adequacy of them in relation to existing hazards and the number of occupants likely to need to use them to escape from fire;
- the risk probability of the fire hazards endangering the safety of occupants.

In all premises in which five or more persons are employed, and/or a licence or Alterations Notice (under the FS Order) is in force, a record must be kept of the significant findings of the FRA, and the FRA must be reviewed whenever alterations to or within the premises to which it relates have been made.

We will look in more detail at what is meant by 'significant' and when the FRA should be reviewed within Chapter 4.

Article 10: The principles of prevention and protection

Any fire safety provisions implemented by the responsible person(s) as a result of the significant findings of the FRA must follow the principles set out in Part 3 of Schedule One of the Order.

These principles are:

- avoiding risks;
- evaluating the risks which cannot be avoided;
- combating the risks at source;
- adapting to technical progress;
- replacing the dangerous by the non-dangerous or less dangerous;
- developing a coherent overall prevention policy which covers technology, organisation of work and the influence of factors relating to the working environment;

- giving collective protective measures priority over individual protective measures;
- giving appropriate instruction to employees.

Article 11: Fire safety arrangements

Here the responsible person(s) must ensure that there are effective arrangements in place to cover health and safety. The complexity of such arrangements will be relative to the processes at the workplace being simple or involved.

They can be incorporated within an emergency plan and by the setting up of formal health and safety systems with officers nominated to ensure that the planning, controlling, monitoring and reviewing of the arrangements are such that all fire and safety systems, routines and emergency procedures are in place and effective at all times. (These must be recorded if five or more persons are employed or if a licence or Alterations Notice is in force for the premises).

Article 12: Elimination or reduction of risks from dangerous substances

The responsible person must follow the principles of prevention in eliminating or reducing the risks from dangerous substances, and must arrange for the safe handling, storage and transport of dangerous substances and waste containing dangerous substances.

Article 13: Firefighting and fire detection

This relates to fire detection, fire alarm systems and firefighting equipment being provided so as to safeguard all occupants, and includes the nomination of competent persons to implement these measures which include the contact arrangements with external emergency services, with particular regard to firefighting and rescue. The detail of this Article will be covered in Chapter 5.

Article 14: Emergency routes and exits

The responsible person(s) must ensure that in order to safeguard all occupants, all of the emergency routes and fire exits must be kept clear. In addition and '*where necessary*' due to the premises' layout, its activities and its hazards to persons, there should be sufficiently sized emergency exits opening in the direction of escape, which are not sliding or revolving doors, and can be readily opened by anyone from inside without a key and capable of affording a quick escape to safety as directly as possible.

Signs must indicate such routes and exits and there must be emergency lighting where necessary should the mains lighting fail.

Article 15: Procedures for serious and imminent danger

The responsible person must put into effect appropriate emergency action procedures, including drill sessions, and nominate sufficient competent persons (Fire Wardens) to assist in the evacuation of occupants.

They must also ensure that access is restricted to areas of danger unless the person has been properly instructed in safety procedures.

They must also ensure that persons are informed of any hazards and imminent danger and of the measures provided to protect them, and enable persons in danger to stop work and evacuate to a safe place. They must also prevent persons re-entering any areas of danger.

Article 16: Additional measures in respect of dangerous substances

The responsible person must have in place adequate information in respect of work hazards and their means of identification, and provide appropriate warning and communications equipment to ensure that persons are warned in advance of imminent danger to ensure appropriate actions of remedy and rescue or withdrawal to immediately take place.

Should the risk assessment indicate it, appropriate means of escape facilities must be provided for occupants.

The emergency services must be notified in advance of serious hazards to enable them to draw up their own plans and, if necessary, there must be adequate signage and information that indicates the type of the hazard and its location.

In the event of a fire involving dangerous substances, adequate arrangements must exist to mitigate the fire's effects, bring the situation under control, inform affected persons and permit into affected areas **only** those persons who have been provided with personal protective clothing and equipment and, if necessary, specialised equipment and plant, and to use this until normality is restored.

Article 17: Maintenance of safety facilities and equipment

The responsible person must ensure that all facilities relevant to the safeguarding of occupants and which relate to general fire precautions, are subject to a suitable system of maintenance and are maintained in an efficient state, in efficient working order and in good repair.

Clearly, this applies to automatic fire detection and alarm systems, emergency lighting, firefighting equipment, fire doors, partitions and so forth and, where premises are in multiple occupation, co-ordination and co-operation with other occupiers and/or owners must take place in order to safeguard all occupants.

Article 18: Appointment of competent persons

Here the duty of the responsible person is to appoint one or more competent persons to assist in the undertaking of the preventive and protective measures, and to arrange that they co-operate adequately and that the time and facilities given, relevant to the premises' size and hazards, are adequate (also see Appendix 2).

If there are competent persons in the responsible person's employ, then they must be preferred to someone not in the employ. If persons are not in the employ, then they must be informed of the hazards present in the premises and of persons likely to be at risk, and of the terms and categories of any persons employed on the premises. It would appear that this Article covers such situations as the appointment of an external consultant, adviser or installer, and that the responsible person **must** ensure that those appointed are competent and are given adequate information and support to facilitate their task (also see Appendix 2).

So, if an external fire safety advisor is appointed to carry out, for example, a FRA, then the responsible person must provide this person with all relevant information on the premises' hazards, and all relevant information which will facilitate the effective carrying out of the FRA and the production of the report of significant findings.

NB: The current definition of competence is discussed in Appendix 2, page 172.

Article 19: Provision of information to employees

The responsible person must inform all employees of the risks found during the FRA and the risks notified to him by another. He must also establish safety procedures including fire drills, inform employees of who are the nominated competent persons in respect of firefighting assistance and evacuation, and of the preventive and protective measures implemented.

Article 20: Provision of information to outside contractors

Here the responsible person must ensure that any employer of outside contractors is fully informed of the risks to his employees, the preventive and protective measures taken and who are the Fire Wardens and other competent persons who implement emergency evacuation procedures.

Clearly, these measures are to ensure that outside contractors receive adequate information to enable them to **not** be placed at risk should a fire break out.

Permit to work systems are also used to create a situation in which outside contractors cannot start work until all due safeguards have been put in place to protect all occupants of the premises.

Article 21: Provision of training

The responsible person must ensure that all his employees are provided with adequate safety training in works time (also see Chapters 5 and 10).

Article 22: Duty to co-operate and co-ordinate

This duty is to ensure that where there are two or more responsible persons sharing or having duties in relation to the premises, they must co-operate with each other and co-ordinate information and safety policies to ensure that the requirements and prohibitions imposed by the Order are complied with.

An example of this would be in the case of a nursing or care establishment that has separate day and night staff. It is essential that at the change over of duty, all relevant information that impacts on occupant safety from fire is handed over fully and clearly. For example, if the total number of residents in the establishment has changed, then the roll-call board must reflect this. Equally, should any resident require additional help during a fire evacuation, these details and the room location of that person must be handed over so that no confusion occurs which could endanger any occupant.

The above fifteen Articles are the duties that the responsible person(s) **must** carry out in respect of the taking or observance of general fire precautions in respect of all occupants and of any other person(s) in the immediate vicinity of the premises.

There is also a general duty placed on all employees whilst they are at work. This duty is contained in Article 23, read full text in SI 1541.

Article 23: Individual duty of employees

Every employee must take reasonable care for their own safety and that of others who might be affected by his own acts or omissions.

Every employee must also co-operate with their employer so as to assist the employer in the effective discharge of the duties imposed by this Order.

Every employee must also let his employer or safety official or manager know of any situation discovered which could constitute a serious and immediate danger to persons plus any matter which might reasonably be considered to represent a shortcoming in the employer's safety arrangements, where these matters have arisen out of the employee's connection with his own work, and which have not already been drawn to his employer's attention. So if, for example, an employee notices that a fire door on a staircase leading to a kitchen has become seriously defective, it **must** be reported unless information exists which shows that the employer or manager has already been advised.

Another example could be that exit doors were locked and the keys removed, which would represent a shortcoming in the employer's safety arrangements.

For all other definitions, see the glossary for clarifications. All those with responsibilities under the Order are advised to make themselves familiar with the relevant parts of SI 1541. Remember: you cannot use ignorance of the law as an excuse.

Chapter 4

Fire Risk Assessment

Also see Appendix 7

The Fire Risk Assessment (FRA) sits at the heart of the self-determination/complying regime of the FS Order 2005. From this heart flows the information that should have been collected during the FRA survey. The ultimate quality of the fire safety provisions provided and thus the degree of preventive and protective features in place to safeguard all occupants from the risk of fire, stem inextricably from this essential initial inspection process. In earlier chapters, it was stated that it is vital to always be mindful of how much of the fire safety legislation within this country arose from some quite dreadful and needless losses of life. Those early accounts were included to leave no doubts that uncontrolled fire, with its attendant heat and toxic gases, possesses the potential to wreck lives and property, and that it can strike at any time with utter disregard for age, race, social class or gender.

'Suitable and sufficient'

Article 9 of the Order requires the responsible person to *"make a suitable and sufficient assessment of the risks to which relevant persons are exposed for the purpose of identifying the general fire precautions he needs to take to comply with the requirements and prohibitions imposed on him by or under this Order."*

There is no definition provided of '*suitable and sufficient*' within the Order.

Accordingly, and unless the responsible person engages the services of a competent fire safety specialist, determining what constitutes '*suitable and sufficient*' will not be a simple task unless the size and category of business and occupancy are such that fire hazards are of the lowest order. To assist in this essential judgement, a series of critical factors will shortly be listed.

However, the reasoning behind this 'critical list' will be better understood if a brief account is given of how fires start and how they can rapidly spread within buildings – in other words, the 'dynamics' of fire.

The dynamics of fire

For a fire to start (and for it to be extinguished) we must be aware of the **fire triangle.**

Heat or ignition source makes up one side, **fuel** makes up another, and the third side is **oxygen**. The lists provided below are not exhaustive.

Heat or ignition source:

- A match flame
- Gas boiler pilot light
- Electric ring on the oven
- Gas ring on the oven
- Radiant on a gas or electric heater
- Convector heater
- Halogen lamp bulb
- Overheated electrical wiring and equipment
- Spark from a grinding wheel
- Unextinguished smoking materials
- Static electricity
- Spontaneous combustion (in hay stored damp, coal stacks etc)

Fuel source:

- Paper and cardboard
- Cloth and textiles
- Wood
- Rubber
- Plastics
- Flammable liquids and gases
- Paint and solvents
- Alcohols such as whisky

Oxygen:

- In the air around us
- In oxidising agents
- From open windows and doors and from ventilation systems
- From medical gas cylinders and hospital piped supplies

If we remove any one side of the triangle, fires cannot start and fires which have started can be extinguished. However, once started, the burning fuel cannot normally be removed so the fire is put out by an extinguishing agent that removes the heat or oxygen or both. The judgement as to what is '*suitable and sufficient*' can be helped by not only understanding the elements of the fire triangle, but by appreciating that premises used for trade and business can be categorised into differing fire risk categories.

Fire hazard and fire risk

The glossary at the rear of the book defines 'hazard' and 'risk' and here we simply need to be aware that the term 'fire risk' refers to several things. Fire risk can have different connotations and it is important to be clear on the particular context being used.

Firstly 'risk'. This refers to the mathematical probability of a fire occurring. Secondly, it can refer to the probability of a fire in one building spreading to adjacent buildings. The close proximity to each other of fully-stocked warehouses of the former London docklands used to be categorised as 'high risk' because of the high probability of a conflagration developing on account of the amount of combustibles stored, and spreading to the adjacent warehouse. Thirdly, it refers to the degree of danger (level of risk, for example high, normal or low) to which occupants of premises could be exposed should a fire break out.

So when the term 'high risk' is used, it can either mean that there is a high probability of a fire emergency occurring within a category of premises and spreading to adjacent parts of the same premises, or to premises adjacent, or, that should a fire occur in premises, there is a high probability that occupants could be in serious danger of harm from fire.

For instance a petroleum refining plant, with its dense and high concentrations of volatile flammable liquids, attracts the grading 'high risk' because it only needs a small leak in parts of the plant to occur and for even the smallest ignition source to be present for a serious fire to develop. The Buncefield oil depot fire of 2005 was a prime example.

Non-domestic premises in which people sleep such as hotels and boarding houses, hostels, hospitals, and nursing and care homes, attract the grading 'high risk', not necessarily because there is a high probability of a fire occurring, but because the risk of harm from fire, should it break out, is higher when people are asleep, oblivious to its hazards. In such premises, occupants are, in the main, not familiar with their surroundings. Any fire emergency in the sleeping hours means, therefore, that as well as having to suddenly wake (provided that there is an effective fire detection and warning system), people have to cope with the disorienting effect of the emergency.

There is therefore a higher risk of injury from fire in such sleeping risk premises.

This risk will be magnified if fire safety provisions in the form of general fire precautions are absent or inadequate and/or the category of occupants is such that additional fire hazards are created (drug addicts, alcoholics and psychiatrically-disturbed residents of some hotels and hostels have been known to trash fire doors and fire alarms, not to mention deliberately starting fires).

Examples of high, normal and low risk premises

Because the FS Order 2005 is concerned directly with **life protection** from fire, the examples that follow relate to the risk to occupants in terms of the degree of danger to which they could be exposed. The lists are not exhaustive.

High risk:

- Hotels and boarding houses, especially if multi-storey with only one escape stairway
- Hotels and boarding houses used as hostels for the homeless/unemployed
- Hospitals
- Nursing homes
- Residential care homes
- Convalescent homes
- Printing shops and factories
- Petrol, oil and chemical plants
- Paper and cardboard mills and stockists
- Firework factories and stockists
- Department stores and shops in older buildings with closely packed stock and unprotected stairways/escalators and open lift shafts
- Clothing and garment manufacturers, especially if with multi-storeys
- Furniture manufacturers
- Plastic goods manufacturers, especially in older, poorly compartmented buildings
- General warehouses heavily stocked, not having sprinkler systems and with open shafts between floors
- Wool and textile mills
- Rag and waste manufacturers
- Enclosed street markets in traditional buildings with no separation between traders

Normal risk:

- Offices
- Restaurants and cafés
- Retail outlets built to current building regulations and not multi-storey
- Factories of single-storey with minimal combustibles used or stored
- Care establishments for day use only (no sleeping risk)
- Doctors' surgeries and health centres
- Cinemas and theatres

Low risk:

- Stonemasons
- Small retail outlets not selling or using flammables
- Offices in low-rise buildings constructed to current building regulations

Combination of high, normal and low risks:

Although a building/premises may, in overall terms, fall into one category, there will often be parts of the premises in which the risk categories change. For example, a small factory may fall within the 'normal' or 'low' risk group, but within it there may be areas in which the fire risk is 'high'. A common situation could be a factory producing products which pose no fire risk, but which has an adjacent packing and parcelling department in which large amounts of paper and cardboard packaging and adhesives are stored and used.

So, in this situation, there would be a risk grading of 'low' or 'normal' within the production area but a 'high' grading applicable to the packaging area.

Similarly, we could have a quite large office premises spread over, say, two or three floors which is categorised as being of 'normal' risk, but on the ground floor there is a large kitchen housing a range of cooking equipment including deep-fat fryers and with a store containing cooking oils, cardboard boxes and other combustibles. It would be likely that the kitchen and its storage area would attract a 'high' risk grading and, as such, fire safety provisions would need to reflect this.

Fire and smoke spread

So, we have seen how the term 'fire risk' can be confusing unless the context in which it is being used is known and made clear. Our understanding will also be strengthened if we know how fire and smoke spread through a building and of the risks to persons this can create. Those involved in assessing fire risk and in making judgements as to the type and level of fire safety measures and provisions to implement, should remember the following critical point about fire and smoke spread.

It is crucial to the overall process of fire safety provisions for occupants that all fire hazards are located and identified. Unless we know what the hazard is, we cannot assess the risk from it and the speed at which fire and smoke can spread. A *'suitable and sufficient'* FRA must therefore leave no stone unturned in detecting hazards. Every part of the premises must be examined with a critical eye, including rooms, cupboards, lockers, attics, basements, above suspended ceilings, pipe shafts and so forth and, if the hazard from anything is unknown, specialist advice is needed. Any failure on the part of the assessor to do this could mean that the risk evaluation might be inaccurate and lead to inadequate safety provisions with the prospects of harm to occupants being increased, especially if the fire starts on the lower floors of a multi-storey, multi-occupied, sleeping risk building.

It is vital for a fire risk assessor to bear this fact in mind when evaluating whether the assessment carried out is '*suitable and sufficient*' as required by Article 9.

The evaluation will also be assisted by understanding how fire and smoke spreads.

Those firefighters who served in the days before there was a breathing apparatus for every crew member need little reminder of the hazards of heat and smoke, especially within the higher levels of a building to which a fire's searing heat and toxic, choking fumes have risen, causing unconsciousness in seconds. If by waving some magic wand it were possible to allow all those with the responsibilities for the fire safety of premises' occupants to experience this for themselves, few, if any, would shy away from making reasonably practicable fire safety provisions within their places of work. We cannot work such magic, but a clear explanation can be given:

a) Fire spreads throughout a building by convection, conduction and radiation.

b) Smoke and heat create convection currents which rise and, if the door to a room is closed, the smoke and heat hit the ceiling and mushroom downwards. This cycle continues for as long as the fire continues to burn and give off its deadly products.

c) These fire products will spread throughout a building via open doors, unprotected stairways, lift and hoist shafts, service shafts, ventilation ducting, holes in floors and ceilings and around gaps caused by propping open fire doors (the latter being one of the most frequently occurring and potentially lethal transgressions).

d) Heat is radiated from a fire and can raise the temperature to such a level that other combustibles many metres away begin to burn. The conflagrations in the London docks during the blitz raids of 1940/41 often resulted from radiated heat igniting a building many metres across a roadway. Within, smoke heat is trapped and radiates downwards, and can be of such a high temperature that any combustibles in its path can ignite. This is why a fire in, say, a basement can spread its products many metres away and many floors above the source of the original outbreak. **This fact is not often appreciated but must be remembered when evaluating *'suitable and sufficient'* during the risk assessment.**

e) Fire also spreads by its heat being conducted by metals such as steel and copper. A steel door or shutter, for example, against which combustible rubbish has been stacked, can conduct the heat onto combustibles in an adjacent room and, from this ignition, the whole cycle of conduction, convection and radiation continues.

The whole question of general fire precautions and adequate fire safety provisions, including some technical information, will be covered in later chapters. Our next step is to explain the full process and objectives of the '*suitable and sufficient*' Fire Risk Assessment.

The Fire Risk Assessment initial survey

Remembering at all times that the assessment has to be '*suitable and sufficient*', the survey needs to do the following:

Exterior of the premises

- Measure the dimensions of the premises
- Note the number of storeys
- Note the proximity of other buildings adjacent
- Note the existence of any external fire escape stairs and ladders and if there are doors, windows or other openings through which fire and smoke could render the escape impassable
- Note if any fire exits are blocked or impeded
- Note if there is an assembly point for occupants evacuating from fire
- Note if there is access for fire service emergency appliances

Interior of the premises

Go to the highest level of the premises and work downwards.

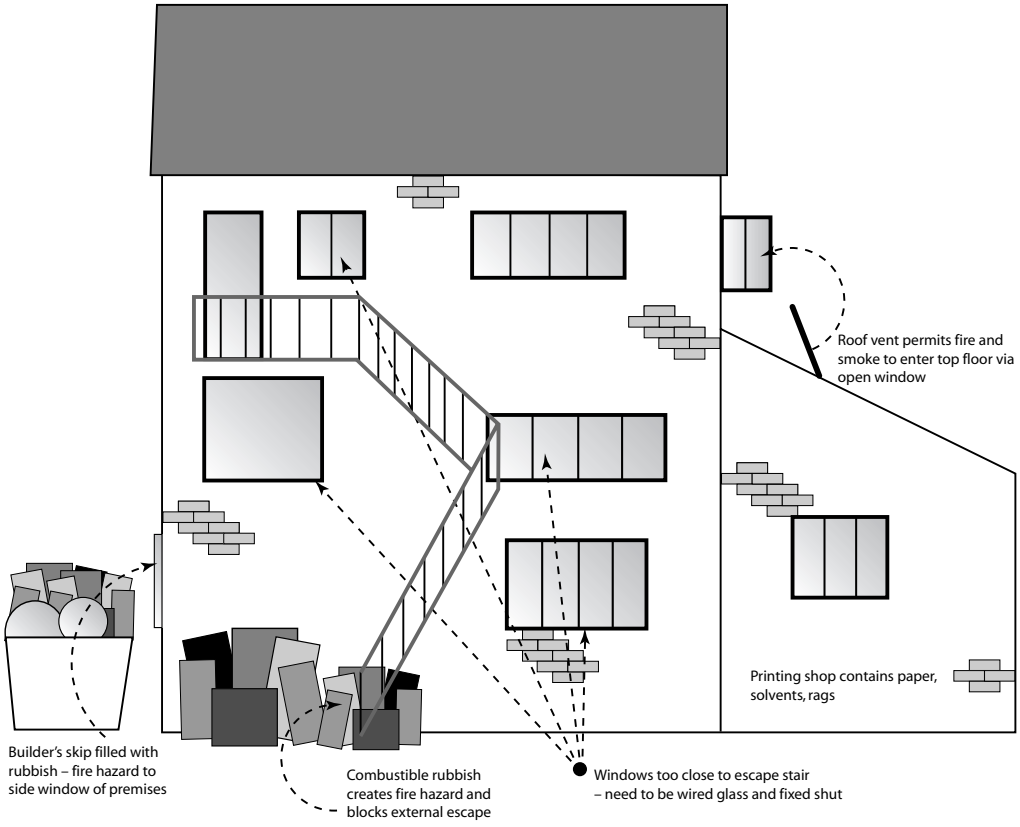
Indentify:

- fire hazards
- ignition/heat sources
- fuel sources
- additional sources of air/oxygen
- persons at risk
- the level of fire risk existing
- existing fire safety provisions (general fire precautions)

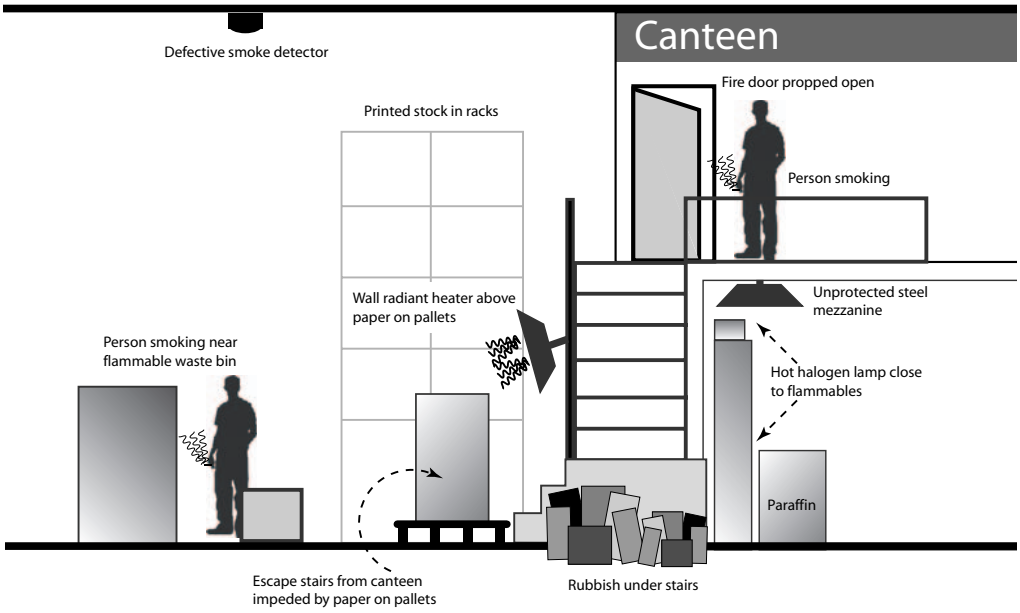
Key points to remember whenever a Fire Risk Assessment is carried out

A hazard is something with the potential to cause harm and this can include articles, substances, plant or machines, methods of work, the working environment and other aspects of work organization.

Exterior of the premises – points to observe



Interior of the premises – points to observe



Example: *Some hazards within a printing shop*

A risk is the likelihood of potential harm from that hazard being realised. The extent of the risk will depend on:

- the likelihood of that harm occurring;
- the potential severity of that harm, ie of any resultant injury or adverse health effect;
- the population which might be affected by the hazard, ie the number of people;
- who might be exposed.

Conclusion: *'suitable and sufficient'*

There is no definition of what is '*suitable and sufficient'* within the Order but it must be remembered that the Order's primary purpose is the safeguarding of the health and safety of any premises' occupant from the hazards of fire using measures which are necessary and appropriate, relative to all of the circumstances of each and every case.

The greater the hazard and risk, the more '*suitable and sufficient*' must the process and methodology of the Fire Risk Assessment be so as to best ensure that the fire safety measures resulting are those which are reasonably practicable and appropriate for the situation existing or which will exist in the future.

'Significant findings'

Article 9 states that in all premises employing five or more people, or if a licence or Alterations Notice is in force, then a record should be made of the '*significant findings of the assessment'*.

There is currently (December 2006) no definition made within the Order of what is meant by '*significant*'. It is suggested, therefore, and in the absence of any definition, that a '*significant finding*' is:

- one which, if not improved upon, any occupant(s) could be placed at risk of death or serious injury from fire; or,
- one which relates to the safety measures and provisions already taken, or to be taken, by the responsible person to ensure that reasonably practicable levels of preventive and protective measures exist to guarantee occupants' safety from fire.

Identifying fire hazards

Also refer to 'The dynamics of fire', page 35

A fire hazard is an article or substance that has the potential to cause harm. All combustible/flammable/explosive materials possess a varying degree of hazard. A small pile of old newspapers is a fire hazard but, if ignited, the resulting fire would not compare with that which would be present if a small can of petroleum was set alight. Petroleum and other flammable liquids, as well as explosives and certain other high fire and explosive hazard substances, are subject to licensing should minimum amounts be exceeded. **Fire risk assessors should therefore provide a printed questionnaire for the responsible person on which questions are asked to verify the presence of such substances, the amounts present and where they are located.** During the FRA survey, a note should be taken of the type, amount and location of those fire hazards, especially those which are not within fire-resisting containers or compartments and which, if ignited, would be likely to quickly spread fire and smoke and jeopardise occupant safety by impeding fire escape routes and fire exits. **Responsible persons need to know that if such hazards were discovered during a fire authority inspection, an Enforcement or Prohibition Notice could result if the risk to persons was considered to be so serious.**

Identifying ignition/heat sources

Also refer to 'The dynamics of fire', page 35

Assessors must adopt a critical approach and be on the lookout for sources of ignition which could cause a fire in and on any fuels present, either within the room or compartment being surveyed or in adjoining rooms or places due to convection, radiation and conduction effects.

Once ignition sources have been identified and recorded, the assessor must bear in mind that any indication that the fire risk potential is unacceptable **must** be made the subject of a recommendation to improve the existing safety situation.

Accordingly, such recommendations will either include:

- removing the ignition source;
- substituting the ignition source for one of lesser fire risk;
- ensuring that if the ignition source cannot be removed or substituted, there are no fuels kept in proximity;

- employing a strictly enforced No Smoking policy;
- providing a safe area for smokers and/or imposing a blanket ban on smoking;
- ensuring that all gas and electrical supplies and equipment are maintained and serviced, and electrical circuits never overloaded so as to reduce ignition risk from malfunction and overheating.

Identifying sources of fuel

We know from the fire triangle that fuel is an essential component.

If we remove fuel from where it could be ignited or remove potential ignition sources from where it is located, then the risk of fire is reduced substantially. We say substantially, and not completely, because we can **never**, unfortunately, discount the threat that exists from arson. This topic will be looked at in Appendix 4.

During the FRA, it is essential to note and record the sources of fuel that could help a fire to spread. The risk of fuel assisting a fire can be lessened in the following ways:

a) Combustible rubbish and waste must never be allowed to build up. It should be removed to fireproof containers outside of the building and placed well away from buildings, open windows etc whenever it is practicable to do so. These containers must be emptied regularly, and before they are so full that the covers cannot be shut, which would provide fuel that could easily be ignited by arsonists.

b) Where combustible materials are part of a production or manufacturing process, only the amounts needed for the job in hand should be kept in the production area. The remainder must be kept in a purpose-built store if it is practicable and, if not, should be segregated from work areas and a strict No Smoking policy employed.

c) Where flammable gases are used, cylinders should be segregated in proper lockable compounds or spaces and different gases not stored together.

d) Gases, solids and liquids should not be stored together as this creates an unacceptable level of fire loading and fire risk potential.

e) Furnishings which comply with the Flammable Furnishings Regulations should be used, and bedding, curtains, wall drapes etc should be of approved fire-retardant materials and checked after laundering to ensure that this retardancy still exists.

f) Floors, walls and ceilings should not be covered in materials that would add fuel to any fire occurring, especially where situated on, or close to, fire escape routes and fire exits.

Identifying additional sources of oxygen

Also refer to 'The dynamics of fire', page 35

During the FRA survey, a record should be made of the presence and location of features or substances that could assist in the development of any fire by supplying additional air/oxygen. The following examples are possible:

- Doors, windows, air vents, ventilation and air conditioning plant and ducting
- Oxidising agents
- Industrial and medical oxygen cylinders and hospital pipelines
- Buildings and parts of buildings with excessive cubic capacities of air such as churches, assembly rooms, theatres, high bay warehouses, railway repair sheds, aircraft hangars and buildings with large undivided roof voids and undercrofts

Identifying people at risk

The 2005 Order exists to bring about adequate and reasonably practicable levels of preventative and protective measures to ensure that no occupant of a premises is placed at risk of death or serious injury in case of fire.

During the FRA survey, it is essential that the numbers and normal locations of employees are recorded, in addition to ascertaining the location and, where possible, the numbers of other persons anticipated to occupy the premises at any one time**,** including any persons with special needs such as those to which the disability discrimination legislation applies or those who are elderly with impaired facilities.

The reasons for this are several:

a) The numbers and normal locations of occupants are related to the numbers, dimensions and physical locations of fire exits, escape routes and staircases needed to ensure that adequate means of escape, capable of being safely and effectively used at all material times, are provided.

b) To enable the requisite numbers of Fire Wardens and Fire Marshals to be nominated to ensure that the emergency fire evacuation routines are effectively carried out.

c) To enable emergency policies to be introduced in respect of, for example, the use of non-ambulant person stairlifts to be formulated.

d) To enable the external emergency services to be appraised so that appropriate systems in respect of firefighting and rescue can be formulated in advance.

Evaluating the levels of fire risk existing

The FRA survey is carried out by dividing the premises into floors and compartments.

Each floor, compartment or department of a building **must** be evaluated in terms of the risk probability of fire occurring being either low, normal, high, or a combination of these. This should be recorded and the category of risk level used when determining the level of general fire precautions considered adequate and reasonably practicable. Long experience gained by the UK fire service has resulted in reliable data based upon historic incidents involving escape from fire.

From this data, parameters exist in respect of the maximum distances permitted for occupants to reach a fire exit relative to the level of fire risk existing.

The existence or absence of these parameters is related to the provision of other fire safety provisions such as automatic fire detectors which can be a 'compensating feature' should it not be practicable to construct additional staircases and escape corridors.

Existing or proposed fire safety provisions

Within the requirements of this Order, fire safety provisions are those that are termed '*general fire precautions'* in Article 4.

Existing or proposed provisions must be recorded on the FRA report as well as the improvements considered necessary to ensure adequate fire safety for all occupants.

To avoid any doubts, the next chapter explains the '*general fire precautions*' in a broad outline. Later chapters provide more detailed technical information.

Chapter 5

General fire precautions and fire safety provisions

In Chapter 3 we examined the responsible person's duty to *'take such general fire precautions, as will ensure, so far as is reasonably practicable, the safety of any of his employees'* as set out in Article 8.

Within this chapter, we will look at the fire protective measures which the Order requires employers/owners/responsible persons to take, and which should be relative to the levels of fire risk to persons revealed when carrying out the FRA survey.

The Order refers to the following protective measures.

Measures to reduce the risk of fire spread on the premises

As we discovered in the last chapter, fire and smoke can spread rapidly through a building. Sound systems of fire prevention diligently deployed by fire-trained employees are crucial and, if fires could always be prevented, then there would be little need for measures to reduce fire spread. The FRA will have highlighted where the fire hazards are and the risk probability of these causing harm to occupants.

It follows that the higher the risk factors, and the hazards being those which it is impracticable to remove or substantially reduce, the greater should be the protective measures employed. Fire and smoke spread and travel can be reduced via:

- Sound principles of fire prevention being followed at all times
- Fire-resisting materials such as fire doors, floors, walls and ceilings
- Fire and smoke stopping in shafts, voids and other places
- Fire-resisting/fire-retardant curtains, drapes, floor coverings and furniture

- Smoke ventilation outlets (see later section on escape routes, page 55)
- Basic firefighting procedures that can limit fire spread by a prompt extinguishing of small fires plus suppression by fixed firefighting installations

Measures in relation to the means for firefighting on the premises

Also see Article 8, page 28

The FRA will have highlighted the hazards existing.

The firefighting equipment provided must be that which is suitable for the fire hazards present in any part of the premises. The equipment will comprise simple-to-use portable extinguishers, hose reels and fire blankets which must be easily accessible (ie not hidden in cupboards or behind rubbish or stock) and be indicated by signs. The equipment provided must be appropriate and relative to the size of the premises and what it is used for, the materials contained there and their chemical and physical properties, and the number of persons likely to be present at any one time.

Automatic firefighting equipment may be necessary in larger and tall buildings and this can include:

- Automatic sprinkler and drencher installations designed to control incipient fires by a rapid actuation at the earliest stage of a fire, or to provide a water spray to keep premises protected from radiated heat from fires in adjacent buildings
- Automatic inert gas extinguishing systems (eg to protect electronic equipment)
- Fixed foam installations (eg to protect oil-fired boiler rooms)
- Wet or dry rising fire mains (to supply water for fire hoses to outlets on landings)

The prompt use of non-automatic firefighting equipment by trained staff can be instrumental in preventing fire spread, and this will help safeguard a premises' occupants, **but the fire service must be called before firefighting actions begin or simultaneously if there are enough staff on duty.** However, only small fires should be tackled and no undue risks should be taken.

The whole question of basic firefighting operations will be covered in Chapter 7, as there is a balance to be struck between the requirements in the Order to provide firefighting provisions and personal safety.

Measures relating to fire detection and fire warning

Also see Article 8, page 28

The Order uses the term '*where necessary*', which tends to imply that there will be some premises in which no protection is required.

We need to tread carefully therefore in attempting to understand what the Order is saying. There are premises in which the business carried on may be such that there is a low level of hazard from fire present. A good example is a monumental mason's small workshop in a single-storey building with single occupancy, and with only stone, tools and small amounts of combustibles present.

In such a situation, there is nothing apparent within the Order which would prevent the responsible person having a fire routine in which the alarm, in the very unlikely event of a fire occurring, was made by the human voice shouting 'Fire! Fire!' or by the manual sounding of a bell, whistle, rotating siren or other device.

Of course if the business was that of a single self-employed individual, in a building where other persons were rarely on the premises, a fire alarm might not be necessary.

In fact within an open plan premises with all areas in sight and with fully alert persons with all their senses intact, then one of the best warnings of fire is those persons seeing smoke or flames, or smelling burning and informing others present of the emergency. Clearly, in any premises in which employees and other persons are not in the immediate vicinity, such a basic system would not be as effective as the provision of a simple electrically-powered alarm system in which that alert individual actuates a call point which sounds a fire warning in all other parts of the premises, and has a level of sound which ensures that the warning is audible **throughout** the premises.

We can state, therefore, that:

- The proven value to life safety from fire of a permanently effective and efficient fire warning system is such that it is recommended for all but those premises in which the risk of harm to persons from fire is innocuous even to a non-expert.
- Where the type of hazards and their location, the activities of a business and the layout of the premises (eg dimensions, number of storeys, number of staircases, openings in floors and walls etc), plus number and location of occupants, are such that an early warning of fire would safeguard them, then the Order requires appropriate fire warning to be provided.

It is because parts of premises can be unoccupied (store rooms, roof voids, attics and basements for example) and because there are features within premises in which fire and smoke could travel unseen (dumb waiters, service pipe and cable shafts etc), that the provision of automatic fire detectors can be so valuable in protecting occupants.

These devices 'sniff out' smoke and fumes or 'feel' the heat of a fire outbreak and trigger an audible and/or visual alarm of fire.

There are no doubts, therefore, that the provision of a permanently effective and efficient automatic fire detection system, linked into a permanently effective and efficient system of alarm, is an essential protective measure in that it gives an early alert to all occupants of the presence of fire, smoke and toxic gases.

Types of fire detection and alarm systems

As explained above, fire and smoke detectors work by detecting smoke or heat and – in occupied premises – they are normally part of an installation that incorporates wall-mounted call points designed to be manually operated.

Whenever a call point is actuated or a detector detects smoke or heat, an audible warning will sound which alerts occupants to an emergency so that they can evacuate in safety. Where deaf occupants are present, a visual alert can be provided.

Automatic Fire Detection (AFD) and Automatic Fire Alarm (AFA) installations can be connected directly to what is known as an Alarm Receiving Centre (ARC) so that the emergency services can be alerted forthwith.

AFD/AFA systems can be hard wired or wireless, although the former are by far the most common.

There are three types of systems:

- Conventional
- Addressable
- Analogue

Conventional

Consists of a number of call points and detectors that connect to each other and to a fire alarm control panel known as the Control and Indicating Equipment (CIE).

The individual devices are wired into the CIE in zones. A zone is typically a floor, area or individual compartment within a building with illuminated lights representing the zones on the CIE. By zoning, an approximate position of where a fire has been detected can be shown on the CIE.

A more precise location as to where a detector(s) has actuated is related to the number of zones the CIE has, which relates to the number of circuits installed within the building.

The CIE would then be connected to a minimum of two sounder circuits (alarm siren, bell, or synthesised voice alerts). Sounder circuits and fire detection zones are wired in the configuration of a star and, at the end of each circuit, there is an end of line device that enables monitoring.

Addressable

Basically similar to a Conventional system, the Addressable has a CIE that enables a precise pinpointing of which detector or call point has been actuated.

(NB: The place where the call point was actuated may **not** be where the fire is because someone may have only actuated the device on passing a call point many metres from the fire's source – as they exit the building for example).

The circuits containing the detection devices are wired in a loop and there can be up to 99 devices to each loop. The detectors are fundamentally the same as those used in Conventional systems with the added feature of its 'address' built in. A switch inside the detector sets the address and the CIE displays the actual device(s) that have operated.

It is possible to connect additional electronic devices into the loop to enable an alarm to be triggered by a sprinkler system flow switch, for example.

As in a Conventional system, a minimum of two sounder circuits are wired in and Loop Isolation Modules can be fitted onto the detection loops to isolate any electrical faults to only a small part of the system.

Analogue

These systems are the most sophisticated electronically of the three types. They are often known as 'intelligent' systems.

There are different types of intelligent systems and the difference results from the way in which devices interface with each other. The most sophisticated systems utilise an individual computer incorporated into each detector. This computer assesses the environment in its vicinity and, as well as being able to sense fire, it can also indicate that the detector is gathering dust or insects which could fool a less sophisticated device into thinking that there was a fire.

Intelligent AFA/AFD systems, if properly installed and maintained, can – with sound premises management – help reduce the high numbers of spurious non-fire alarms that occur with AFD/AFA systems. These are a drain on fire service resources and can create a 'cry wolf' mentality amongst the occupants of a building who may not respond with urgency should a genuine emergency happen.

It is possible on some of these systems to wire up to 127 detectors, call points and other devices into each loop, and these features make this type of system ideal for large premises in which the protection of life is a priority, without running the risk which exists in the other two systems for these high numbers of false alarms.

Selecting an appropriate type and category of AFD/AFA system

In Chapter 6, comprehensive details are provided to help responsible persons better understand what is quite an involved area of fire protection. In this section, we will provide key information to assist in providing an AFD/AFA system that will be 'appropriate' to what the Order requires.

The cost of an AFD/AFA system will obviously vary in relation to not only the amount of coverage required, but also by the type and sophistication of the system chosen.

Clearly, and as stated earlier, there will be some very low risk (minimal hazard) premises in which very simple fire alarm arrangements could be 'appropriate'.

With regard to AFD systems, it is always good practice to utilise industry standard devices, but the Order does not state that, in appropriate situations, domestic smoke alarms, possibly hard wired together and battery operated, cannot be made use of if the environment is such that degradation of the devices will **not** occur.

In any event, such relatively low cost devices can be a useful interim fire protection arrangement within the small, low risk (minimal hazard) environment, for safeguarding occupants by an early warning, but only until a proper electrical system is installed.

Clarification of life (L) protection detection and alarm systems

The 2005 Order is about life protection and not the protection of structure, which is the domain – essentially and legally – of the building control authority.

However, responsible persons must not lose sight of Article 38 of the Order in those premises to which it relates: the maintenance of measures provided for the protection of firefighters engaged in fire and rescue operations within premises. These measures can include firefighting shafts, firefighting lobbies fitted with fire-resisting doors, smoke ventilation outlets, rising internal water mains with outlets for hose and so on.

In as much as some of these relate to items of structure, then it is arguable that AFD/AFA systems, which are there to give life protection by safeguarding occupants, will also help in protecting those structural elements provided to protect firefighters.

This is due to the early detection of fire which can help reduce the potential for fire spread by a prompt alert to the fire service who can begin early fire suppression.

British Standard for fire detection and alarm systems

AFD/AFA systems should always be those that follow the recommendations in the British Standards (BS) current at the time of installation or at the time of any alterations and improvements to existing systems.

At the time of writing (January 2007), **BS 5839-1:2002** was current in respect of system design, installation, commissioning and maintenance.

Within this Code of Practice, the different categories of life protection (as against property protection) are set out.

Life protection systems are categorised as follows:

- L1: The highest life safety system covering the whole building
- L2: Intended for cover of escape routes and other areas of high risk
- L3: Protecting only the escape routes

- L4: Intended for circulation areas, corridors etc in escape routes
- L5: Intended for where detectors satisfy a specific fire safety objective

The system type (Conventional, Addressable, Analogue) plus the life protection category considered appropriate to satisfy the requirements of the Order, will be an outcome of the '*suitable and sufficient*' FRA, but the following caveat is made:

Other than the simplest of manual systems, the decision and assessment as to what AFD/AFA systems will be appropriate and reasonably practicable are likely to be outside of the competence of the average responsible person. If this is the case, then advice should be sought from a competent person, bearing in mind that it is the duty of the responsible person to satisfy themselves as to competence.

See Appendix 2, 'Defining competence and seeking specialist advice'

The judgement as to competence of those sought to proffer advice can be assisted by a general broad understanding of AFD/AFA systems. This will assist the responsible person by lessening the risk of being given advice from a dubious source. Additionally, such knowledge will be of value when engaging specialist assistance as it will create a better appreciation of the financial cost factors involved and if what is being proposed appears to be too extravagant and, therefore, superfluous or too little and, therefore, inadequate, with the prospect of occupants' safety being placed in jeopardy**.** It will also be knowledge which can be beneficial to understanding terminology during any meetings and consultations involving the fire authority when it might specify levels of fire protection required as a condition of an Alterations or Enforcement Notice (see Chapter 11, 'Fire authority enforcement').

L1-L2-L3 categories could be used in the following examples – this is not an exhaustive list:

L1/L2

- Hospitals (see Health Technical Memoranda HTM)
- Nursing and residential care establishments
- Hotels and boarding houses
- Convalescent homes and treatment centres with sleeping accommodation
- University and college premises with sleeping/residential accommodation
- Large department stores
- Large factories with high degrees of fire and dangerous substance hazard

L2/L3

- Day centres used for purposes of treatment and care
- Medical health centres/ group GP practices

- Larger dental practices with laboratories
- Larger office premises in older buildings or in buildings of multiple occupation

L3

- Low-rise office premises in modern purpose-built buildings
- Smaller retail premises/workplaces

The above are only examples for guidance. The final decision as to the category and type of life protection system to be provided will be influenced by the following criteria:

a) The findings of the FRA and recommendations from a competent specialist.

b) A satisfying of the requirements set out within the FS Order 2005 relative to:
   - whether the premises or part of them are a 'sleeping risk';
   - whether the category of occupants is such that delays in evacuation times are a possibility (eg treatment centres, old persons, disabled persons, day centres etc);
   - the amounts and types of fire hazards within the premises;
   - the numbers of persons present and their locations;
   - the degree of fire-resisting compartmentation existing or to be provided;
   - the dimensions of premises and any features which could jeopardise occupants' fire safety;
   - the provision of firefighting facilities and staff trained in all aspects of fire safety actions.

c) The requirements of the fire authority.

d) The requirements of the building control authority.

e) Any requirements of the Health and Safety Executive.

f) Any requirements of property and business insurers.

g) The relative cost differences between simple and complex systems.

Fire detection and alarm systems – designed, installed, commissioned and maintained in line with Code of Practice recommendations – play a pivotal role in life protection.

Provided that they are appropriate to the relevant premises or parts of such premises and to the degree of life risk which exists, AFD systems, if properly maintained, keep a vigil which is not affected by human failings or complacency, and they provide that vital protection at all times, including during the sleeping hours when occupants in sleeping risks are totally oblivious to the hazard of fire and toxic smoke.

Chapter 6 needs to be read in conjunction with the above information so that responsible persons are fully au fait with the key technical points to be aware of when complying with the requirement to provide reasonably practicable fire detection and warning arrangements relative to the circumstances of the case.

Measures in relation to means of escape – key elements and strategies

Also refer to 'The dynamics of fire', page 35

This section outlines the key elements in respect of means of escape and the evacuation strategies that are available. Detailed information on means of escape is provided in Chapter 8 and Appendices 1 and 11.

Means of escape (MOE) refers to the emergency routes and exits available from within a premises to a place of safety or relative safety. **Ultimate** or **total** safety is the exterior of the affected building and far enough away so as not to be placed in any danger from fire and fire products. **Relative** or **reasonable** safety is to the far side of a fire-resisting door and wall at which point persons are protected from fire products as they make their way to ultimate/total safety.

The basic principle on which all sound MOE systems are based is that of persons being able to turn their back on a fire and escape to a place of safety by their own unaided efforts, or with assistance from staff if disabled or handicapped physically or mentally, but in all cases without the help of the fire service.

To enable this principle to effectively apply, the following key elements must exist:

a) An effective means of alerting all occupants that a fire has occurred.

b) Sufficient numbers of outward opening, readily openable fire exits with dimensions sufficient to pass persons escaping safely and promptly.

b) Distances of travel to fire exits to be as direct as possible relative to the degree of fire risk existing to persons.

c) Adequate fire-resisting compartmentation to escape routes relative to the risk and to the building's dimensions and numbers of storeys.

d) Emergency routes and fire exits being clear and unobstructed at all times.

e) Adequate directional signage, illuminated where necessary, on emergency routes and exits.

Wherever it is possible and practicable to do so, relative to the risk, there should be at least two escape routes from all parts of the premises, independent of each other and separated in such a way that fire products cannot affect both routes simultaneously.

Where it is impossible or impracticable to provide more than one interior escape route, for example in a hotel of several storeys with only one staircase serving all floors, then additional protective measures will have to be taken as compensating safety features.

Such measures could include:

- an AFD/AFA system of L1 or L2 category;

- lobby protection between bedrooms and the staircase, namely the installation of a pair of self-closing, fire-resisting doors to ensure that fire products will be confined by two fire doors to the bedroom and not enter the stairs and jeopardise the safety of guests evacuating;
- an external fire escape leading to ground level;
- full enclosure of internal staircases with fire-resisting materials so as to form a protected route to a place of safety.

Escape routes and fire exits

All escape routes and fire exits within the premises must be kept clear at all times.

- Combustible rubbish must never be allowed on or in escape routes.
- Corridors and understairs areas must be fire-sterile and therefore free of such items as gas cylinders, spare beds, furniture, electrically operated appliances etc.
- There should be no breaches to fire-resisting walls and partitions by service pipes and cables.
- Fire doors must never be wedged or propped open.
- Fire exit doors must open outwards.
- If a premises' security requires a door to be locked from the outside, then that door must be capable of being readily opened from the inside without the use of a key by any person escaping. This will require either a panic bolt, break-glass bolt or Yale-type latch with clear signage present, capable of being read in all light conditions.
- There must be no obstruction on either side of any exit door and, in situations where final exits lead to a street or yard where vehicles can park, a weatherproof sign readily visible and stating **Fire Exit Keep Clear At All Times** should be fitted.

Travel distances

Article 14(2)(a) requires all emergency routes and exits to lead as directly as possible to a place of safety.

As stated earlier, there is **total** or **ultimate** safety and **relative** or **reasonable** safety.

It would often be impracticable, especially in larger buildings or in buildings such as hospitals and care homes, for all exits to lead directly to total safety, which is outside of the affected building and well clear of fire dangers.

Accordingly, evacuation can be such that en route to a final exit outside of the premises, occupants receive the protection of a reasonably or relatively safe area.

Once a properly installed and maintained fire-resisting door and partition are passed through, occupants are protected for at least 30 minutes from the effects of fire and smoke and this 'buys' time for persons who are escaping.

Within hospitals, care homes and other such places where non-ambulant persons are present, or where there are persons with limited agility, such time is vital to the overall life safety process because evacuation times will, of necessity, be slower than where fully able-bodied occupants are concerned.

Lengthy experience of the dynamics of fire and smoke, relative to the provision of adequate fire-resisting compartments, and relative to there being sufficient numbers of fire exits of adequate dimensions for the potential numbers of persons evacuating the premises, has resulted in maximum permitted **travel distances** (see Part Two).

These distances are:

- those travelled from within a room (Stage 1);
- those travelled from the exit of that room to a storey exit or a protected compartment or lobby (Stage 2);
- those travelled from a storey exit/protected compartment/stairway to a final exit (Stage 3).

Of course, these three stages will not be applicable in every case. In many premises, an exit will be close to the room exit or be within the room or workplace and thus only Stage 2 or Stage 1 travel will be required.

Indirect and direct travel distances

Indirect distance is the actual distance to be travelled within a room or compartment when it is necessary to navigate around furniture, fittings, machinery etc.

Direct is the shortest distance that could be achieved if the room were empty of furniture, fittings, machinery etc.

NB: Any alterations to the internal layout of premises or compartments, or to the contents, may have detrimentally affected safety by increasing the travel distances recommended for specific risk and occupancies. Article 9(3) requires that the FRA is reviewed in such situations to establish if the previous protective measures are still valid.

Recommended travel distances applicable to different types of premises and risk are set out in Part Two.

Evacuation strategies

- Single stage evacuation
- Progressive horizontal evacuation
- Phased evacuation/staged evacuation

Single stage evacuation

This strategy adopts the policy of evacuating every occupant in a single operation.

With a suitable AFD/AFA system and with all staff properly trained in the fire emergency action routine, it should be possible, where all occupants are able-bodied and in low to medium-rise buildings with adequate escape routes, stairways and exits, to evacuate the premises in a few minutes.

NB: Where any building is in multiple occupation, it is imperative that the responsible persons of each organisation liaise closely and co-operate and co-ordinate the safe evacuation of all occupants who come under their control. It is equally important to ensure that where any fire escape route and fire exits pass through the premises of a separate organisation, foolproof contingency plans exist between the different companies to guarantee that all doors can be readily opened without the use of a key and that no obstructions to these routes and exits are present.

Progressive horizontal evacuation

This strategy uses the principle of evacuating from a fire area into a place of relative/reasonable safety in a horizontal sequence. It is the strategy used in hospitals where it would be impracticable and injurious to move sick or recuperating patients immediately out to the building's exterior. Occupants are evacuated to beyond a fire-resisting compartment, and should the fire be spreading, are moved onto the next compartment and so on. This strategy depends upon there being sufficient space to accommodate the occupants evacuated and, in those premises such as hospitals and care homes, sufficient trained staff to assist the non-ambulant.

Phased evacuation/staged evacuation

This strategy is one in which occupants are evacuated in a phased sequence. It is the opposite of the single stage evacuation because rather than all occupants evacuating together, it relies upon a co-ordinated movement of persons dependent upon the fire situation existing. It is a strategy well suited to the larger shopping malls and high-rise office blocks and towers. In these situations, it is impracticable and often unnecessary to evacuate everyone should an alert of fire be received on the fire alarm panel. Instead a local alarm, usually a voice communication, is used to evacuate the affected area. Should the fire be spreading, then other areas and/or the whole premises will be evacuated, but in a phased sequence managed by the fire and security staff.

Some high-rise towers rely on phased evacuation because the staircases are not wide enough to accommodate the very high numbers of persons if they tried to evacuate simultaneously. Thus, in a 30-storey tower, for example, with a fire on the twenty-fifth floor, the fire floor and the five floors above would be evacuated first. If the fire continued

to develop, then a progressive phased evacuation of the other floors would occur with the security staff timing and co-ordinating the evacuation sequences so as to ensure that staircases are not overloaded.

Measures to ensure that means of escape can be safely and effectively used

These are the measures that have to be provided to enable the MOE to always be capable of providing safe and prompt exiting from fire from any point within a building or premises. These include:

- Emergency lighting and way guidance
- Fire exit and escape signage
- Fire door and fire emergency action signage
- Ventilation outlets for smoke (plus life protection sprinklers in appropriate cases)
- Fire-resisting constructions

Emergency lighting and way guidance

This exists to provide adequate lighting on escape routes should the main lighting to the premises fail, and also provides illumination to fire exit signage, fire alarm call points, changes in floor levels, stairways, fire exit doors, firefighting equipment and rooms and basements without natural light. Way guidance systems employ light emitting diodes or luminous materials at low level to direct occupants to fire exits, especially those which are away from the main exit route paths.

Emergency lighting units can either always be on or only activate when normal lighting fails and can have a battery supply which is kept charged by the main electrical supply or be powered by emergency auto start generators.

Emergency lighting must be serviced and tested regularly to ensure that it operates in an emergency and, ideally, emergency lighting should comply with BS5266.

Fire exit and escape signage

Fire exit signs play a key part in directing people along emergency routes to fire exits.

Responsible persons should remember the following key point: **persons will usually try to exit by the same way they came in.** It is therefore imperative that in the larger premises in which fixtures and fittings or sales items or stock restrict vision, adequate escape directional signs are provided of sufficient size and in the best positions to ensure that persons can quickly find the nearest available fire exits.

There are still too many premises in which too few signs exist, and those that do exist are often badly positioned and too small to be seen from a distance – even to people with excellent sight. It must never be forgotten that if fire exit signage is inadequate

and the route that occupants took to enter the premises is impassable by fire and smoke, panic can easily ensue – especially as smoke and heat can fill a floor within minutes or even seconds. In heavily populated premises such as, for example, department stores at sales and Christmas periods, this could lead to escape routes becoming overloaded with the resultant hazard of crush injury.

Escape and exit signs must therefore:

- be those which comply with the current Signs and Signals Regulations;
- be clearly visible from all areas;
- be of sufficient size and provide unambiguous directional information;
- be positioned in a way which allows the next sign to be seen as escape is made;
- be fixed above doors in the direction of escape. If on doors they will not be seen when door is open;
- be 2m to 2.5m above the floor when positioned above doors;
- not be suspended (if a hanging sign) by materials which could fail in the heat of a fire or in hot smoke (eg nylon fishing line);
- be securely fixed to walls and replaced if loose or no longer clearly legible;
- be adequately illuminated as appropriate to the situation existing in an emergency.

Fire door and fire emergency action signage

Fire door signs are not for decoration. They exist to remind persons to close or lock them, or to keep them from being obstructed in their operation.

Self-closing fire doors (other than on bedrooms) require the sign **Fire Door Keep Shut** to be securely attached on both sides.

Self-closing fire doors on store rooms, cleaners' cupboards, etc require the sign **Fire Door Keep Locked** on the door's exterior.

Fire doors or smoke doors which are retained in the open position by an electro-magnetic door holder wired into the AFD/AFA system, or by a stand-alone device, require the sign **Fire/Smoke Door Keep Clear Do Not Obstruct.**

Fire exit doors fitted with a panic bolt require the sign **Push Bar To Open**, which must be positioned just above the bar.

Fire exit doors fitted with a glass bolt and hammer require the sign **Break The Glass With The Hammer Provided** fitted adjacent.

Fire action notices on which the emergency routines are set out should be positioned next to fire alarm call points, fire points and in staff rooms and other places where they can be seen, illumination being provided where necessary.

Ventilation outlets for smoke

Some premises have stairways on exterior walls in which a section of the wall, or glazing within the wall, is equipped with automatic or manual means for ventilating the stairs of fire smoke so as to keep the escape route relatively clear. In the larger shopping malls, smoke extraction systems are an integral element of the means of escape criteria, along with sprinklers to protect life on escape routes.

Fire-resisting constructions

The age of a building, the type and quality of its construction, its internal layout and whether the premises in question comprises an original structure linked to new extensions, all have a bearing on the fire-resistance facts relative to means of escape routes and exits.

Older buildings may:

- not have been caught by earlier fire safety legislation;
- not have had any fire authority fire safety inputs and inspections for a long time;
- not have fixtures, fittings or materials which comply with today's standards of fire resistance;
- not have had safety checks made of electrical wiring or gas supply piping for a long time;
- have staircases which are unenclosed and unseparated, permitting easy spread of fire products;
- have no emergency lighting or fire exit signage and/or inadequate fire warning;
- have floors, walls and ceilings perforated by service pipes and cable runs;
- have hidden voids and cavities along which fire products could travel and jeopardise the MOE;
- have inadequate fire exits and escape routes relative to occupant numbers and category;
- require compensating features such as AFD/AFA, external fire escapes etc;
- have external fire escapes which do not comply with fire and building regulations.

In order to *'reduce the risk of fire spread'* (Article 4(1)(a)), *'secure the safe and effective use of the MOE'* (Article 4(1)(c)), and *'mitigate the effects of the fire'* (Article 4(1)(f)(ii)), it is essential that during the FRA a critical examination is made of all of the above items. In the case of any uncertainties, in addition to a record being made of significant findings, consultation and liaison with the FA and BCA must take place before any improvement works commence. By doing so, the responsible person should be able to discover if the fire authority/building control authority have a case file record of the premises and of any past recommendations or requirements made, and if there is work to be done to satisfy their respective legislation (see Chapter 11 and requirements of Alterations Notices). Failure to so consult may mean that unnecessary expenses are incurred in upgrading measures already put in place.

If any doubt exists that the fire safety provisions within the relevant premises or parts of them are such that occupants' safety would be jeopardised, these should not be used and placed out of bounds**,** particularly if the premises or part comprise of a sleeping risk, and the advice of a competent fire safety specialist sought.

Fire safety training and instruction

See Article 21 in the Order

Responsible persons must never forget that fire safety training for employees is a vital element in ensuring the safety from fire of all occupants and ensures that responsible persons have complied with this requirement of the Order.

The majority of fires that occur are the end result of some human error, act or omission. The fire safety provisions provided in premises to which the 2005 Order applies are the end result of a '*suitable and sufficient*' FRA, from which value judgements have to be made relative to risk and to what is reasonable and practicable to the premises in question in respect of ensuring occupants' safety.

No matter how comprehensive the FRA and the fire safety measures which have been implemented, inadequate employee training and instruction can be the weak link in the overall fire safety process. The responsible person should, therefore, be mindful of the following advice.

a) Only engage someone who has a verifiable CV as to the qualifications held to deliver this vital training and instruction (see Appendix 2, 'The definition of competence'). The definition of 'competence' provided within the Order is loosely worded and its criteria are no guarantee that a person has any substantial and specialist experience and background in fire safety and in the application of legislation.

b) Training sessions, plus the instruction and information given, must satisfy in all aspects the requirements set out in Article 21(2) (a) to (e) and Article 19(1) (a)(b)(c)(d) and (3) (training requirements of the Order and information to employees).

c) Senior managers and any other person with corporate responsibility who are employed on the premises should be included in the training.

d) The names of all who have received training and the name of the trainer should be recorded and retained to enable the enforcing authority to have sight as required.

e) All new staff should receive interim induction training followed up by the periodic fire safety training sessions.

f) Any member of staff with responsibilities which bring them into Article 5(3), should receive full and proper fire safety training and instruction before taking up their duties.

g) A clear policy must exist to ensure that any members of staff who fail to properly carry out their duties in respect of fire safety training received without reasonable excuse are aware of the consequences, and that they could be liable for any omissions under Article 32 of the Order.

h) Any person who appears incompetent as to their ability to carry out the emergency routines covered in training sessions should be the subject of additional training and counselling to enable the responsible person to take appropriate decisions in line with collective safety.

Training session information

The information and instruction given in training sessions should be designed to ensure that all employees are aware of:

- how fires start and spread;
- how to prevent fires;
- the fire and safety legislation current at any one time;
- the location of all places of hazard;
- the location of all emergency routes and exits;
- the purpose of fire doors and fire-resisting construction;
- what to do on hearing the fire alarm;
- what to do on discovering a fire including basic firefighting;
- the importance of employees asking questions of the trainer in order to clarify any points of uncertainty in respect of fire safety and their role within it.

In addition to the above, those employees who have been nominated as competent persons in order to carry out the duties of Fire Wardens/Fire Marshals etc, must receive oral and written instructions and information in respect of:

- any AFD/AFA systems present;
- any direct auto links to Alarm Receiving Centres;
- understanding and acting on information on the alarm CIE (Control and Indicating Equipment);
- evacuation strategies and policies including the movement of non-ambulant persons;
- more detailed knowledge of fire preventive and protective provisions;
- the importance of accurate roll-call information and procedures;
- the importance of co-operation with other responsible staff;
- liaison with the fire service initial emergency attendance.

It is strongly advised that the trainer issues all trainees/employees with written information to consolidate the oral and visual information presented. Additionally,

employees should be issued with suitable aide-memoire prompt cards to ensure that essential emergency and preventive arrangements can be recalled as necessary in between the periodic training sessions.

By applying such a comprehensive, rigorous and critical approach to fire safety training, employees will have no excuses for not being able to carry out their own involvements with competence should a fire emergency occur.

Training which is inadequate either because of incompetence on the part of the trainer, or by a failure to ensure that relevant instruction and information is provided, can have serious consequences for the fire safety of occupants.

These could manifest themselves as:

- a failure to observe sound principles of fire prevention, eg by permitting poor housekeeping which results in combustible rubbish building up;
- a failure to appreciate how fires start and of how rapidly fire and smoke can spread within a building and, as a result, not appreciate fully the reasons for not indulging in surreptitious smoking;
- a failure to appreciate the vital importance of closing fire doors and smoke doors, resulting in these often being wedged or held open on cabin hooks;
- a failure to appreciate the vital need to keep escape routes and exits clear;
- a failure to become au fait with the locations of all fire exits;
- a failure to appreciate that in a fire, one or more exits may be impassable;
- a failure to understand the importance of calling the fire service in fire emergencies, or of how to interpret information on the fire alarm CIE and which, by ignorance, could result in the alarm being silenced prematurely;
- a failure to know the location of alarm call points and fire extinguishers;
- a lack of understanding about which fire extinguisher is suitable and an inability to use it to attack a small fire in its incipient stage;
- a failure to understand the extra responsibilities of Fire Wardens;
- an inability to know how to effectively move a non-ambulant person in a fire emergency;
- a failure to appreciate that no one must re-enter a building on fire;
- an inability to be able to know what information to pass to fire crews arriving as a result of an emergency fire call.

CASE STUDY

A fire started near midnight in a first floor bedding store in a residential care home in which 25 elderly residents were accommodated.

The premises had a fire alarm with call points but no fire detection and had several carbon dioxide extinguishers scattered about on the ground floor of the two-storey premises. No staff had received any fire safety training or instruction. There were two staff on duty; they shared the wakeful watch duties through the night doing four hours awake and four hours resting in a ground floor office. The duty supervisor had smelled burning at about 2200 hours but thought no more of it and carried out no search of the premises to locate the source. At about 0200 hours, an elderly but agile resident on the first floor had smelled smoke and discovered that the first floor corridor was filling with smoke and that there were flames licking out of the edges of the door. She had gone down to the supervisor who had dozed off. She alerted him and he ran up to the bedding store, grabbing a fire extinguisher intended for electrical fires. The supervisor took several minutes trying to find out how to use the extinguisher by which time the smoke was very heavy.

The elderly resident had the presence of mind to waken the sleeping supervisor who called 999 immediately. The brigade was on the scene in minutes but too late to save the first supervisor and four residents who were accommodated closest to the bedding store, all of whom died from the effects of smoke and fire fumes.

The incident highlights the dangers of staff never receiving fire safety training and instruction. This resulted in the following serious deficiencies:

a) An inability to appreciate that the smell of burning was a developing fire.

b) An inability to appreciate the vulnerability of sleeping risk occupants and the speed at which smoke and heat can spread.

c) A failure to actuate a call point at the first indication of fire.

d) A failure to appreciate that the fire extinguishers were inappropriate.

e) A failure to understand emergency actions and evacuation in a fire situation.

f) A failure on the part of the home's owner to have staff trained in fire safety and to have in place reasonably adequate fire safety provisions and to have taken adequate general fire precautions relevant to the high-risk category of the premises.

The above is but one example of many that have occurred over the years and highlights the vital importance of a '*suitable and sufficient*' FRA and of staff receiving comprehensive fire safety training and information.

The FS Order 2005 has at its heart the safety of persons from fire, and provided that responsible persons comply fully with the Order's requirements relevant to the circumstances of the case, they should be able to avoid committing an offence.

More importantly, they should have prevented the disastrous situations that can occur when fire safety legislative requirements are ignored in general, and fire safety training and instruction in particular.

Part 2

Additional information

Case Study

Key Points

Reference

Introduction

The purpose of this section is to provide the responsible person with more detailed information and advice on the key areas of general fire precautions as required by the Order (see Chapter 3).

Wherever possible, this will be done by bullet points – points that are grounded in lengthy experience of practically applying Codes of Practice recommendations to a wide range of non-domestic premises. Responsible persons should always remember that the advice provided is a recommendation **only**, and that the final decision as to the fire safety precautions taken will depend upon a range of factors, some of which have been highlighted already in earlier chapters and sections. A prudent employer/owner is one who appreciates that ignorance of the law is no excuse.

Given the massive shift from the fire authority prescriptive system to one of self-compliance, in which the responsible person holds an unconditional responsibility, it would seem prudent for the responsible person to leave no stone unturned in **seeking competent advice on any area of serious concern.** In the same way as it is beneficial to obtain background information before going to see your tax adviser or mortgage provider, then it will be beneficial to be in possession of relevant knowledge when seeking out sound advice on complying with the requirements of the FS Order 2005.

Hindsight is useless in a casualty ward, and given the heavy responsibilities that the Order places on responsible persons, it will always be in the better longer-term interests of employer, employee and other premises' occupants for advance knowledge and preparedness to be the order of the day.

Chapter 6

AFD/AFA systems

Key principles

The following pointers are designed to flag up key elements but they are **not** substitutes for the recommendations existing in any Code of Practice or guidance literature, which should be referred to as required and the advice of a fire safety specialist should be sought as necessary.

Sleeping risk/non-sleeping risk premises

- In premises in which people sleep, automatic fire detection is **essential** to 'buy time'.
- In small, lower risk, non-sleeping risk premises, a manual call point system with no detection may be appropriate.
- Many non-sleeping risk premises may require automatic fire detection if the risk necessitates this.
- The level of system considered reasonably practicable in both sleeping and non-sleeping risks depends inter alia on building dimensions, number of floors, building's age, construction, internal layout, category of occupants in terms of agility and physical/mental impairment, numbers of staff present, business activity and degree of hazard existing plus the requirements of the fire authority, building control authority and insurers.

Category of system

- The category of AFA/AFD system chosen (L1, L2 etc) must be made clear to all concerned.
- The FS Order 2005 is concerned with life protection. Any separate property protection AFD/AFA required must be made clear to all concerned.

Consultation/design/installation etc

- There should be **full consultation** between **all parties** involved with system design, installation, testing and commissioning and any variations to the Code of Practice must be agreed and recorded with all parties.
- The use of staged alarms and staff alarms must be subject to consultation with **all parties.**

Component compatibility

- All components of the system should conform to current BS/Euro standards and be fully compatible.

Faults and fault monitoring

- The system should be capable of monitoring faults and a single fault must not disable all of the system.

System wiring/mains and standby power supplies

- The mains supply final circuits to all parts of the alarm should be dedicated solely to the fire alarm system, and should serve no other systems or equipment and the alarm supply must be clearly indicated.
- Standby electrical supplies should accord with the recommendations in the Code of Practice.
- The system wiring should be such that a call point, a detector or both will trigger the alarm.
- Cabling used within the installation must accord with the recommendations within the Code of Practice.

Control and Indicating Equipment (the fire alarm panel)

- The CIE should be installed as per the Code and, where possible, in positions which enable the fire service to easily access and read in all light conditions.
- Where appropriate, fire alarm Control and Indicating Equipment (CIE) panels must display the zone in which a call point or detector has actuated.

Search area distances

- The search area distances for persons determining the source of an alarm should not exceed those set out on the current Code of Practice relevant to the category and type of system.

Direct links of AFD/AFA to Alarm Receiving Centre

- Any decisions to provide a direct automatic link to a permanently staffed Alarm Receiving Centre should be agreed with the fire authority and with the premises' insurers before it is installed.

Alarm sound levels and visual signals

- Sound levels of bells or sirens must accord with the recommendations in the Code relative to the risk category.
- The attenuation of alarm sounds by heavy doors etc must be taken into account.
- Visual signals must be provided as appropriate for the hard of hearing.

Detectors and call points

- The detectors used should be those that are relevant to the fire risks, which best reduce the prospects of false alarms and which are set out in the current Code of Practice.
- The detectors and call points used should be installed and spaced in accordance with the Code of Practice.
- Removal of any detector designed to detach for maintenance should not affect any call point operation.
- Detectors should only be capable of removal by a special tool available only to authorised persons.

Wireless alarms

- Any radio linked/wireless alarms must accord with the recommendations in the Code of Practice.

False alarms

- The system should be installed and maintained so as not to create unacceptable levels of false alarms.
- Responsible persons should be aware of the primary causes of false alarms:
  - cooking fumes;
  - steam from showers, swimming and therapy pools, bathrooms, industrial processes;
  - smoke from cigarettes and pipes;
  - dust and insects;
  - aerosol sprays;
  - high velocities of air;
  - smoke from outside sources such as vehicle exhausts, refuse burning etc;

- hot work like welding and cutting of metals;
- candles;
- interference from radio telephones and other electromagnetic sources;
- water and damp ingress into components;
- physical damage to call points and detector heads;
- testing or maintenance without advance notification;
- malicious actuation of call points, eg in retail stores to provide a decoy to shoplifting.

False alarm reduction

- False alarms can be reduced by:
  - intelligent siting of call points to reduce risk from accidental damage, environmental factors or vandals;
  - provision of covers to call points to make the malicious actuation less simple and more noticeable;
  - intelligent siting of detectors and choosing correct type relative to the risk and to the environment.
- In kitchens and food preparation areas use heat detectors, not smoke detectors.
- Do not use smoke detectors in areas set aside for smokers.
- Do not use smoke detectors in showers and bathrooms.
- Do not use smoke detectors in boiler rooms.
- Do not use smoke detectors close to openable windows.
- Consider using staff pre-alert alarms as a filtering mechanism.

CASE STUDY – Staff time delay alarm system

The premises were an extremely large single-storey department store consisting of a mix of immediate post-war and late twentieth century buildings.

The premises had been troubled by gangs of shoplifters who actuated fire alarm call points, which caused a full-scale evacuation of many thousands of shoppers.

During the evacuation these shoplifters stole many items of stock.

Major alterations to the premises involved the FA, BCA and the store's management along with a reputable and competent fire alarm installation company.

All parties finally agreed that in addition to covers being fitted to call points, a time delay system should be utilised in which the actuation of a call point sounded a

pre-alarm but not the full evacuation signal, which was done by means of a pre-recorded message.

The store had full-time dedicated security staff. On the actuation of a call point, or the actuation of a detector sensing fire products, the pre-alarm would sound and a message in a coded form directed the nearest patrolling security staff to check out the location of the alarm.

If there were no indications of fire or smoke, the security staff had 45 seconds to contact the security control and instruct them to cancel the alert.

If there **was** a fire, then as soon as at least two detectors sensed fire products, the full evacuation voice alarm would operate.

If there was fire on arrival of the checking security staff and the fire products had still to reach the detectors, that member would radio for the full evacuation to be sounded and/or actuate call points in the vicinity which would also create the full evacuation.

By this filtering method, previously high ratios of malicious alarms were greatly reduced. This removed the 'cry wolf' situation in which employees and regular shoppers would assume the alarm did not indicate a genuine fire, even if this were to be the case.

Appropriate categories of AFD/AFA relative to risk

This list is not exhaustive and is provided for guidance only.

Normal workplaces such as shops, offices, factories, cafés and restaurants etc	**MANUAL (M)**	Under 2005 Order some degree of AFD could be required relative to risk
Hotels and boarding houses, including those used as hostels	**L1 OR L2**	FS Order 2005 concerned with life protection so detection in all bedrooms likely to be appropriate
Hospitals	**L1/L2**	See Health Technical Memoranda (HTM)
Nursing and care homes	**L1 TO L3**	Consider false alarm filtering methods + use of approved AFD linked door retention during day

Places of assembly	**M TO L1-L4**	Depends on occupancy numbers and building size
Shopping malls/centres	**L1 TO L3**	Needs early liaison with FA/BCA as these premises are often massive and complex with sophisticated smoke control
Inner room scenarios where person passes from room through outer room to evacuate	**L5**	AFD fitted in outer room and/or vision panel in door to inner room enables sight of fire

Summary of AFD/AFA systems

The FS Order 2005 refers to general fire precautions in respect of fire detection and fire alarms as being '***where necessary***' and '***to the extent that is appropriate***'.

Bearing in mind the onus now placed on responsible persons by Article 34 of proving limits of what is practicable or reasonably practicable, the prudent employer, owner or other person with life safety responsibilities will make themselves as knowledgeable as practicable on all matters relevant to satisfactory compliance with the law.

The UK fire and rescue service is mandated by legislation to both enforce the requirements of the FS Order 2005 and to provide free advice in respect of fire prevention, means of escape from fire, and measures to reduce the spread of fire.

However, since 2004, this advice needs only be given where the fire authority considers it reasonable to do so. With this in mind, it is suggested that within those premises in which any misjudgement as to the level of AFD/AFA systems necessary could place occupants at serious risk, the following actions are recommended:

a) Contact both the fire authority and building control authority to seek their advice in respect of the matter, outlining clearly the concerns held in respect of the category and coverage of the AFD/AFA system, and setting out the proposals which you are considering in order to satisfy the requirements of the Order.

b) Request a joint meeting on site with representatives from both authorities and, if one has been engaged, an independent fire safety advisor.

c) File copies of all correspondence.

d) After two weeks to a month, if no acknowledgement has been received, chase the matter via a telephone call – recording these communications in the diary – and follow up as required.

It must be remembered that the Order does not enable the fire authority to validate your FRA, but it is obliged to provide advice if it considers it reasonable to do so. It is often the case that printed guidance sheets are provided. Clearly in the small to medium, low to normal risk premises, it would be unreasonable to expect the FA – with its limited resources – to give detailed advice on every enquiry. However, in the case of, for example, a major place of public resort such as a large department store, or a sleeping risk with scores of beds, it can be stated that the FA should consider it reasonable to proffer appropriate professional advice on matters of collective life safety where large numbers of people are concerned.

The information within this chapter should assist in the decision-making process and place the responsible person in a more enlightened position when self-complying with the requirements of the 2005 Order in respect of fire detection and fire alarm systems.

Chapter 7

Firefighting measures

Practical pointers on training, safe operation, testing and maintenance

- All staff must receive **adequate** training on basic firefighting from a **competent** person.
- Articles 4 and 13 indicate that firefighting measures are required to lessen the risk of fire spread.
- All portable firefighting equipment must be readily locatable, be indicated by signs and have operating instructions and usage information on a directly adjacent label.
- Fire Wardens and other competent persons **must** ensure that all extinguishers are in place and that the instructional signs relate to the extinguisher it refers to, so as to prevent the wrong extinguishing medium being used with potentially dangerous consequences (on average there should be one extinguisher for every 200 m^2).
- **No undue risks** are to be taken when carrying out firefighting measures, especially opening doors behind which there are strong indications that a serious fire might be developing.
- The fire service **must** be called **before** any firefighting begins or, if there are enough staff present, simultaneously.
- If a small fire being tackled is growing out of control, the area is to be vacated. If it is safe to do so, the door to the room must be closed fully after vacating, and staff should evacuate to the assembly point and be ready to inform the fire service of the details of the fire and its location.
- Where hose reels are installed, these must be clearly identifiable and instructions provided on an adjacent sign.

- Because of the unlimited water supply available to hose reels, operatives must not expose themselves to risk by staying too long in any firefighting efforts in which the fire is not being controlled.
- **No attempts** are to be made by staff in tackling fires involving gas cylinders, aerosol sprays and canisters.
- **All** extinguishers and hose reels **must** be subject to periodic tests and servicing and results recorded in a logbook.
- After use on any fire or during staff training, extinguishers must be refilled and recharged by a competent person, and there must be sufficient spare charged extinguishers available to ensure fire protection to the premises whilst recharging is taking place.
- Where fixed installations such as sprinklers exist, then their testing, resetting after operation, servicing and repair must be entrusted to a competent person.
- Any internal hydrants and ring mains for use by the fire service, along with rising mains, must be kept in a good state of repair and accessible at all times to the fire service.
- Where a works process involves hot cutting, grinding etc, then sufficient numbers of extinguishers must be placed in the immediate vicinity of the operations **before** the work commences.

Categories of fire

- Class A fires are those involving solid materials such as wood, paper, card and textiles
- Class B fires are those involving flammable liquids such as petrol, diesel and oil
- Class C fires are those involving gases
- Class D fires are those involving burning metals
- Class F fires are those involving deep fat fryers in commercial kitchens

Types of fire extinguisher

Also see Appendix 10

Water

The water extinguisher or water with special additives is coloured red and is the first choice for use on Class A fires. It normally contains nine litres and is usually charged by air from a compressor. It puts out a fire by cooling the burning materials and soaking

them so they are no longer able to support combustion. The water extinguisher **must not** be used on electrical equipment.

Its operation consists of:

- removing the vandal tag (plastic tear-off ring);
- removing the safety pin if fitted;
- pointing the hose at the base of a fire;
- squeezing the control levers which releases or stops the water on demand;
- moving the jet to cool as much of the burning material as possible;
- discharging the whole contents to ensure extinguishment.

Foam

The traditional foam or the AFF type is coloured cream (or a cream band over red) and is the first choice for fires involving flammable liquids or liquefiable solids such as petrol, paint, printing inks, etc.

It extinguishes by forming a blanket of foam that excludes oxygen.

It can also be used on Class A fires but **must not** be used on electrical fires.

Its operation consists of:

- removing the vandal tag;
- removing the safety pin;
- squeezing the control levers;
- aiming the jet to land on the rear edge of the burning material;
- sweeping the jet from side to side, working to the front edge of the fire.

NB: Flammable liquid fires can easily reignite on account of the heat produced, and back-up extinguishers should be provided in case.

Dry powder

The dry powder extinguisher is coloured blue (or a blue band over red) and can be used on most classes of fire but it is a very messy medium and, if used on electrical equipment, it usually renders the equipment useless. It can be used to lessen the risk of ignition should a spillage of flammable liquids occur. It can also affect breathing and visibility if used in a confined space.

Its operation consists of:

- removing the vandal tag;

- removing the safety pin;
- squeezing the control levers;
- sweeping the powder spray across the fire or spillage in a side to side motion;
- discharging the whole of the contents.

Carbon dioxide

This is the first choice for fires on electrical apparatus but can also be used on Class A and Class B fires. The extinguishers are coloured black (or a black band over red) and the smaller models have a convex base, whilst the bigger ones have a flat base to enable it to stand without falling. There is a discharge horn instead of a nozzle and the extinguisher is **very noisy** in operation.

Its operation consists of:

- removing the vandal tag;
- removing the safety pin;
- holding the extinguisher by the control levers (**do not hold the horn or base** as cold burns could result);
- squeezing the levers and discharging the whole of the contents into the affected area of fire (through vents and grilles on electrical apparatus).

High-pressure water spray

Class F fires involving such apparatus as deep-fat fryers in commercial kitchens can be extinguished by the high-pressure water spray extinguisher which is coloured red.

The extinguisher has a metal lance instead of a conventional nozzle and water is the medium used to suppress fire, which it does by turning the blazing oil into an emulsion.

This emulsion excludes oxygen in much the same way as foam operates.

Its operation consists of:

- removing the vandal tag;
- removing the safety pin;
- standing back about a metre from the burning fryer;
- squeezing the control levers and directing the spray into the fryer from above.

Fire blanket

This is kept in a metal casing with two draw tags hanging down which are pulled to release the blanket. Used in kitchens, laboratories and other places where cooking or heating is taking place.

Its operation consists of:

- pulling on the draw tags;

- taking a grip on two corners as if holding a bicycle's handlebars;
- lifting the blanket to protect the hands and face;
- placing the blanket to completely envelop the flaming receptacle;
- turning off the heat and power source if safe to do so;
- leaving the blanket in position to prevent reignition;
- discarding the blanket after use.

NB: No attempt should be made to carry flaming pans or other receptacles outside as the flames can blow back and cause serious burns. Water must not be used to try to extinguish a burning pan of cooking oil as the expansion ratio of 1700 to 1 can create a huge fireball, causing serious injury and fire spread.

Fixed firefighting installations

These are:

- Hose reels
- Water sprinkler and drencher systems
- Total flooding inert gas systems
- Dry and wet rising mains and firefighting lobbies
- Foam inlets

Hose reels

Hose reels have the advantage of being of virtually unlimited water supply, they are easy to operate with a hand-controlled nozzle and require little maintenance if installed to the appropriate approved standard. They are stored on a metal drum, either concealed in a wall cabinet or open, and the water is either turned on manually by a valve on a pipe next to the drum or automatically as the hose tubing is pulled off the drum.

Two persons are needed to operate a hose reel. One takes the nozzle to the fire, whilst the other feeds the tubing around corners. A disadvantage of this equipment is that it can tempt the determined person to stay too long in the environment of a developing fire and lead to personal injury.

The jet should be aimed into the centre base of a fire and kept moving across and around the burning material so as to achieve the maximum knock down and cooling.

Hose reels are **not** to be used on electrical equipment.

Water sprinkler and drencher systems

These have been protecting many properties across the globe for over a century and are highly effective in extinguishing a fire in its early stages.

The key elements consist of:

- A water supply
- A main valve, alarm valve check, test, isolation, flushing and drain valves
- Range pipes
- Sprinkler heads
- Exterior alarm gong or connection to internal fire alarm

The sprinkler heads are positioned at predetermined spaces, relative to the fire hazard and risk. Each sprinkler head contains a spherical glass bulb, partly filled with an expansible liquid, which bursts the glass and releases the water. The liquid used is what determines the temperature at which the sprinkler actuates. A fusible link can be fitted instead of the glass bulb. The water is deflected by a plate to form a conical downwards or sideways spray coverage. To prevent freezing in cold environments, the system or a part of it can be filled with air which is released before the water and can lead to some delay in the fire being attacked unless an accelerator device is fitted.

Sprinkler systems have a main valve that is connected to the water supply.

This valve is locked in the open position. If it is shut down before the fire is properly extinguished, the fire could spread and the resulting actuation of many sprinkler heads could overwhelm the system – leading to poor or absent pressure at some heads.

After use, the system has to be drained and, to facilitate this, drainage valves are provided. To facilitate drainage, some installations have sprinkler heads positioned upright rather than pendant. Isolating valves can be fitted to separate parts of the system to facilitate maintenance and servicing, which must be carried out by a competent sprinkler engineer.

Sprinkler systems are essentially devices for protecting property but, since the late 1980s in the UK, they have been installed along with smoke exhaust installations as a measure to protect the means of escape in such places as large shopping malls.

Since the introduction of the FS Order 2005, and the requirements of Articles 4 and 13, it would appear that sprinkler installations would fall into the definition of measures to reduce fire spread and ensure that the means of escape is capable of safe and effective use at all material times.

Drencher and deluge systems employ the same principles as sprinklers although they can be manually, rather than automatically, operated. They are used to provide a water spray to protect parts of buildings likely to be exposed to the radiated heat from an adjacent fire or to provide a deluge of water from open sprayers onto an entire area.

Pointers on automatic sprinkler and deluge installations

a) **System design, installation etc.** Systems should be designed, installed, tested, commissioned, serviced and maintained in line with **BS5306** and associated Codes of Practice and the responsible person or a nominated competent person should make themselves familiar with the recommendations made within the Codes of Practice.

b) **Preliminary consultation with authorities.** Preliminary advice in respect of sprinkler installations should be sought by the responsible person from a competent and qualified source and consultation should be sought **before** installation of a new system, or alteration to an existing system, with the fire, water and building control authorities, and with the premises' fire insurers.

c) **Sprinklers are for early stage fires.** Sprinklers are designed to extinguish fires in their early stages and only the heads in the immediate vicinity of the fire operate at first, thus reducing water damage.

d) **Water damage.** The design of sprinkler systems must take into account the potential for water damage to other fire protection measures (for example the failure of fire alarm circuitry or the effective operation of automatic fire detectors).

e) **Other fire safety measures needed.** Sprinklers do **not** obviate the need for the other fire protection measures required as necessary by the 2005 Order.

f) **Ratings.** Sprinkler installations and systems are rated in respect of occupancies being either 'light hazard', 'ordinary hazard' or 'high hazard'.

g) **Mechanical damage.** Sprinkler systems can be prone to mechanical damage in many industrial locations and appropriate preventive policies should be put in place to lessen this risk including the fitting of sprinkler head guards as necessary.

h) **Type of water supply.** The type of water supply and its capacity (limited, virtually unlimited, roof top tank, reservoir, town's mains etc) relates to the fire insurers' grading of the system and on any insurance premium discounts possible by having an installation in operation.

i) **Signposting of main valves.** A clearly visible sign should be fitted on external walls as close as is practical to the entrance to the main valve and should be marked **Sprinkler Stop Valve Inside** so as to assist the fire service in finding its location. A further sign marked **Sprinkler Control Valve** should be fitted close to the main and any subsidiary stop valves.

j) **Gong identification.** Where there is more than one installation, each alarm gong should be prominently marked with the number of the installation.

k) **Sprinkler shutdown notification to fire authority.** Where sprinkler installations are part of a system to protect life, then the local fire authority **must** be advised **in advance** of any intention to shut down any part of the system. If the system has to be shut down urgently, the fire authority must be informed **forthwith** unless a previous agreement with the fire authority and premises'

insurers have agreed a suitable compensating contingency plan to be brought into immediate effect.

l) **Fire service authority.** During any fire situation in which sprinkler heads have actuated, it is **only** the fire service senior manager present and in control of the incident who should close down any water supply. It is standard fire service practice in the UK to position a firefighter at the main valve of an installation to ensure that no unauthorised shutdown takes place that could place the whole building in jeopardy from fire spread.

Total flooding inert gas systems

These are used to provide fire protection to sensitive electronic equipment such as computer banks and telecommunications systems, where conventional extinguishing mediums would render the equipment useless. They are also used to extinguish fire in electrical substations and transformers.

If the fire protection provided reduces the fire spread and helps safeguard occupants, then it would appear that the provision of such installations would be considered to be an appropriate measure under the FS Order 2005.

Dry and wet rising mains and firefighting lobbies

These are vertical metal pipes installed in buildings, which supply water to outlets on each landing to which the fire service can connect its fire hoses.

- A **dry riser** is fed from an inlet on the building's frontage by a fire service pump.
- A **wet riser** is fitted to high-rise premises and here the riser is permanently charged with water.

Building regulations requirements can specify the provision of firefighting shafts in high-rise premises in which a landing lobby protected by double fire-resisting doors contains rising main outlets, and enables a firefighting bridge head to be established on the floor below the floor on which a fire has occurred.

Responsible persons must ensure that these landings are kept clear of obstruction, especially if they are also part of any exit route, and that **all** elements of the installation are maintained in an efficient state and in good repair.

Cases of vandalism of landing valve outlets have occurred and a close check should be made on a regular basis as any delays caused by defective or missing connections could jeopardise life safety**.** Equally, regular audits must take place at the exterior of premises to ensure that rising main inlet boxes have not been vandalised and that clear access is available **at all times** for fire service appliances. Rising mains must be tested **at least** annually.

Foam inlets

These are connections outside of a building, usually at street level, to which the fire service can connect foam-making equipment to enable a fire in, say, a basement oil-fired boiler to be attacked.

With regard to the FS Order 2005, this equipment would only be relevant if the suppression of any fire was necessary to protect the safety of occupants from fire spread, or was a way to ensure that the means of escape could always be used safely.

Chapter 8

Means of escape

Introduction

This chapter provides additional information in the critical area of safe and prompt escape from a fire situation to that outlined earlier.

Means of escape (MOE) should never be thought of in isolation from the other essential areas of fire safety provisions put in place to safeguard the occupants of premises.

These other **essential** areas are:

- The construction features, dimensions and age of the premises
- The occupancy category of premises and the use to which the premises are put
- The degree of fire-resisting construction existing or proposed
- Fire detection and alarm systems existing or proposed
- Fire exit signage and emergency/escape lighting
- Firefighting measures – portable and fixed, existing or proposed
- The number of fire-trained staff including Fire Wardens/Marshals
- The normal response times of the local authority fire service
- The level of liaison which exists between the responsible persons and the fire service in terms of firefighting and rescue

The introduction within the UK fire service since 2004 of what are termed Integrated Risk Management Plans (IRMP) has resulted in major shifts in some locations in the speed and number of emergency fire appliances responding to reports of fire.

Traditionally, and for well over half a century in the UK, the larger sleeping risks such as hospitals, care homes and hotels would see an automatic pre-determined attendance of up to three pumping appliances and an aerial ladder, dependent upon the size and risk within the premises.

IRMPs and a concentration on community and domestic fire safety, as outlined in Chapter 5, have resulted in reduced numbers of appliances and personnel attending emergency fire calls, even those received from major sleeping risks such as hospitals and hotels.

Responsible persons under the 2005 Order should not lose sight of these major changes when evaluating and deciding upon the level of fire safety provisions to be implemented, although the speed and weight of the fire service attendance have **never** been criteria for lessening the fire protection within premises.

However, the fact remains that if the level of fire protection in a building was poor, a fast attendance by the fire service might offset, to a degree, any lack in fire safety provisions. A fire service policy, therefore, which results in fewer fire pumps arriving later, does strengthen the need to ensure that the fire safety measures provided are those adequate relative to the occupancy and risk existing.

Those who recall the UK fire and rescue services industrial disputes of 1977 and 2002 will remember the advice given out by the fire and rescue authorities to the public and industry to be vigilant with their fire safety, given that the attendance of emergency fire appliances would be reduced in terms of speed and numbers.

Chapter 5 outlined the key elements in respect of MOE and, within this chapter, examples of model escape schemes relative to occupancy categories and evaluated hazard and risk levels are provided.

The travel distances quoted are those which have evolved as a result of the UK fire service's lengthy involvement in devising maximum lengths to which occupants should travel when making good their escape under earlier fire safety legislation.

Her Majesty's Government has issued a set of guidance documents to assist the responsible person by providing them with fire safety information.

This guidance is designed to help the non-fire safety expert carry out their self-complying duties in respect of the 2005 Order in non-complex premises. It is recommended that **all** charged with the duties of responsible person obtain the guidance document(s) relative to their premises' occupancy and use, and combine the key parts of those with the advice provided in this and similar manuals.

Means of escape (MOE): a clarification of basic principles

The principles of means of escape can be simplified in many cases:

- Reaching a place of reasonable/total safety as safely, calmly and promptly as possible by one's own unaided efforts (except for those needing staff help)
- Gathering at a recognised assembly point well away from danger

These objectives are facilitated by:

- prompt detection and warning of a fire/alarm situation;

- the provision of adequate fire-resisting separation;
- the provision of adequate directional signage on escape routes and doors;
- ensuring escape routes are as direct as possible and eliminating dead ends wherever practicable;
- ensuring, wherever practicable, that more than one escape route exists;
- ensuring adequate 'fire action' wall signs exist within premises;
- ensuring that sufficient exits of adequate widths for total occupancy exist;
- ensuring that all employees have been fire safety trained and instructed.

Remember: when devising MOE, the locations and dimensions of escape routes must allow for one of the widest exits being inaccessible because of fire and smoke and the exits remaining must be able to permit the maximum occupancy numbers of the premises to safely escape.

A key point to always remember

The absence of incident does not necessarily indicate the presence of safety OR the fact that your premises have not ever had a fire does not mean that there are no fire risks and that fires will not happen.

Never forget that

- Smoke and fire fumes are the biggest killers
- Smoke and the heat within it can fill a compartment or escape route in seconds
- Fire products can ignite materials many metres from the fire source via openings in compartments
- Shortfalls in any key protective element can negate the value of even the best escape route

Achieving a reasonably practicable means of escape

Different buildings and different premises within those buildings will vary a great deal, dependent on the age of the structure, the use to which the premises are put, the fire hazards present and the risk probability of harm to occupants.

In the following pages, the illustrations and text aim to assist responsible persons and other fire risk assessors in achieving fire safety standards, relative to the circumstances of each case, which ought to satisfy the enforcing authorities as to being reasonably practicable and appropriate **(but remember, the FA cannot validate your FRA).**

In Chapter 5 we took a brief look at the stages involved in escaping from fire within a room or compartment to a place of safety, and learned that these may involve only one stage, two, or all three.

We now need to put some flesh on the bones of that outline and, in order to keep matters as simple as possible, the examples which follow are principles of means of escape which can be used in the majority of places of work. We will look firstly at escape routes and stages of escape, then travel distances, then the importance of exit numbers and dimensions.

Escape routes

Normally these use the usual ways in and out of the premises, that is corridors and stairways, circulation areas, etc.

However, these routes will only be escape routes capable of safe and effective use in a fire emergency, if they have been purpose-built or modified to ensure this safe escape.

Those holding the responsibility for occupant safety under the Order **must** become familiar with the following terms:

- **Protected route –** an escape route that is provided with adequate fire-resisting construction from the remainder of the building along its length.
- **Unprotected route** – a route that is **not** so provided with fire-resisting construction.
- **External route –** an escape route external to a building.
- **Alternative route –** a route which enables safe escape to be made no matter where a fire is, because it is separated sufficiently by fire-resisting construction or by adequate space, or by travel in a different direction**.**
- **Dead end –** a point from which there is only one direction of escape.

The three stages of escape

As was pointed out earlier, escape is divided into three stages:

Stage 1: From a point in a room to the exit from that room.

Stage 2: From the exit from a room to the access into a stairway, or, if at ground level, the final exit.

Stage 3: From the access to a stairway to the final exit.

Of course, it will not always be necessary to traverse all stages – this depends on the location of any fire relative to escape routes and exits.

Risks in Stage 1. The main danger here is that occupants in a room are unable to escape because fire products have made the exit impassable. If there are a lot of occupants in a room, those at the furthest point from the exit may be overcome by fumes or fire before they can escape or be injured in a mad rush.

Stage 1 risks can be avoided or reduced by:

- making the travel distance to the single exit shorter;
- providing additional suitably positioned exits;
- making exits wider.

Risks in Stage 2. Here the dangers are between the access point from a room up to the entry to a stairway enclosure, a corridor fire door, or to a final exit. Occupants escaping from a fire have to travel horizontally along a safe route and, if there is no protection, death and injury could result.

Stage 2 risks can be avoided or reduced by:

- limiting travel distances;
- providing alternative routes;
- providing a protected route(s).

Risks in Stage 3. The dangers from fire products are in the vertical downwards travel if descending from above ground level, or in the vertical upwards travel if coming up from a basement or, more rarely, accessing an exit via a roof. Travel here refers to the use of stairs, not lifts.

Fire products can enter these escape routes unless adequate safety measures are provided. Unprotected staircases and stairways can act like a chimney flue, drawing fire and smoke into them at great speed and overcoming occupants rapidly.

Stage 3 risks can be avoided or reduced by:

- protecting staircases by fire-resisting construction;
- providing staircase ventilation;
- the separation of unprotected staircases so that only one is affected;
- protecting the whole route up to the final exit.

Travel distances

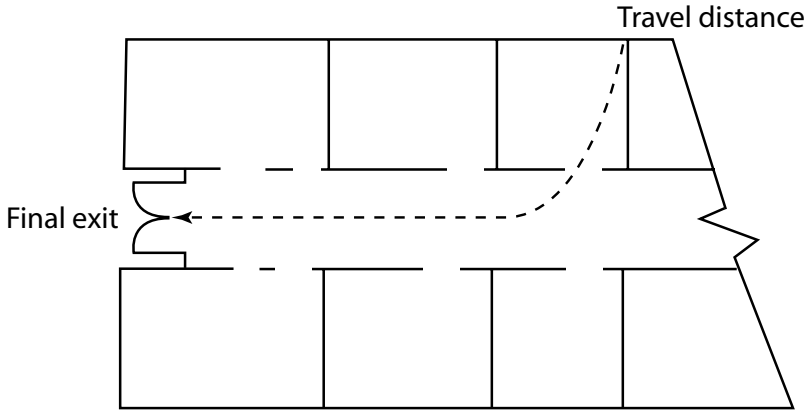
We can now take a closer look at travel distances, which – as first-hand experience has taught us – can spell the difference between safety, serious harm or death.

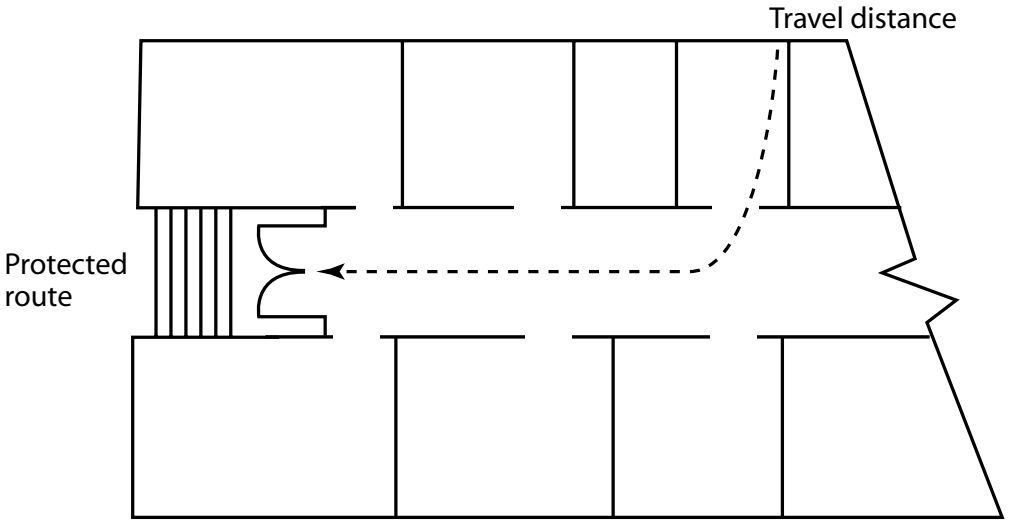
The above statement is not intended to be alarmist, and it can be a mistake to apply a rigid approach. Instead, each premises, and the situation within it, requires a careful Fire Risk Assessment from which a practical evaluation can be made as to what will be adequate and reasonably practicable in the specific circumstances.

The longer the travel distance, the greater the risk from fire products unless adequate fire protection exists along the escape route. Travel speed varies with physical age and infirmity, and an elderly or disabled individual will not be able to evacuate as quickly as a young or agile person. Responsible persons assessing travel distances need to

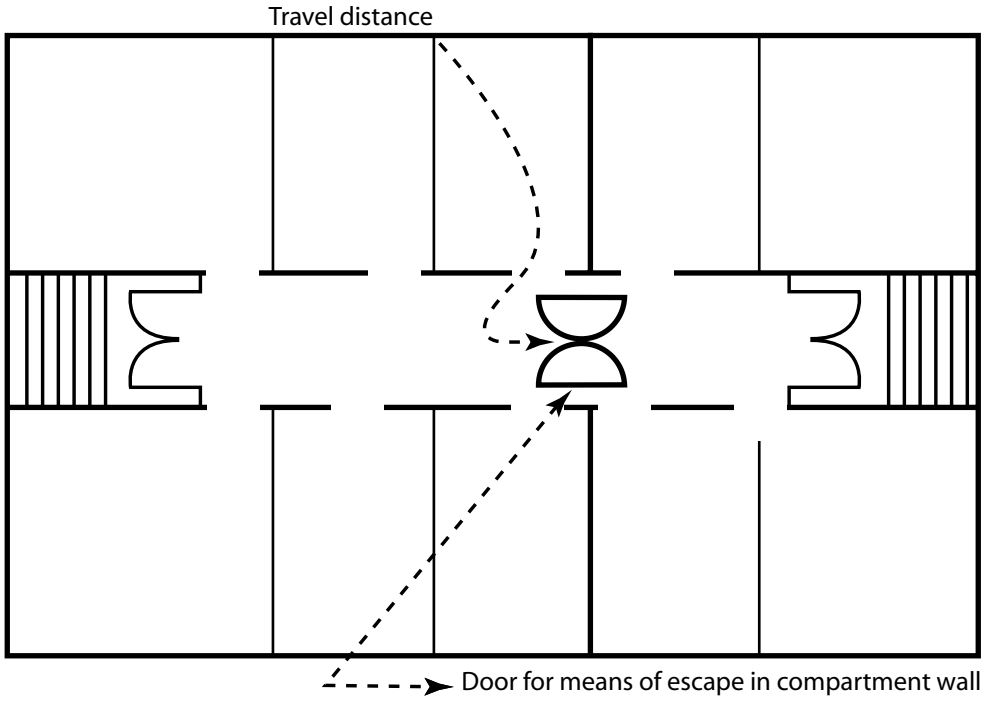
remember that the distance to be measured is the actual distance to be covered between any point and the nearest usable:

- final exit;
- door to a stairway which is a protected route; or, in certain cases,
- door used for escape purposes situated in a compartment wall.





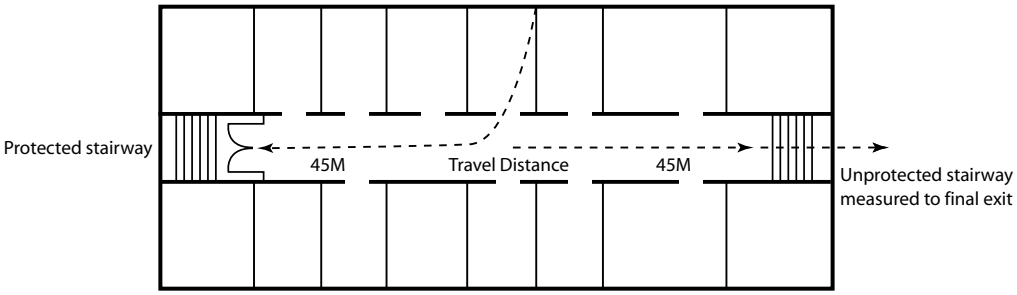
It should be borne in mind that the contents of rooms (desks, filing cabinets, display stalls, machinery etc) may increase the actual travel distance.



In an office building, the aggregate travel distance, that is the traversing of the different stages or part of them, should not normally be more than (in normal risk situations):

a) 45 metres from any point where an escape in more than one direction can be made; or

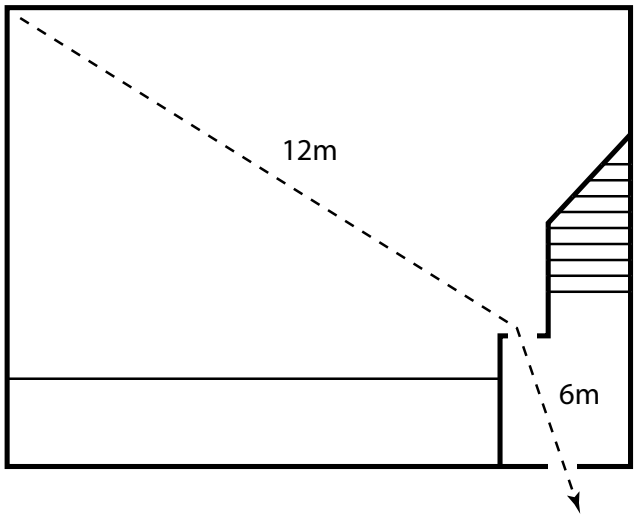
b) 18 metres when there is escape in only one direction (no alternative exists).



The travel distance across a room should not be more than 12 metres if:

a) there is only one exit from the room; or

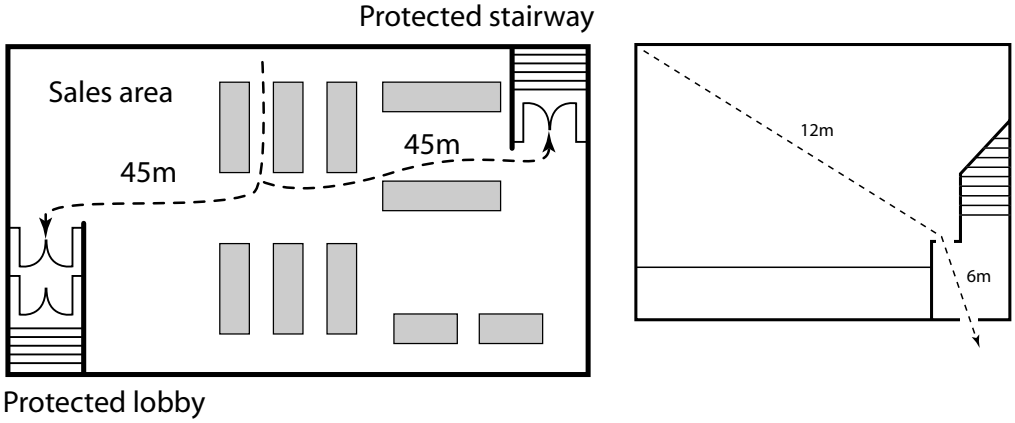
b) the room has more than one exit but the angle between the exits is less than 45 degrees.



In shop premises, the aggregate travel distance along escape routes across sales floors to a protected corridor or lobby, protected stairway or final exit (or, in certain cases, a compartment wall door), including the travel around sales counters, sales stock etc, should not normally exceed (in normal risk situations):

a) 45 metres from any point where there is an escape in more than one direction; or

b) 18 metres from any point where only one escape route direction exists, remembering that, in this case, no more than 12 metres of the total 18 metres should be travel across a room.



The distance of travel across a room should not exceed 12 metres if:

a) The room has only one exit; or

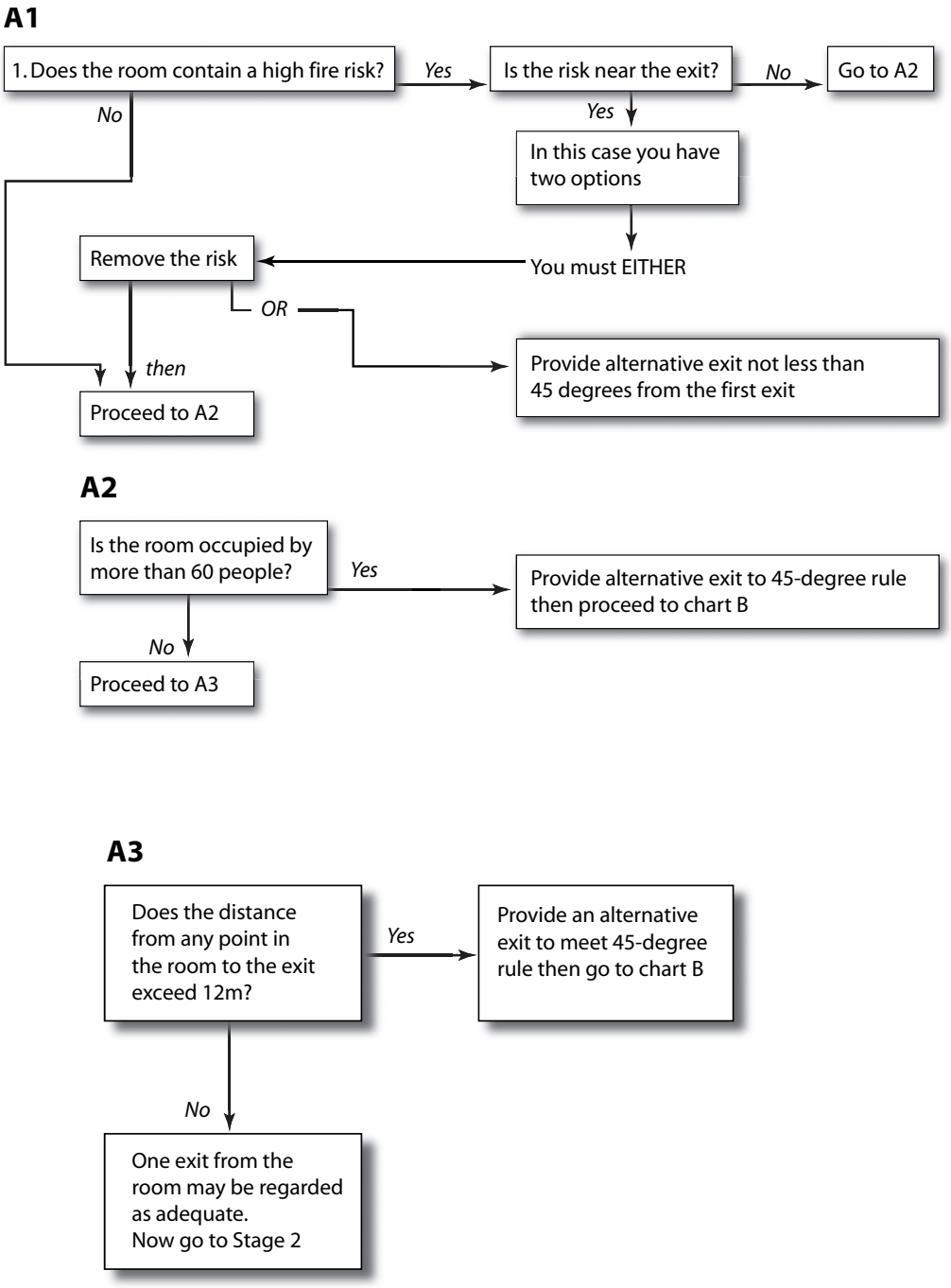
b) It has more than one exit but the angle between the exits is less than 45 degrees.

Set out below is a flow chart of questions to be asked in order to achieve adequate MOE relative to the hazard and risk, and the numbers present in the premises.

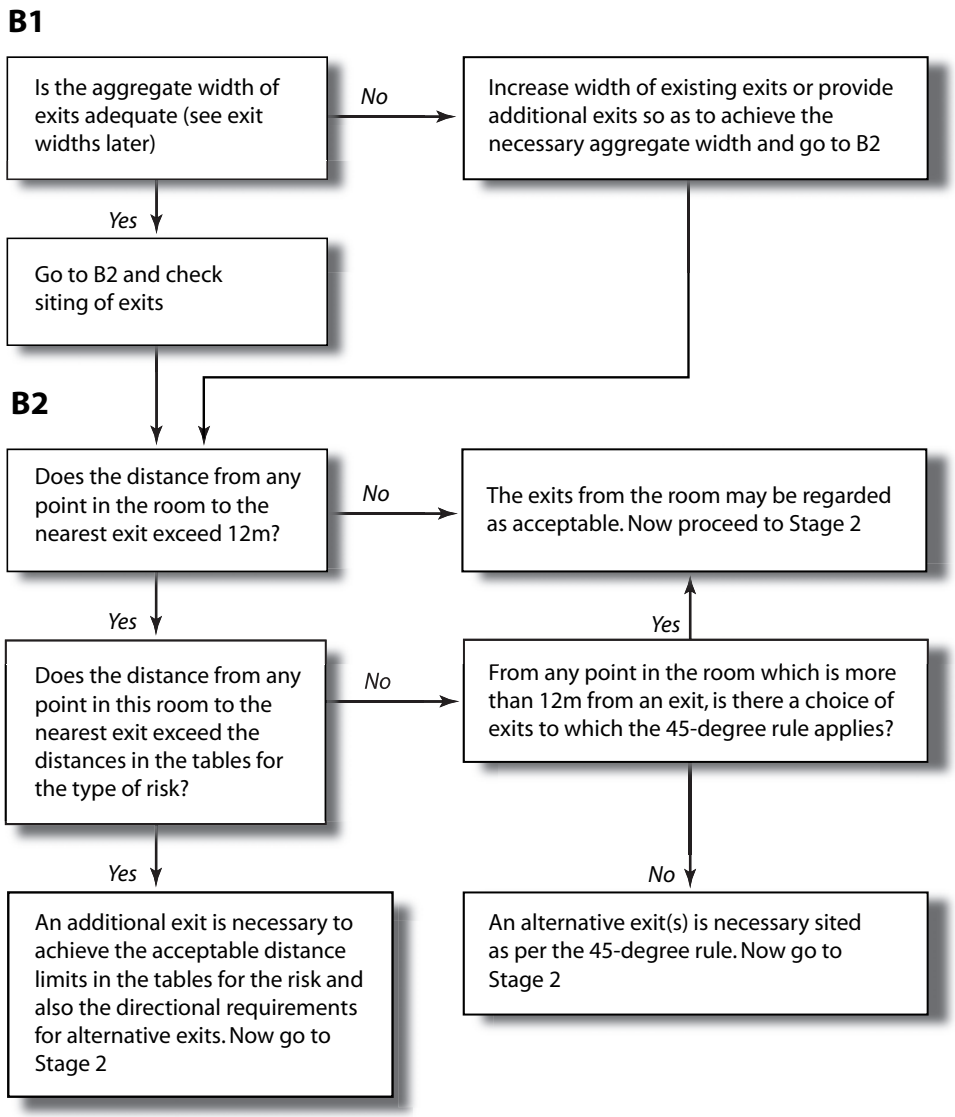
Stage 1 – Escape from a room

Room with one exit – flow chart A

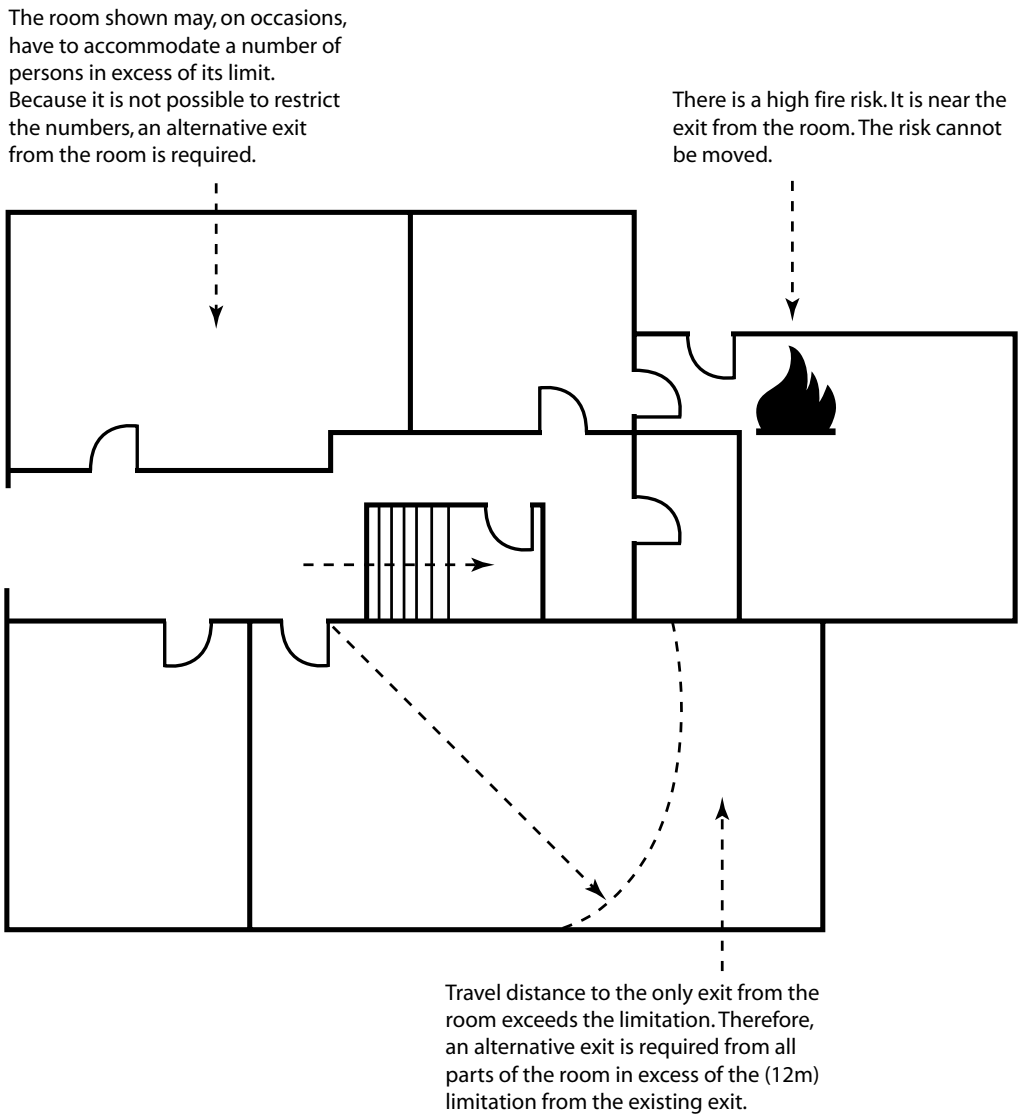
The questions assist in the production of alternative solutions to ensure reasonably practicable escape routes, and this fits in with the ethos of the Order which mandates the fire and rescue authorities to inform a responsible person that alternative solutions are permissible.



Room with more than one exit – flow chart B



Example: the use of flow chart A

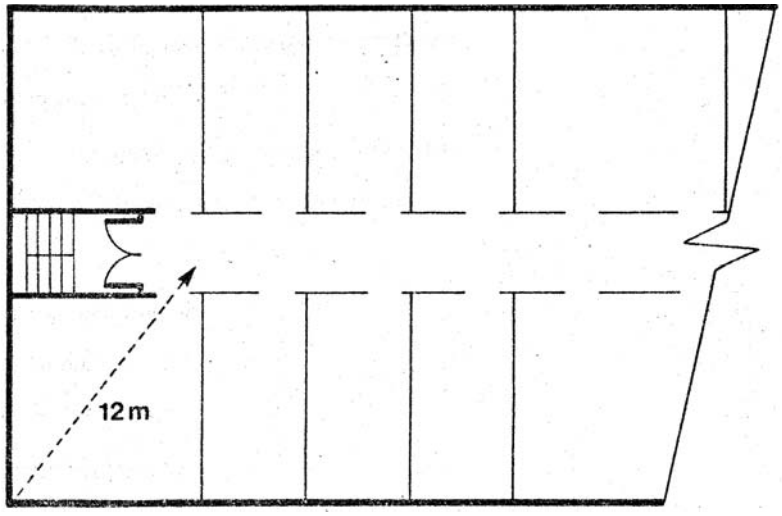


NB: At the first point that it becomes necessary to provide another exit the room then becomes one with more than one exit and must thereafter be checked against flow chart B.

Escape from rooms in office and shop premises

Where individual rooms have only one way out, ie escape is in one direction only, it is important to limit the distance which has to be travelled within the room to reach the exit. In these circumstances therefore the distance of travel measured from the furthest point in the room to its exit should be not more than 12 metres.

This is illustrated in the example below.

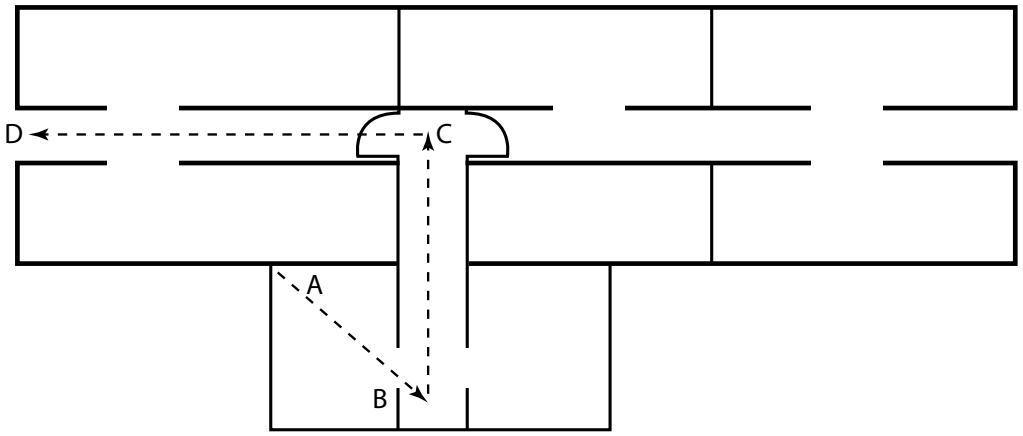


A situation can occur that when a person leaves a room and enters a corridor, there is only one way out – a **dead end** – and they can only go one way until they come to an alternative route or a final exit.

In such scenarios, it is necessary to:

a) restrict the distance to be travelled in the one direction; and/or

b) restrict the total distance to be travelled to a door to a protected stairway, a door for means of escape in a compartment wall or final exit.



Inner and access rooms

It is quite usual to find a room within a room, known as an inner room, with the room leading to the inner room known as the access room. It is possible for the occupants of the inner room to be unaware of any fire in the access room and, therefore, the following safeguards must exist.

The travel distance from the furthest point in the inner room through the communicating door to the exit from the access room should not exceed 12 metres, except in the following cases:

a) where no high fire risks such as highly flammables are permitted in the access room;

b) where a vision panel is fitted in the communicating door or wall between the inner and access rooms;

c) where automatic fire detection is installed in the access room;

d) where no person has to travel through more than one access room or through an access room which is not under the control of the same occupier.

Distances of travel relative to premises use and risk levels

Please note that all distances below are provided for guidance only. Seek the advice of a fire safety qualified specialist if any uncertainty exists.

Office and shop premises

Single escape route:

- 12 metres in high risk
- 18 metres in normal risk
- 25 metres in low risk (only used in very low risk premises)

More than one escape route:

- 25 metres in high risk
- 45 metres in normal risk
- 60 metres in low risk (only used in very low risk premises)

Factories and warehouses

Single escape route:

- 12 metres in small high-risk areas (seek expert advice for larger areas or for specialist high-risk areas such as paint spraying, explosives)
- 25 metres in normal risk
- 45 metres in low risk (only in very low risk premises)

More than one escape route:

- 25 metres in small high-risk areas (seek expert advice for larger areas or for specialist high risk such as paint spraying, explosives)
- 45 metres in normal risk
- 60 metres in low risk (only in very low risk premises)

Sleeping accommodation

Single escape route:

- 9 metres in a bedroom and higher fire risk area (seek specialist advice for all sleeping risk travel distances before rooms occupied by persons)
- 18 metres in normal risk (seek specialist advice before rooms occupied)
- 25 metres in low risk (only applies to lowest risk – seek specialist advice)

More than one escape route:

- 18 metres in a bedroom and high-risk area (seek specialist advice before rooms/areas occupied)
- 35 metres in normal risk (seek specialist advice before rooms occupied)
- 45 metres in low risk (only applies to lowest risk – seek specialist advice)

Residential care premises

Single escape route:

- 6 metres in high risk (seek specialist advice for all distances)
- 9 metres in normal risk (seek specialist advice before occupation)
- 15 metres in low risk (only applies in lowest risk but still seek specialist advice)

More than one escape route:

- 10 metres in high risk (seek specialist advice before occupation)
- 18 metres in normal risk (seek specialist advice)
- 25 metres in low risk (only applies to lowest risk but seek specialist advice)

Small and medium places of assembly

Single escape route – seating in rows:

- 10 metres in high risk (seek specialist advice)
- 15 metres in normal risk
- 18 metres in low risk (only applies to lowest risk – seek specialist advice)

Other areas:

- 12 metres in high risk (seek specialist advice)
- 18 metres in normal risk
- 25 metres in low risk (only applies to lowest risk – seek specialist advice)

More than one escape route – seating in rows:

- 20 metres in high risk (seek specialist advice)
- 32 metres in normal risk
- 45 metres in low risk (only applies to lowest risk – seek specialist advice)

Other areas:

- 25 metres in high risk (seek specialist advice)
- 45 metres in normal risk
- 60 metres in low risk (only applies to lowest risk – seek specialist advice)

NB: See BS5588 PtII Clause 10.2.4 in respect of bars and restaurants and separate escape stairways.

Responsible persons must not lose sight of the fact that the above tables are **for guidance only**, and that the assessment of the actual travel distances to be employed in any situation can be a complex matter in many premises because of the variables involved, which are often not evident to the untrained eye.

No more is this the case than with sleeping risk premises and in places where large numbers of members of the public are occupying premises.

In any cases of uncertainty, it will not be prudent to take chances and the services of a competent and qualified fire safety specialist and/or the advice of the enforcing authority must be sought in advance of the premises or parts of the premises being used, whenever it is possible and practicable to do so.

We have looked at the sub-division of travel distances as elements of means of escape and the time-tested actual travel distances relative to different types of premises and levels of risk. In order for all occupants to escape promptly and safely should fire occur, it is necessary to understand the principles used to calculate safe occupancy levels relative to the numbers and dimensions of exits, the final link in the safety chain which permits escape to total or reasonable safety.

Fire exits – numbers and dimensions

Fire exit dimensions are integral to effective and safe escape from fire, and the following guidance needs to be borne in mind when the numbers and dimensions of exits are calculated, relative to maximum occupancy numbers of a premises.

A normal minimum exit width is 750mm. This is the width with the door open at right angles to the frame. If wheelchair exits are required, this width should be no less than 900mm.

Doorway exit widths and escape times of occupants are interdependent and related to the risk rating of the premises or part of the premises (ie, high, normal or low).

A door of not less than 750mm width can pass 40 persons of average size per minute. If this were the only exit, then it would take three minutes to evacuate 120 persons. A doorway of no less than one metre width can pass up to 80 persons per minute.

Where more than 80 persons per minute are expected to use a door, the minimum doorway width should be increased by 75mm for every additional 15 persons.

It can be seen from this that exit widths/numbers and locations/positions of exits are crucial to prompt evacuation relative to the fire hazard/risk ratings, and that the exit widths and aggregated exit widths of all the fire exits provided are crucial to prompt escape.

A calculation must be made using the aggregated widths of all exits, ensuring that there are enough units of exit width to permit safe and prompt evacuation of the maximum numbers of persons to be within the building or the relevant part of it.

All calculations of exit widths and of the number of persons needing to escape in premises with more than one way out to safety, must allow for alternative exits being made impassable because of fire and smoke. The remaining exits must still be adequate to accommodate the maximum numbers present.

NB: Exits must open in the direction of escape travel.

Stairway widths and their relation to fire exit widths

Stairways should normally be at least 1050mm wide and never less than the width of the routes leading to them, to avoid bottlenecking with its risk of tripping and of persons being crushed. For the same safety reasons, no stairway or other escape route should narrow at the exit point.

Where a stairway is wider than 2100mm it should, ideally, be divided with handrails with each section either side of the rail being no less than 1050mm.

Responsible persons under the Order must seek competent specialist advice should any uncertainty exist in respect of escape route widths or exit and stairway widths, and should refer to the appropriate British Standard/Home Office guidance and to building regulations relevant to the premises or part of the premises in question.

Density factors

When calculating the number of exits required, the usage of the premises must be taken into account because the use relates to what are termed density factors or population loads.

Density factors are the amount of floor space occupied by individual persons on a floor (see table below). For example, a dance hall with people dancing close together will have a different density factor per individual than in, say, a department store or supermarket where the extra space taken up by baskets and trolleys needs to be assessed. Further information is available on this aspect in the British Standards publications relevant to fire safety in places where people work and resort.

The number of persons, including employees, who are likely to be occupying the premises can be calculated approximately by using factors of density, or population loads as these have tended to become known.

The density factors are that amount of area per person, relative to the gross floor area, less stairways, lifts and toilets.

The following factors have been used successfully for many years by fire safety inspectors and are set out below:

Shops and showrooms	$7m^2$ (75 square feet)
Supermarkets	$2m^2$ (20 square feet)
Department stores	
Main sales areas	$2m^2$ (20 square feet)
Less populated areas, eg furniture, beds	$7m^2$ (75 square feet)
Restaurants and lounges (depending on seat spacings)	$1m^2$ to $1.5m^2$ (10 square feet to 15 square feet)
Bars	$0.3m^2$ to $0.5m^2$ (3 square feet to 5 square feet)
Offices	$5m^2$ (55 square feet)
Entertainment premises	
Closely seated audience	$0.5m^2$ (5 square feet)
Dance halls	$0.55m^2$ (6 square feet)
Exhibitions	$1.5m^2$ (15 square feet)

The above information is the foundation upon which all means of escape evaluations are made. To augment this, some additional pointers are provided in the next section.

Additional pointers on means of escape

High-rise towers and multi-storey buildings

Please note that the following pointers are for general guidance only. **These types of buildings require detailed consultation with many parties and the advice of a fire safety qualified specialist must be obtained as a priority**. **New buildings are the province of the building control authority in the first instance**.

- The taller the building, the greater will be the evacuation times to a place of total safety.
- The taller building's MOE schemes should consider the creation of refuge areas of reasonable/relative safety at intermediate floor levels where the design and construction make this practicable to achieve.
- The tallest buildings such as office accommodation could include 'crossover' floors to enable alternative escape stairs at the opposite side of a building to be accessed in the event of others being impassable.
- 'Crossover' floors in the tallest multiply-occupied buildings require foolproof arrangements to ensure unlocked access at all material times.
- The tallest high-rise towers may have limited occupancy stairways necessitating a co-ordinated phased evacuation controlled by the premises' fire and security staff.
- The tallest high-rise towers may be of a 'sealed envelope' construction in which mechanical ventilation provides breathable air via extensive ducting. Any breaches of the 'sealed envelope' may create problems for occupants.
- Ventilation and extraction ducting in high-rise towers will be required by building regulations to be fitted with smoke detectors and dampers to prevent fire spreading smoke and fumes into accommodation and affecting the safe use of escape routes.
- Firefighters coming upwards to deal with an incident in a high-rise may obstruct evacuating occupants coming down on narrow staircases.
- Evacuation plans for persons with physical disabilities must exist and be regularly tested for effectiveness as any problems during a fire evacuation could seriously affect evacuation times and place more persons at risk.
- Fire warning arrangements in the tallest buildings must be subject to strict criteria and the understanding of the procedures on hearing the alarm must be unambiguous to all. Voice alarms can assist in this clarity.

Basements

- Because fire and heat rise, escape parameters from basements and sub-basements must take this into account. During the initial and ongoing FRA surveys, the assessor must take a critical look at the fire separation existing or proposed between the basement and the ground floor and the risk of fire spread throughout the premises via shafts, voids or perforated floors etc.
- Basement fire escape routes leading to escape panels at street level must be regularly audited to ensure that no hatches have been obstructed or inadvertently sealed for purposes of external premises security to the extent that occupants cannot exit promptly to safety.

- **Responsible persons need to be clear that if anyone is working in a basement area of the premises, which meets the definition of workplace within the 2005 Order, then the 'general fire precautions' requirement of Articles 8 to 22 will be applicable**.
- Where only one staircase serves a building with a basement, the stairway from the upper floors should be separated by a corridor between the basement and the stairs, or by a protected fire-resisting lobby at basement level.
- Any basement in which more than 60 persons will be present, and in which there is no direct access to a place of total safety, should have at least two protected escape stairways.
- Wherever it is practicable, all basements should be accessed by a door from the open air at ground level and positioned so as to prevent smoke from any basement fire affecting the escape routes from upper floors.
- Advice should be sought from the local building control authority on the required fire resistance of the floor above a basement and on whether a suitable AFD/AFA installation could be permitted as a compensating feature where it would be impractical to achieve the fire resistance standard.

CASE STUDY

A fire broke out one evening in the basement of a chain of fast food restaurants. The fire was in a carton storage area and heavy smoke was soon being produced. The manager called the fire service and they were on scene within five minutes.

A roll call had apparently shown no one to be unaccounted for and fire crews equipped with breathing apparatus entered the basement to locate the fire's source.

During their search, they heard the sounds of someone crying for help and a female member of staff was found in a corner of the basement, suffering from the effects of smoke, and she was brought up to street level.

A subsequent investigation revealed that a Jacob's ladder provided an exit from the basement to a street hatch to enable escape from fire.

It was discovered that for security reasons, as the restaurant was in a high crime area, the hatch had been screwed shut without any member of staff being informed. No alternative fire escape route had been devised and had it not been for the prompt response and actions of the fire service, the female employee would, in all probability, have lost her life.

Balance between fire safety and security

- In areas with a high incidence of burglary, caution must be taken that overt security arrangements in the form of grilles and meshes, steel plated doors etc have not jeopardised MOE from fire.

Public assembly and entertainment premises

- In premises used for public assembly in which panic-bolt fire exit doors are secured by chain and padlock when the public are absent, it is vital that the responsible person ensures that all chains and padlocks are taken off and placed on a hook away from the door. This is to avoid fooling occupants exiting in an emergency to believe that the door is locked when it only appears to be, with the resulting danger that they will move back towards the fire and lose valuable time in evacuating.

External fire escapes

- External fire escapes should not pass closer than 1.8m horizontally and 9m vertically to any wall, door or window (other than toilet windows), which are not of at least 30 minutes' fire resistance. Windows should be fixed shut and doors self-closing.

- External fire escapes can become slippery from ice, algae and steam condensation from adjacent boiler flues. Such escapes should be ideally protected from the elements and illuminated as necessary.

Roof exits

- If a fire exit is provided to give MOE at roof level for employees, the roof should be flat, illuminated and fitted with a railing to prevent anyone stepping off the edge. The public and small children should not normally be allowed to exit via this route but, if it is agreed that the public or residents can use it, the route should be clearly indicated and made known to them by signs and other means in advance of any emergency.

Lifts and escalators

- Unless a lift is on a separate electrical sub-circuit, independent of the main supply and fitted with a standby supply, then it should not be used by persons escaping. Escape via protected stairs should be the route for agile persons. Specialist advice should be sought where disabled persons have to use lifts for fire emergency evacuation.
- Lift shafts and openings and escalators can provide a path for fire smoke and fumes and should be protected to prevent escape routes being affected. Where practicable and necessary, adequate shaft head ventilation should be provided in accordance with building regulations and sound fire safety practice.

Stairways

- Where there are two stairways providing alternative exits from a building, then these should be separated by fire-resisting construction.
- Where the head of an accommodation stair has to be passed to reach an alternative protected escape route and there are rooms off the stair landing, pass doors can be provided through these rooms to allow occupants to evacuate on the far side of the enclosing fire-resisting doors without having to pass onto the stair head.
- Accommodation stairways which are not the sole means of escape from a building need not be fire separated from the remainder of the floor unless people have to pass the head of the stairs to reach an alternative exit or pass through a compartment floor. They need not be enclosed at the ground level but should be enclosed at all other levels.

Way guidance/exit signage/exit plans

- The use of luminous way guidance markings at floor or skirting board level can be of great benefit where smoke has got onto an escape route and obscured fire exit directional signs placed at a higher level.
- All premises that provide sleeping accommodation should have clearly marked plans showing fire escape routes and exits to a place of total safety within the

room and, where possible and practicable, instructions should be in the main European languages.

Trained staff and evacuation methods

- In all premises in which occupants are non-ambulant or of limited agility, a suitable number of staff should be trained in the most effective means of transporting such occupants to a place of reasonable and total safety.
- Where stair lifts are provided, and the lift when in use restricts the width of any stair used by ambulant persons to escape from fire, the advice of the BCA and the FA should be obtained in writing.
- Subject to any observations from the BCA and the FA, a written emergency policy is to be produced and incorporated into staff training information, and the premises' written emergency plan.
- During the periodic fire drills, one or more exit routes should be blocked to simulate what can occur in a fire, and to monitor that occupants know which alternative escape routes to use.

Also see Chapter 9 relating to fire-resisting construction

Specific notes on disabled and mobility impaired occupants

- The Disability Discrimination Act requires measures to be in place to ensure effective MOE exists.
- Fire-resisting refuges and lobbies must be considered when planning escape for the disabled.
- Where firefighting lifts are used as disabled evacuation, the FA/BCA must be consulted.
- Normal lifts should only be used for disabled evacuation after a FRA has concluded it will be safe.
- Wherever possible, a normal (evacuation) lift should be located next to a protected stairway.
- Exits must be planned along with staff training to ensure that any disabled person can safely exit.
- Emergency evacuation plans must take into account the carrying of disabled persons should it not be possible to use lifts or wheelchairs.
- Chairlifts should not normally be used for emergency evacuation and any stair on which a chairlift is fitted should not reduce the effective stair width, especially if it is the only stairway or less than the width of the escape route.

- The BCA must be consulted in respect of the installation of disabled ramps.
- Staffing levels in those premises in which there are a high number of persons dependent on others to assist in fire evacuation must be adequate, relative to the occupancy and the fire risk.

Crèche facilities and escape

- Wherever possible in those premises in which crèche facilities are provided, it is important that any parents, on hearing a fire alarm, do not have to access the crèche to collect their children by travelling against the normal escape route. Accordingly, the crèche should be on the same level as the parent or guardian and on the way out to the final exit.

General points on the sub-division of corridors on escape routes in all types of premises

- If there are corridors more than 30m long, these should be sub-divided by installing fire doors and fire-resisting partitions at the mid point.
- For resisting the passage of smoke only, provided the doors fitted are self-closing and can, with their frames/partitions, hold back smoke and fumes effectively, then these do not need to be the standard 30 minutes' resistance fire doors.
- If a corridor leads to two separate exits from a floor, for example to separate stairs at either end of the corridor, then fire doors must be used to divide the corridor into two, and a fire-resisting wall erected to provide the necessary fire-resisting separation (see Appendix 12).

General points on the enclosure of stairways in all types of premises

- Without fire-resisting enclosures, a stair can soon become filled with fire products.
- If unenclosed stairways are part of the escape route, then fire may cut off the escape route.
- Unenclosed stairways can provide a route for fire and smoke to spread to other floors and cut off the escape for occupants at a higher level.
- Providing enclosures gives a protected stairway and the travel distances, relative to the type of premises and the risk, can be measured up to the stairway entrance rather than to the final exit.
- It is vital to life safety that fire doors to enclosed stairways are kept shut and never wedged open.
- If it is desired that fire doors are kept open to assist circulation, then this must only be by way of magnetic retainers linked into the fire detection system and in line with the current BS.

- If the enclosed stairway is the only exit from the higher floor(s) then the approval of the FA should be sought before installation of any such hold-open device on doors to the stairway.
- Where a single enclosed stair does not go directly to a final exit, a protected route must be provided from the stair foot to the final exit by upgrading the fire resistance of the doors, walls and other openings along that route (see illustrations in Appendix 1).
- If there is more than one ground floor exit available, then these must be accessed via two routes separated from each other by fire-resisting construction (partition up to ceiling height plus self-closing fire door).
- Where a building's layout means that persons would have to pass through a protected stairway to reach another stairway, this should be avoided by providing either pass doors through rooms next to the stairway, constructing a bypass corridor if practicable, or by use of balconies.

Spiral stairs

- Where it is proposed to use a spiral open plan stair for escape, the FA and BCA should be consulted for advice.

Fixed vertical ladders

- These should not be used by members of the public for escape from fire.
- Subject to there being no dangers from fire/smoke coming from windows adjacent and where there are no alternatives, these could be used by a small number of fully agile members of staff.

Final exits and safety clearance from all types of premises

- Final exit door widths must never be less than the escape route preceding it.
- Final exit doors must be capable of being opened from the inside without the use of a key.
- Final exits must be clearly signed and visible in all light conditions.
- Final exits with a panic bolt/push bar must be clearly indicated with instructions.
- Final exit doors with glass barrel bolts and a hammer must have clear instructions adjacent.
- Final exit doors must open outwards and be kept clear on both sides at all material times.
- The space into which escaping persons will disgorge from a final exit must be of sufficient size to enable all those evacuating to get well clear of the building in the event of a severe fire.

- There needs to be an alternative exit from the disgorging space to a place of ultimate safety and the route to this must be made clear via signage, lighting etc, and must not expose persons to fire and smoke when using it.

Buildings in multiple occupation and safe and effective escape from fire

The FRA should have confirmed if the premises are in single or multiple occupation. If multiple, the following points need to be considered:

- Is there a fully co-ordinated fire emergency evacuation plan involving all occupiers?
- Does escape from any part of the building via another occupier depend on the other occupier keeping doors unlocked (see Chapter 5)?
- Are the responsible persons within the different occupancies co-operating with each other to ensure adequate life safety for all occupants including maintenance of the common stairs etc?
- Is there a need for AFD/AFA audible throughout the whole building so that a fire at one level does not occur and place people at risk because there was no audible alarm?
- Tenancy leases and contracts should make it clear to each responsible person within the different occupancies, that they have the unconditional responsibility for complying with the Order within those parts of the building to which the tenancy/lease applies.

Her Majesty's Government fire safety guidance

Responsible persons under the FS Order 2005 should obtain the '*Fire Safety Risk Assessment*' guidance document relative to the type of premises for which they hold self-compliance responsibilities.

This document provides clear illustrated examples of the variety of means of escape solutions which are available and – if after reading these and any other fire safety advice guidance literature – uncertainty still exists, then it is imperative that the advice and assistance of a competent fire safety specialist is obtained.

Chapter 9

Fire separation and compartmentation

Introduction

This chapter deals with one of the most important areas of life protection from fire hazard, which is the provision of adequate levels of structural protection from fire and its products by way of fire-resisting materials.

- The presence of fire-resisting floors, walls, ceilings and doors are crucial to life safety.
- For all general purposes, fire-resisting refers to a minimum 30 minutes' resistance to the passage of flame, heat, smoke and toxic gases (but see building regulations requirements).
- The fire-resisting elements of floors, walls, ceilings, doors and so forth are what provide the levels of fire separation and compartmentation assessed as necessary and appropriate to the protection of a premises' occupants from fire products.
- Fire separation and compartmentation are directly related to the levels of fire hazards existing, and to the risk probability of those hazards endangering the safety of occupants at any time.
- It is essential, therefore, when carrying out a '*suitable and sufficient*' FRA to ensure that, **starting from the highest level,** the list of items to be checked includes:

Floors

- What is the material of construction?
- If timber, is it close boarded or tongued and grooved and are there noticeable holes or gaps?
- Is there any surface covering the timber, eg plyboard, and is this imperforate?

- If it is not timber, are there any holes or openings including those around service pipes and cables?
- Whether timber or solid, are there any openings such as chutes, dumb waiter/lift shafts, open plan stairways or escalators?

Walls

- Are the walls of solid masonry/block work/stone/timber stud/steel or aluminium frame?
- Are the walls plastered, covered with plasterboard/insulating board/plywood/textiles/metal and are there are any combustible cores or infills? Do they extend up into false/suspended ceilings?
- Are there external windows or doors, and could they permit fire products to affect any other part of the premises including external fire escapes and gangways?
- Are the external windows/doors fitted with fire-resisting glazing, are the windows openable or fixed shut and are the doors fire doors with effective and approved self-closing devices?
- Are there any internal windows or glazed panels and are these fire-resisting if adjacent to any escape route?
- Are there openings in any internal wall for service pipes, cables, ventilation trunking etc and are these fire stopped?
- Are there any other openings in walls through which fire products could spread?

Doors

- Are there any proper fire doors fitted (see Appendix 1)?
- If fire doors, are they in good condition throughout and do they fit flush into the frame?
- If not fire doors, what sort of doors are they, eg solid timber/timber with glazing/all glass/steel, and do they fit flush into their frames?
- Are any doors positioned on escape routes and protected routes?
- Does any door open out over a stairway in a position that could obstruct persons evacuating?
- Are any doors on escape routes/protected routes propped or wedged open?
- Are all fire doors signed with the appropriate instruction such as **Fire Door Keep Shut**?
- If there are wall or corridor cupboards present, are their doors of adequate fire resistance and, where appropriate, are they signed **Fire Door Keep Locked** or **Electrical Hazard** etc?

Further guidance on fire resistance

Also refer to current national building regulations guidance

A minimum of 30 minutes' fire resistance is required in the following circumstances:

- Walls which separate the following elements from all other accommodation:
  - stairways
  - protected lobbies
  - lift wells
  - protected routes
  - adjoining compartments
- Floors which separate any one storey from another storey
- All doors in:
  - a stairway separating wall (not if it is a door to a WC with no fire risk)
  - a protected lobby wall
  - a lift well enclosure (except a door to a lift well which is contained within a stairway enclosure)
  - a wall separating a protected route (not if it is a door to a WC with no fire risk)
  - a corridor for sub-division
  - a stairway from ground floor to basement
  - a compartment wall

If it is not possible or reasonably practicable to achieve these standards, compensating features such as reduced travel distance, fire detection etc may be required.

Surface finishes of walls and ceilings

Class O – acceptable in all locations: Inorganic materials such as plasterboard, brick and blockwork, concrete, plaster finishes, ceramic tiling.

Class One – suitable for all rooms but not on escape routes (ie stairways, corridors, entrance halls): Includes all the materials in Class O and additional materials such as timber, chipboard, hardboard and blockboard. Particleboard, heavy flock wallpapers and thermosetting plastics suitable if flame-retardant treated to achieve a Class One rating.

Class Three – materials for use in rooms of less than 4m^2: Materials as in Class One but without the flame retardance and including certain dense timber or plywood and standard glass reinforced polyesters. **Not acceptable** on escape routes (corridors, stairways, entrance halls).

Responsible persons should bear in mind that technical progress means that materials may be developed which could be included in one or more of the above classifications.

In addition, building regulations are developed over time and, if there is any uncertainty over surface spread of flame requirements in particular or fire resistance in general, the fire and building control authorities **must** be contacted before work commences.

Chapter 10

Staff training and instruction

Key points

- Practical experience of fire and smoke dynamics is a valuable aid to fire safety training lecturers.
- Responsible persons have a duty to ensure the competence of all who deliver fire safety training.
- Fire safety training must accord with the requirements as set out in FS Order 2005.
- Effective fire safety training is that which can be understood by **all** attendees.
- Effective fire safety training must include an outline of the requirements imposed by current legislation both on responsible persons and on individual employees.
- Effectiveness of training is augmented by the use of prompt cards for all attendees (see example on page 116).
- Effectiveness of specialised training (Fire Wardens etc) is augmented by printed notes and manuals.
- Effectiveness of training is augmented by current training videos and discs.
- Hands-on use of fire extinguishers/hose reels is important to the effectiveness of fire emergency routine. (NB: Attendees should be asked if they have any physical reason for not being able to handle extinguishers.)
- Full understanding of AFD/AFA systems must be a key objective in Fire Warden training.
- All attendees must be instructed on the vital importance of fire doors and fire compartmentation.
- All attendees must understand the vital importance of knowing the location of all exits and escape paths.

- Fire prevention and fire hazard spotting must be included in all fire safety training sessions.
- All training must include the vital importance of the fire service being called promptly.
- All Fire Warden training must include the liaison procedures with the fire service during emergencies.
- All attendees should understand the importance of a clear hierarchy in fire safety management, especially in respect of Fire Wardens and within sleeping risk premises.
- Trainers must ensure that all Fire Wardens and other 'competent person' staff clearly understand the need to co-operate and co-ordinate in respect of occupants' safety from fire, especially in multiply-occupied and sleeping risk premises.
- Trainers must provide opportunities for attendees to clarify uncertainties on any aspect of training.
- Fire safety training must be refreshed at least once a year in non-sleeping risks and at least twice a year in sleeping risks and in places where large numbers of the public gather.
- Fire safety training must cover the question of regular fire alarm tests and drills when, on a sequential basis, exit routes are 'blocked' to simulate a proper fire in which some exits are rendered impassable.
- Training must ensure that the vital importance of accurate nominal roll boards is understood.
- Fire safety training is vital and it should never be compromised by employees leaving early or arriving late.
- Fire safety training must be carried out in work time.
- All fire safety training should be recorded with the names of attendees and the trainer.
- All training records must be retained and be readily available for scrutiny by the enforcement agencies.

Prompt card for staff – an example

FIRE SAFETY PROMPT
ACTION ON HEARING ALARM

1. Verify 'Fire' on alarm panel
2. If 'Fire' ensure 999 call made
3. Turn off machinery/gas/electricity
4. Fire Wardens 'sweep' their area
5. Ensure nearest exit used
6. Close all doors
7. Go straight to assembly point

DO NOT RE-ENTER

FIRE PREVENTION/FIRE SAFETY

- Do not smoke in No Smoking areas
- Don't permit rubbish to accumulate
- Separate combustibles from heat sources
- Keep all escapes/exits clear at all times
- Don't wedge fire doors open
- Keep fire doors shut
- Keep cupboards on escape routes locked
- Report defects at once
- Report fire hazards at once
- Refer to this prompt card often

FIRE SAFETY PROMPT
ACTION ON DISCOVERING FIRE

1. Actuate nearest call point
2. Only tackle small fires – don't take risks
3. If safe to do so, turn off equipment, leave room, close door fully
4. Leave building at once via nearest fire exit
5. Close any fire doors on exit route
6. Go to assembly point immediately

DO NOT RE-ENTER

DO NOT USE LIFTS

Also see Chapter 5 for more information on staff training and instruction

Chapter 11

Enforcement of the Fire Safety Order 2005

Understanding what the legislation requires

Article 25 of the FS Order 2005 states:

'For the purposes of this Order, 'enforcing authority' means:

a) the fire and rescue authority for the area in which premises are, or are to be, situated, in any case not falling within any of sub-paragraphs (b) to (e);

b) the Health and Safety Executive in relation to:

i) any premises for which a licence is required in accordance with section 1 of the Nuclear Installations Act 1965 (a) or for which a permit is required in accordance with section 2 of that Act;

ii) any premises which would, except for the fact that it is used by, or on behalf of, the Crown, be required to have a licence or permit in accordance with the provisions referred to in sub-paragraph (i);

iii) a ship, including a ship belonging to Her Majesty which forms part of Her Majesty's Navy, which is in the course of construction, reconstruction or conversion or repair by persons who include persons other than the master and crew of the ship;

iv) any workplace which is or is on a construction site within the meaning of regulation 2(i) of the Construction (Health, Safety and Welfare) Regulations 1996(a) and to which those Regulations apply, other than construction sites referred to in regulation 33 of those Regulations.

c) the fire service maintained by the Secretary of State for Defence in relation to:

i) premises, other than premises falling within paragraph (b) (iii), occupied solely for the purposes of the armed forces of the Crown;

ii) premises occupied solely by any visiting force or an international headquarters or defence organisation designated for the purposes of the International Headquarters and Defence Organisations Act 1964(b);

iii) premises, other than premises falling within paragraph (b)(iii), which are situated within premises occupied solely for the purposes of the armed forces of the Crown but which are not themselves so occupied;

d) the relevant local authority in relation to premises which consist of:

i) a sports ground designated as requiring a safety certificate under section 1 of the Safety of Sports Grounds Act 1975(c) (safety certificates for large sports stadia)

ii) a regulated stand within the meaning of section 26(5) of the Fire Safety and Safety of Places of Sport Act 1987 (d) (safety certificates for stands at sports grounds);

e) a fire inspector, or any person authorised by the Secretary of State to act for the purposes of this Order, in relation to:

i) premises owned or occupied by the Crown, other than premises falling within paragraph (b)(ii) and (c);

ii) premises in relation to which the United Kingdom Atomic Energy Authority is the responsible person, other than premises falling within paragraph (b)(ii)

The above means that:

- it is the local fire service (fire authority) that is statutorily obliged to enforce the Order in all premises other than those falling within the sub- paragraphs (b) to (e);
- the Health and Safety Executive is the enforcing authority for (b) (i) to (iv), provided that persons other than the master and crew of a ship of Her Majesty's Navy are involved in construction, reconstruction or repair;
- save for the exceptions listed, it is the fire service maintained by the Secretary of State for Defence that enforces (c) (i) to (iii);
- the relevant local authority is the enforcer in respect of (d) (i) to (ii);
- a fire inspector or other person authorised by the Secretary of State is the enforcer in respect of (e)(i) to (ii).

Enforcement

Article 26

Article 26 sets out the legal duties placed on the enforcing authorities to enforce the provisions of the Order, and to take notice of any guidance issued by the Secretary of State.

It also states that a fire authority is empowered to have some of its functions performed by the Health and Safety Commission or by the Office of Rail Regulation.

Article 27 – powers of inspectors

In essence, authorised inspectors can go into any premises to which the Order applies at **any reasonable time** (the normal working hours) or, in the case of allegations of serious risk from fire, **at any time** in order to carry out a full or partial inspection of the premises and make inquiries to ascertain if the responsible person or other persons have self-complied with the Order's requirements.

In order to ascertain compliance, the inspector can:

- establish who is the responsible person(s);
- ask to see records and plans and take copies as necessary;
- require the assistance and facilities of any person, **even if not the responsible person**, so as to establish from that person any information relevant to the compliance with the Order and the part that person performs in connection with compliance;
- take samples of any article or substance so as to verify their fire resistance or flammability and to require, in the presence of a responsible person, the removal or dismantling or testing of any article or substance considered to be posing, or be likely to be posing, a danger to any occupant. Before carrying out any actions in this regard, the inspector must consult with any other appropriate persons (for example a building control officer, fire testing laboratory) in order to verify if any danger actually exists**.**

Inspectors **must** produce evidence of their authority to enter and carry out an inspection if required to do so and, if that authority is not produced, it would be wise to refuse entry and to contact the enforcing authority forthwith.

NB: Responsible persons should not confuse visits by firefighters for operational familiarisation purposes with fire safety enforcement inspections under the Order.

Contact/liaison with the emergency services

Article 13(3)(c) states that '*where necessary*' the responsible person must:

> *'arrange any necessary contacts with external emergency services, particularly as regards firefighting, rescue work…'*

The Fire Services Act 2004 empowers the fire service to carry out visits to selected premises so that fire crews can obtain information that will be of benefit during emergency responses to premises. This information includes the location of water supplies, hard standing and access points for rescue ladders and platforms, location of firefighting shafts and lifts, sprinkler main valve groups, hazardous processes and the location and numbers of occupants etc.

Such visits may be combined with fire safety audits under this Order as a way of maximising resource usage. However, a fire safety enforcement inspection and an operational visit are two different entities. Responsible persons must clarify the purpose of every pre-arranged visit by the fire authority and not assume that a visit for operational purposes means that a fire safety compliance audit has taken place. The danger in such an assumption would be that a nil comment by the fire service operational personnel might be construed by the responsible person as proof that his fire safety provisions under the Order are satisfactory, even if they are woefully inadequate.

Enforcement programmes

It is ultimately the responsibility of local authority fire service Chief Officers and heads of the other enforcing authorities to decide the policy to be adopted which will ensure that the requirements of Article 26 are satisfactorily complied with.

In the case of the fire service, Central Government issues guidance to Chief Officers as to the measures to be considered when formulating a prioritisation programme as to which premises will be audited by fire service staff, so as to monitor compliance with the Order by responsible persons.

Chapter 13 provides a fire service perspective on the whole question of enforcement, but responsible persons need to bear in mind that although the FS Order 2005 has caught a hugely increased number of premises within its scope, the enforcing authorities have a low ratio of inspectors relative to the number of premises. It will be necessary, therefore, for a programme of inspections to be devised which will better ensure that those premises in which the occupancy is at greatest risk will be audited in preference to those in which the perceived risks are lower.

However, it must not be forgotten that the 2005 Order is about self-compliance, not fire authority prescription, and that it is the unconditional responsibility of responsible persons to comply at all times. It has to be borne in mind that a responsible person cannot try to pass the blame for any fire safety shortfalls on anyone. Even a specialist advisor, called in to assist as a competent person, cannot accept the responsible person's ultimate responsibility – although that same advisor could presumably be taken to task if they acted in a negligent fashion.

Most importantly, responsible persons must be mindful at all times of the wording of Article 32(i)(a)(b) (Offences):

> *'It is an offence for any responsible person or any other person mentioned in article 5(3) [*persons other than the responsible person (my words)] *to*
>
> *a) fail to comply with any requirement or prohibition imposed by articles 8 to 22 and 38 (fire safety duties) where that failure places one or more relevant persons at risk of death or serious injury in case of fire;*

b) fail to comply with any requirement or prohibition imposed by regulations made, or having effect as if made, under article 24 (power to make regulations) where that failure places one or more relevant persons at risk of death or serious injury in case of fire.'

Responsible persons should note that in both of the above Articles, an **actual incidence** of death or serious injury from fire does **not** have to take place for an offence to be committed. It is the placing of persons **at risk** that can constitute the offence.

The fact, therefore, that there will be premises in which a fire service enforcement inspection has **not** taken place, does not mean that the fire authority automatically assumes that the responsible person has self-complied with the Order.

It simply means that by the normal programme of enforcement audits, any transgressions have still to be discovered.

Those holding the mantle of responsible person need to be prudent and appreciate that if the offence is committed when persons are placed at risk, then an actual fire in which life loss and/or serious injury have occurred will be an even graver matter because the whole concept of the Regulatory Reform (Fire Safety) Order 2005 is based not only on fire **preventive** principles, but also on fire **protective** principles. If the trust placed on employers and owners of businesses is found to be seriously misplaced, then the enforcing authorities are entirely within their rights to consider imposing penalties relative to the circumstances of the case. Employers, owners and other responsible persons must also remember that the fact that the fire authority has not yet audited a businesses premises, does **not** mean that any shortfalls by responsible persons in complying with the requirements of the Order will go unnoticed by the fire authority – far from it.

There are other avenues of communication by which the fire authority's fire safety enforcement staff can be made aware of non-compliance including:

- from information gained by firefighters attending an emergency call to the premises;
- during an operational familiarisation visit by fire crews trained to observe fire safety shortfalls;
- during attendance at a premises by officials from another safety agency (eg building control);
- by an employee or other person 'whistle blowing' in respect of fire safety shortfalls and hazards.

The FS Order 2005 and the Integrated Risk Management Plans permit fire and rescue authorities to devise their own enforcement policies, but national guidance has been issued to Chief Fire Officers in respect of fire risk and the targeting of premises.

In order to ensure that the statutory enforcement duties via Article 26 of the Order are being complied with, fire and rescue authorities are free to utilise a variety of means to collect risk data in order to best devise effective and efficient inspection regimes to monitor self-compliance with the Order. This is discussed in more detail in Chapter 13.

Duties and powers of enforcing authorities

We will now look at the powers available to enforcing authorities, which they can apply to ensure that the fire safety provisions provided are reasonably practicable relative to the hazards existing and the risk probability of such hazards causing harm to any occupant. Should the shortfalls discovered in premises be such that the fire authority considers that they must be improved, then it may issue advice or a notice as to what needs to be done to bring about the requisite improvement.

So what does the actual process consist of, and what powers are available to the fire authorities? Firstly, all responsible persons need to be aware that in law there is a difference between a **duty** and a **power**.

A duty is not discretionary. It is something which must be carried out and the word 'must' is usually to be found within a sentence concerning legal duties. For example, in Article 26, *' Every enforcing authority **must**……'.*

By contrast, a power is discretionary and the word 'may' will be found. For example, in Article 27 (Power of Inspectors), *'Subject to the provisions of this article, an inspector **may**……'.*

In essence then, an enforcing authority must enforce the provisions of the Order, but they are permitted to exercise discretion in their application of the various powers at their disposal. What are these powers?

They are:

- Alterations Notices
- Enforcement Notices
- Prohibition Notices

NB: Responsible persons should read the full text in SI 1541.

Alterations Notices

Article 29(i) states:

'The enforcing authority may serve on the responsible person a notice (in this Order referred to as 'an alterations notice') if the authority is of the opinion that the premises:

a) constitute a serious risk to relevant persons (whether due to the features of the premises, their use, any hazard present, or any other circumstances) or

b) may constitute such a risk if a change is made to them or the use to which they are put.

2) An alterations notice must:

a) state that the enforcing authority is of the opinion referred to in paragraph (i) and

b) specify the matters which, in their opinion, constitute a risk to relevant persons or may constitute such a risk if a change is made to the premises or the use to which they are put.

3) Where an alterations notice has been served in respect of premises, the responsible person must, before making any of the changes specified in paragraph (4) which may result in a significant increase in risk, notify the enforcing authority of the proposed changes.

4) The changes referred to in paragraph (3) are:

a) a change to the premises;

b) a change to the services, fittings or equipment in or on the premises;

c) an increase in the quantities of dangerous substances which are present in or on the premises;

d) a change to the use of the premises.

5) An alterations notice may include a requirement that, in addition to the notification required by paragraph (3), the responsible person must:

a) take all reasonable steps to notify the terms of the notice to any other persons who has duties under article 5(3) in respect of the premises;

b) record the information prescribed in article 9(7), in accordance with article 9(6) [the significant findings of the risk assessment and the numbers of persons at risk]

c) record the arrangements required by article 11(1), in accordance with article 11(2) [fire safety arrangements] *and*

d) before making the changes referred to in paragraph (3), send the enforcing authority the following:

i) a copy of the risk assessment; and

ii) a summary of the changes he proposes to make to the existing general fire precautions.

6) *An alterations notice served under paragraph (1) may be withdrawn at any time and, for the purposes of this article, the notice is deemed to be in force until such time as it is withdrawn or cancelled by the court under article 35(2)* [appeals].

7) *Nothing in this article prevents an enforcing authority from serving an enforcement notice or a prohibition notice in respect of the premises.*

Some comments and clarifications on Alterations Notices

a) The enforcing authority will have to make a professional judgement as to what within the premises, its usage, its hazards, or any other circumstance can be classified as constituting a 'serious' risk.

b) The requirement for the responsible person who has been served with an Alterations Notice to notify the fire authority before making any of the changes specified, is similar to the requirement in the former Fire Precautions Act for owners and occupiers of premises to so notify the fire authority.

c) Unlike the requirement in the former Fire Precautions Act, the 2005 Order makes no mention of a time scale being put in the Alterations Notice by the fire authority. **It is advised, therefore, that responsible persons on whom an Alterations Notice has been served, consult with the fire authority to ascertain if there is a time limit by which the fire authority needs the information from the responsible person before making changes. If a responsible person lodges an appeal to the courts in respect of the serving of an Alterations Notice, it must be lodged within 21 days of the serving of the notice (see section on Appeals, page 132).**

d) Responsible persons need to inform other persons who have managerial control in respect of fire safety on the premises of what is in the Alterations Notice so that there is no confusion in respect of fire safety requirements.

e) The serving of an Alterations Notice does not prevent the fire authority from serving an Enforcement or Prohibition Notice in respect of the premises if interim shortfalls are discovered.

Enforcement Notice

Article 30 states:

1) *If the enforcing authority is of the opinion that the responsible person or any other person mentioned in article 5(3) has failed to comply with any provision of this Order or of any regulations made under it, the authority may, subject to article 36* [determination of disputes by the Secretary of State], *serve on that person a notice (in this Order referred to as 'an enforcement notice').*

2) *An enforcement notice must:*

   a) *state that the enforcing authority is of the opinion referred to in paragraph (1) and why*

   b) *specify the provisions which have not been complied with, and*

c) require that person to take steps to remedy the failure within such period from the date of the notice (not being less than 28 days) as may be specified in the notice.

3) An enforcement notice may, subject to article 36, include directions as to the measures which the enforcing authority considers are necessary to remedy the failure referred to in paragraph (1) and any such measures may be framed so as to afford the person on whom the notice is served a choice between different ways of remedying the contravention.

4) Where the enforcing authority is of the opinion that a person's failure to comply with this Order also extends to a workplace, or employees who work in a workplace to which this Order applies but for which they are not the enforcing authority, the notice served by them under paragraph (1) may include requirements concerning that workplace or those employees; but before including any such requirements the enforcing authority must consult the enforcing authority for that workplace.

5) Before serving an enforcement notice which would oblige a person to make an alteration to premises, the enforcing authority must consult:

a) in cases where the relevant local authority is not the enforcing authority, the relevant local authority;

b) in the case of premises used as a workplace which are within the field of responsibility of one or more enforcing authorities within the meaning of Part 1 of the Health and Safety at Work Act 1974 (a), that authority or those authorities; and section 18(7) of the Health and Safety at Work etc Act 1974 (meaning in Part 1 of that Act of 'enforcing authority' and of such an authority's 'field of responsibility') applies for the purposes of this article as it applies for the purposes of that Part;

c) in the case of a building or structure in relation to all or any part of which an initial notice given under section 47 of the Building Act 1984 is in force, the approved inspector who gave that initial notice;

d) in the case of premises which are, include, or form part of, a designated sports ground or a sports ground at which there is a regulated stand, the relevant local authority, where that authority is not the enforcing authority; and for the purposes of this sub paragraph, 'sports ground' and 'designated sports ground' have the same meaning as in the Safety of Sports Grounds Act 1975 and 'regulated stand' has the same meaning as in the Fire Safety and Safety of Places of Sport Act 1987;

e) any other person whose consent to the alteration would be required by or under any enactment.

6) Without prejudice to the power of the court to cancel or modify an enforcement notice under article 35(2)(appeals), no failure on the part of an enforcing authority to consult under paragraphs (4) or (5) makes an enforcement notice void.

7) Where an enforcement notice has been served under paragraph (1):

a) the enforcing authority may withdraw the notice at any time before the end of the period specified in the notice; and

b) if an appeal against the notice is not pending, the enforcing authority may extend or further extend the period specified in the notice.

Some comments and clarifications on Enforcement Notices

a) An Enforcement Notice can be served on the responsible person or on any other person caught by Article 5(3) of the Order.

b) The notice has to inform those on whom it is served as to the reasons why it has been served; the fire safety general precautions and safety provisions not complied with, and the steps needing to be taken to make good the failings within no less than 28 days from the date the notice was served (here the fire authority can apparently 'prescribe' what steps are required).

NB: Responsible persons must be clear as to whether the 28 days runs from the date actually set out on the notice or the date on which it was received by the responsible person(s). It should also be clear whether the 28 days are working days or include weekends.

c) Where the notice gives directions as to the measures that the fire authority considers are necessary to improve fire safety, then the fire authority must make it clear in the notice that the person on whom the notice is served can use alternative ways of remedying any shortfall. A simple example of an alternative remedy would be in the case of an 'inner room situation' and the requirement in such cases to ensure that occupants within the inner room were aware of fire occurring in the outer room. Here the fire authority might state that they could either fit smoke detection within the outer room or a vision panel in the door between the outer and inner room.

d) In situations in which premises are found to be not complying with the Order but which come under the jurisdiction of another enforcing authority, then the enforcing authority can still make requirements concerning the workplace, but before they do they have to consult the other enforcing authority.

e) Before serving an Enforcement Notice that requires alterations to premises, any enforcing authority must consult all other relevant authorities and/or persons. Such authorities could be building control officers, private approved building inspectors, the Health and Safety Executive, a local authority etc.

f) Even though an enforcing authority fails to consult any other authority, the Enforcement Notice is still valid.

g) Wherever an Enforcement Notice has been served, the enforcing authority that served it may withdraw it at any time and, unless there is an appeal pending, they may give further time in respect of the improvement work specified in the notice.

Prohibition Notices

A Prohibition Notice is one of the strongest powers, if not the strongest available to enforcing authorities as was explained in Chapter 2. As regards fire authorities, such notices are not issued lightly and are reserved for the situations in which the risk to occupants' life from fire is seriously excessive.

Article 31 states:

1) *If the enforcing authority is of the opinion that use of premises involves or will involve a risk to relevant persons so serious that use of the premises ought to be prohibited or restricted, the authority may serve on the responsible person or any other person mentioned in article 5(3) a notice (in this Order referred to as 'a prohibition notice')*

2) *The matters relevant to the assessment by the enforcing authority, for the purposes of paragraph (1), of the risk to relevant persons include anything affecting their escape from the premises in the event of fire.*

3) *A prohibition notice must:*

   a) *state that the enforcing authority is of the opinion referred to in paragraph (1);*

   b) *specify the matters which in their opinion give or, as the case may be, will give rise to that risk; and*

   c) *direct that the use to which the prohibition notice relates is prohibited or restricted to such extent as may be specified in the notice until the specified matters have been remedied.*

4) *A prohibition notice may also include directions as to the measures which will have to be taken to remedy the matters specified in the notice and any such measures may be framed so as to afford the person on whom the notice is served a choice between different ways of remedying the matters.*

5) *A prohibition or restriction contained in a prohibition notice pursuant to paragraph (3) (c) takes effect immediately it is served if the enforcing authority is of the opinion, and so states in the notice that the risk of serious injury is or, as the case may be, will be imminent, and in any other case takes effect at the end of the period specified in the prohibition notice.*

6) *Before serving a prohibition notice in relation to a house in multiple occupation, the enforcing authority shall, where practicable, notify the local housing authority of their intention and the use which they intend to prohibit or restrict.*

7) *For the purposes of paragraph (6):*

   – *'house in multiple occupation' means a house in multiple occupation as defined by sections 254 to 259 of the Housing Act 2004, as they have effect for the purposes of Part 1 of that Act (that is without the exclusion contained in Schedule 14 to that Act and –*

   – *'local housing authority' has the same meaning as in section 261(2) of the Housing Act 2004.*

8) *Without prejudice to the power of the court to cancel or modify a prohibition notice under article 35(2) (appeals), no failure on the part of the enforcing authority to notify under paragraph (6) makes a prohibition notice void.*

9) *Where a prohibition notice has been served under paragraph (1) the enforcing authority may withdraw it at any time.*

10) *In this article 'premises' includes domestic premises other than premises consisting of or comprised in a house which is occupied as a single private dwelling and article 27 (powers of inspectors) shall be construed accordingly.*

Clarifications and comments on Prohibition Notices

a) The fire authority will only issue a Prohibition Notice in the most serious of fire risk situations such as:
   - a hotel with serious breakdown in fire-resisting compartmentation and lacking in fire alarm and emergency lighting; or
   - a factory containing large amounts of combustibles with many sources of ignition present and with an unenclosed staircase to upper floors, an inoperative fire alarm and no firefighting equipment.

b) A serious situation of fire risk in any premises will be magnified if it is a sleeping risk premises or one in which large numbers of the public are present or are likely to be present.

c) Fire authority inspectors do not need to give notice to an employer/owner/ responsible person when responding to allegations of serious fire risk and they can respond at any time.

d) A notice must explain what the contraventions are and the reasons why the fire authority considers persons to be at such a serious risk from fire, and say what part of the premises and its processes are to be prohibited or restricted. An example is provided in (a) above in respect of a hotel and factory.

e) The notice refers to the occupied premises so if the hazards are discovered in, say, a factory out of work hours, the notice can take effect immediately before the factory starts work.

f) In the cases of houses within multiple occupation where the responsible person or owner cannot be located, it is the practice in some fire authorities to serve a copy of the notice on all residents/occupiers. Fire authorities can make extensive efforts to serve notice on responsible persons but serving a notice on all residents does at least serve to inform residents of the serious risk existing and leaves them to make their own minds up as to seek temporary safer accommodation until the necessary improvements have been completed.

g) Fire authority fire safety inspectors 'police' the premises in which a Prohibition Notice has been served to ensure that the responsible person is complying and not ignoring the requirements of the notice. Evidence of failure to comply could end up in heavy penalties for the accused, which can include imprisonment in addition to a hefty fine and the consequences of a criminal record.

Example of wording on a Prohibition Notice

"The fire authority is of the opinion that the use of the premises known as 'Travellers End' involves a risk to persons should fire occur, which is so serious that the use of the premises is to be restricted to sleeping accommodation on the ground floor only. The fire authority is of the opinion that the risk to persons in the event of fire is so serious because of:

a) unsatisfactory fire-resisting doors and door furniture to the single staircase enclosure;

b) fire detection and alarm system inoperative at all floor levels.

As a consequence, the use of the premises is restricted to that set out above until such a time as the defects have been remedied to the satisfaction of the fire authority. To remedy these defects, the fire authority is of the opinion that the following alternative remedies can be used:

a) Employ a competent person to install new fire doors, frames and self-closing devices to meet the fire-resisting standard of BS 476 in respect of fire and smoke-stopping doors.

b) Have a competent person upgrade the existing fire doors and frames and fit self-closing devices, intumescent strips and smoke seals so as to achieve the requisite 30 minutes' fire/smoke resistance.

c) Have a competent person install a new fire detection and alarm system so as to comply in all aspects to BS 5839. **In the interim the authority will accept adequate numbers of domestic smoke detectors hard wired so as to provide an early alarm of fire and smoke throughout the relevant parts of the premises.**

The responsible person or other person set out in Article 5(3) of the Order is hereby informed that this notice will take immediate effect and that any appeal lodged under Article 35(4) of the Order shall not result in the Prohibition Notice becoming ineffective."

Offences and appeals

We will now look at the offences that can be committed under the Order and the appeals process that exists.

Offences

The purpose of this section is to leave no uncertainties as to what constitutes an offence under the Order, and to clarify in greater detail the types of omissions and shortfalls which are likely to place responsible persons in a position where the full weight of the law could be brought to bear. **As always, responsible persons should read the full text in SI 1541.**

Article 32 states that:

1) *It is an offence for any responsible person or any other person mentioned in Article 5(3) to:*
   a) *fail to comply with any requirement or prohibition imposed by articles 8 to 22 and 38 (fire safety duties) where that failure places one or more relevant persons at risk of death or serious injury in case of fire;*
   b) *fail to comply with any requirement or prohibition imposed by regulations made, or having effect as if made under article 24 where that failure places one or more relevant persons at risk of death or serious injury in case of fire;*
   c) *fail to comply with any requirement imposed by article 29(3) or (4) (alterations notices);*
   d) *fail to comply with any requirement imposed by an enforcement notice;*
   e) *fail without reasonable excuse in relation to apparatus to which article 37 applies (luminous tube signs):*
      i) *to ensure that such apparatus which is installed in premises complies with article 37(3) and (4)*
      ii) *to give a notice required by article 37(6) or (8), unless he establishes that some other person duly gave the notice in question*
      iii) *to comply with a notice served under article 37(9).*
2) *It is an offence for any person to:*
   a) *fail to comply with article 23 (general duties of employees at work), where that failure places one or more relevant persons at risk of death or serious injury in case of fire;*
   b) *make in any register, book, notice or other document required to be kept, served or given by or under this Order, an entry which he knows to be false in a material particular;*
   c) *give any information which he knows to be false in material particular or recklessly give any information which is so false, in purported compliance with any obligation to give information to which he is subject under or by virtue of this Order, or in response to any inquiry made by virtue of article 27(1) (b) [power of inspectors];*

d) obstruct, intentionally, an inspector in the exercise or performance of his powers or duties under this Order;

e) fail, without reasonable excuse, to comply with any requirements imposed by an inspector under article 27 (1) (c) or (d);

f) pretend, with intent to deceive, to be an inspector;

g) fail to comply with the prohibition imposed by article 40 (duty not to charge employees);

h) fail to comply with any prohibition or restriction imposed by a prohibition notice.

3) Any person guilty of an offence under paragraph (1) (a) to (d) and 2(h) is liable:

a) on summary conviction to a fine not exceeding the statutory maximum; or

b) on conviction on indictment, to a fine, or to imprisonment for a term not exceeding two years, or to both.

4) Any person guilty of an offence under paragraph (1)(e)(i) to (iii) is liable on summary conviction to a fine not exceeding level 3 on the standard scale.

5) Any person guilty of an offence under paragraph (2)(a) is liable;

a) on summary conviction to a fine not exceeding the statutory maximum; or

b) on conviction on indictment, to a fine.

6) Any person guilty of an offence under paragraph (2)(b), (c), (d) or (g) is liable on summary conviction to a fine not exceeding level 5 on the standard scale.

7) Any person guilty of an offence under paragraph (2)(e) or (f) is liable on summary conviction to a fine not exceeding level 3 on the standard scale.

8) Where an offence under this Order committed by a body corporate is proved to have been committed with the consent or connivance of, or be attributable to any neglect on the part of any director, manager, secretary or other similar officer of the body corporate, or any person purporting to act in any such capacity, he as well as the body corporate is guilty of that offence, and is liable to be proceeded against and punished accordingly.

9) Where the affairs of a body corporate are managed by its members, paragraph (8) applies in relation to the acts and defaults of a member in connection with his functions of management as if he were a director of the body corporate.

10) Where the commission by any person of an offence under this Order, is due to the act or default of some other person, that other person is guilty of the offence, and a person may be charged with and convicted of the offence by virtue of this paragraph whether or not proceedings are taken against the first mentioned person.

11) Nothing in this Order operates so as to afford an employer a defence in any criminal proceedings for a contravention of those provisions by reason of any act or default of:

a) an employee of his; or

b) a person nominated under articles 12 (3) (b) or 14 (1)(b) or appointed under article 18(1).

Appeals

Article 35 states that:

1) *A person on whom an alterations notice, an enforcement notice, a prohibition notice or a notice given by the fire and rescue authority under article 37 (firefighters switches for luminous tube signs) is served may, within 21 days from the day on which the notice is served appeal to the court.*

2) *On an appeal under this article the court may either cancel or affirm the notice, and if it affirms it, may do so either in its original form or with such modifications as the court may in the circumstances think fit.*

3) *Where an appeal is brought against an alterations notice or enforcement notice, the bringing of the appeal has the effect of suspending the operation of the notice until the appeal is finally dismissed or, if the appeal is withdrawn, until the withdrawal of the appeal.*

4) *Where an appeal is brought against a prohibition notice, the bringing of the appeal does not have the effect of suspending the notice, unless on the application of the appellant, the court so directs (and then only from the giving of the direction).*

5) *In this article 'the court' means a magistrates court.*

6) *The procedure for an appeal under paragraph (1) is by way of complaint for an order and:*

   a) *the Magistrates Courts Act 1980 applies to the proceedings, and*

   b) *the making of the complaint is deemed to be the bringing of the appeal.*

7) *A person aggrieved by an order made by a magistrates court on determining a complaint under this Order may appeal to the Crown Court; and for the avoidance of doubt, an enforcing authority may be a person aggrieved for the purposes of this paragraph.* [This means that if the fire authority is not happy, then it can appeal to the Crown Court.]

Clarifications and comments on offences and appeals

a) Responsible persons must remember that an offence is committed when there is a failure to comply with any requirement or prohibition that places any occupant **at risk** of death or serious injury in case of fire. A death or serious injury does **not** have to occur, therefore, for an offence to be committed, and this reinforces the concept of prevention and proactivity over 'after the event' reactivity.

b) Employees are liable for prosecution for their own omissions should these place any occupant **at risk** of death or serious injury in case of fire.

c) Where there is a corporate body, any one member of that body can be guilty individually in addition to the whole corporate body being guilty, provided that it is proved that the individual has contributed to the committing of the offence.

d) An employer cannot use the fact that any of his employees or anyone appointed as a competent person or external advisor has been at fault as a defence against his own omissions and non-compliances under this Order.

e) Subject to (d) above, it is a defence for any person charged with an offence under this Order to prove that he took all reasonable precautions and exercised all due diligence to avoid the commission of such an offence.

f) If an appeal is brought against an Alterations or Enforcement Notice, the notice is suspended until the outcome of the appeal hearing. If an appeal is brought against a Prohibition Notice, the notice stays in force until the appeal outcome and, if the court directs that the notice is suspended, it can only be suspended on the giving of that direction, thus affording protection for occupants, provided that the enforcing authority closely monitors the situation to ensure that the notice's requirements are not contravened.

Determination of disputes by the Secretary of State

Article 36 states that:

1) This article applies where:

a) a responsible person or any other person mentioned in article 5(3) has failed to comply with any provision of this Order or of any regulations made under it, and

b) the enforcing authority and that person cannot agree on the measures which are necessary to remedy that failure.

If such a situation arises, then the enforcing authority and the person referred to in paragraph (1)(a) may agree to refer the whole disagreement to the Secretary of State to allow a determination to be made as to the measures necessary.

The Secretary of State may then write to both parties requesting additional information, such as plans to assist in making a determination, and set a date by which this information is to be with him. If it is not received by then, he can refuse to make a determination.

Unless changes have been made to the premises in question since the date of a determination, the enforcing authority cannot serve an Enforcement Notice or give any directions in such a notice that would conflict with the contents of the determination.

Miscellaneous enforcement matters

This section paraphrases a number of miscellaneous enforcement and technical items to assist the responsible person in being clear about their overall responsibilities under this Order. However, it is very strongly advised that responsible persons and those persons referred to in Article 5(3) obtain a copy of the SI 1541-2005 and become au fait with all relevant Articles and seek specialist advice on any part of which they remain unclear.

These are:

- Firefighters' control switches on luminous tube signs
- Measures to protect firefighters
- Civil liability for breach of statutory duty

- Duty to consult employees
- Licensed premises provision
- Plans and consultations process with the enforcing authorities
- Disapplication of the Health and Safety at Work Act 1974 re general fire precautions
- Service of notices

Firefighters' control switches

Article 37. These are the electrical isolating switches fitted adjacent to luminous signs above shop frontages and on other displays, which use tubes filled with gases that glow on the application of an electrical current.

Because firefighters have lost their lives as a result of coming into contact with these signs, it is a requirement that where a transformer is used to raise the voltage to operate the luminous display, the electrical supply to these luminous discharge tubes can be shut off by means of a switch.

The switch must conform to the safety standards of the Institute of Electrical Engineers (IEE) and if the switch is compliant in respect of position, colour and marking, the fire and rescue authority (fire authority) cannot impose any further requirements in respect of the switch being readily recognisable to firefighters and readily accessible to them.

The responsible person **must** notify the fire authority no less than 42 days before commencing installation work for such a switch, of where the switch is to be placed and how it is to be coloured and marked. If the fire authority is not satisfied that the installation will satisfy its requirements, it has to serve notice on that responsible person within 21 days of receiving the responsible person's notice of that dissatisfaction.

In those cases where a cut-off switch was in position before the introduction of the 2005 Order, the fire authority can serve notice on the responsible person requiring compliance with the regulation if their requirements in respect of the switch are not satisfactory and giving a time scale by which the work is to be completed.

Where luminous discharge apparatus exists without a cut-off switch, then a notice can be served on the responsible person by the fire authority, specifying what is required and the date by which the work is to be completed. Some premises are exempt from this Article of the Order and, if doubt exists, the responsible person should contact the fire authority as a priority.

Measures to protect firefighters

Article 38. '*Where necessary*', measures must exist in premises to assist and protect firefighters when engaged in operations within premises or within the boundaries of the premises, including those which are shared with other occupiers.

Medium to high-rise towers and other large buildings with basements and sub-basements have to comply with building regulation requirements in respect of such matters as emergency appliance access, hard standing for aerial ladders and platforms, rising

water mains, firefighting shafts and fire-resisting lobbies, staircase smoke ventilation and so forth. The responsible person must ensure that all such items are adequately maintained so that they are in a good state of repair and can work efficiently whenever they are required.

In a multiply-occupied building, it is still a requirement on the responsible person to liaise with any responsible person in other parts of the building in respect of this Article, even if the Order does not apply to the other part.

Civil liability for breach of statutory duty

Article 39. This relates to whether an employer can be liable in respect of a civil action by an employee should the employer breach a duty under this Order.

Duty to consult employees

Article 41. This places a duty on the responsible person to nominate competent persons to assist with implementing firefighting measures. It follows that the responsible person has to consult with employees to name those persons and to inform other employees who are the nominated persons.

Licensed premises provisions

Article 42. In any premises to which the Order applies where any enactment requires a licence to be held (for example, sale of alcohol, public entertainment) in respect of premises or persons, the licensing authority has to provide the enforcing authority with the opportunity to make observations as to the suitability of the premises or persons before the licence is issued. By way of example, it was a long-held tradition within the UK for the fire authority to be consulted by the licensing authority or justices, in order for the licensing authority to be assured that the premises were fit and proper and suitable in terms of fire safety, means of escape and so on.

If the enforcing authority has taken, or is to take, any enforcement action in respect of a licensed premises, then the enforcing authority has to notify the licensing authority of this. However, if the enforcing authority fails to so consult, this does not invalidate any requirements made by the enforcing authority.

Where any such licence is in force, none of its terms, conditions or restrictions take precedence over the requirements imposed by the FS Order 2005.

Plans and consultations process

Article 45. Where a new building is erected, an existing building changed structurally, or proposals made to change the use of a building, and plans are deposited with a building control authority, that authority must consult with the enforcing authority before passing the plans.

The duty placed on the building control authority only applies in respect of buildings or parts of the building to which the 2005 Order applies, or which would apply after the erection, structural change or change of use. It does not apply where the local authority is also the enforcing authority.

Disapplication of the Health and Safety at Work Act 1974

Article 47. Unless the enforcing authority is that within the meaning of the Health and Safety at Work Act 1974, or in relation to the Control of Industrial Major Accident Hazards (CIMAH) 1994 Regulations, then any regulations made under that Act do not apply to premises caught by the 2005 Order in respect of fire and safety matters previously covered by the 1974 Act.

Service of notices

Article 48. This relates to the posting, delivering, communication and serving of notices in respect of the 2005 Order.

It states that the proper address of any person is their last known address unless a body corporate or partnership, in which case it is the registered or principal address of the company in the case of the former, and the principal office of the partnership in the case of the latter.

If a company has registration outside of the UK, the address is that of the company's principal office within the UK.

Any notice can be sent by post to the relevant address or addressed to the responsible person or partner and hand delivered at the premises and given to some responsible individual who appears to be resident or employed in the premises.

If after a reasonable inquiry, the above names and address cannot be found, then the notice can be addressed to the responsible person for the named premises, and by delivering it to a responsible individual who appears to be resident or employed in the premises. If this is not possible, then the notice(s) can be securely affixed to a conspicuous part of the premises. Electronic or data transmission can also be used to send a notice but, if sent to the responsible person, the notice only has effect if he has indicated a willingness to receive a notice transmitted in this way to the enforcing authority, and has agreed to send whatever details the enforcing authority requires.

Similar rules apply if the enforcing authority is the recipient.

Please see Chapter 13 for additional information

Chapter 12

Liaison with the fire and rescue service

As was covered earlier, Article 13(3)(c) mandates the responsible person '*where necessary*', to *'arrange any necessary contacts with external emergency services, particularly as regards firefighting, rescue work…'*.

The aim of this section is to assist the responsible person in seeing matters from the perspective of the front-line fire crews who will be those responding in any fire emergency. As was mentioned with considerable emphasis in the earlier chapters, there must be no confusion in the minds of responsible persons about the quite separate roles of fire safety as required by this Order and the role of firefighting and rescue as carried out by attending emergency crews.

A more detailed account will be provided shortly of these two arms of the local authority fire and rescue service, but here we are concerned with the responsible person being crystal clear on the following two areas:

- Operational familiarisation visits by fire crews
- Liaison between Fire Wardens and the emergency response fire service Crew Manager

Operational familiarisation visits

Operational familiarisation visits are mandated by the 2004 Fire Services Act.

Their purpose is to enable fire crews likely to be on the first response appliances to:

- know the fastest route to the premises at all times of the day from all compass points;
- know exactly where the premises are located and the full address and reference points;

- know the access points to the site at all hours and if this is easy or difficult;
- know what solid hard standing (free from manhole covers and grilles) is available for appliances;
- know if any overhead obstructions/hazards to aerial ladders exist such as electric/ telephone wires;
- know the location of public and private water mains and hydrants;
- know the location, availability and access of static water supplies such as ponds and swimming pools;
- know the physical dimensions of the premises in terms of number of floors, basements, overall size;
- know the use to which the premises are put and the normal occupancy numbers and categories;
- know the location and type of any hazardous, combustible materials within and without;
- know the location of any hazardous processes and machinery;
- know the location of hidden dangers to fire crews such as unguarded inspection pits/shafts;
- know the location of all entrance and exit points to the premises including fire exits;
- know the location and type of any AFD/AFA systems and where the main panel is situated;
- know the location and visibility of any 'mimic' alarm panels provided in the larger premises;
- know the location of the electrical and gas intakes and their respective isolating devices;
- know the location of the cut-off switches for luminous discharge tube signs;
- know the location and extent of roof voids, basements and any wall plans provided;
- know the location of any basement smoke outlets and staircase external wall smoke ventilators;
- know the location and construction of fire-resisting compartmentation throughout the premises;
- know the location and type of measures to assist and protect firefighters such as firefighting shafts, fire-resisting lobbies, rising mains, smoke exhaust systems etc;
- know the exact location of main valves to any sprinkler/deluge installations existing;
- know the location of external and internal escape stairways and their discharge points;

- know the location of fire and security controls in the larger buildings and high-rise towers;
- know and be familiar with the fire emergency evacuation strategies in use and of the numbers of occupants likely on stairways if phased evacuation/staged fire alarm systems are employed;
- know the location of the main emergency assembly points and the roll-call procedures employed;
- know and understand clearly the role and responsibilities of Fire Wardens/site managers and who will liaise with the Crew Manager on arrival at an emergency;
- know in advance if there will be specialist technical/scientific advice available if required;
- know the contents and policies within any emergency plan document for the premises;
- gather information to help the fire and rescue service best plan its protection for the premises.

Responsible persons in all but the smallest and most fire-innocuous premises are advised to bear all of the above points in mind when formulating their emergency plans and arranging contacts with the fire and rescue service. Such information should be of great benefit by clarifying the vast amount of information that the attending fire crews need to be in possession of ahead of any emergency, and will assist the responsible persons in demonstrating due diligence provided that such information is always borne in mind and applied dynamically over time, relative to hazard and risk.

Liaising with the emergency response fire service Crew Manager

The previous pages set out some thirty points of information which any competent local authority operational manager will be seeking when carrying out a familiarisation visit under the auspices of the Fire Services Act 2004.

With all of these points in mind – adjusted relative to the dimensions, hazards, occupancy categories and risk and occupancy levels of a premises, a clarity will ensue as to the information which needs to be passed to the first responding fire crews by nominated Fire Wardens.

It needs to be pointed out here that it can never be guaranteed that the local fire station crews who have visited premises to obtain operational information will be those who actually respond to any fire emergency. The normal practice within the UK fire service when carrying out familiarisation visits is to highlight those premises of higher risk such as larger factories, hospitals, residential care homes, department stores, hotels and so on. With the four watch system still in operation at the time of writing on whole-time UK fire stations, it has been normal practice for personnel on all of the four watches to

physically visit a risk, as being on site is the most effective method of assimilating information, along with visits by part-time firefighters as appropriate.

Where the largest and highest risk premises are concerned, it is the policy in some fire authorities to arrange for as many firefighters as possible to visit from a wide surrounding area. In the absence of this operational information, data is circulated in the form of an Operational Note to all of those stations likely to be called upon should a serious fire situation occur which requires reinforcements from afar.

The increasing demands placed upon the fire service, including the legal mandate to attend a range of non-fire emergencies combined with a focus on community domestic dwelling fire safety, have meant that visits to non-domestic risks may be less than was traditionally the case. Should the local fire crews who have physically visited a premises be engaged on another emergency at the time of a fire, then it is quite possible, depending on circumstances, that fire crews may be from many miles distant and unfamiliar with the particular features and hazards within the premises being attended.

It is for such reasons that responsible persons and their nominated competent persons should be fully aware of the points set out earlier, and that staff fire safety periodic training emphasises the type of useful information to be passed to the Crew Manager in charge of the first fire appliances to arrive.

In this way, those crews entering a premises for firefighting and rescue purposes will have been assisted in carrying out their role effectively and efficiently, and this will benefit both occupant and property safety and not needlessly jeopardise firefighter safety.

Key procedures when liaising with the first attending Crew Manager

Fire Wardens/competent persons, fully identifiable in a high visibility surcoat, should:

- ensure that any access gates to the premises are fully open to allow prompt site entry;
- ensure that no vehicles are parked over any internal fire hydrants;
- have used an accurate roll-call list of all occupants to take, or be taking a roll call;
- have noted if any persons are unaccounted for and where these were last seen if known;
- have checked any fire alarm indication panel and noted the location of any fire signal;
- on the arrival of the emergency fire appliances, locate the Crew Manager who will normally be wearing either a yellow or white helmet with one or two black bands. The Crew Manager will be looking out for a Fire Warden in a high visibility surcoat with whom to liaise in respect of the situation;
- inform the Crew Manager of the nature of the incident, including any fire panel indications;

- inform the Crew Manager if any persons are unaccounted for and where they were last seen;
- inform the Crew Manager of any hazardous materials or hazardous processes and the location;
- inform the Crew Manager of the access and exit points from the premises and the quickest access points to the part of the premises where the fire is situated or indicated on the panel;
- if asked by the Crew Manager, advise where the isolating devices are for all gas and electrical supplies;
- if asked by the Crew Manager, point out the location of any hydrants or any open water supplies which the premises' contingency plan has confirmed will provide firefighting water and can be safely accessed by the fire and rescue service;
- if asked by the Crew Manager, point out the evacuation strategy in use, the numbers of occupants still to evacuate, where these are located and the approximate time to disgorge;
- if asked by the Crew Manager, indicate the location of any floor or basement wall plans;
- if asked by the Crew Manager, indicate the location of any sprinkler system stop and drain valves;
- if asked by the Crew Manager, point out the location of any smoke extraction outlets and vents;
- ensure that no persons re-enter the premises and only re-enter when the crew manager in charge states that it is safe to do so.

Emergency fire situations, by their very nature, are highly charged occasions for premises' occupants and responsible officials, especially if any occupants are reported missing. The whole point of the 2005 Order is to use the initial and ongoing dynamic process of Fire Risk Assessments to prevent fires occurring in the first instance, to restrict their spread and ensure that all occupants can safely escape should the worst occur.

Unless the responsible person includes the above operational liaison processes within the premises' contingency emergency action plans and practises drill situations periodically, along with training from a competent source, confusion and chaos can reign during an emergency as people can become easily disoriented when in danger.

This is particularly likely to be the case in sleeping risk premises when a fire breaks out in the small hours, during which occupants are, in the main, oblivious to hazard.

Strict adherence to the operational pointers given above will play a huge part in ensuring occupant safety and, as a by-product, the protection of the premises and people's livelihoods as well as the protection of firefighters from unnecessary danger.

Chapter 13

Fire safety law enforcement – a fire and rescue service perspective

The fire service's role in non-domestic fire safety enforcement

Although this book is essentially for those charged with ensuring that reasonable and adequate levels of occupant safety from fire exist within business and other non- domestic premises, its contents cannot be isolated from the role of the enforcing authorities.

Indeed, it has been this author's long experience that for adequate levels of occupant safety from fire to exist, there has to be a clear and mutual understanding between those who have a duty to enforce the fire law, and those who have a duty as employers, owners and responsible persons, to ensure that the fire law is complied with.

This has been the case for many decades now and the very high standards of employee and public safety which, with only a few exceptions, have been the norm in most non-domestic premises on these shores, have been a result of the intelligent application of time-tested preventive and protective principles.

These principles were prescribed by the fire authority, consolidated by follow-up visits and inspections, and oral and written goodwill advice and recommendations, and – via a process of negotiation and persuasion – have resulted in adequate and reasonable fire safety standards over many decades.

It is a fact that some of the past processes were not the most cost-effective in terms of time, methodology and staff resources, but the arguments for and against such regimes and systems are outside of the remit of these pages.

The FS Order 2005 – like the Health and Safety at Work Act, which has been with us for over three decades and the Fire Precautions (Workplace) Regulations, which had almost a decade on the statute books – requires the creator of the risk to self-comply/self-determine with the requirements it imposes, where it is necessary and appropriate to do so.

As we have mentioned on more than one occasion in earlier chapters, this new piece of fire law places a tremendous amount of faith and trust in non-fire expert employers, owners, responsible persons and other competent persons to comply with its requirements without fail over time. History has demonstrated time after time that human error – either as a result of laziness, tiredness, parsimony, complacency, physical and mental incompetence, poor, absent or confusing communications, or genuine mistake – has been the missing link in the chain of events that lead to life-loss disasters.

Above all, as was highlighted in Chapter 1, it has been the flawed belief that the absence of incident indicates the presence of safety, a belief that has played such a massive part in this country and overseas, not only in cases of fire, but in air, sea, rail and road traffic disasters.

Since that tragic fire in the City of London's Queen Victoria Street in 1902, this nation alone has been witness to so many multiple life-loss incidents that could have been avoided, or, at the very least, seen reductions in the numbers of lives lost.

Those whose professional lives are spent witnessing the often grisly aftermath of human failure, or those people who were unfortunate enough to have been somehow directly or indirectly involved in such situations and survived, will need little reminding of the need for the existence of reasonable and adequate safety measures.

However, most individuals also accept that, realistically, absolute safety is a utopian ideal in a world where human failings and idiosyncrasies eternally exist, and that what is required are practical, pragmatic and balanced safety measures, rather than inflexible and dogmatic stringency, which often results in no safety standards at all.

It is because this is recognised that the FS Order 2005 qualifies many of its Articles on general fire precautions with such words as '*where necessary*', '*to the extent that is appropriate*', '*so far as is reasonably practicable*' and so on.

So, the point of this chapter is to provide those within industry, commerce and public services who hold a responsibility for self-compliance, with some idea as to the standards of 'reasonably practicable' fire preventive and protective measures that any fully experienced and competent fire authority fire safety specialist would be looking for. It must be stressed that fire safety judgements can be something of an inexact science and that the 'solutions' devised by those who have had extensive fire ground experience might differ markedly from those that are not grounded in the same experiences. There is more than one solution to many fire safety situations, and the 2005 Order recognises this as already mentioned (see section on Alterations and Enforcement Notices, page 124/126), and human rights law requires all to express their own opinion.

What is clear to most people who have obtained an extensive and intensive involvement with the ravages of fire on people and property, is that it is very easy for someone with no practical involvement with fire dynamics to underplay or overplay the weight of protection required.

Equally, it can be the case that some fire assessors, mindful of the litigious society in which we live, have been guilty of asking for a level of fire precautions which is onerous, and gives scant regard to the fact that, as vital as it can be, fire safety is not the only

budgetary requirement of a business. The trick is to recognise what is 'over provision' and what is 'under provision' relative to the hazard and risk existing.

With this brief background in mind, we can pose the following questions:

- How might the fire authorities decide on which premises to monitor for compliance?
- What data and intelligence are they able to call on when devising inspection programmes?
- Who will carry out inspections to monitor self-compliance?
- What are the fire authorities going to be expecting in terms of reasonable and adequate measures to safeguard occupants relative to the risk level existing?
- What level and amount of free advice can an employer/responsible person expect from the fire service in respect of fire safety matters?
- Who and what will ensure a consistency of enforcement parameters in respect of ensuring that a premises is expected to have the same fire safety measures as an identical one on the other side of town?

Monitoring for self-compliance

It is for the Chief Fire Officer, in conjunction with elected members of the fire authority, to decide, with his or her executive board, the policy in respect of satisfying the statutory duty to enforce the provisions of the Order as set out in Article 26 of SI 1541-2005. Such decisions and policies take cognizance of Central Government guidance and an 'enforcement concordat', which has veered more towards a 'lighter touch' than to the weight of a heavier 'arm of the law'.

Selecting the premises to be inspected

In formulating a programme of inspections to monitor self-compliance, the following factors may be taken into account by the local fire authority.

The number of premises definitely known as being high or potential high risk. Fire authority staff would normally use the term 'high risk' to define premises in which the risk to occupants from fire is high because of either the use to which the premises are put, those with high occupancy numbers spread over several floor levels, or because it is a premises in which occupants may need assistance in evacuating. Larger workplaces and factories where combustibles, flammables or explosives are manufactured or used in a process, the larger department stores, the larger general hospitals, hotels, hostels and residential care homes all fall into this category.

However, it is a fact that in terms of risk to occupants, some of the smaller premises are often those where the risk rating will be high, for example printers or furniture and clothing factories.

It does not follow, therefore, that fire authorities will necessarily monitor for self-compliance only in the larger, higher-risk premises. Where local knowledge indicates that serious risks to occupants exist should fire occur, then there is nothing to stop fire authorities carrying out specially targeted inspection campaigns as a method of meeting the statutory duty obligations mandated by Article 26.

On page 121 it was mentioned that there are a number of avenues by which the fire authority can become aware of premises which are not complying with the Order and that, if any allegation of serious fire risk to persons is made to the fire authority, an inspection can be made at any time without notice being given.

Premises which have a case file history of previous fire safety shortfalls or where past fires or repeat false alarms have occurred. Fire authority records will show premises where fire safety shortfalls have been discovered in the past, along with any fires or unacceptably high numbers of false alarms which have occurred. If the premises are those in which the risk of fire occurring is high, and the risk to occupants is high, then these could be included within an enforcement inspection programme.

Premises where the fire risk to persons increases periodically. At different times of the year, the risk to occupants should fire occur increases considerably in a number of premises. For example, during the sales periods, the number of shoppers within the larger department stores can far exceed the density factors, which have been traditionally used by the fire service when determining the numbers and dimensions of fire exits required. In addition, it is often the case that extra goods, over and above what are normally found, will be taking up floor space, as well as increasing the fire loading factors and, in some cases, obstructing means of escape routes and obscuring fire exit signage.

The same situation occurs at the Christmas period, with the added fire risk from displays and grottoes – sometimes decorated with materials that are likely to be combustible – and with additional sources of ignition occasioned by festive lighting.

In those public assembly buildings in which periodic exhibitions, displays and concerts are held, the numbers of occupants can increase many times over that which are normally seen, increasing the number of persons at risk should fire occur and possibly overwhelming fire exits (see Chapter 8).

Existing premises in which other authorities have notified the fire authority that alterations/change of use applications are proposed. Articles 45 and 42 require the building control and licensing authorities to consult with the fire authority in certain circumstances (see Chapter 11).

Given that the fire authority is the enforcing authority for those parts of any building which comes under the 2005 Order, and dependent on the perceived or known fire risk levels existing, an enforcement inspection of premises to which building regulations or licence applications are proposed is likely to form part of the monitoring surveys carried out by the enforcing fire authority.

Data and intelligence

Experience over many years has taught that it is only by having sound systems in place to gather information and intelligence on the overall levels of fire hazards and associated risk factors existing, that finite fire authority resources can be used to best effect in achieving and maintaining occupant safety via prioritised enforcement audits. Accordingly, excellent liaison and consultation systems need to exist with as many reliable sources as practicable.

Such sources will include:

- The local building control authority
- The Health and Safety Executive/Factories Inspectorate
- The local environmental health department
- The local housing authority
- Local Chambers of Trade and business federations
- The local police authority
- The local social services department
- Industrial fire liaison panels
- Harbour and dock authorities
- Rail and road transport authorities
- The licensing authorities (eg alcohol, petroleum)
- Airport authorities
- Hospital trusts
- Fire safety 'hotline' telephone advice services

Mutual and reciprocal exchange of information or 'local partnership schemes' in which the types of organisations listed above regularly communicate, play a vital part in providing up-to-the-minute data which assists in the policy decisions as to the number and category of premises to be monitored under the Order. By way of example, the fire and rescue authority's fire safety department might decide to provide their counterparts in other agencies with aide-memoire prompt cards to facilitate their observation and reporting of fire hazards seen on their travels.

Equally, other agencies such as building control, environmental health and police officers can provide an early warning system to the fire and rescue service of a developing fire risk, or of concerns about fire hazards in a wide variety of premises (see page 17 re Bradford Football Club disaster). The fire service can apply a risk weighting or loading factor to information received and, when a certain number of points are reached, this can trigger an enforcement inspection. By the same token, where inspections reveal that the fire risk within a premises is lower than perceived, decisions can be taken to remove the premises from any monitoring programme or to stagger the periods of reinspection.

After the 1987 amendment, the repealed Fire Precautions Act permitted owners/occupiers to be exempt from the need to hold a fire certificate when certain fire safety parameters existed within selected places of work (but not in sleeping risks).

Furthermore, the Non-Certificated Premises Regulations, which were part of the FPA regime, also permitted certain categories of premises to not require a fire certificate at all. Given that the FS Order 2005 has embraced far more premises than were ever 'caught' by earlier legislation, and given the finite resources of the fire authorities, it is likely that fire authorities will need to employ a similarly selective process in terms of not monitoring certain lower risk premises. Responsible persons, of course, **must still self-comply** – whether or not the fire service includes a premises in its enforcement programme. Of course, the fire and rescue service is only too well aware that if an employer, owner or responsible person fails to notify other safety authorities of any changes or proposals, then the fire authority may not be aware of the premises' existence. This differs from the situation which existed under the FPA because, other than in respect of an Alterations Notice under the 2005 Order, there is no requirement within the Order for the responsible person to notify the fire authority directly of any proposals which could affect occupants' fire safety. It is for this and other reasons that the strategy for enforcement must be as foolproof as possible, because there is no registration scheme which increases the potential for premises to escape the fire authority's enforcement programmes. Although ignorance of the law is not a defence, it would seem useful if local authorities provided regular publicity to ensure that the great faith being placed in persons to fully comply with the Order is not misplaced.

Earlier fire safety law was not specifically about fire prevention, but was more about ensuring that occupants were protected after a fire had occurred so that they could escape unharmed. Fire prevention, as well as protection, is at the heart of the new Order. Increased publicity can only improve the prospects of more employers and business owners self-complying with it and preventing fires in the first instance.

Given that a survey by the Chief Fire Officers Association (CFOA) showed that more than 50 per cent had not complied at all during the ten years that the 1997 Fire Precautions (Workplace) Regulations were on the statute books, then the concerns of more than a few about self-compliance with the new Order might well be justified.

On top of this, it is the case that since 2004, UK fire authorities have rationalised the system by which a pre-determined number of fire pumps and specialist vehicles were automatically despatched to reports of fire within domestic and non-domestic premises.

The national fire risk categorisation schemes, which divided fire brigade areas into a number of categories based largely on the risk of fire spread, determined the speed and weight of emergency appliance response. They were essentially derived from wartime concerns over the risk of fire spreading from one building to another, hence the term 'high risk' was once applicable to congested city centres or dockland warehouses in their heyday.

Integrated Risk Management Plans (IRMPs) have had to be drawn up by all UK fire authorities with a focus on domestic fires, as this is where most fire deaths occur.

The traditional pre-determined attendances to the high-risk parts of the larger cities and towns – even to the larger sleeping risks such as hospitals – have, in many cases, been reduced. It is against this background that the concept of fire prevention, which the 2004 Fire Services Act places a duty on fire authorities to deliver, assumes even greater importance now that the FS Order 2005 places this huge trust in employers to self-comply. Although the attendance of the fire service has **never** been a direct factor in the level of fire prevention and fire protective measures provided within premises, it is arguable that it would be naive to not give consideration to it now that virtually all non-domestic premises have had to place trust in non-fire expert persons to achieve and constantly maintain adequate levels of occupant safety.

There are more than a few in the 'fire world' who hold concerns that if this trust – which is an inherent part of any self-determining safety legislation – is misplaced, and fires are not prevented, then reduced emergency appliance responses over longer time scales than hitherto could impact upon the fire safety of occupants.

It is for these reasons that the gathering of data from a wide range of agencies is so important in assisting fire authorities with their enforcement inspection programmes.

Who will carry out enforcement inspections?

Once a fire authority has formulated its enforcement policies, who will carry them out?

Traditionally, fire safety inspections in non-domestic premises have been carried out by a mixture of specialist fire safety department staff and front-line fire crews, the former having received extensive training and supervision. Most fire safety specialists have traditionally been front-line firefighters who have transferred into the specialist discipline of enforcement and advice.

Article 26 of the 2005 Order (enforcement of Order) permits the fire authority to appoint inspectors, and this permits applicants from backgrounds other than firefighting to get involved with the enforcement of the Order.

Enforcement of the 2005 Order requires careful consideration of the most effective and efficient way of ensuring that Article 26 is fully complied with. It requires an intelligent and selective application of the premises to be inspected, the timescales in which follow-up visits need to be made, relative to both known and perceived categories of hazard and risk, and careful decisions as to the expertise, qualifications, inspection experience and training needed by the staff who will carry out enforcement inspections across a wide range of non-domestic premises.

What standards will the fire authority expect?

The fire authority needs to satisfy itself that the responsible person has complied in full with the provisions of the Order relative to the fire risk existing, the dimensions and features of the premises, and the category and number of occupants. Bearing in mind the wording used in the Order, they will expect:

- the FRA to be '*suitable and sufficient*';
- that 'significant findings' arising from the FRA are recorded where there are five or more employees or where a licence or Alterations Notice is in force;
- that the FRA has been reviewed if significant changes have occurred;
- that risks from dangerous substances have been removed or reduced;
- that adequate fire detectors, alarms and firefighting equipment have been provided as appropriate to the fire hazards and risk to occupants;
- that emergency routes and exits comply with Article 14 relevant to the risk;
- that adequate emergency plans in respect of serious and imminent danger exist;
- that additional emergency measures exist for dangerous substances;
- that competent persons have been appointed as appropriate;
- that all relevant safety information has been passed to employees and to external contractors and their employees;
- that all employees have received adequate fire safety training, instruction and information from a competent person, and that this training has included the individual legal duties of employees;
- that responsible persons co-operate and co-ordinate fire safety measures; and
- that all premises, facilities and devices are regularly maintained and kept in good repair.

Alterations, Prohibition and Enforcement Notices

Where an Alterations or Enforcement Notice has been served on the responsible person, the fire and rescue authority may inspect the premises at any reasonable time (or, in the case of allegations that a serious risk exists, at any time), so as to monitor compliance with any directions within such a notice.

Where a notice has been served under Article 31 prohibiting or restricting the use of the whole or part of a premises, the fire and rescue authority may inspect the premises at any time in order to verify that any directions within the notice are being complied with. In order to ascertain that any of the above (or, dependent on the premises and its use, any relevant provisions or directions) have been complied with, the inspector can be expected to:

a) establish who is or are the responsible person(s);

b) produce their authority identification card if requested by the responsible person;

c) inspect the premises in detail and on all levels and parts, including the exterior if appropriate, in order to ascertain if the preventive and protective provisions existing (or those proposed) are, or will be, appropriate and are those which comply with any technical standards and policies used by the fire and rescue authority;

d) request to see the FRA report and any plans of the premises;

e) request to see all records in respect of staff training, emergency action plans etc;

f) request to see all correspondence in respect of fire safety improvements proposed;

g) take copies of items in (c), (d) and (e) above;

h) take samples of any articles or substances;

i) after due consultation and in the presence of the responsible person and any other appropriate person of due expertise in respect of the danger, require any dangerous article or substance to be dismantled, removed or subjected to a test;

j) at the conclusion of the inspection, inform the responsible person of any unsatisfactory area which must be rectified forthwith (eg obstructions and rubbish on escape routes, blocked/locked fire exits);

k) dependent on the situation, inform that a relevant notice will be served and explain precisely what this means, what is required of the responsible person and the appeals processes which exist via Articles 35 and 36.

l) Where any Alterations, Enforcement or Prohibition Notice had already been served at the time of an inspection, and/or any requirement of the Order/notice not complied with, the fire and rescue authority inspector who has grounds for believing that an offence(s) has been committed may caution the relevant person(s) with a view to legal proceedings being taken (see Police and Criminal Evidence Act 1984 in respect of individual rights including that of having a solicitor present on such occasions).

Clearly, if the responsible person has self-complied to a level that is reasonably practicable relative to the hazard and risk, and the fire authority inspector is in agreement with all that has been done or is proposed to be done, there will be no need for any notices of enforcement to be served and, where they were served, can be withdrawn with a written notice sent to the responsible person stating that fact.

What advice can the fire authority provide?

If there is work to be done and the responsible person requires advice from the fire authority, what advice can the fire authority give, considering that it is not empowered to validate Fire Risk Assessments?

The Fire Services Act 2004 places a duty on fire and rescue authorities to give free advice on request in respect of:

- Fire prevention
- Restricting the spread of fire
- Means of escape from fire

The 2004 Act states that it can do this when it considers it **reasonable to do so.**

There is no national clarification readily available to the public as to what constitutes 'reasonable'. With the repeal of the Fire Precautions Act on 1st October 2006, prescriptive fire safety has ended, save for the requirements within Enforcement and Prohibition Notices – and even these might be no more than statements as to what has not been complied with rather than actual prescriptive direction as to what the FA requires. In addition, the Order makes it clear that the responsible person who does not have persons within the organisation who satisfy the definition of competence, shall seek assistance in discharging the duties set out in the Order (see Appendix 2).

It may well be the case, therefore, that the enforcing authority is not bound to offer any more advice than that of seeking the services of a competent specialist, and/or to obtain the appropriate guidance documents from the Stationery Office. However, it is arguable that such general advice might not satisfy the meaning of the words within the Fire and Rescue Services Act 2004, which are precise in terms of '*fire prevention, restricting the spread of fire and means of escape from fire*'.

As mentioned on more than one occasion in this book, it is only the courts who can give a valid interpretation of the words used in legislation, and it might eventually transpire that to merely refer an enquirer to a private consultant or towards the guidance documents, which is something that has been mooted in some quarters, is not what was intended by the 2004 Act.

It would also not appear to be in the best interests of the reputation and professionalism of the fire and rescue authority for an inspector to be carrying out an enforcement survey, discover a shortfall that is not extensive enough to require an Alterations Notice, and proffer no appropriate advice at the time, something which this author has already experienced on more than one occasion. If a fire authority concludes that it will provide goodwill advice in appropriate scenarios, and that this would not conflict with their overall enforcement criteria, who will decide that the advice given by the inspector is consistent and adequate for the circumstances of the case?

Consistency and professionalism of advice

One of the criticisms levelled at the fire service over the years has been that of an inconsistency of advice; not only between different fire authorities or between different districts within a fire authority, but even between inspectors working from the same office! Although any advice given needs to be tailored to all of the specific circumstances of a case, there are premises which are virtually identical in terms of size, fire risk and occupancy, where widely different interpretations of Codes of Practice are made by individual inspectors and/or their supervisors.

Nothing is more irritating for the employer, owner or responsible person to learn that the fire safety provisions which they were recommended to provide in a premises identical to another elsewhere, were far more extensive than those within the other building.

This is one of the reasons why many fire authorities, but not all, have spent a good deal of time in formulating a service-wide fire safety policy document in which careful consideration has been given by seasoned fire safety practitioners as to the minimum or appropriate standards and solutions which should be employed when enforcing or advising across the whole of the fire authority's area.

With today's reduced prospects for obtaining the wide practical experiences which were possible in the past, especially in the busiest fire authorities, and given that the Order allows the appointment of inspectors from without the fire and rescue service, clear consistent policy on all fire safety enforcement has never been so necessary.

Never has it been more important than it is today when employers, with no specialist knowledge in most cases, are required to self-comply with the requirements of the 2005 Order, rather than having the reassurance of a judgement which was historically grounded in experience of fire and smoke and honed by progressive training and mentoring from time-served fire safety and firefighting experts.

If fire authorities choose to provide useful practical advice in line with the 2004 Act, either over the fire safety department's telephone 'hotline', via email, on site, or in a hard copy letter or information sheet, then the presence of a service-wide, easy-to-understand, consistent policy needs to be in place to assist all enforcement staff.

If this does not exist, then it is likely that at some future point, the effect of a responsible person who failed or was unwilling to seek external fire safety expertise, combined with inappropriate advice from a fire authority inspector bereft of service-wide policy guidance and lacking in experience, could manifest itself in a most unsatisfactory fire safety situation.

Summary

The FS Order 2005, by embracing so many premises which have hitherto fallen outside of the enforcement net, will be a challenge to the fire and rescue authorities in best ensuring the widest standards of fire safety of persons within non-domestic premises. The Fire Risk Assessment guidance documents, and other books like this, are designed to assist those caught within the definition of responsible person. However, if shortfalls still occurred under the rigorously-inspected FPA regime, then it is naive to believe that every employer and responsible person will be self-complying with the 2005 Order, particularly as the Fire Precautions (Workplace) Regulations 1997 demonstrated in such a discouraging fashion that this was patently not the case.

Any law which cannot be properly enforced can become a dead letter. However, the combined inputs of guidance literature and the time-developed skill and resourcefulness of the UK fire and rescue services in intelligently prioritising and selecting their enforcement programmes, can better ensure that effective monitoring of the Regulatory Reform (Fire Safety) Order 2005 will exist and help ensure adequate fire safety provisions are the norm and not the exception.

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Appendices

Case Study

Key Points

Reference

Appendix 1

Technical information

Within this section is the additional technical information provided to clarify the detail in respect of fire safety provisions and information.

The areas covered are:

- Fire doors
- Fire-resisting glazing
- Fire-resisting construction
- Fire-resisting floors/ceilings
- Roof voids and basements
- Door self-closers and retention devices
- Emergency and escape lighting
- Fire signage and notices
- Rising mains
- Fire appliances: access and hard standing
- Advice on firefighter safety in selected businesses

Fire doors

Fire-resisting doors are a vital element in fire safety protective provisions. In many fires, fire-approved, properly rated, properly installed and maintained fire door sets (a door set being leaf, frame and all door hardware) have proved their worth in saving lives by resisting flames, smoke and heat and allowing occupants to escape unharmed.

The FS Order 2005 is concerned with life protection, but fire doors also help to protect property by restricting the spread of fire products. Fire doors built to approved standards have to pass a furnace test to demonstrate that they possess the necessary resistance, insulation and integrity relevant to their rating in terms of the time they will withstand fire, heat and smoke. Although 20-minute rated doors can be obtained, they are no longer made by many suppliers and are usually used as smoke doors – for example to sub-divide a long corridor.

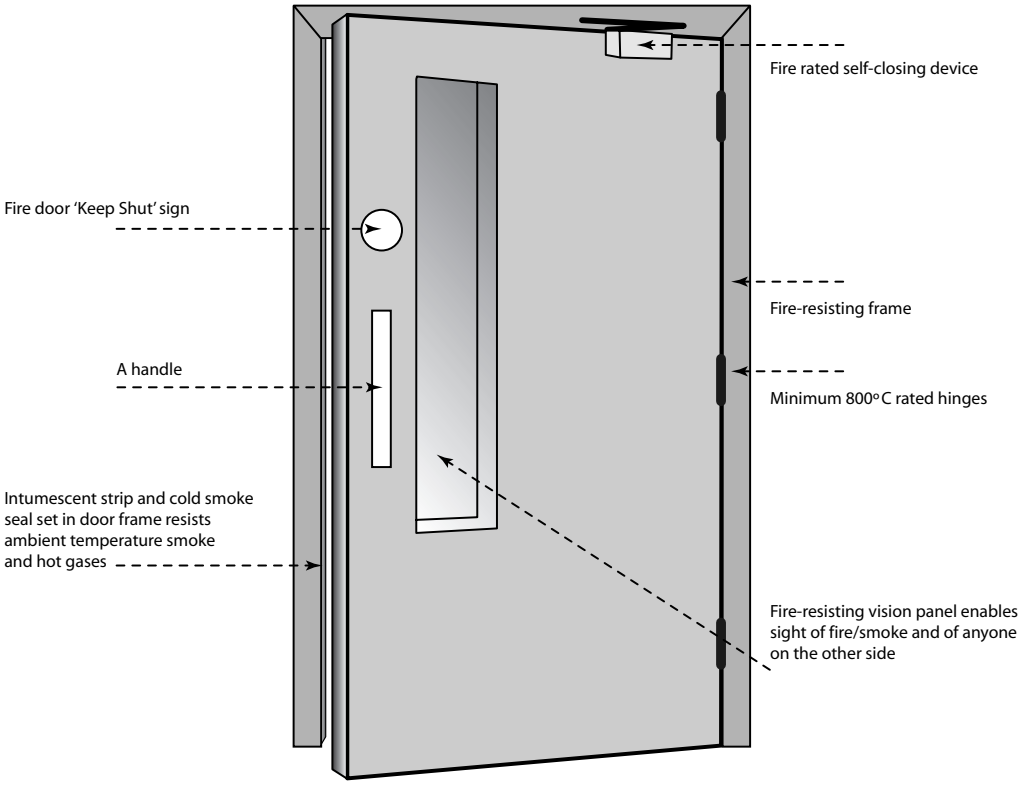
In the UK, the minimum standard generally used in most forms of fire-resisting construction is 30 minutes' resistance to the passage of flame and hot gases but 60-minute rated fire door sets are also available in both timber and metal.

It must be understood that it is of little use having a door leaf of the correct fire rating if the frame in which it is fitted, along with the hinges, are not equally rated. If this were the case, the frame and/or hinges would fail and cause the door to fall out. Hinges, therefore, should be rated to at least 800 degrees centigrade with three fitted in most cases. The resistance of the door frame, plus any furniture such as a self-closing device, must equal that of the door leaf, as must any glazing vision panel fitted.

Timber fire doors need a 2mm gap between the leaf and frame with a larger gap often required to allow the door to be fully closed when ambient temperature smoke seals are fitted. These are the brush-type strips on the door edges that resist the passage of smoke which is not of a high enough temperature to activate the intumescent strips. These are seals fitted either into the edge of the leaf or, more preferably, into the door frame that expand when they come into contact with hot gases, effectively sealing the door against the passage of fire products.

Where smoke seals are fitted, the suffix 'S' is used after the letters FD plus the time rating. Thus a 30-minute fire door fitted with separate smoke seals or those incorporated into the intumescent strip is categorised as FD30S.

A typical fire door and its components



The above illustrates a typical fire-resisting door set (door leaf and frame) with its associated components, which will have a minimum of 30 minutes' resistance to fire and smoke if properly installed, maintained and used.

Fire-resisting glazing

For years, glass known as Georgian wired has been used to provide glazing that will withstand fire for long enough to allow occupants to escape before giving way.

Wired glazing achieves this because the wire mesh within the glass helps dissipate the heat and also holds the glazing together. Today, clear glazing capable of withstanding very high temperatures is also available and both types are used in screens and partitions, interior windows alongside protected escape routes and as vision panels in fire doors. Such glazing must be installed by a competent person and the manufacturer's instructions must be fully adhered to for full fire-resistance performance.

All glazing used should conform to an approved standard and, if doubts exist, the responsible person/fire risk assessor should seek specialist advice.

Fire-resisting construction

In Chapter 5, details were provided in respect of fire separation and compartmentation, along with information on surface spread of flame. To that information, it is useful to add that the normal minimum of 30 minutes' fire resistance of walls can be obtained by using:

- a timber stud wall on nominal 72mm x 37mm studs at 600mm centres. These are faced with 12.5mm plasterboard and all of the joints on the board edges are filled and taped;
- non-load bearing channel section steel studs at 600mm centres and faced as for timber studs;
- a masonry wall of solid bricks of clay, brick earth, shale, concrete or calcium silicate with a 90mm minimum thickness on each leaf, provided the wall is totally imperforate.

Fire-resisting floors/ceilings

Also see 'Roof voids and basements' on page 160

It should be remembered that the fire resistance of a floor can be affected by the fire resistance of any ceiling which is positioned below it, as well as by the type of construction of the floor and its supports.

Ceilings which are of ornate decorative materials cannot easily be upgraded and, in 'heritage' buildings, specialist advice should be sought as necessary. In any event, the condition of the ceiling and floor above needs to be examined during a '*suitable and sufficient*' FRA, to check especially if there are any perforations which could allow smoke and hot gases to pass. A fire resistance of 30 minutes can be achieved on a tongue and grooved softwood timber floor by using boards of no less than 15mm after finishing and supported on timber joists of 37mm. On the ceiling below this, plasterboard of 12.5mm should be used, backed by timber supports and with all joints taped and filled, and any holes which pass service pipes or cables must be fully fire-stopped with a sealant approved for this purpose. Any uncertainties in respect of upgrading floors and ceilings should result in advice being obtained from a competent source, who will be able to advise on other methods of obtaining fire/smoke resistance, such as the use of hardboards and other materials laid over an imperforate timber floor.

Firefighter safety advice

Although the term 'relevant persons' within the Order does not include firefighters except in respect of certain functions, a responsible person – mindful of the litigious society in which we live – should consider the safety of any firefighters called to their premises in addition to the maintenance of any provisions required to protect firefighters

(see Article 38). During any familiarisation visits made by front-line fire crews to the premises, it would be to the benefit of their health and safety if they were informed of all matters relevant to floor/ceiling fire resistance. When fire crews are involved in fire-fighting and search and rescue operations, it assists their safety to know whether elements of construction have been strengthened or weakened in terms of fire resistance and helps in the effective saving of life and property.

In 1966, for example, a severe night-time fire in the basement of a Manhattan store burnt under a timber joisted and timber planked ground floor onto which concrete had been laid – a potentially lethal structural alteration that was unknown to the fire department. The fire caused the timber to burn through and, subsequently, the weakened concrete ground floor collapsed, plunging 12 New York City firefighters to their death in the inferno below.

Roof voids and basements

Where a premises has a substantially-sized roof void and/or basement, the responsible person should contact the local BCA to establish if there is any requirement under the building regulations to install cavity barriers in the roof void or to upgrade the basement ceiling/ground floor to achieve the requisite fire resistance.

Where a change of use has, or is to take place, say from a residential house into a retail shop, the fire resistance between the basement and ground floor may be required to have a greater amount than the usual 30 minutes (see 'Fire-resisting floors' above). There may need to be work carried out to upgrade the fire and smoke resistance of the ceiling/floor. Dependent on the type of occupancy, the FA may consider that automatic fire detection within the roof voids/basement may be a suitable compensating feature, especially if the property is a sleeping risk and/or one in which a large number of occupants are present.

Where basements or roof voids fall within the definition of workplace within the 2005 Order, the responsible person must assess the risk to persons and provide appropriate general fire precautions where necessary, including adequate means of escape and fire warning systems. During visits carried out by the fire and rescue authority for purposes of operational familiarisation, it will be advantageous for the responsible person to point out any smoke ventilation outlets and smoke extraction equipment that exist within the basement.

The additional pointers on means of escape in Chapter 8 in respect of stairways serving basements should be read in conjunction with this section.

Door self-closers and retention devices

It is essential that all fire doors **except** those on cupboards and other spaces which need to be kept locked shut after use, are fitted with adequate self-closing devices**,** capable of fully shutting the door from all angles.

Self-closers are essential elements of fire protection and can save lives by closing doors after a person has left a room or area in panic because of a fire within, and thus keep fire products away from escape routes.

Self-closing devices should be considered as part of the door hardware and have adequate levels of resistance to fire and heat. Some devices have a variable pressure control, useful for doors where the elderly or infirm are present, which facilitates the opening and closure of the door at a controlled speed. It is vital that doors with self-closers on escape routes are **never** wedged or propped open, or held open on cabin hooks, as this defeats their purpose as vital parts of the fire protection system.

The **only** approved method of holding such doors open is by the use of electro-magnetic devices which link into the premises' AFD/AFA installation, or by the use of stand-alone devices fitted to individual doors and activated by the sound of an adjacent fire alarm sounder. In premises where it is inconvenient to the circulation of persons, such as in hospitals, department stores etc, such devices are particularly useful as they permit circulation but close automatically if:

- the AFD/AFA system operates via a detector or a call point;
- the AFD/AFA system fails;
- the main electrical power fails.

Fire doors that utilise such devices must be fitted with a sign **Fire Door Keep Clear** and there must be no obstruction to present the doors shutting fully.

It is important to ensure that the siting of smoke detectors is such that no undue delay is occasioned in the actuation of the door closer.

All such doors should have a release device to enable manual operation and, in sleeping risks, such doors should be closed in the sleeping hours, which is also a good way of checking that a door has not become warped or dropped on its hinges which could prevent proper closure.

Stand-alone devices are usually battery operated and, on the detection of the fire alarm sounder, a floor plunger is lifted and a self-closer ensures that the door shuts.

Care has to be taken to change batteries and to ensure that the floor covering is such that there is no impedance to the doors closing.

Where a premises has only one escape stairway, or there are features within a premises which could detrimentally affect the means of escape, the advice of a fire safety specialist, plus that of the FA/BCA, should be obtained if it is proposed to install any automatic door retention device on doors protecting the escape route(s).

Although a device known as the rising butt hinge will allow a door to self-close, these are not recommended owing to their inability to fully shut a door from any angle.

Emergency and escape lighting

This exists to illuminate escape routes, fire exits, fire extinguishers and hose reels, manual call points of fire alarms, fire action notices, floor gradient changes, escape stairways, rooms with windows of $8m^2$ or less, lifts, corridor intersections, exits from basement rooms etc. In the smaller, lower risk premises, permanently charged torches and hand lamps are permitted as long as they are always available and readily accessible. Stand-alone, self-contained units with a battery power box and lights on top can be used in conjunction with escape route directional signs and door exit signs. These units are designed to switch on automatically should the mains power fail. Emergency lighting can be incorporated into the normal lights and is kept permanently charged and ready to activate on a mains or local circuit failure. Devices fitted should conform to current British/Euro standards and be installed and maintained by a competent person.

Emergency and escape lighting is critical to ensuring safe and effective means of escape and, as such, clearly falls within Articles 4(c) and 14(h) of the Order.

During a fire situation at night or in a windowless or blanked window building, it is absolutely essential, especially when large numbers of persons are escaping as from night clubs/discotheques, that escape routes and exits are readily visible throughout the evacuation period.

Fire signage and notices

Signs should comply with the Signs and Signals Regulations, which means that the sign must be pictographic. If it facilitates understanding, the BS-type of sign can include text, but text-only signs should **not** be used.

Weather and environment proof

Where signs are to be fitted out of doors, or inside in damp environments, the material from which the sign is made should not deteriorate and quickly render the sign useless.

Signs and notices should be securely fixed and a regular check kept on their condition, with immediate replacement being made if the sign is no longer legible or visible.

Fire emergency action notices

Fire action notices which set out the emergency action to be taken if a fire is discovered or the alarm sounds, should be fitted in prominent positions within premises. An ideal situation is next to a fire alarm manual call point.

The instructions on the notice must be clear and easily understandable and, where the information is written on the notice manually, a check should be made regularly to ensure that the wording has not become illegible.

Fire alarm manual call points

Manual call points should be indicated by a 'finger and flame' sign – as large as the surrounding surface will accommodate – to highlight the call point to persons not familiar with its location.

General safety signs and information

Bearing the safety of staff, firefighters and visitors to the premises in mind, appropriate safety signs should be fitted in strategic locations in respect of:

- **No Smoking**
- **Flammable Liquids No Smoking**
- **Danger Electrical Equipment Inside**
- **Danger Gas Cylinder Store**
- **Clear Up All Rubbish**
- **Fire Escape Route Keep Clear**

- plus any other signs and notices as appropriate. Where employees or other persons do not have English as their first language, consideration must be given to having signs and notices made up in other languages as necessary, ensuring that the instruction when interpreted is the same as that in English.

Signs adjacent to firefighting equipment are there to:

- indicate its presence prominently;
- indicate the type of fire on which it can be used;
- indicate how it is operated.

Fire Point signage

A **Fire Point** sign in red, as large as the wall surround will reasonably permit, is a good way of indicating the joint location of firefighting equipment, fire alarm manual call points and fire emergency action notices.

Rising mains

These are vertical steel pipes, usually of 100mm diameter, which rise from ground level to the top of buildings with an outlet on each floor that permits firefighters to connect firefighting hose.

Whereas a 'wet riser' is capable of being charged from its own supply, and is found in the taller tower blocks, the 'dry riser' has to be charged with water from a fire and rescue service pump, utilising water from a street hydrant. Responsible persons need to ensure that these mains are kept in a good state of repair and tested annually in line with Article 38 of the Order. It is important to ensure that the inlet box at ground level and any

drain valves are not obstructed or damaged, that fire appliances can get to within 18 metres of it, and that it is signposted clearly and kept locked when not in use.

There is an air valve at the top that **must** be included within the test.

Fire appliances: access and hard standing

On new buildings and existing buildings to which the relevant parts of the building regulations are applicable, adequate access and hard standing must be provided, together with arrangements to enable fire appliances to reverse. Responsible persons must ensure that access is available at all material times and allow the fire and rescue service to carry out exercises and familiarisation visits to ensure that there is no danger of access roads, manhole covers, grates etc collapsing under the appliance's weight in an emergency, or that there are any overhead obstructions such as electric cables or telephone wires which could cause a hazard or prevent effective firefighting and rescue operations from taking place.

Advice on firefighter safety in selected businesses

It would clearly be impractical to give advice to every business/commercial premises in respect of firefighter safety. Instead, this author has drawn on a wide personal experience in fire and rescue work and Fire Risk Assessments in a variety of premises, in order to extract some basic principles to assist responsible persons when deciding on the hazards to be drawn to firefighters' attention during their familiarisation visits.

NB: The Fire Services Act permits fire authorities to obtain information about premises which will be of assistance in emergency fire fighting and rescue situations.

The Order requires responsible persons to arrange contact and liaison with the emergency services also. It is suggested that the provision of information on the premises, relative to the circumstances of the case, will be of mutual benefit to occupant safety and fire service effectiveness in emergency scenarios and the examples given are designed to assist the responsible person in knowing what a competent fire service manager would want to know during an operational familiarisation visit.

Premises with basements

A responsible person should inform fire crews of:

- the dimensions of the basement;
- what the basement is used for;
- what combustibles are stored in the basement;

- what service pipes, cables, electricity intakes, heating boilers, gas meters and shut off valves exist;
- what entrances and exits exist, where they are located and if they can be readily opened from inside;
- whether the ceiling and floor above are fire-resisting and the materials used;
- whether there are smoke outlets from the basement and, if so, their type and location;
- whether any stairways from upper floors are fire separated by lobbies;
- whether any lifts go to the basement and if there is a fire-resisting lobby provided;
- whether there is a basement plan available;
- whether persons work in the basement or frequent it to deposit and collect materials;
- whether there is AFD/AFA within the basement and emergency lighting;
- whether there are fixed firefighting installations such as foam inlets;
- whether a Fire Risk Assessment has been carried out.

Department stores and other large retail outlets

A responsible person should inform fire crews of:

- the dimensions of the premises and number of floors;
- whether the premises are in single or multiple occupation and what use each floor is put to;
- whether a co-ordinated plan exists for fire emergency evacuation in multiple-occupation premises;
- the location of the basement, what hazards exist there and if accessed by staff for any reason;
- any alternative means of escape from the basement and whether or not it is usable at all material times;
- the location of stock rooms, mailrooms, despatch rooms, warehouse and any loading bays;
- the location of staff rooms and canteens and likely numbers of occupants at any one time;
- the location of principal fire exits and escape stairs;
- whether there is an accommodation staircase (one used for general circulation but not for normal means of escape exiting);
- fire protection features such as sprinklers, rising mains, escalator shutters, smoke exhaust systems;

- the location of any roller steel shutter fire doors and the mode of operation (AFD link, fusible link or manual) plus location of fire pass doors to allow occupants to escape if fire shutters drop;
- whether flammables (such as white spirit, fire lighters, adhesives) are sold and where they are located;
- whether all staff have received fire safety training and if Fire Wardens have been appointed and trained;
- the location of lifts and lift shafts, both goods and passenger, and if closed or unenclosed;
- the location of the AFD/AFA panel and of any repeater or mimic panels at the exterior;
- the type of fire alarm (ie bell, siren, voice alarm and is there a staff alarm before a main alarm);
- the presence of any security features such as barred windows, time delay door locks etc;
- access points for fire appliances;
- the location of any rising mains/ fire lifts/firefighting lobbies;
- the evacuation strategy, ie single stage, phased etc;
- the location of assembly points to enable staff roll calls to be made;
- whether a Fire Risk Assessment has been carried out.

Light to medium factories/workshops

These can cover a diverse range of premises with a comprehensive range of hazards, including printing works, clothing manufacturers, reproduction furniture manufacturers, engineering works, timber and veneer suppliers, motor repairers, tyre and exhaust centres and railway rolling stock repair sheds. Many such premises share common features and the examples here can be used as a general template in respect of information of value to fire crews during fire emergencies.

In **printing shops/engineering workshops**, a responsible person should inform fire crews of:

- the premises' dimensions and layout features;
- the danger if presses or machinery are left running in machine rooms that are smoke-filled;
- flammable solvents in printing machine rooms and store rooms and lubricating oils for machinery;
- combustible cotton waste and cleaning cloths in machine rooms and stores;
- tall stacks of palletised paper and heavy paper reels in printing shops and loading bays;

- guillotine machinery and rotating drills in printing shops, lathes and grinders in engineering plants;
- varnishing equipment, liquid varnish and flammable solvents in printing and ancillary trades;
- the type of printing process (lithography, photogravure, silk screen, letterpress);
- the presence of volatile vapour extraction and recovery plant and ducting;
- the location of any lift shafts;
- the location of any AFD/AFA panel;
- the location of fire-separating shutters and mode of operation;
- the location of any sprinkler systems and main valves;
- whether staff have received fire safety/Fire Warden training;
- the location of exits, escape stairs and assembly points;
- whether a Fire Risk Assessment has been carried out.

In **clothing manufacturers/personal accessory producers** (eg handbags, umbrellas, suitcases), a responsible person should inform fire crews of:

- the premises' dimensions and layout features including number of floors and goods produced on each level;
- whether the premises is in single or multiple occupation and, where multiple, if a co-ordinated exit strategy exists;
- store rooms and work rooms full of combustible cloth, leather, plastics and paper patterns;
- chutes linking floors that could spread fire and smoke rapidly;
- electric sewing machines, cutting and overlocking machines and electric irons;
- the location of any external fire escape staircases and if protected from fire and smoke;
- the location of internal fire exits and escape routes and if protected or unprotected;
- the location of lifts and lift shafts, whether any lifts are unenclosed and if they are ventilated at the lift shaft head;
- the location of staff rooms, restaurant, kitchen and maximum occupancies at any one time;
- the location of packaging and despatch areas;
- the location of AFD/AFA system control panels;
- the location of sprinkler valve groups and of any fire shutters and dampers;
- the location of assembly points.

In **reproduction and contemporary furniture manufacture**, a responsible person should inform fire crews of:

- the premises' dimensions and layout features including number of floors and the goods produced on each level;
- whether premises are in single or multiple occupation and, where multiple, if a co-ordinated exit strategy exists;
- the location of any cellulose spraying booths and cellulose stores;
- the location of timber, board, textile and leather or plastic raw material storage areas;
- the location of electric saws, planing machines, lathes, sawdust extraction cyclones and ducting;
- the location of ducting access points to enable investigations of fire spread;
- the number of fire safety-trained staff including training in fire extinguisher usage;
- the location of any basements or roof voids;
- the location of any sprinklers and their valve groups plus fire shutters and dampers;
- alternative exits and access points to premises;
- the location of the AFD/AFA panel;
- the location of assembly points;
- whether a Fire Risk Assessment has been carried out.

Large storage buildings such as warehouses

This category of premises can comprise a very high fire risk in terms of the potential for fire spread, especially if the cubic capacity of the premises is below that for which the building regulations have called for a sprinkler installation. Although the numbers of occupants may be low relative to the premises' size, it is still a workplace in those parts that fall within the definition of workplace given in the Order.

A responsible person should inform fire crews of:

- the dimensions of the premises and number of floors, staff numbers and their location;
- the construction of the premises (cast iron columns supporting steel or timber joists for example);
- whether premises are in single or multiple occupation and, where multiple, if a co-ordinated exit strategy exists;
- whether a storage warehouse is, or has ever been, a bonded warehouse with strong security features such as barred windows and steel doors that can impede escape and firefighter access;
- the use to which the premises are put and the combustibility of materials produced, used or stored;

- the amount of materials stored and if they would absorb water during firefighting (grain, jute etc);
- the location of sprinklers and deluge systems and location of control valves;
- the existence of AFD/AFA installations and if audible throughout the building;
- the location of the main and any repeater mimic fire alarm panels;
- the location of steel fire shutters and mode of actuation (ie fusible link, AFD link, manual);
- the location of rising mains;
- the location and type of lifts and if enclosed or unenclosed;
- the location of escape routes and exits;
- the position of staircases, if made of stone or timber and if fire protected by enclosures;
- the location of all entrances and exits to the building;
- access roads for fire appliances and appropriate hard standing;
- whether staff are fire safety-trained and if there is a trained works firefighting team;
- any other potential hazards to fire crews;
- whether a Fire Risk Assessment has been carried out.

Sleeping risk premises

Premises in which people sleep such as hospitals and residential care premises, hotels and guest houses, hostels, boarding schools, universities and colleges will always fall within the high risk category. When sleeping, we are oblivious to the hazards of fire and smoke and this risk is compounded in those premises where occupants are incapacitated due to illness, injury, physical and/or mental impairment and the infirmities accompanying old age.

Nothing in this section is intended to supersede any specialist requirements to be found in the various fire and safety documentation issued and available from Central Government or any of its departments relative to the category of premises in question. Those persons caught by the definition of responsible person **must** make themselves thoroughly familiar with such publications and seek the advice of a competent authority or competent specialist should any uncertainties exist.

The following information is provided to augment such advice and, in the case of those premises previously within the scope of the repealed Fire Precautions Act such as hotels and guest houses, is provided to illustrate how relevant information can be key to the safety of occupants and fire and rescue service personnel.

A responsible person should therefore inform fire crews of:

- the dimensions of the premises, the number of floors and, in the case of hotels and guest houses, the number and location of bedrooms and the maximum

number of persons for whom sleeping accommodation is provided (NB: The term 'sleeping accommodation' should not only include beds and whether those are single, double or triple but should also include sofas and temporary beds where these are used);

- in the case of hospitals and residential care premises, the maximum number of patients/residents and where they are located within the building(s);
- in the case of hostels, boarding schools, colleges etc, the maximum number of people that occupy the premises by day and night and where rooms and dormitories are located;
- for all premises, the type of fire detection and alarm installation and the location of indicator panels;
- the number of supervisory staff on duty at any one time and if all have received current fire safety emergency training;
- the evacuation strategy, ie single stage, multi-stage or phased and the location of escape stairs – both internal and external, fire exits and assembly points;
- the existence of stairlifts and if exit for ambulant persons could be impeded;
- the existence of basements and the use to which they are put;
- the existence of air conditioning and kitchen fume extraction ducting and where located;
- in the case of hospitals and nursing homes, the location of medical gas cylinders and/or piped supplies;
- the location of bedding and general stores and the existence of highly flammable substances;
- the location of pathogenic waste disposal areas;
- the location of lift shafts, dumb waiter shafts, bedding chutes to laundries etc;
- the location of boiler rooms and the fuel used for heating;
- the location of kitchens and the fire separation existing between other parts of the premises;
- the existence of up-to-date plans and floor layouts of the premises plus details of fire and smoke separation constructions;
- the type of fire extinguishing apparatus provided;
- the existence of fire sprinklers and their associated control valves;
- the existence of foam inlets to oil-fired boiler rooms;
- the location of the main electrical and gas supply controls;
- the access for fire service appliances;
- the location of all ways in and out of the building to facilitate fire and rescue operations;
- the location of fire hydrants and rising fire mains;

- the details of nominated Fire Wardens and supervisors so as to ensure effective liaison with the fire service during emergencies;
- any other information that the responsible person considers should be made known;
- whether a Fire Risk Assessment has been carried out.

Summary

The above examples are provided to illustrate the type of information that would be of use to operational fire and rescue personnel if called to a fire emergency within such premises. The same information should be conveyed to the fire service for any other type of business or storage premises.

Responsible persons can use these examples as a guide when deciding on the information to be conveyed to fire crews when arranging contacts with the emergency services as required by the Order. Any competent operational fire service manager will welcome a neatly printed information sheet which sets out the type of information described above. If a scale plan can also be provided of key aspects, then so much the better. As already stated, although the provision of such information is not a legal requirement within the Order, arranging external contacts with the emergency services is (Article 13(3)(c)), *'where necessary'*.

It is advised that it is better to give more information than less, and responsible persons should not be inhibited by assuming that the fire and rescue service will consider the information excessive. From any information received, the fire and rescue services will extract the details that they consider significant, and their own policies in respect of both emergency attendance and enforcement inspections will be assisted by the data provided.

In addition, the responsible person will be placed in a better light, should a future fire emergency at a premises result in injury to occupants or fire and rescue staff from a hazard that was pointed out during the familiarisation visit.

It will be advantageous, therefore, for the responsible person to place on file an exact copy of the information provided to the fire and rescue service in this regard and to retain it indefinitely. For all premises, the responsible person must advise if a Fire Risk Assessment has been carried out and recorded in line with the requirements of the Order.

Appendix 2

The definition of competence and seeking specialist advice from an external source

The definition of competence

Within the FS Order 2005, competence is described as someone who has: *'sufficient training and experience or knowledge and other qualities to enable him properly to assist in undertaking the preventive and protective measures'* (Article 18(5)).

Within the Management of Health and Safety at Work Regulations, competence is described thus: *'A person shall be regarded as competent… where he has sufficient training and experience or knowledge and other qualities to enable him properly to assist in undertaking the measures referred to in paragraph (1)'.*

These descriptions are virtually the same and again, although it is only the courts who can interpret exactly what the framers of the legislation intended, it will be of value to have a closer look at what the description is actually trying to say.

The first thing to be clear about is that an employer/responsible person has to always appoint someone from inside the organisation, provided that they can be classified as 'competent', **in preference** to seeking assistance from outside. Clearly, if a business or organisation employs a full-time fire and safety officer, qualified by written examination and a solid, checkable track record of practical involvement in the business of fire prevention and protection, there would appear to be no difficulties in describing such a person as competent.

However, who does the responsible person select if no such individuals exist within the organisation, and how precise and relevant is the description of what can be used to define competence? It needs to be remembered very clearly that a responsible person could find themselves, at some future date, standing in a court following a fatal fire situation, and that a weakness in the competence of those selected to assist could be shown

to be a significant causal factor in the life lost. However, it would appear from the Order that the responsible person bears an unconditional responsibility for compliance and that the defence in a court of law of trying to lay blame upon the competent person by reason of any act or default on their part will not be permitted. It is clear from the Order that it is the duty of the responsible person to satisfy himself as to the competence of any person appointed to assist whether from within or without the organisation.

Although the Order does not make any specific reference to qualifications, it would seem logical to assume that if someone has spent a number of years practically involved in the evaluation of fire safety hazard and risk, augmented by gaining technical diplomas and by attending and qualifying on lengthy specialist fire safety training courses, they ought to be safely regarded as competent. Not only do such persons have '*sufficient training and experience*'**,** but they also ought to have the *'knowledge and other qualities'*, which the Order vaguely refers to.

With regard to other persons who do not have such a background, it is not clear as to what is expected of them.

Clearly, there are a large number of non-domestic premises where it would be untrue to suggest that a responsible person – even if lacking in fire safety *'training and experience'*,'*knowledge and other qualities'* (whatever they are), could not effectively carry out a FRA in a small low to normal risk premises.

Provided that adequate clear and understandable guidance is provided, the owner/employer of such a premises should be able to produce a situation in which **all** the requirements of the Order have been complied with. Whether such persons will have the inclination or the time in a busy business to self-comply is a matter for them and the enforcing authorities.

Once we move on, however, to the more hazardous/larger premises, and especially those which are sleeping risks, we move into a completely different arena where even seasoned fire safety practitioners often disagree on the best way of dealing with a safety issue.

Given that the responsible person cannot use as a defence, if charged, the fact that the 'competent person' appointed turned out not to be competent, it will be very important for the same responsible person/employer/owner to be guided as to the best way of ensuring that those they appoint are indeed competent to assist.

It now seems clear to this author that a key skill needed by responsible persons is to know at what stage, or on which item of general fire protection, they ought to be seeking competent specialist advice and assistance.

With this in mind, the following pointers are provided to give guidance as to when to seek such input – provided of course that the necessary competence does not already reside within the organisation.

Do not lose sight of the fact that it is the responsible person(s) who are unconditionally responsible for self-complying with the Order.

Low-risk premises/no abnormal hazards

The responsible person should not normally need to seek specialist advice if the premises are:

- single-storey and of limited dimensions and floor area;
- single occupancy and not a sleeping risk;
- constructed to recent building regulation requirements;
- low fire hazard in terms of processes, substances and materials and with able-bodied occupants;
- of low numbers of occupants (employees and other persons).

The responsible person must also:

- carry out the '*suitable and sufficient*' FRA in the manner shown in Chapter 4 and in Appendix 8;
- record significant findings if five or more persons are employed or if the premises has a licence or Alterations Notice;
- evaluate the risk as set out in Chapter 4 and Appendix 8.

If hazards such as petroleum, paraffin, diesel oil, gas cylinders, explosives, adhesives or solvents exist, then specialist advice must be obtained and the local council and the fire authority contacted in case there are any licensing requirements for petroleum or other highly flammable substances.

If there are no serious risk hazards, then the responsible person must decide if the following measures are necessary and appropriate:

- Improved measures to prevent fires (good housekeeping, regular checks of fire hazards etc).
- Improved measures to reduce fire spread (new self-closing fire door(s) and partitions etc).
- Improved MOE (additional exit(s), enlarge existing exit(s) etc).
- Improved means of ensuring escape routes and exits can be used easily (housekeeping, exit signs, emergency lighting unit etc).
- New or additional fire extinguisher(s) relative to the risk (BS approved types) and instruction signs.
- Manually operated fire alarm (rotary bell, hand siren, human voice) or simple electrical alarm with well-sited call points.
- Automatic fire detection plus manual call points, electrical alarm with battery back up. In the latter two cases, advice should be obtained from a competent fire alarm installer and guidance literature will point the responsible person in the right direction as to the type of detection/alarm system needed.
- Improved information to employees in respect of fire emergencies (oral instructions and fire action notices) or provide proper staff training in fire safety from

a competent person using the bullet points within this section to ensure that the appropriate level of instruction is provided, including basic use of firefighting equipment.

The responsible person must also ensure that:

- **all** facilities and equipment are regularly maintained and records retained of all training, fire drills, weekly alarm tests, extinguisher tests and servicing etc;
- the FRA is reviewed in line with Article 9 of the Order;

- **no chances are taken with the fire safety of any person and, if any aspect of the self-compliance is proving to be outside of their competence, or any aspect of any guidance literature or information is not understood, then specialist advice must be obtained forthwith.**

Normal to high-risk premises

Factors that are likely to influence the decision of any responsible person to seek specialist advice and assistance in premises of normal to high risk include:

- the degree of fire hazard inherent in the use to which the premises are put, especially where highly flammable substances are manufactured, used or stored, or where the premises are a sleeping risk;
- the impracticability or impossibility of removing or reducing such hazards and risks;
- the dimensions of the building, number of floors and large or complex layout;
- the fact that it is a high-rise building or has floors more than nine metres above ground;
- uncertainties as to the MOE being adequate relative to the hazards, risk levels and occupancy numbers, occupants' locations and the category of occupants;
- the potential for complications in co-ordinating occupant safety in buildings which are in multiple occupation;
- uncertainties as to the perceived need for automatic fire detection and fire warning arrangements, how much detector coverage is required within the premises, or whether a simple, less expensive, installation would be appropriate relative to the life risk existing or proposed;
- uncertainties as to the need for fixed firefighting installations such as rising mains, sprinklers, total flooding etc;
- uncertainties as to the degree of fire-resisting separation and compartmentation required to comply with the general fire precautions requirements of the Order;
- uncertainties as to whether employees can meet the criteria for competence as described within the Order;
- uncertainties as to the level of fire safety training required relative to the risk.

Seeking specialist advice

There are undoubtedly a large number of buildings and premises in which, according to the existing or proposed fire hazard and risk, responsible persons – using available guidance information – can self-comply with the requirements of the 2005 Order in a way which should satisfy the enforcing authority.

The contents of this and other guidance manuals, along with that provided by Central Government in its eleven site and risk specific documents, should be of assistance in this self-determination process.

However, there will also be a large number of buildings and premises in which difficulties will be encountered in whole or in part with regard to satisfactorily complying with the requirements of the Order, and the above list provides areas in which difficulties are likely to be encountered. What this manual helps to do, is to leave no doubt that there comes a point at which it would be very difficult for a responsible person, uncertain as to which fire safety provisions to implement and who failed to seek specialist advice, to prove that they *'took all reasonable precautions and exercised all due diligence to avoid the commission of such an offence'* (Article 33 2005 Order).

It is the difficulty in making a judgement as to what constitutes '*reasonable precautions*' – something that can tax even the most experienced fire safety practitioner – that will create the biggest burden on those who are required to comply with the Order in the more technically involved situations.

The Order requires the responsible person to appoint one or more competent persons to assist in undertaking the preventive and protective measures required by the Order. In making this appointment, it is the sole responsibility of the responsible person to ensure that whoever is appointed is competent, and to remember that any such appointment does not absolve the responsible person from their responsibilities under the Order. Ultimately, therefore, those who are caught by the definition of responsible person need to be in possession of as much information as is practicable in respect of what the 2005 Order requires. Such technical information will be of value to the responsible person as it can be used as a technical prompt and help decipher any technical advice provided by a competent fire safety specialist. In short, by absorbing the information set out, any appointed competent specialist will not seem to be speaking another language!

The FS Order 2005 has spawned a good deal of advertisements from persons offering their services as fire risk assessors, fire safety consultants and fire safety trainers. Responsible persons wishing to obtain the services of a genuine fire safety specialist need to be critical in their appraisal of any advertisement, and thoroughly satisfy themselves as to the experience, competence and qualifications advertised.

A genuine professional fire safety advisor should be happy to forward proof of any professional qualifications held and of their current public indemnity insurance certificate, and provide verification of the types of instructions successfully carried out for other clients if requested.

A fully competent, qualified and competent fire safety advisor will display a conscientiousness for his client about the professional input made as if he was the responsible person himself.

Appendix 3

Effective management of fire safety

A chain of management

Without a clear and seamless supervisory chain in respect of fire safety, the potential for preventive and protective shortfalls increases.

This chain must be such that any person with managerial or individual responsibilities for fire safety is crystal clear as to their own levels of both responsibility and accountability to the fire and safety law.

Any lack of clarity can manifest itself in a confusing state of affairs in which no one is sure who is supposed to be doing what. At best, work is duplicated and, at worst, nothing at all is done because one person thinks the other was responsible and vice versa. Such confusion has often been found to be a causal factor in major disasters.

It is clear from the FS Order 2005 that the responsible person is usually, but not always, the employer. It is also clear that the responsibility for fire safety can rest with other persons as Article 5(3) states.

Article 32(8) reminds us that a body corporate can also be charged with offences under this Order, and it follows that a clear management chain needs to be in place to ensure that all parties are aware of the overall corporate and individual responsibilities held.

A suggested hierarchy is set out below.

The hierarchy

Chief Executive/board of directors

The above are responsible for determining all policies in respect of self-complying with the Regulatory Reform (Fire Safety) Order 2005 and for agreeing tenders for work and

allocating appropriate funds to ensure reasonably practicable fire safety provisions are implemented. One or all could be caught by the definition of 'responsible person' under the Order.

Fire Safety Manager

Holds day-to-day responsibility for ensuring that all corporate policies are implemented and monitored. The Fire Safety Manager will be a responsible person by virtue of Article 5(3) of the Order and reports to the Chief Executive/Director/Senior Manager.

Individual heads of department

Heads of department will hold day-to-day responsibility for all aspects of fire safety within their area of control and will report to the Fire Safety Manager. Dependent upon the extent of their control, they might be caught by the definition 'responsible person' in Article 5(3).

Deputy head of department

Carries out all of the fire safety duties in the absence of the head of department and may be a Fire Warden in emergencies. Would normally report to the departmental head or to the Fire Safety Manager when the head is absent. Possibly a responsible person under Article 5(3) when the head is absent.

Other staff and individual employees

All members of staff have a duty to co-operate to assist responsible person(s) in complying with the 2005 Order. Staff with any supervisory control for fire safety may be caught by Article 5(3).

A management hierarchy like the above must be reinforced by a clear **written policy** as to the specific fire safety responsibilities of each link in the chain. This should be **in addition** to any emergency plans required by Health and Safety at Work legislation and by the FS Order 2005. The ultimate objective of such a clearly delineated management chain is the safeguarding of all occupants by way of a developed fire safety culture in which each person from the most senior to the most junior works towards this common goal.

Decision making

Corporate level decisions

A corporate or senior management board will be making decisions on:

- achieving compliance with all of the requirements of the Order in ways that are reasonably practicable, relevant to the findings of '*suitable and sufficient*' FRAs;

- who is to carry out FRAs, ie competent persons within the organisation or without;
- their satisfaction as to the competence of any external fire safety specialist appointed;
- the level of general fire precautions to be carried out so as to comply with the Order;
- the type of AFD/AFA system or fixed firefighting installation and the extent of its coverage;
- whether to seek third party accreditation in respect of complex fire safety installations such as extensive addressable AFD/AFA, sprinkler and deluge systems;
- liaison with insurers in respect of any fire safety provisions proposed or existing;
- overall corporate fire safety policies in respect of:
  - staff fire safety training and instruction
  - evacuation routines
  - fire drills
  - liaison with the fire and rescue service
  - liaison and consultation with the building control authorities
  - liaison with the Health and Safety Executive
  - selecting contractors following requests for tenders for fire safety improvement works
  - agreeing the expenditure budget for fire safety work.

Decisions and involvements of the Fire Safety Manager

These will be the outcomes of what has come down from the Chief Executive/corporate board, or up from the departmental heads or individual employees in respect of fire safety. They are likely to include:

- dissemination of policy decisions to all parts of the organisation via memos/notice board/email;
- liaison with safety agency officers and with contractors carrying out fire safety improvements;
- managing the day-to-day fire safety during the potentially hazardous period of structural work;
- managing every aspect of periodic checks of all fire protection equipment and installations;
- keeping a close watch on any changes that could require the FRA to be reviewed;
- liaising with any fire safety specialist appointed from outside the organization;
- initiating local action to remedy any fire safety shortfalls reported by any member of staff;

- arranging the periodic fire safety training including liaising with trainers and lecturers;
- co-ordinating the requirements of the Order to make contact with the fire and rescue service;
- Being vigilant to any serious shortfall in fire safety and ensuring it is remedied promptly;
- liaising frequently with the Chief Executive and other line managers;
- keeping all relevant fire safety records so as to have proof of compliance with the Order.

Fire safety involvement of the departmental head

A departmental head is likely to be involved by:

- ensuring that all staff under their control comply with any fire safety policy directives;
- ensuring that all aspects of fire safety and fire protection within their department are in order;
- ensuring that any fire safety shortfalls personally observed or drawn to their attention are passed to the Fire Safety Manager forthwith and a record kept on a fire safety action file;
- ensuring that all members of staff respond promptly to weekly fire drills, that the nearest fire exits are used and that all staff report to the assembly point;
- ensuring that any person nominated as a Fire Warden carries out their checking duties diligently;
- suggesting improvements to the Chief Executive via the Fire Safety Manager in respect of fire safety;
- ensuring that all newcomers are made fully aware of the emergency fire routines.

Individual employees

Every employee has a duty in law to co-operate and help the responsible person to effectively discharge their duties under the Order. Involvement in fire safety is likely to include:

- attending fire safety training sessions on induction and periodically;
- ensuring that fire safety prompt cards are referred to often;
- ensuring that they do not cause anyone risk of harm from fire by their own acts or omissions;
- reporting any shortfall observed in fire safety to the line manager/Fire Safety Manager;
- ensuring that all fire action notices are adhered to in a fire emergency;

- reporting any fire hazards observed to the line manager/Fire Safety Manager;
- noting and keeping familiar with the location of all fire exits and escape routes;
- noting and keeping familiar with the location of all firefighting equipment and fire alarm call points;
- responding promptly on hearing the fire alarm and reporting promptly to the assembly point;
- ensuring that sound fire preventive policies are followed at all times.

Fire prevention

The earlier fire safety legislation described in previous chapters focused on ensuring that occupants of buildings could safely escape from any fire that occurred and, although fire prevention featured, it was part of a general goodwill advice process rather than being an inherent element of the fire law.

The FS Order 2005 remedies this by making prevention as important as protection.

In fact, fire prevention is arguably more important than protection because if fires never started, protection would be unnecessary.

Unfortunately, as any emergency service employee will state, emergencies will happen wherever humans congregate. Accident, error, mistake, mechanical and electrical malfunction and malicious ignition by arsonists are but a few reasons why protection must be adequate at all material times where human life is concerned.

The fact that emergencies continue to occur has to be viewed in the light of how many more emergencies, deaths and injuries there would be if no fire prevention education and information were given. Well before the 2004 Fire Services Act placed a legal duty on fire authorities to engage in community safety, the UK fire and rescue service had been massively involved in fire prevention education. Without such dedicated input, the number of domestic fire deaths would not have declined but, undoubtedly, would have kept on rising as it is part of the human condition to think that fires only involve others. Prevention of fire is therefore vital and the bullet points set out below are drawn from intense practical involvement in witnessing the aftermath of fires in a wide range of premises. Fire safety training should comprehensively cover the vital importance of fire prevention and fire hazard spotting.

Common causes of fire

The following are some of the more common causes of fire to which the fire and rescue authorities respond to annually. By being aware of these, it is easier to know how to prevent fires in the first place. Please note that this is not an exhaustive list.

- Electrical wiring and circuitry faults due to:
  - incompetent installations
  - incorrectly rated fuses
  - worn insulation to cables
  - damaged cables
- Electrical causes due to:
  - overloaded power points using multi-adaptors
  - overheated electric motors due to electro/mechanical malfunctions
  - illegal extraction of electricity using conductive bridging cables
  - high intensity halogen lamps placed too close to combustibles
  - static electricity
- Careless discarding of smokers' materials igniting combustibles
- Fires due to cooking activities such as:
  - the overheating of cooking oil that overflows onto gas or electric ignition source
  - a chip-pan fire, exacerbated by trying to use water to extinguish
  - a fire on the stove of a commercial kitchen that spreads via extraction ducting to other parts of the premises
  - leaving combustibles next to hot stoves and cooking rings
  - curtains blowing onto cooking rings and flames
- A naked flame such as a gas boiler pilot light igniting adhesive vapours during floor tiling
- Children playing with lighted matches and disposable cigarette lighters
- Covering convector heaters or placing combustibles too close to heaters
- Domestic pets knocking over liquid fuel heaters
- Clothes airing too close to a heat source
- Candles placed too close to combustibles or being knocked or blown over
- Christmas tree decorative lights
- Fireworks

General housekeeping

- Remove combustible rubbish daily and place it in secure closed containers away from buildings.
- Never allow combustibles to obstruct escape routes and fire exits, including on the exterior side.
- In sleeping risks, do not stack spare mattresses in corridors or in rooms adjoining escape routes.
- Never store gas heater cylinders in escape routes but place them in secure locked exterior compounds.
- Do not allow notice boards to become overfilled and preferably place notices behind glass covers.
- Clear all combustible rubbish from around electric motors, dental surgery compressors etc.
- In printing works and other workplaces, remove oily/inky cloths and rags regularly to avoid the risk of spontaneous combustion fires.
- Clean all build up of dust from electrical cables and power sockets to avoid ignition risks.
- Ensure that any portable or wall-mounted heaters are not used to hang clothing or as a storage place for other combustibles.
- Keep stock and store rooms tidy to prevent the build up of cardboard and paper waste that, on ignition, can produce dense smoke.
- Do not allow indiscriminate use of attics, roof voids, basements and undercrofts as dumping grounds for all manner of combustibles, often stacked next to electrical circuitry, heating pipes, halogen light bulbs, gas central heating boilers and fume ducting.
- Ensure that all electrical, gas, solid fuel and oil burning apparatus and supply cables, pipes and control equipment are subject to regular servicing and maintenance schedules.
- Do not overload power sockets by using too many adaptors and plugs.
- Ensure that all occupants and staff closely monitor the No Smoking law for adherence.

Fire prevention in kitchens

Kitchens are inherently high risk on account of the heat-producing equipment and because of the combustibility of cooking oils and fats used or stored adjacent. To achieve effective fire safety, the responsible person must:

- ensure that all kitchen and catering staff are regularly fire safety-trained;
- ensure that all cooking apparatus is subject to regular cleaning and safety maintenance;

- ensure that all filters in fume ducting are regularly changed to prevent a build up of combustible solids that can spread fire throughout the premises via the extraction ducting;
- ensure that where cooking oils are used in deep fat fryers, thermo cut-outs are used to prevent overheating and fire;
- ensure that, at the end of cooking, the individual cooker controls are shut off as well as the main wall control to avoid problems with deep-fat fryers, particularly if left unattended with oil still present;
- ensure that no combustibles are kept or stored next to hot cooking equipment;
- ensure that fire safety training includes instruction on the use of suitable fire extinguishers and fire blankets.

Fire prevention in storage areas

Because store and stock rooms can contain large amounts of combustibles, the management of fire prevention is vital. Fire products from what can be a lethal mix of cardboard, paper, plastics, adhesives, solvents, textiles, flammable liquids and gases to name but a few can rapidly cause death and injury.

Responsible persons should ensure that:

- flammable liquids should be segregated from other combustibles and kept in approved containers;
- storage of highly flammables should conform to any licensing requirements if applicable;
- combustible gas cylinders of different kinds must not be mixed together;
- combustible gas cylinders should be stored in a purpose-built exterior compound and conform to any licensing requirements or Codes of Practice applicable;
- store rooms should have stock on racking or shelving in an orderly fashion as loose, untidy items are easier to ignite (see Appendix 4 'Arson');
- no portable heaters should be covered or positioned close to combustibles to prevent fires being caused by conduction or radiation;
- combustibles must be cleared frequently and placed outside in secure containers with shuttable lids, at least eight metres from buildings to avoid fire products affecting adjacent premises;
- in printing works/paper stores, ignition sources must be kept away from packing paper on parcels of sheeted paper and from the paper used on the outside of paper reels;
- all electrical wiring and circuitry should be regularly serviced and tested for safety;
- no lighting equipment, especially that with high temperature halogen bulbs, should be placed where it becomes an ignition source;
- a strict No Smoking policy should be enforced at all times;

- care must be taken to ensure that hot exhausts of any internal combustion powered forklift or other vehicle do not become an ignition source within store rooms;
- any hot cutting or operations likely to produce sparks must be made the subject of a permit-to-work system.

Fire prevention when building work is taking place

Premises are at their most vulnerable when internal building work or substantial alterations are taking place. This is because fire-resisting doors, walls and other parts of a compartment may be removed as the alterations get underway. In addition, large amounts of combustible materials may be scattered about the work area, which can include adhesives used to secure flooring and wall coverings. The vapours from adhesives are invariably flammable and can be heavier than air. If a source of ignition is adjacent – such as the pilot light on a central heating boiler or an electrical spark – a fire can quickly ensue, and fire products spread on account of the fire-resisting structures being absent in the area of the work.

The responsible person should ensure that the following is carried out:

- Before any alterations work begins, the FRA should be revisited to evaluate what measures need to be taken to safeguard occupants. If an Alterations Notice issued by the enforcing authority is in force, then the enforcing authority must be consulted before any work begins.
- Contractors are required to carry out a FRA in line with the Construction Directives and implement appropriate safeguards before work begins. Any such safeguards should be discussed with a responsible person or his Fire Safety Manager where one exists.
- Where structural alterations are likely to affect the existing MOE arrangements, the building control authority must be notified in advance of the work commencing so as to confirm what building regulations might be applicable.
- Where sprinkler systems installed as part of the MOE are to be shut down, or part of the system isolated, the fire authority should be consulted before the work begins.
- Building materials should be stored in a secure area outside the premises and any gas cylinders used in hot cutting or welding operations should be segregated from other combustibles and moved outside the premises at the end of the day.
- A permit-to-work system should be put into use where any hot cutting, welding or spark producing grinding is to take place, and this must be strictly monitored by a competent member of staff.
- Employees of external contractors must be made fully aware of the fire emergency action routines within the premises and the identity of the nominated Fire Wardens.

- Where AFD/AFA systems are installed, then consideration should be given to the temporary fitting of dust caps over smoke detector heads to prevent false alarms caused by the detector being actuated by dust and fumes from hot work.

NB: If detectors are covered in this way, it is essential that a regular fire patrol takes place in the work area so as to be alert to fire and the need to manually operate the alarm. Dust covers must be removed as soon as the work is finished and at the end of every working day. This advice is critical in sleeping risk premises.

- It is imperative that a check is made at the end of every day whilst the work is in progress of all relevant parts of the premises to ensure that no fire hazards or ignition sources remain. This is especially the case in roof voids and basements etc, where fire can grow undetected.
- Should the amount of work taking place be such that substantial amounts of fire compartmentation are to be dismantled, then those parts of the premises should be vacated and the areas sealed off to persons and not occupied until after the works are completed and all fire protection measures reinstated.
- Adequate numbers of portable fire extinguishers, appropriate to the risks, must be provided within and at the entrances to the work area for the entire time that the alterations are taking place.
- It must be ensured that neither construction materials nor contractors' vehicles block any fire exits, cover any internal fire hydrants or block any fire and rescue service access points.

Records and record-keeping of fire safety matters

The existence of accurate and time-chronicled records is essential to demonstrate to the enforcing authority that all **reasonable precautions** and all **due diligence** were taken in complying with the requirements of the Order.

A responsible person should ensure that the following records are made and retained:

- The significant findings of the FRA (see example records in Appendix 9).
- Copies of correspondence seeking advice from the enforcing authorities on fire safety issues.
- Copies of correspondence to the fire and rescue authority in respect of operational visits.
- Letters and reports from the enforcing authority following on-site fire safety inspections.
- Correspondence between competent fire safety specialists and the responsible person in respect of seeking expert assistance under Article 18.
- Correspondence between the responsible person and external fire safety equipment installers.

- Names of all staff who received fire safety training together with the name of the trainer and dates of the training.
- Records of all periodic checks and servicing of:
  - AFD/AFA installation, fire alarm weekly tests including number of call points actuated in sequence
  - false alarms caused by AFD/AFA installation
  - fire drills (record fact that exits blocked sequentially to test evacuation by all other fire exits)
  - sprinkler installation test valve, all other valves plus all other fixed firefighting equipment
  - condition of static water supplies and access points for fire and rescue pumps
  - tests of smoke exhaust systems
  - tests of lifts including firefighter lifts
  - Fire Exit signage
  - fire action notices
  - emergency lighting
  - condition of fire doors and screens including automatic door retainers
  - tests of fire shutters and their operating mechanisms
  - condition of stand-alone fire door retainers
  - clearness of escape routes and fire exits including external stairs
  - annual tests of extinguishers and other firefighting equipment
  - Certificates of Compliance in respect of fixed installations
  - Alterations and Enforcement Notices served
  - Prohibition Notices served
  - receipts for purchase of current fire safety guidance literature
  - records of safety checks by competent persons re electrical installations and wiring
  - records of safety checks by competent persons re gas supplies
  - records of service and safety checks by competent persons re stair lifts for disabled/non-ambulant persons
  - records of service and checks of any apparatus with a fire hazard potential
  - copies of all emergency contingency plans for the building/premises
  - copies of information on hazards required to be passed on to the workforce.

Recording methods

The above records should be readily available to the enforcing authority. Records can be in hard copy in log books or electronically recorded, as long as they are accessible and easy to retrieve. A separate log should be kept for the fire detection and alarm system with pages made out as shown in the appendices of the current BS 5839 Code of Practice. Loose-leaf records of tests and checks should be avoided as pages can be removed. Log book pages should be sequentially numbered and a line and date and signature made if two pages are accidentally turned over.

A separate record should be made of fire safety shortfalls reported with a highlighted system used to show that the shortfall has been remedied, along with the date and time.

Literature and prompt cards issued during fire safety training of staff should be filed as proof of the syllabus covered and the duration of the training.

All log book entries should be signed by the person making the entry and the name is to be legible.

NB: Responsible persons must not lose sight of the fact that a duly authorized officer from the enforcing authority can ask to see and take copies of any records at any time. Furthermore, in the event of any legal proceedings being taken against any person in respect of non-compliance with the FS Order 2005, any records may be used as evidence of actions taken or not taken.

As such, all documentation should be able to withstand the full scrutiny of the legal system. As was stated earlier, the presence of all relevant documentation which proves the actions and measures taken or proposed, along with evidence that all relevant guidance literature was made use of in planning fire safety, will be important to the use of the defence of due diligence.

It is strongly recommended that duplicates are kept of all relevant documents and that the copies are held in a safe and separate place from the originals, which should be kept on the premises and available for inspection by the enforcing authority.

Appendix 4

Arson

Motives for arson fires

Deliberately started fires are a constant threat. So much so that a number of fire and rescue authorities have set up their own taskforce, working in conjunction with the police and forensic services, to counter this ever-present risk to persons, property and to firefighters called out to deal with arson incidents.

It is faulty thinking to believe that any premises is not at risk. The psychological motivations behind the arsonist's actions can be complex. Suffice to say that fires can be started deliberately in all manner of premises and without any warning being given.

It is useful to be aware of some of the more common motives for arson fires:

- The holding of a grudge following dismissal from employment
- Jealousy in respect of personal or professional relationships
- A pathological obsession with fire
- To defraud insurance companies on a loss-making business
- To try and hide the scene of a murder or other crime
- Vandalism for reasons unknown

Protection against arson

- Provide a security system to prevent unauthorised persons entering your premises, especially any persons who have been dismissed.
- Provide secure boundaries by erecting fences, security gates, shutters etc.
- Provide security lighting/CCTV around the premises or in the more remote unlit areas.

- Ensure that doors and windows in the remote unlit parts of premises are secured and vandal proof.
- Install fireproof postboxes to lessen the risk of accelerants being poured through.
- Ensure that all combustible refuse is placed into lidded secured bins.
- Ensure that no refuse or builders' skips are within nine metres of the premises if practicable.
- Park any vehicles and trailers well away from buildings if practicable.
- Provide adequate burglar/fire alarms linked to a permanently staffed Alarm Receiving Centre.
- Have a regular security patrol operate both within and without the premises as appropriate.
- Do not leave flammable liquid or gas cylinder stores unlocked.
- Secure all ancillary buildings from unauthorised access and do not leave unsecured ladders around which could be used to gain access out of hours.
- Train all staff to be vigilant in noticing suspicious persons in the vicinity on more than one occasion.
- In premises where highly flammable/explosive substances are manufactured, used or stored, provide a rigorous safety monitoring and security system to negate the actions of any arsonist on the premises.
- Do not make fire ignition easy for the arsonist by leaving readily ignitable materials around in the form of stacks of combustible rubbish, or torn paper wrapping on sheets or reels of blank paper within printing industry press and machine rooms.
- Do not allow combustible refuse to be stacked close to exterior doors and windows.
- Contact the local fire and rescue authority and crime prevention police officer for added advice.
- Ensure that arson reduction and security measures do not jeopardise the fire safety of any occupant within the premises.

Appendix 5

Heritage buildings

Historic buildings which form part of this country's heritage require a sensitivity of fire safety and fire protective handling if the right balance between the aesthetics of a structure and fire safety are to be achieved.

Where such a building is open to the public or where any part of the premises is used as a workplace within the meanings within the FS Order 2005, then the requirements of this legislation will apply in terms of the provision of reasonably practicable fire safety provisions to safeguard occupants.

A competent fire safety specialist should be contacted early on, along with English Heritage and the local fire and rescue authority, and all available fire safety guidance and technical information obtained before any additional fire safety provisions are made.

Appendix 6

Plans and line drawings

There is some contention as to the use of plans in the overall scheme of fire safety and life protection within premises.

This subject has become controversial because some fire risk assessors fail to appreciate that even a simple dated plan, which records at one glance a range of features, can be of great use to anyone involved with achieving and maintaining life safety from fire. These pages are not the place for airing this debate, but this author is convinced that although there is certainly no need for any plans in many premises, there are others in which quality fire safety and life protection over time will be substantially improved by their presence. Of course, plans and drawings have to be produced in any event, should a Full Plans application be made to the building control authority. Where this is not the case, plans in respect of fire safety provisions, albeit a potentially expensive process, can be money well spent for the following reasons:

- Plans give an instant picture of fire safety provisions existing, provided they are up to date.
- Provided a scale is used, travel distances to exits can easily be measured with a scale rule.
- The use of standard symbols allows the position of all fire safety provisions to be observed including the existence of fire-resisting walls, fire doors, detectors, sounders, emergency lighting etc.
- Plans assist in the process of FRA review by showing how material changes may affect MOE.
- Plans showing existing AFD/AFA devices assist installers when updating or extending systems and save time and money for a business by reducing on-site time for installers.
- Extracts of floor layouts can be used in evacuation plans in multi-storey complex buildings.
- Plans enable fire authority inspectors to check if material changes have taken place since an earlier inspection/audit for compliance.

- Plans allow fire authority officers, building control officers, architects and responsible persons to discuss proposals without having to necessarily walk the site at every meeting.
- Plans are of great value to operational fire crews when dealing with a serious fire situation in which persons are unaccounted for by enabling a building's layout and locations of hazard to be readily seen. This can also be a safety benefit for firefighters involved, especially where a large building is smoke-filled.
- Plans can be instrumental in illustrating quickly to any inquiry or court of law the level of general fire precautions which exist within a premises or which existed before any serious property-damaging fire occurred.

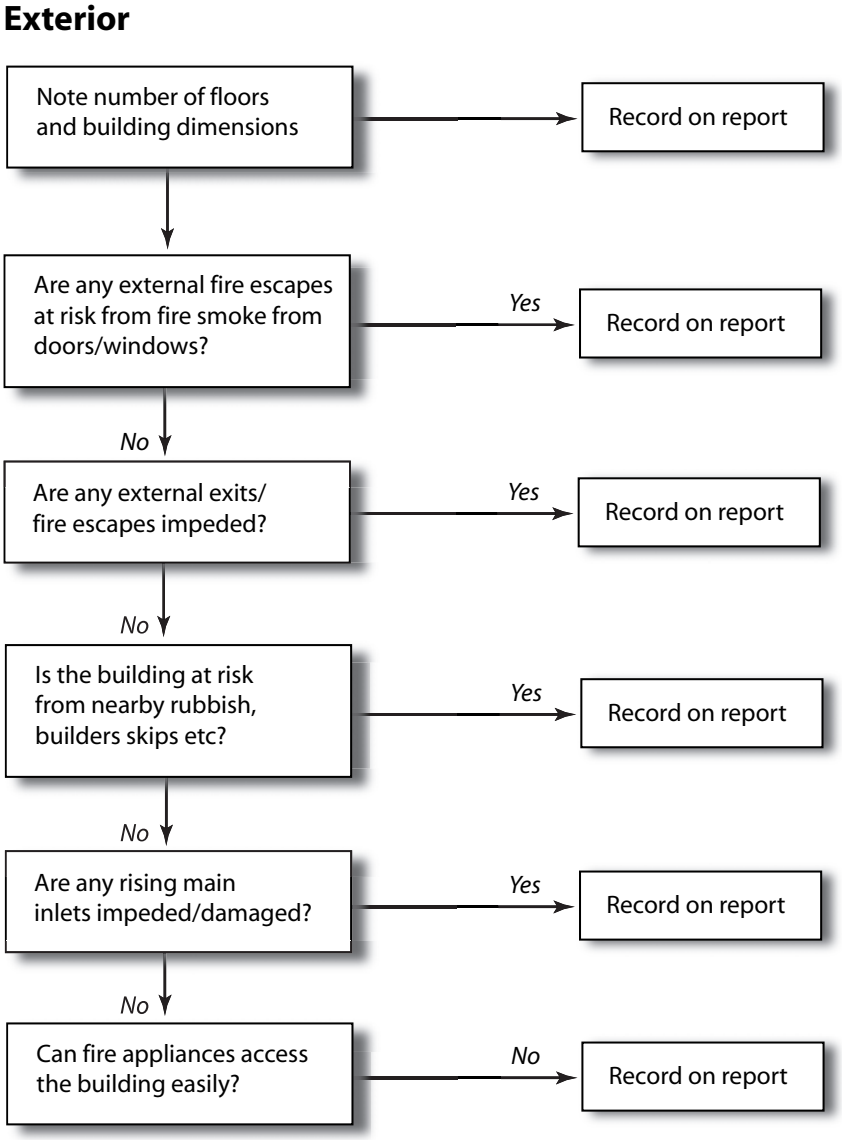
Although it is not a requirement under the FS Order 2005 to provide plans, and it is indeed the case that many premises do not need to have them, the above advantages can outweigh any costs of production in those larger and more complex premises.

Where the particular circumstances of a case are such that properly marked up floor plans will better facilitate the ongoing compliance with the Order, it is recommended that such plans are produced. A fire safety specialist who is fully familiar with the production and interpretation of plans should be contacted to provide guidance and assistance where the circumstances of the case so dictate. Those premises which were caught by the Fire Precautions Act prior to 1st October 2006 should already have plans. Unless material alterations have taken place since their issue, these plans will be a valuable part of a premises' fire safety record.

Appendix 7

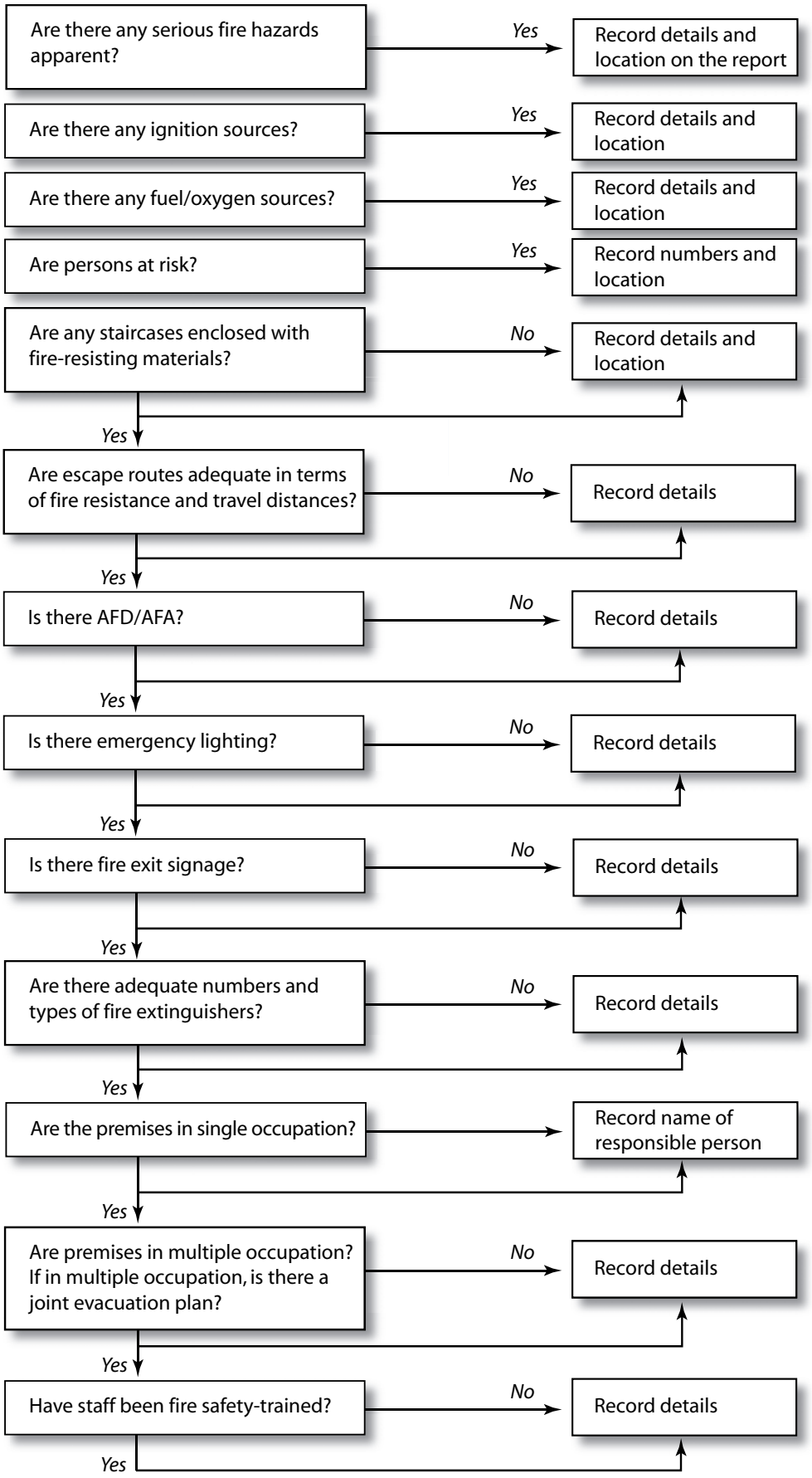
Fire Risk Assessment flow chart

The following flow chart can be used to facilitate a systematic method of surveying fire hazard and risk.



Interior

Start at highest floor and work down, dividing the survey into sections per floor



Using the flow chart

The flow chart enables a systematic overview to be made of the FRA process.

The point of each question/observation and the action to take are set out below.

EXTERIOR

Question/observation	Reason for information	Action by assessor
Number of floors plus premises' dimensions	Gives initial 'feel' of premises and assists with MOE evaluations, shows if occupants can get clear	Record findings Make recommendations
Are external fire escapes at risk from fire/smoke?	Permits hazard/risk to be evaluated	Record findings and recommend actions
Are external escapes impeded?	Permits MOE parameters and hazards to be gauged	Record. Remove hazard forthwith
Is building at risk from combustible refuge?	Enables hazard/risk to be evaluated	Record. Remove hazard forthwith
Are any rising mains impeded or damaged?	Enables remedial actions to be taken	Record. Remove obstruction. Repair damage
Can fire appliances access the building easily?	Enables effective emergency service operations	Record. Recommend improvement if space permits better access

INTERIOR

Question/observation	Reason for information	Action by assessor
Serious fire hazards	Need to identify for risk evaluation	Record on FRA report and recommend action to remove or reduce
Ignition/oxygen sources	Need to identify for risk evaluation	Record on FRA report and recommend action to remove or reduce
Persons at risk	Enables risk evaluations re occupants	Record on FRA report and recommend appropriate fire safety provisions
Enclosure of staircases	Enables evaluation of risk to occupants Is pertinent to MOE travel distances	Record on FRA report and recommend appropriate improvements
Adequacy of escape routes	Enables evaluation of risk to occupants	Record on FRA report and recommend improved fire safety provisions
Is there AFD/AFA?	Pertinent to effective and prompt evacuation	Record on FRA report and recommend appropriate improvements if needed
Emergency lighting	Pertinent to effective escape at all hours	Record on FRA report and recommend improvements as necessary
Fire exit signage	Enables evaluation of risk via well-directed routes	Record on FRA and recommend improvements as necessary
Firefighting equipment	Enables evaluation of measures to reduce fire spread	Record on FRA report and recommend action as relevant to the risk
Single/multi-occupation	Pertinent to evaluation of risk and co-operation between different occupiers on fire safety matters	Record on FRA report and recommend action if appropriate and necessary
Staff training in fire safety	Enables evaluation of risk to occupants	Record on FRA report and provide advice

Appendix 8

The Fire Risk Assessment report

Where five or more persons are employed to work, or a licence under any enactment, or an Alterations Notice is in force, the Order requires that a record be made of the *'significant'* findings of the '*suitable and sufficient*' FRA.

Below is an example of a FRA report which might be produced following the survey of the printing shop illustrated on the drawing in Chapter 4, page 41.

Name of premises: I. M. Pression Ltd

Date of survey: 13 October 2006

Address: 128 Fount Street, London NW39

Carried out by: A. N. Other

Type of premises: Lithographic Colour Printers

Premises description:

A two-storey factory of traditional brick and timber construction built around 1930, with reinforced concrete floor to the main factory, and timber floorboards on timber supporting joists to the first floor.

The building is of some 45 metres frontage by 30 metres depth and there is access for the fire service via the rear gates with hard standing provided.

There is a single enclosed timber staircase from the ground to the first floor offices and an unenclosed steel stair to the mezzanine level.

Ground Floor

Printing machine room – fire hazards:

IGNITION SOURCES: Smoking materials, halogen lamp, printing press motor, various power sockets

FUEL SOURCES: Paper on timber pallets, ink, cleaning cloths, paraffin cleaning liquid, methylated spirits

OXYGEN SOURCES: No additional oxygen sources

PERSONS AT RISK: Ten employees within the machine room and staff room areas

LEVELS OF RISK: High fire occurrence risk due to nature of the printing process and the evidence noted of smoking

Fire in machine room could endanger persons in staff room on mezzanine especially and the unprotected mezzanine construction and the open steel stairs increases the risk

EXISTING FIRE SAFETY: Limited AFD (one detector damaged). No emergency lighting. One water extinguisher. No exit signage. No fire routine notices. Staircase to first floor adequate/satisfactory. One 30-minute fire-resisting door fitted

RECOMMENDATIONS: All staff to receive fire safety training from a competent person

Provide three water extinguishers, three carbon dioxide extinguishers and fire routine/fire action notices. Remove combustible stock from under the halogen lamp and improve housekeeping. Institute an immediate No Smoking policy

Ensure all electrics satisfy current IEE regulations

Provide appropriate AFD/AFA system to BS 5839 installed by a competent person

Contact building control authority in respect of unprotected steel mezzanine floor

The above is an example of one department of the premises only. A record should be made of the other floors, and all other parts of the premises, as described in Chapter 4. Once the FRA has been completed, the following actions must result, relative to the hazard and risk existing and whether the situation is one of simplicity or complexity.

- Decide if a fire safety specialist will be needed to advise on uncertain areas.
- Decide if the situation is such that the FA/BCA need to be consulted.
- If it is a simple low risk premises, seek the services of:
  - a competent fire alarm installer fully familiar with BS 5839
  - a competent fire extinguisher and fire signage contractor
  - a competent emergency lighting installer
  - a carpenter/joiner competent in fire protection work
  - competent electrical and gas engineers.
- If specialist fire safety advice is needed, seek the services of a competent person and bear in mind the comments and advice set out in Appendix 2 when making the selection.

Appendix 9

Fire extinguishers

Also see Chapters 5 and 7

Water type

- Coloured red
- Usual content of nine litres
- Used on Class A fires (paper, card, cloth etc)
- **Not for electrical or liquid fires**

Water with additives

- Coloured red
- Usually less than nine litres
- Some can be used on Class B fires (flammable liquids) **but read the instructions on the extinguisher**

Foam

- Coloured cream or red with cream band
- Various weights
- Can be used on Class A or B fires
- **Not for use on cooking fat fires**

Powder

- Coloured blue or red with blue band
- Various weights
- Can be used on most classes of fires
- Very messy – can obscure vision and affect breathing in confined spaces

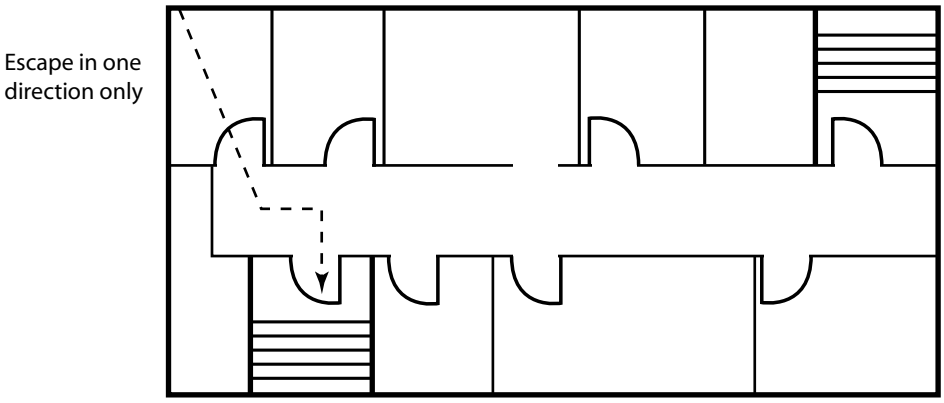
Carbon dioxide

- Coloured black or red with black band
- Can be used on electrical fires
- Various weights
- Very noisy in operation
- Turn off electricity if possible

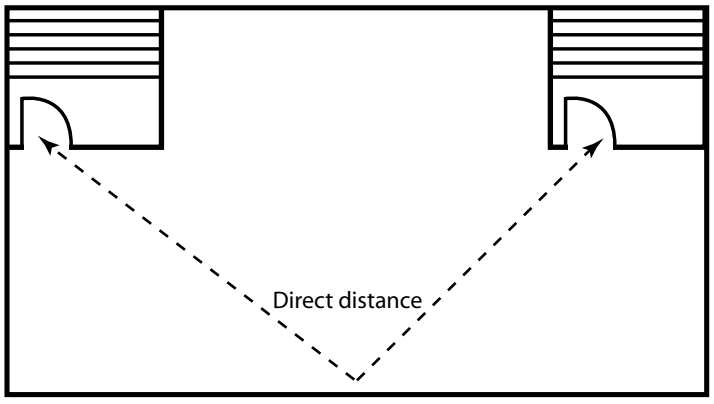
Appendix 10

Definitions and illustrations – means of escape

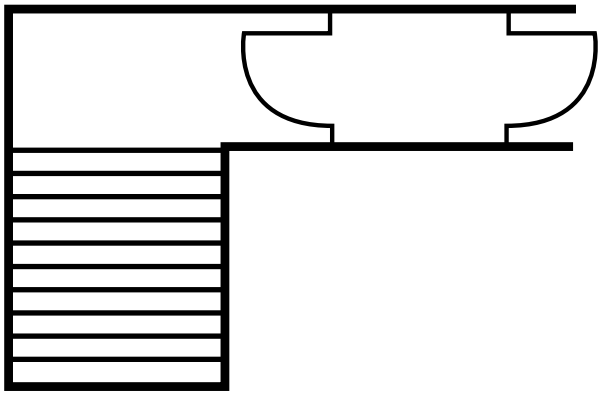
A dead end situation



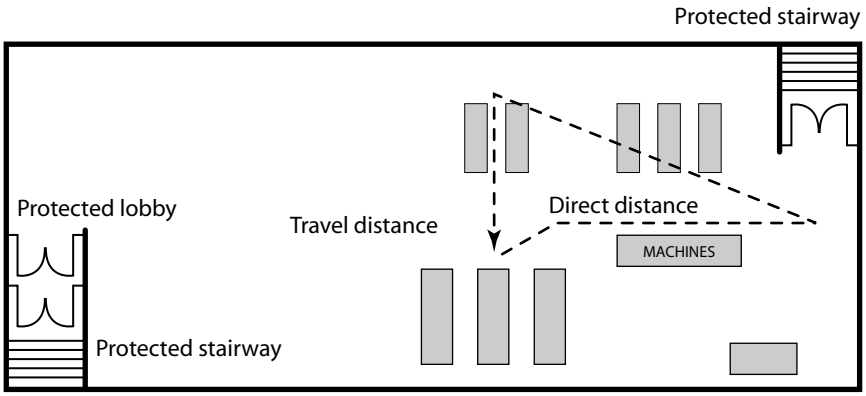
Direct distance



Door arrangements to a protected lobby

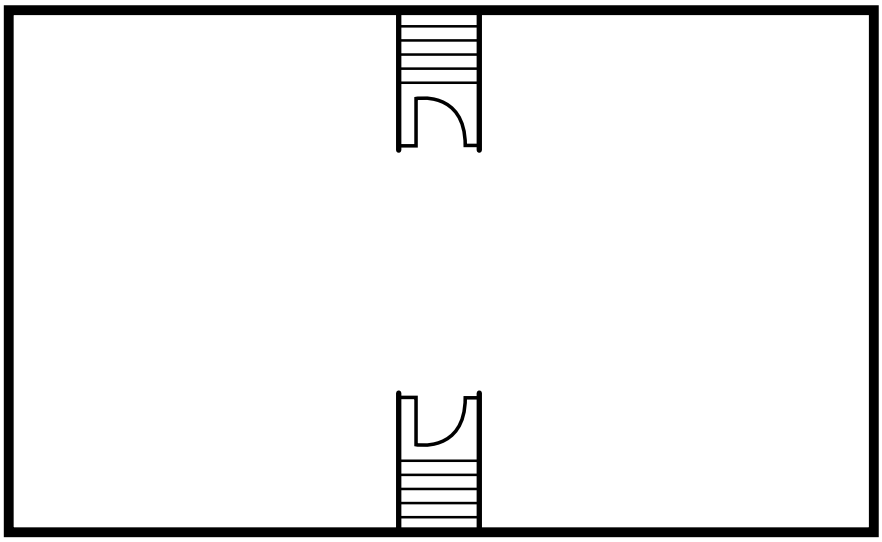


Travel distance



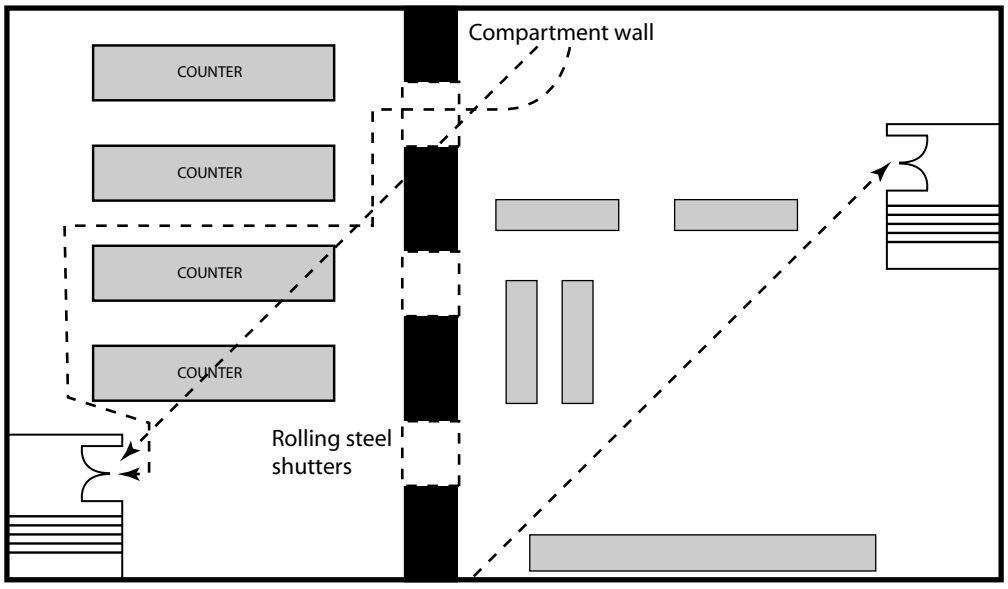
Siting of exits

Acceptable: staircases sited at building's extremities



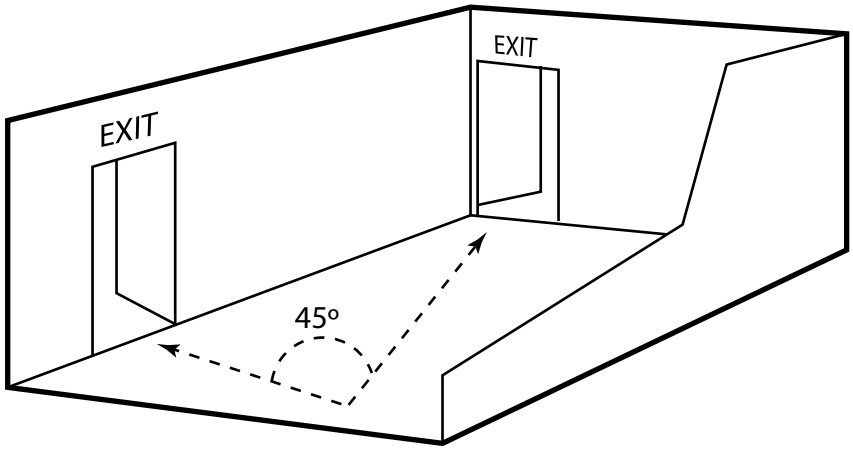
Not acceptable: staircases not sited at building's extremities

Direct distance and travel distance in a department store

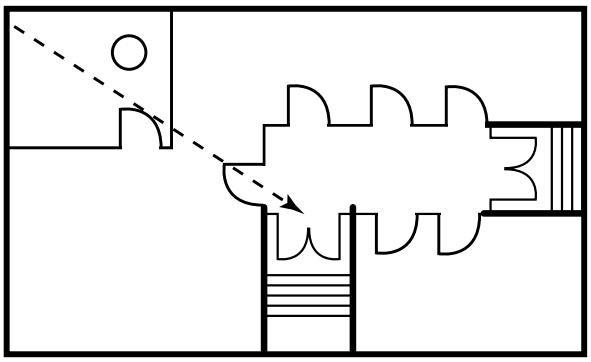


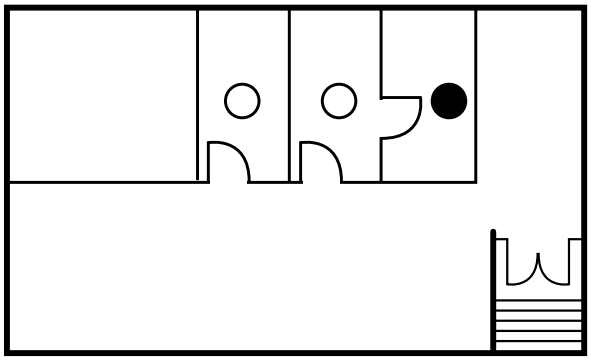
The 45-degree rule

Where alternative exits from a room or area are required they should be positioned so that the angle between them is no less than 45 degrees.



Inner room situations

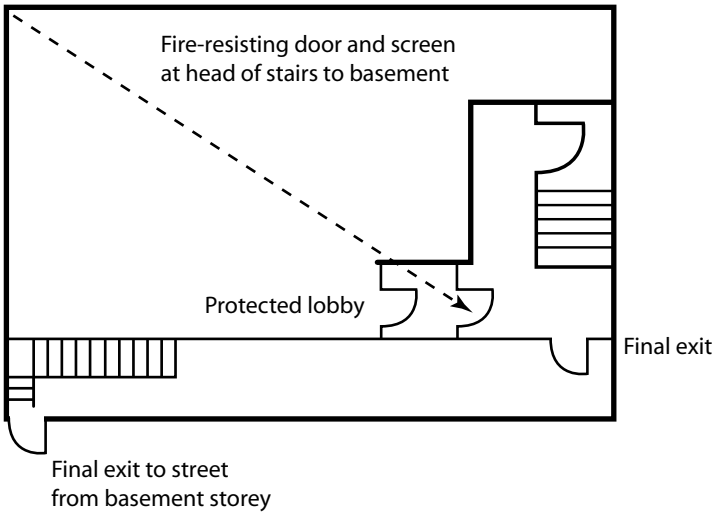




○ Acceptable ● Not acceptable

Protection of basement escape routes

From a sleeping risk such as a hotel or guest house:



Appendix 11

Fire safety advisor's terms and letters of agreement

In addition to the advice provided in respect of 'competent persons' in Appendix 2, it is very important that employers/responsible persons who seek out the services of a fire safety specialist/advisor/consultant bear in mind the following points.

Action at the conceptual stage

At the conceptual stage of a plan to alter any premises, or change the use of any premises, it is essential that an early contact is made with the enforcement authorities, either by the responsible person or by the externally appointed fire safety specialist. If, for example, a premises has an accommodation stairway which you wish to retain at all costs, and that stair is the only escape route, the views of the building control authority and fire authority must be sought so as to permit a proper idea to be obtained as to what they might require in terms of additional means of escape.

If this is not done, then needless expense may be incurred in undoing structural and refurbishment works so as to install the additional stairway/fire escape.

Licensed premises

If the premises are subject to any form of licensing, particularly that in respect of the sale and consumption of alcohol on the premises, then an early contact must also be made with the licensing authority, which is required to consult with the fire authority to obtain its opinion as to the fire safety suitability of the premises.

Additionally, and especially if the premises are within a listed building, the views of the planning authority must be obtained, especially if the provision of an external fire escape is being considered.

A competent external fire safety specialist will seek the views from the above agencies at the earliest stage, but it is essential that a responsible person makes it crystal clear to the advisor/consultant from the outset whether he has already made any such approaches, and what the response from them has been.

Clarification of the advisor's brief

From the outset, it is essential that the employer/responsible person specifies to the advisor precisely what is wanted. If it is to carry out a Fire Risk Assessment and produce a report of significant findings, this must be made clear.

If the report has been requested by, for example, the building control authority to enable it to consider a relaxation of the building regulations in respect of fire safety, then this must be made clear to the advisor/consultant.

If the employer/responsible person is considering solving their fire safety problem by way of a fire-engineered solution that departs from the conventional approach, then this must be made clear from the outset, but the employer/responsible person should always bear in mind that the fire authority is statutorily bound to enforce the requirements of the Order.

As a public safety body, the fire authority must always be conscious of ensuring the fire safety of all occupants of non-domestic premises caught by the 2005 Order. This does not mean that it will not give its approval to an unconventional approach, but that it will draw upon its extensive expertise in fire, and on the historic incidents that have led to life loss, some of which were referred to at the start of this book, when deciding whether or not to approve any proposal.

Employers and responsible persons, and anyone who is assessing fire risk where life is involved, will be assisted in their communications with the enforcement authorities if they keep in mind the statutory duties placed on these agencies to enforce the regulations applicable.

These authorities are ultimately there to maintain public safety and whilst fully entering into the consideration process of the engineered solution, have to ultimately ensure the safety of a premises' occupants above that of the wishes of any individual or company. This is particularly true when the circumstances are such that doubts exist as to whether the safety measures proposed are adequate.

This being said, both the building regulations and, since 1st October 2006, the FS Order 2005, have mechanisms to enable a responsible person to seek a determination from the Secretary of State, if that responsible person cannot agree with the decision of the enforcing authority.

Advisor's letter of agreement/contract

Ensure that the external advisor/consultant provides a letter of agreement, which clearly sets out terms and conditions in respect of the work to be undertaken. The employer/responsible person should read the terms carefully, and a competent fire safety advisor should be happy to clarify any item, before signature.

If an employer/responsible person harbours any uncertainties as to the legality or content of any contract or agreement letter, then a lawyer with expertise in contract law should be asked to vet the document.

Undue influence

Employers and responsible persons must not attempt to influence an independent advisor as to the content of any Fire Risk Assessment report in a way that could be perceived as persuading the advisor to compromise occupant safety in order to achieve any personal objective.

Unconditional duties under the Order

As was pointed out earlier in Chapter 3, the employer/responsible person must, at every stage, remember that the FS Order 2005 places an unconditional responsibility on their shoulders to comply with the Order's requirements.

Most importantly, it must be remembered that should a responsible person be accused of any offence under this Order, the onus on proving what is reasonably practicable in relation to why something was not done rests with that person, and to attempt to use the acts or omissions of any external advisor as a defence is not permissible.

Conclusion

Case Study

Key Points

Reference

Conclusion

The Regulatory Reform (Fire Safety) Order 2005 has heralded a significant shift in the field of non-domestic fire law within this country.

It has been constructed partly upon the foundations and principles of the 1974 Health and Safety at Work Act, in which those who create the risk of harm to persons, must bear the unconditional responsibility for ensuring compliance with the legislation.

Although it is only the courts who can ultimately interpret what those who framed the Order intended to mean, it appears that more than a few of the words and principles that underpinned the demonstrably successful life-saving Fire Precautions Act (FPA) have been used in the FS Order 2005.

Although the fire authorities did provide fire prevention advice to owners and occupiers caught by the FPA, the preventive concept was less intensive than were the measures required to protect occupants after fire had occurred.

This new Order clearly focuses upon the vital importance of fire prevention as being an integral and crucial element of the self-complying process. It places a massive trust in those caught by the definition 'responsible person' to fully comply with not only their preventive responsibilities, but also with those responsibilities that call for reasonably practicable and adequate protective measures to be in place. The new Order has brought many more premises within the remit of the local authority fire service but has placed ultimate responsibility for life safety squarely at the door of the non-fire expert responsible person.

It is clear from lengthy experience, and especially at a time when such intense focus and resources are directed to domestic fire safety, that for this new fire law to not become a dead letter, the fire authority's role in enforcement monitoring, and the decisions as to which premises to target at any one time, will require an even greater focus and criticality than has ever been the case before. The advice and information within this book has been time-tested in the harsh and cruel environment of operational firefighting and rescue. Those tests have illustrated clearly the vital need to ensure that the occupants of premises are protected from the hazard of fire. The efficacy of the preventive and protective measures set out in this book have derived from, and have been influenced in no small part by, the witnessing of fire's effects on people and structures over many years when personally attending numerous fire emergencies in many types of premises. Those persons who make a selective and intelligent use of such information in the manner suggested within the chapters, and never drop their guard in self-complying

in a reasonable and practicable way, will have gone a good way towards ensuring the fire safety of all occupants who resort to the premises for which they hold responsibility for life safety from fire.

This will help ensure the continued safety of all occupants of the increased numbers of non-domestic premises caught by the 2005 Order, and better ensure that those needless multiple life-loss fires, described earlier in this book, which spawned those effective fire safety laws of the last four decades do not begin to reoccur.

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Glossary and references

Case Study

Key Points

Reference

Glossary

Please note that this is not an exhaustive list.

ACCESS ROOM: Also known as 'outer room' and one which is the only escape route from an inner room.

ACCOMMODATION STAIRWAY: One used to accommodate persons but which is not an escape stairway.

ACCOUNTABILITY: In a fire safety sense of responsibility, the person(s) who can be held to account for acts or omissions.

ADEQUATE: Something adjudged as being sufficient for the purpose by those responsible for making that judgement. Adequacy is a subjective term when dealing with fire protection.

ALARM: A warning of fire either by human, mechanical or electrically produced sound.

ALTERATIONS NOTICE: A notice served by the enforcing authority if it is of the opinion that a serious risk to any occupant from fire exists within a premises. The notice legally requires the responsible person to notify them before making any material alterations to premises.

ALTERNATIVE ESCAPE ROUTE: An escape route which is separated from another via fire-resisting construction or by travel distance or by its position and which can be used no matter where the fire is located.

AS LOW AS REASONABLY PRACTICABLE: Often abbreviated to 'ALARP', this relates to the cost benefits relative to reducing risks.

AUTOMATIC FIRE DETECTION AND ALARM SYSTEM: Normally abbreviated to AFA/AFD, this refers to automatic detection of heat or smoke, which then activates a fire alarm via sounders.

AUTOMATIC SPRINKLER SYSTEM: An installation consisting of water bearing pipes fitted with heat sensitive heads that disintegrate at set temperatures and project water onto a fire.

BASEMENT: A space below the ground floor of a building, which is more than 1,200 mm lower at some point than the highest level of ground next to the building's walls.

CAVITY BARRIER: A fire-resisting partition fitted within large spaces such as roof voids to lessen the risk of fire spread throughout the whole area.

CIVIL OFFENCE: An offence committed against a person.

COMBUSTIBLE MATERIAL: A material or substance that will support combustion and burn.

COMPARTMENT WALL/FLOOR: A wall/floor of fire-resisting construction that separates one fire compartment from another.

COMPETENT PERSON: Someone who has enough training and experience **or** knowledge and other qualities to enable them to properly assist the responsible person in discharging their duties under the Order.

CORPORATE BODY: A corporate body or body corporate is that body of persons within an organisation that holds ultimate decision-making responsibilities in respect of that organization.

CRIMINAL OFFENCE: An offence committed against the State.

DANGEROUS SUBSTANCE: A substance having physical/chemical or chemical properties that create a hazard – and thus a risk within the workplace to persons – because of the way in which it is used or stored.

DEAD END: A place from which there is escape in only one direction.

DENSITY FACTOR: A term used in connection with the calculation of the size and numbers of fire exits needed within a premises to ensure safe and effective escape from fire. It relates to the amount of floor space taken up by occupants within different types of premises, and from which the total maximum safe numbers permitted can be calculated.

DIRECT DISTANCE: A term which relates to means of escape (MOE) from premises that is the shortest distance from any point on a floor which a person would need to travel to reach the nearest storey exit or fire protected route, ignoring walls, partitions and fixings.

DISABILITY DISCRIMINATION ACT: An Act which makes it unlawful to discriminate against disabled persons which, with regards to fire safety, can call for special provisions and procedures to exist.

DOMESTIC PREMISES: Privately-occupied dwellings save for the common parts used by residents of other dwellings.

EMERGENCY/ESCAPE LIGHTING: Lighting that will illuminate escape routes, exit signs etc if the main power fails.

ENFORCEMENT: The act of ensuring that laws are effectively applied where it is appropriate to do so and which can include inspections, serving of notices and prosecutions.

ENFORCEMENT NOTICE: A notice served by the enforcement authority that requires a responsible person to carry out necessary fire safety works or procedures.

ENFORCING AUTHORITY: The agency that is specified in Article 25 of the 2005 Order and which, for most premises, will be the fire and rescue authority (fire service).

It is these agencies that are statutorily required to enforce the requirements of the Regulatory Reform (Fire Safety) Order 2005.

ESCAPE ROUTE: Being the route that has to be travelled to reasonable and total safety when escaping from fire.

EVACUATION STRATEGY: The strategy adopted for evacuating a building's occupants, which relates to the dimensions of a building, its usage, type of occupancy, staff numbers and degree of fire risk.

EXTERNAL ESCAPE STAIR: A stair on the outside of a building that provides escape from fire.

FALSE ALARM: Normally relates to fire detection and alarm installations which have given a fire warning signal that turns out not to have been caused by fire or smoke.

FAMILIARISATION VISIT: A visit by operational firefighters to a premises to obtain advance information relative to emergency fire and rescue activities. This is not a fire safety inspection.

FINAL EXIT: The final exit from a building through which occupants pass when escaping from fire or an alarm indicating fire. The exit should disgorge persons to a place of total safety and this place must be large enough to enable all to be clear of danger from fire products.

FIRE COMPARTMENT: That part or whole of a building that is built to prevent fire spread from or to the same building or an adjoining building.

FIRE DOOR: A construction comprising a leaf, frame, hinges, other door furniture and heat/smoke seals, which has satisfied an approved standard in respect of preventing the passage of fire and smoke for a specified period.

FIREFIGHTING LIFT: A lift capable of use and control by the firefighters when dealing with a fire emergency.

FIREFIGHTING SHAFT: An enclosure constructed from fire-resisting materials that houses a firefighting stair, rising water mains and firefighting lift if provided.

FIRE RESISTANCE: Usually refers to the ability of materials or items to withstand fire for a specified period of time without failing. Thirty minutes is the normal minimum but greater times can be achieved and these, like all time criteria, depend on the type of material, its construction and on satisfactory installation and maintenance.

FIRE SAFETY INSPECTOR: Normally a uniformed member of the fire and rescue authority who is empowered to enter premises coming under the scope of the FS Order 2005 and carry out inspections to monitor the responsible person's compliance with the requirements of the Order.

FIRE STOPPING: Material applied between anything that breaches an element of construction and which would stop the passage of fire products that could otherwise occur. An example would be the application of an approved sealant between and around a service pipe passing from one fire compartment to one adjoining.

FIRE WARNING: An alarm of fire provided by the human voice, by the physical operation of a bell or siren, or by the actuation of a fire detection and/or fire alarm either by a detection device or by the manual operation of a call point.

FLAMMABLE MATERIAL: Material that can be easily ignited and which will burn rapidly.

HIGHLY FLAMMABLE: These are generally liquids with a flashpoint of below 21 degrees centigrade.

HAZARD: A substance, item or process that has the potential to cause harm.

HIGH RISK: A high probability of the harm, inherent within a hazard, being realized.

HOUSE IN MULTIPLE OCCUPATION: Normally abbreviated to HMO, this is a building or part of a building in which persons from different and separate households live, for example flats, bedsits, hostels etc. They can pose a higher than average fire risk to residents because a greater number of hazards per floor area can exist – eg cookers, room heaters – than is the case in a single family dwelling.

HOUSEHOLD: The term applied where occupiers from the same family group reside together.

INNER ROOM: A room from which escape is possible only by passing through an outer room.

LICENSED PREMISES: Premises which require a licence arising from legislation, which must be obtained before certain activities can legally take place.

MATERIAL CHANGE: Any alteration within a premises, either structural or otherwise, which affects the means of escape from fire within the premises and thus affects the fire safety of persons.

MEANS OF ESCAPE: Usually abbreviated to MOE, this refers to the routes of travel by which any occupant can make good their escape from fire to a place of total safety.

PHASED EVACUATION: Evacuation sequence in which different parts of a premises are evacuated in phases, starting with those parts closest to the risk.

PLACE OF REASONABLE SAFETY: Sometimes known as place of relative safety, a place such as a protected corridor or stairway with a minimum of 30 minutes' fire and smoke resistance, which allows occupants to escape to a place of total or ultimate safety.

PLACE OF TOTAL SAFETY: Also known as a place of ultimate safety, a place away from the premises where persons are no longer in immediate danger from the effects of a fire.

PREMISES: Any place such as a building and the immediate land bounded by any enclosure of it. Any tent, moveable or temporary structure, or any institution or workplace.

PROHIBITION NOTICE: A notice served by the enforcement authority on the responsible person when the risk to persons in case of fire is so serious that the use of the premises must be restricted or prohibited until the serious risk is alleviated.

PROTECTED LOBBY: An access to a fire escape stairway that is of fire-resisting construction, has two sets of fire doors, and provides access to no area other than a toilet or lift.

PROTECTED STAIRWAY: A stairway that is adequately protected from the rest of the building by fire-resisting construction.

PROTECTED ROUTE: An escape route that is adequately protected from the rest of the building by fire-resisting construction.

REFUGE: A place of reasonable safety in which persons, including disabled and others requiring assistance, are able to rest or wait for help before reaching a place of total safety. It should lead directly to a fire-resisting escape route.

RESPONSIBLE PERSON: The person or persons ultimately responsible for fire safety as defined in the Regulatory Reform (Fire Safety) Order 2005.

RELEVANT PERSONS: Any person lawfully on the premises and any person in the immediate vicinity. Firefighters carrying out firefighting tasks do not come within this definition.

SELF-CLOSING DEVICE: A device that is capable of closing a door from any angle and against any latch fitted to the door.

SIGNIFICANT FINDING: A term used to define what should be recorded on a Fire Risk Assessment report. It is a subjective opinion between persons as to what constitutes significant and is likely to include fire hazards likely to place persons at risk of serious injury or death and preventive and protective features in place or proposed.

SMOKE ALARM: A device that can sense smoke from fire and sound an integral alarm signal.

SMOKE DETECTOR: A device that detects smoke and relays an electronic signal to both a warning sounder and to a Control and Indicating Unit (alarm panel).

STAGED FIRE ALARMS: Audible/visual warnings of fire that can be given at different stages, ie first to a staff member and then to the public, which can lessen unnecessary full evacuations.

STOREY EXIT: A final exit or a doorway giving direct access into a protected stairway, firefighting lobby or external escape route.

TRAVEL DISTANCE: The actual distance to be travelled by a person from any point within the floor area to the nearest storey exit or final exit, having regard to the layout of walls, partitions and fittings such as shop counters, restaurant tables etc.

VISION PANEL: A transparent panel in a wall or door, often fire-resisting, which permits persons to see any fire, smoke or other persons at the far side.

WAY GUIDANCE: Luminous rows of light emitting diodes (LED) or similar used to illuminate at a low level the escape route from a premises.

WHERE NECESSARY: A term used within the FS Order 2005 to signify the appropriateness of the preventive and protective measures required to safeguard persons from fire risk. It is a subjective term relative to the level of specialist fire safety knowledge and competence possessed by different individuals or different groups. The term could also imply that, on some occasions, no measures are necessary.

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7. The Health And Safety At Work Act 1974 and Subsequent Regulations and Amendments
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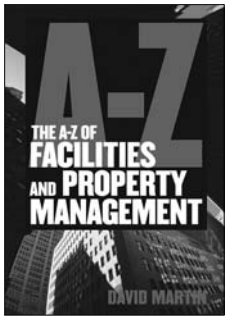

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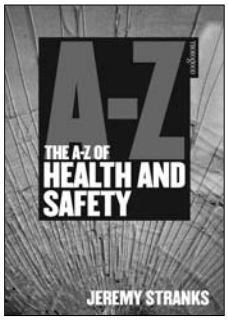

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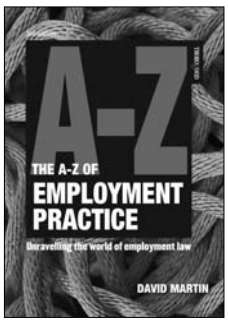

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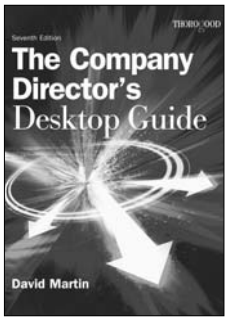

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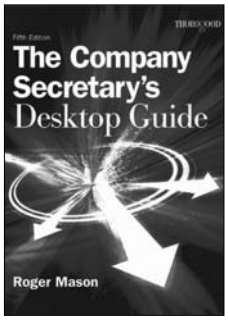

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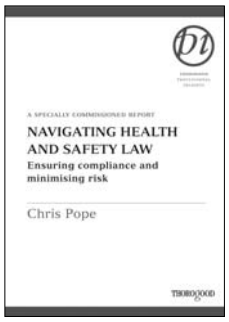

NAVIGATING HEALTH & SAFETY LAW

Chris Pope
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All the key health and safety regulations are explained without the usual emphasis on jargon. There are plenty of practical examples and checklists. Using the report, almost anyone with managerial responsibility will be able to quickly appreciate what to do to prepare for all the commonly encountered dilemmas that normally leave you reaching for the phone or the web.

If you have already been challenged by the insurer, inspector, or one of your workforce about the status of your health and safety this special report will give you a workable answer to questions like:

- Is my health and safety policy legally compliant?
- How do I avoid being liable for an employees ill health arising from previous employment?
- Who should carry out safety inspections? Is it my responsibility?

ME TIME: LIFECOACH YOURSELF TO SUCCESS

Barrie Pearson and Neil Thomas
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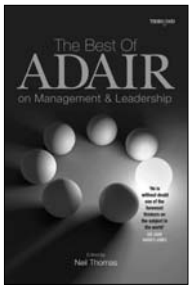

BEST OF JOHN ADAIR

Edited by Neil Thomas
£9.99 paperback

This is a goldmine of ideas, advice and techniques from one of the world's leading writers on management and leadership. It brings together all of John Adair's thinking on leadership, teambuilding, creativity and innovation, problem-solving, motivation, communication and time-management. It's full of practical guidance, experience and insight, and packed with a large number of charts, diagrams and forms.

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We understand everything managers and leaders need to be, know and do to succeed in today's commercial environment. Each product addresses a different technical or personal development need that will encourage growth and increase your potential for success.

- Practical public training programmes
- Tailored in-company training
- Coaching
- Mentoring
- Topical business seminars
- Trainer bureau/bank
- Adair Leadership Foundation

The most valuable resource in any organisation is its people; it is essential that you invest in the development of your management and leadership skills to ensure your team fulfil their potential. Investment into both personal and professional development has been proven to provide an outstanding ROI through increased productivity in both you and your team. Ultimately leading to a dramatic impact on the bottom line.

With this in mind Falconbury have developed a comprehensive portfolio of training programmes to enable managers of all levels to develop their skills in leadership, communications, finance, people management, change management and all areas vital to achieving success in today's commercial environment.

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- Extensive bank of experienced trainers
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- Interactive training
- Balanced mix of theoretical and practical learning
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- Excellent cost/quality ratio

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Falconbury are aware that a public programme may not be the solution to leadership and management issues arising in your firm. Involving only attendees from your organisation and tailoring the programme to focus on the current challenges you face individually and as a business may be more appropriate. With this in mind we have brought together our most motivated and forward thinking trainers to deliver tailored in-company programmes developed specifically around the needs within your organisation.

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Falconbury works with each organisation to develop a programme of training that fits your needs.

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Developing and achieving your personal objectives in the workplace is becoming increasingly difficult in today's constantly changing environment. Additionally, as a manager or leader, you are responsible for guiding colleagues towards the realisation of their goals. Sometimes it is easy to lose focus on your short and long-term aims.

Falconbury's one-to-one coaching draws out individual potential by raising self-awareness and understanding, facilitating the learning and performance development that creates excellent managers and leaders. It builds renewed self-confidence and a strong sense of 'can-do' competence, contributing significant benefit to the organisation. Enabling you to focus your energy on developing your potential and that of your colleagues.

Mentoring involves formulating winning strategies, setting goals, monitoring achievements and motivating the whole team whilst achieving a much improved work life balance.

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For more information on all our services please contact Falconbury on +44 (0)20 7729 6677 or visit the website at: www.falconbury.co.uk.

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FIRE RISK

Fire Safety Law and its Practical Application

ALLAN GRICE

At the end of 2006 the biggest change to UK fire safety law for over 30 years occurred when the Regulatory Reform [Fire Safety] Order 2005 came onto the statute books. Company owners and senior executives, landlords, builders and professionals are all waking up to a seismic shift in liabilities and potential penalties.

The new regulations mark a cricial change in the application of UK fire safety in which employers, not the fire service, now have to determine the fire safety of all occupants and employees.

This sea change could clearly have major implications for the safety of all those who occupy non-domestic premises for work or leisure.

Several million premises are caught by this new law and employers risk prosecution, severe penalties and possible imprisonment if they place any occupant at risk.

This book draws on over three decades of professional fire fighting, rescue and fire safety specialist enforcement to provide invaluable jargon-free, practical guidance to those who now bear responsibility:

- Property and facilities managers
- Office managers and company secretaries
- Health and safety officers
- Architects and professional specifiers
- Building company executives
- Surveyors and landlords
- Police officers
- Lawyers and students of Public Safety Law

Allan Grice, MIFireE has had a Fire Service career spanning 30 years across London, Yorkshire and Devon. He is currently an independent fire safety adviser to a large number of organisations. During the late 1980's he was responsible for all safety law enforcement and advisory services across North East London. Between 1990 and 1997 he was Principal Fire Safety Officer for the Devon Fire and Rescue Service. Allan has been visiting lecturer in the ***Practical Application of Fire Safety Law*** at Leeds University for past 10 years. He is a Member of the Institution of Fire Engineers [MIFireE] and the author of several technical papers, including ***Structural Collapse and Fire Fighter Safety***, published by the Institute of Fire Fighting Engineers.

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