

Section A -Fire

Introduction

You will be aware that many unfortunate events occur through the unthinking actions of people and that most of these events could be avoided. Very often people fail to notice important things, they become accustomed to things even if they are wrong.

Your vigilance is essential at ALL times. You will be in a position to put right things that may cause accidents.

REMEMBER: Fire respects nothing.

It leaves people homeless and jobless; it DESTROYS, it MAIMS, it KILLS.

Upon appointment to an assignment you will be inducted on the fire procedures for that site.

Nature of Fire

Before you use any fire-fighting equipment it is essential that you understand the circumstances that create a fire.

A fire can only occur when three elements come together, if you remove anyone of the elements the fire cannot start or continue to burn.

The three elements are:

- **Heat**

Heat can come from many sources:

Discarded cigarettes

Sparks from welding equipment

Electrical faults

The sun

- **Fuel**

Fuel can be describes as anything that burns. This is usually divided into:

SOLIDS: wood, paper, cloth etc

LIQUIDS: petrol, paint, oil etc

GASES: acetylene, gas etc

Most of the articles and materials that we use in everyday life will burn.

- **Oxygen**

We have little control over the supply of this; it is freely available in the atmosphere.

It is not just in the cylinders at the hospital, dentist or welding shop, it is the air that we breathe to give us life. It is also this same oxygen that will sustain a fire that can so often destroy life.

Remove any of the three elements and the fire goes out.

This can be illustrated with a simple experiment that you may have seen before: Think of a

lighted candle (you have heat from the match, fuel from the wick and wax, and oxygen in the air)

If you cover the candle with a jar in a short time the candle will go out because all the oxygen in the jar will have been used up.

If you leave the candle burning it will also go out when the wick or wax are all burned up.

All fire fighting equipment is designed to attack one or more of the three elements and so stop the fire

eg a water extinguisher reduces and removes the heat source and so puts out the fire.

Action on Discovery of a Fire

The site safety plan for your site will have specific instructions for you in the event of you discovering a fire and these you must make yourself fully aware of. You must, on commencing duties on any site, learn the fire routines for those premises; these would include knowing the sound of fire alarm, the evacuation procedures and your role in meeting the Fire Brigade. These may be very simple or complex depending on the site.

If you discover a fire, the normal procedure when there are other people on the site would be to:

- i. Sound the alarm
- ii. Call the Fire Brigade immediately
- iii. Meet the Fire Brigade at the entrance (ensuring that access is available)
- iv. Direct the Senior Officer to the fire
- v. Advise the Fire Brigade of:
 - a. any people still on the premises
 - b. any inflammable materials stored
 - c. type of fire, if known
- vi. Assist in the evacuation of the premises, if necessary.

The following should assist you to remember what has to be done:

F Find

I Inform

R Restrict

E Extinguish

FIND -This can be done in many ways. Heat sensors, smoke detectors, or even the your own sense of sight and smell. You do not necessarily need to see the fire, it can often be detected by smell (smoke) or even noise. Once a fire is found any action taken should be immediate.

INFORM -If the alarm is not already sounding then sound the alarm. If there is no alarm on the premises then shout or make some other noise as occupants **MUST** be alerted to the danger. When this has been done then telephone the Fire Brigade giving as much relevant information as possible.

RESTRICT -If possible, without putting yourself in danger, try to contain the fire. This does not necessarily mean trying to put it out; closing windows and doors, removing any combustible material will all help to restrict the ability of the fire to develop.

EXTINGUISH -Only if it is safe to do so, extinguish the fire. Do not activate an extinguisher until you are close to the fire. Do not attempt this unless you are sure of the type of fire and which type of extinguisher to use.

NB: Your site safety plan will give you specific instructions on this matter. They may tell you that you must **NOT** attempt to extinguish a fire. Ensure that you know what they say.

Types of Fire

The Home Office Fire Department had categorised fires into four different classes. These are based on the type of fuel that is burning:

- A TEXTILES Wood, paper, cardboard, cloth etc**
- B LIQUIDS Petrol, oil, paint, wax etc**
- C GASES Acetylene, hydrogen, propane, butane etc**
- D METAL Magnesium, aluminium etc**

There is no recognised category of Electrical fires as electricity itself does not burn, it provides the heat source for many fires. Because electrical equipment is involved in causing many fires, or is in places where fires are burning, great care must be taken to select the correct type of extinguisher if attempting to fight the fire.

Fire Fighting Equipment

The type of equipment used for fighting a fire, either portable or automatic, depends on the type of fire that is to be fought.

It is very important that you know and understand what types of equipment that you have on your site, and also how they work.

Each of the four categories of fire mentioned have their own means of extinguishing. If you try to do this using the wrong equipment it can lead to very serious consequences.

A Class C fire is very dangerous and at NO time should a you ever attempt to extinguish it. The Fire Brigade must be called immediately.

A Class D fire is the most dangerous of all types of fire and NO attempts should ever be made to put it out. Again, the Fire Brigade must be called out immediately.

Hand Operated Extinguishers

There are a few simple rules to remember when using these extinguishers. All are fairly simple to operate and are effective if used according to the makers instructions.

You must READ the labels and LEARN the method of operation. It is critical that you are aware of the different type of extinguishers and which types is to be used on a particular type of fire.

THE WRONG CHOICE MAY BE INEFFECTIVE, HARMFUL OR EVEN DANGEROUS!

The following points should be remembered:

- i. Gas extinguishers, particularly Carbon Dioxide (CO₂), become freezing cold when used
DO NOT hold the metal casing as your hand could become blistered or even stuck to it.
- ii. Water and gas fire extinguishers are most effective when aimed at the BASE of a fire.
- iii. Foam extinguishers are used to lay a blanket of foam OVER burning liquid. The foam should be aimed at the far side of the fire and allowed to spread across the burning surface.
- iv. A bucket of water is still a useful item if you do not have immediate access to an extinguisher.
- v. Buckets of SAND are also simple and effective when used to dam the flow of spilt liquid.
- vi. Be prepared.
- vii. Water based fire extinguishers must never be used on fires involving live electrical apparatus.

Specialised Equipment

It is important that you understand that there are other types of fire fighting equipment used in more specialised installations such as computer rooms, laboratories etc.

CO₂ Flooding System

Most of these have a built in system that uses a gas (halon or CO₂). It smothers the fire automatically by removing the oxygen from the air, this means that there is no secondary damage to the premises and property (eg. water damage). In premises where such a system is installed it is important that everyone understands that they must leave the area immediately if an activation occurs. As the system removes oxygen from the air they are in danger of being suffocated.

Nobody should attempt to enter such a room or area if the alarm has been activated unless specially trained and equipped to do so. All such systems have signs warning personnel what action should be taken in the event of a fire.

Sprinkler System

These systems are used in a variety of buildings where 'Class A' items such as clothes, furniture, paper etc are stored and manufactured.

The system is activated directly by the heat of the fire. The 'head' releases water to douse the flames.

Your duties may require you to check the pressure gauges and valves that control the sprinkler system. It is usual for the valves to be locked in the OPEN position.

Once this system has been activated it can only be closed down manually. If there is one of these systems installed on your site you must know the location of the stop valve; it will usually be indicated by a notice at the nearest access point. Details such as these will be in the site instructions.

Dry/Wet Risers

Many large premises have a riser system which allows the Fire Brigade to get large amount of water to any part of the building without having to lay hoses up numbers of flights of stairs. In other word it is a second system of water pipes, of wide diameter, fitted throughout buildings.

The only difference between wet and dry risers is that with a dry system the pipes remain empty until such time as the Fire Brigade star pumping water through whereas the wet system is kept primed with water at all times and is ready for instant use.

Foam Flooding

Another system for Fire Brigade use is the foam flooding system. This is found in places such as boiler rooms or flammable liquid stores and allows foam to be pumped inside without the need to enter the room.

This system will have an inlet valve set in an external wall, covered by a panel, and indicated by a notice.

It is essential that access to such valves is always kept clear. Never allow vehicles to park, or goods to be stacked so as to obstruct the access to the inlets by the Fire Brigade.

Smoke/Fire Check Doors

These are doors that are placed either to restrict the flow of smoke through a building, or that have a long resistance to fire thus helping to contain a fire within certain sections of a building. It is obvious that these can only be effective if they are shut.

However, in many modern buildings these types of doors are kept open with electronically controlled catches. In the event of a fire alarm being activated the catches are automatically released and the doors closed.

If this type of system is not in place the doors must always be closed. It is a vital part of your job to ensure that all smoke/fire check doors are kept unobstructed.

Fire Blanket

This is most often found in kitchens and is used to smother a fire eg, a blazing chip pan. To use this it is simply carefully placed completely over the burning item to prevent air from reaching the flames.

The fire blanket. can also be used if a person is on fire. He should be laid on the ground and the flames smothered with the blanket.

This is not an exhaustive list of fire-fighting equipment. There are many other types but these are some of the most common.

REMEMBER: the only way to learn about the systems on your assignment is to observe (have a good look around to see what equipment there is and where it is located) and read the instructions provided.

The Fire Report

Following any incident involving a fire at your assignment you will probably be required to prepare a report to the customer and/ or your Manager.

While you are dealing with a fire you will not have much opportunity to write down all that happens, but remember -you MUST enter details in SITE LOG afterwards.

The report about the incident would most likely have the following items included:

- the DATE and TIME the incident began
- the TIME that you called the Fire Brigade and TIME of arrival
- the NAME of the Senior Fire Officer present .the DETAILS of any police attending
- the NAMES of any persons injured .the possible CAUSE of the fire
- what DAMAGE has been caused any particular ACTIONS that you took

When entering details into a the site log or a separate report state only the FACTS as they happened.

New Colour Coding of Extinguishers

With effect from January 11997 all new fire extinguishers will have to conform to a new standard of colour coding.

From this date all fire extinguisher manufacturers or suppliers will only be able to supply ALL-RED fire extinguishers. Many are already following this standard.

Fire extinguishers may have labelling on them that includes the well known colour coding for different types of extinguishant. This colouring will be strictly limited in size (no more than 5% of the total area of the extinguisher not counting the hose and handle) Labelling **MUST** be clearly visible over 1800o.

In other words, if the extinguisher is standing in its position, or hanging up, the label must be seen on the front or visible surface.

Any extinguisher in use before January 1997 does not have to be changed to this new coding. It can remain until the end of its working life.

Health & Safety

Introduction

By tradition all of us owe a duty of common care to those around us. This means that we must take care that other people are not adversely affected either by what we are doing, or by what we do not do.

To prop open a fire door in the workplace could be called a breach of common care because a fire could spread much faster due to the door being open. This would endanger other people in the building. Equally, if you see a fire door propped open and walk past without closing it, this also is a breach of common care, you are endangering other people by not closing the door.

This concept is a basic part of current Health & Safety legislation.

In 1974 The Health & Safety at Work Act came into being. This Act is THE major piece of legislation concerning safety in the workplace. It has great importance for many reasons but some of the more significant reasons are that:

- For the first time everyone at work, irrespective of where they worked was provided with protection under the Act. Prior to this only certain workplaces had been covered. Approximately 12 million more workers were included.
- There was a major change in emphasis in the way the Act was written in order to concentrate on preventing accidents and illnesses and creating better work practices rather than reacting to disasters and disease.
- The Act moved away from detailed, specific rules as in the Factories Act, to emphasising management organisation, good policies and safe systems of work.

The Health & Safety at Work Act was set up in such a way that continuing improvements in safety legislation could be made under its "umbrella". The most important of these additions have been what became known as the Six Pack:

- The Management of Health & Safety at Work Regulations .Workplace (Health, Safety and Welfare) Regulations .Display Screen Equipment Regulations
- Provision and Use of Work Equipment Regulations
- Manual Handling Operations Regulations
- Personal Protective Equipment at Work Regulations

These all expand on the principle of managing the workplace in order to make it a healthy and safe place to work, ranging in scope from the provision of suitable lighting in the workplace, adequate welfare facilities, to the provision of eye tests for those who spend a lot of time using Display Screens and personal protective equipment where there are unavoidable hazards.

Who is covered by the Act

The Act covers everyone at work, employers and their employees, whether they are at their usual place of work or working on another site. Employees may be part or full time; temporary or permanent, casual or trainees.

Also covered are sub-contractors, visitors to the premises, anyone who uses products made by the organisation, or anyone who may be affected by the work being carried out. This last category would include passers-by outside a building site, neighbours affected by noxious emissions etcetera.

It is important to remember that even those who unlawfully enter the premises are covered by the Act; an intruder should not be able to fall down an unfenced trench any more than an employee.

Responsibilities placed by the Act

The Act places specific responsibilities on both employer and employee in order to ensure health and safety in the workplace.

- Duties are placed on employers to look after the health, safety and welfare of their employees
- Employees and the self employed have to look after their own health and safety, and that of others; in other words anyone who may be affected by what they do or fail to do
- Employees must follow rules or procedures set out to ensure health and safety
- No one must interfere with or misuse any equipment or material that is provided for safety reasons

The duties placed on employers to look after the health, safety and welfare of employees include providing:

- Working environments, systems of work and premises that are safe and healthy
- Access to and egress from the workplace that is safe
- Training for employees in safety matters and safe methods of work
- Information on matters to do with health and safety
- A written safety policy where they set out how they comply with the law
- Machines, equipment, plant, storage and transportation that are safe

What is Safety about?

Safety is about avoiding situations that could lead to accidents. Accidents have a much greater cost than may be thought; there is the pain and suffering to someone injured, the distress to their family, loss of earnings. There is also the distress suffered by colleagues, maybe loss of productivity, the cost of replacement staff, the cost of investigating the causes, the cost of replacing equipment or goods, possibly even the cost of compensation. You can see how easily the costs of an avoidable accident mount up.

Hazards and Risks

A hazard is defined as: anything that has the potential to cause harm.

A bottle of acid is a hazard in the workplace as it has the potential to harm people.

A risk is defined as: the likelihood of harm happening in certain circumstances. Taking the same bottle of acid, if it is properly labelled, and kept in a locked cupboard with restricted access there is a low likelihood of anyone being harmed by it.

However, if the same bottle of acid loses its label, and is left on the edge of a desk with the lid off the chance of harm happening is much greater -there is a higher risk.

Risk Assessment is the process that has to be undertaken by employers, throughout the workplace, identifying anything that may be a hazard, working out how high the risks associated with those hazards are, and going about eliminating or reducing them.

Much of this is common sense and is also carried out on a day to day basis by everyone. Before you cross the road you look for vehicles coming; if you think there is a big enough gap you will cross, if not you wait or go to a crossing point.

Typical hazards in the workplace:

- Trips, slips and falls caused by slippery floors, spillages, trailing cables, damaged floor surfaces, litter etc
- Unlit or poorly lit passages or stairways
- Falls from working at heights: ladders, zip ups, cherry pickers, mobile scaffolds, roof work etc
- Inspection pits, excavations or other holes left uncovered or unprotected when not in use
- Blocked emergency exits
- Dangerous stacking of materials
- Leaking pipes, valves, containers etc
- Combustible rubbish left in working areas
- Failure to wear specified personal protective equipment .Operating machinery without guards in place
- Operating machinery without appropriate training
- Reckless driving of vehicles, bad parking, riding on non passenger transport
- Using damaged or unmaintained equipment
- Deliberate interference with anything provided for First Aid, health, safety or fire protection

This list is just a very basic sample of some of the more common hazards that occur in the workplace. If your site has any specific hazards that will require particular attention from you then you will find all the relevant information about this in your assignment instructions.

FIRST AID

Always report injuries and ensure any accidents are recorded in the accident book. Make sure you are aware who your first aiders are and how to contact them.

RIDDOR

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations, revised in 1995 requires the reporting of work-related accidents, diseases and dangerous occurrences. Reporting of accidents and ill health related to work is a legal requirement so as to enable the appropriate authorities to find out where risks arise and to investigate serious accidents-

You may be required to assist with some of the record keeping required by these regulations. You may be the person who reported an accident or dangerous occurrence.

A brief list of the types of accidents and occurrences that are required to be reported includes the following:

- Fractures, dislocations, amputations
- Loss of sight (temporary or permanent) .fujury from electric shock
- Unconsciousness from asphyxia .Collapse or failure of lifts
- Explosion of pressure vessels or pipes
- Collapse or partial collapse of scaffold over 5m tall

In addition to accidents that are legally notifiable, all accidents must be logged in the Accident Book. This is in case of possible claims under company insurance or sickness and benefit schemes. It also provides an employer with a record of what accidents have occurred and gives the opportunity for preventive action to be taken.

Safety Signs

It is vital that you are able to recognise the five different categories of safety signs. Their purpose is to draw attention to situations which affect your, and other peoples safety.

There are five categories of signs from 1996:

- Prohibition
- Warning
- Mandatory
- Safe condition
- Fire equipment

Each of these categories has a distinct colour and format in order that their message can be easily recognised. They are similar to road signs.

Prohibition signs

These signs show activities or behaviour that must not be carried out, that are prohibited.

The signs are a red circle on a white background, with a red diagonal line through. There may be a black symbol in the centre showing what is prohibited, such as a cigarette. There may also be words under the sign, in white on a red background.

Warning signs

These signs caution you that there is some type of danger or hazard present and that you should take particular care.

The signs are triangular in shape, with a yellow background and a black edge. There will be a black symbol in the centre and black words on a yellow background.

Mandatory signs

These signs instruct you that you must do something.

The signs are blue circles with white symbols in the centre. There may also be wording, white words on a blue background.

Safe condition signs

The signs give information about safety and safe matters.

The signs are square or rectangular, green background with white symbols and words.

Fire Equipment signs

These signs give information about fire equipment. These have only come within the Safety Sign Regulations in 1996, and there is an overlap period to allow for these to be put in place everywhere.

The signs are a red square or rectangle with white symbols. Hazchem signs

in addition to the four safety signs it is important for a security officer to understand the signs that are used on vehicles and containers giving information about hazardous contents. These signs are known as hazchem signs.

The labels give the following information:

- An emergency code for the substance, this tells the emergency services what action should be taken in cases of emergency
- A UN identity number for the product, unique to that product
- A hazard warning symbol -a picture on a white or coloured background that indicates the hazardous properties of the contents, eg. oxidising, toxic, corrosive
- A contact telephone number for further specific information

The hazard may be biological, chemical or physical, including fire or explosion. Should deliveries of this sort be made to your site the site safety plan should provide you with information. The same applies to storage of these products on site.

Leaks and Spillages

If hazardous products are stored on site they may be in an exclusion zone. If they are not and you find traces of spilled or leaking substances a few very basic rules should be followed:

- Avoid physical contact
- Check labels for instructions, taking care not to step into spillage
- Inform the supervisor or control centre
- Contact emergency services if necessary
- Follow details in assignment instructions

Personal Protective Equipment

There may be a requirement on site to wear some type of protective clothing or equipment. This may be a hard hat, toe protector boots or shoes, ear defenders or protective glasses. It may be that you may have to wear some specific type of clothing.

If such a requirement exists the equipment will be provided for use and where necessary training or instruction given in its use.

It is a requirement of the Health & Safety at Work Act that such equipment must be used when provided, it must not be misused or damaged.