

## Appendix B

# Fire Risk Assessment Case Study

The purpose of this case study is to illustrate one practical approach to conducting a fire risk assessment. The checklist and proformas used in this case study may be used as shown or may be adapted to suit an individual's own workplace.

The assessment uses the first of the approaches described in section 11.5.5 above and is suitable for all small to medium-sized workplaces where the arrangement of the premises are not complex. The fire risk survey is initially undertaken using the fire risk assessment questionnaire as a guide. The sources of ignition present and potential ignitable items are recorded on floor plans of the premises. From the information gathered the risks are evaluated and the outcomes of the assessment are presented in a summary table. The 'actions required', listed in the summary table, represent the measures that need to be taken to upgrade the fire safety arrangements to a level judged to be satisfactory for the residual fire risk. The 'actions required' are prioritised and listed on the first page of the assessment.

The workplace in this case study is a coach building firm which customises lorries and vans. The factory unit is 800 m<sup>2</sup> consisting of office accommodation, workshops and a storeroom. The factory has a portal steel frame structure with full height brick and block cladding. The workplace is categorised as a normal risk for assessing means of escape, except for the finishing area where paint spraying is conducted – this is a high risk. The assessment illustrated has been undertaken because of recent changes in the workplace which have involved changes to work processes, the introduction of some new machinery and an increase in staff from 20 to 30. The company already has a fire action plan but wishes to review their fire safety procedures in the light of the changes.

It is important to be aware that a copy of all assessments should be kept in the workplace and be available for inspection by the fire authority. It is also important that the priority action plan developed from the assessment can be shown to have been carried out.

### **FIRE RISK ASSESSMENT**

Name and address of company: *D H Ross Ltd, Watery Lane, Toynton, Somerset*

Assessment area: *Factory unit*

Work activity: *Coach builders*

Number of people employed: *30.*

Maximum number of people in workplace: *50.*

#### **Priority action plan resulting from the assessment**

##### **Immediate actions**

- *Unblock the escape route from west fire exit*
- *Limit the quantity of fabric located in the store*
- *Remove the furniture from the upper workshop area*
- *Ensure the timber offcuts are removed from the upper workshop area daily*

##### **Actions to be undertaken in a week**

- *Reposition the exit sign in the upper office level*
- *Replace the self-closer on fire door between the office area and the workshop*
- *Identify the assembly location on the fire action notices*

##### **Actions to be undertaken in four weeks**

- *Undertake fire drills and start a record of fire drills*
- *Organise fire training and induction sessions for contractors*
- *Review the duties and responsibilities of specific employees for fire safety and update the fire action plan*

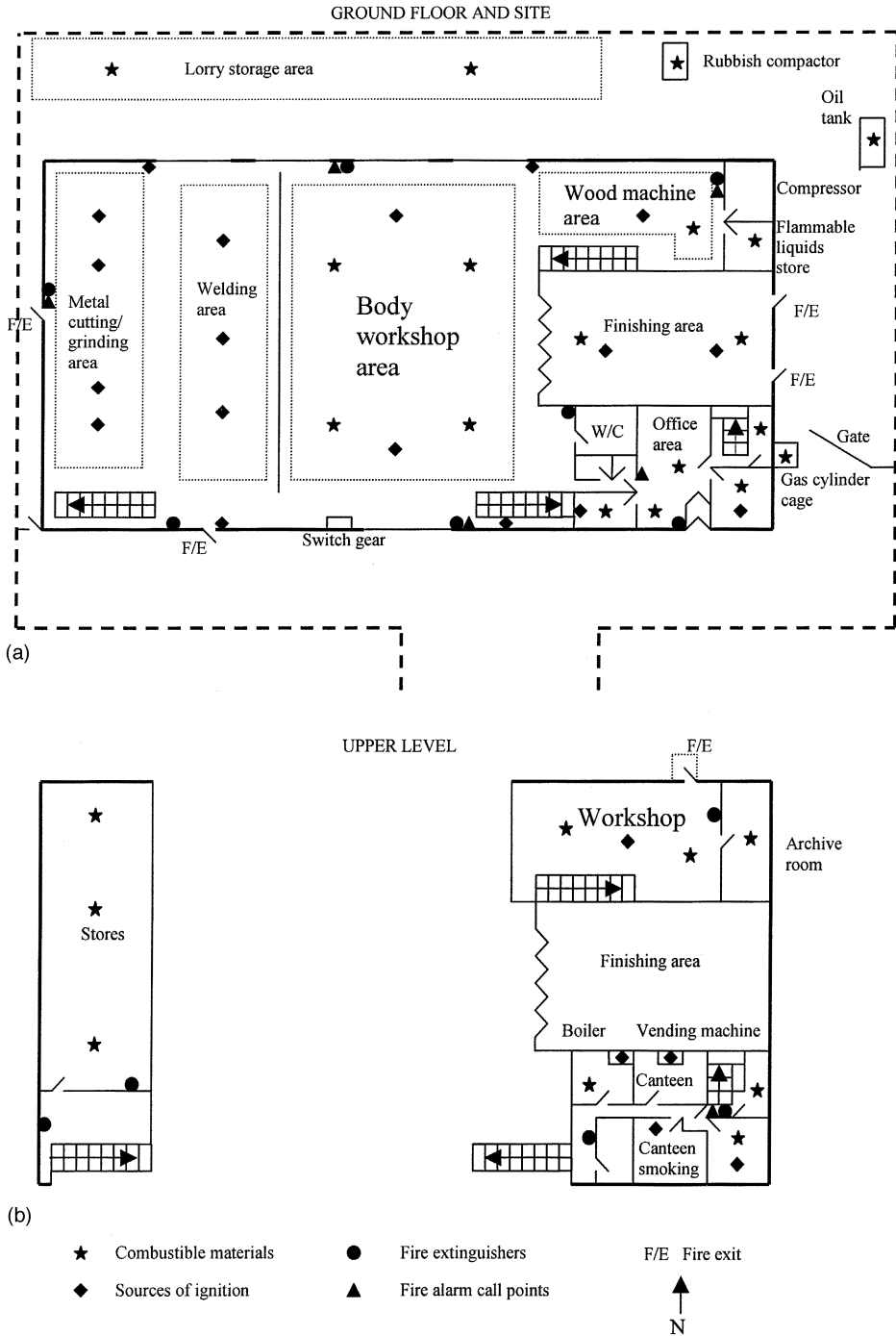
##### **Actions to be implemented into the short term maintenance programme**

- *Construct a 30 minute fire protected ceiling above the metal cutting and grinding area*
- *Relocate the flammable liquid store*
- *Remove the gas cylinder cage to a location away from the factory wall*
- *Refurbish the north fire escape stairs*

Assessor: *A N Other*

Position in the company: *Fire Safety Manager*

Date: *14 November 2000*



**Fig. B1** Floor plans of the factory marked up during the fire risk survey.

## Fire risk assessment: checklist questionnaire

Stage 1: Identify the fire hazards			
<b>Combustible materials</b> (a 'no' answer highlights a concern)			Notes:
Is the work activity free from the use of combustible materials?	<del>Yes</del>	No	Timber, fabrics and upholstered furnishings used
Is the workplace free from the accumulation of rubbish, waste paper or other materials which could be readily ignited?	Yes	<del>No</del>	All rubbish and waste is removed directly to the rubbish compactor
Are all flammable substances stored safely?	Yes	<del>No</del>	In flammable liquid store
Are the structure or fittings of the workplace free from excessive quantities of combustible materials?	Yes	<del>No</del>	
Is the workplace free from large amounts of stored combustible materials: timber, fabrics, furniture (containing foam padding) or furnishings?	<del>Yes</del>	No	Fabrics and furniture in the north end of the store. Timber and furnishing in the upper level workshop area. Archive room
Is the workplace free from any other combustible materials which present a significant hazard?	<del>Yes</del>	No	Gas cylinders, paint, vanishes, adhesives and cleaning materials when in use
<b>Sources of ignition</b> (a 'no' answer highlights a concern)			Notes:
Are heating appliances fixed in position at a safe distance from any combustible material and fitted with suitable guards?	Yes	<del>No</del>	All radiant heaters in workshop fitted at roof height
Is the work activity free from the processes of incineration, cooking, welding, flame cutting, frictional heat or paint spraying?	<del>Yes</del>	No	Welding in designated area, metal cutting and grinding under store area, paint spraying in finishes area
Is the workplace free from oil or gas burning equipment?	Yes	<del>No</del>	
Is all portable electrical equipment inspected regularly by a competent person?	Yes	<del>No</del>	Register of inspections kept
Is the wiring of the electrical equipment inspected regularly by a competent person?	Yes	<del>No</del>	Register of inspections kept
Are all flammable and combustible materials stored at a safe distance from light bulbs and fittings?	<del>Yes</del>	No	Fabrics in the north end of the store close to light fittings
Is the use of multi-point adapters and extension leads kept to a minimum?	Yes	<del>No</del>	
Are there suitable facilities for the disposal of smoking materials?	<del>Yes</del>	No	
Have measures been taken to reduce the risk of arson?	Yes	<del>No</del>	CCTV cameras recently installed
Is there a no smoking policy throughout the workplace?	<del>Yes</del>	No	No smoking policy in workshops. Smoking allowed in offices
Stage 2: Identify people at risk			
<b>People at risk</b> (a 'yes' answer highlights people at risk)			Notes:
Are there staff who work in remote areas of the workplace, or in areas of high risk?	Yes	<del>No</del>	Storeman, painters in finishing area

Cont.

Is there an area of the workplace which is used for sleeping purposes?	<del>Yes</del>	No	
Are there people in the workplace who are confined to bed or whose mobility is impaired?	<del>Yes</del>	No	
Is the workplace regularly used by people whose hearing or eyesight is impaired, or people suffering from heart ailments, pregnant women, or people with learning disabilities or mental illness?	<del>Yes</del>	No	
Do large numbers of people, particularly members of the public, occupy the workplace?	<del>Yes</del>	No	
Do people who are unaware of the fire risks and unfamiliar with the building layout and exit routes regularly use the workplace?	Yes	<del>No</del>	Contractors. May be up to 20 extra people working in the workplace
<b>Taking account of the identified people at risk evaluate the adequacy of the means of escape</b> (a 'no' answer highlights a concern)			Notes:
Are there sufficient exits of a suitable width for the number of people present?	Yes	<del>No</del>	See floor plans
Do the exits lead to a place of safety?	<del>Yes</del>	No	Not the F/E on the west side
Are all gangways and escape routes free from obstructions?	<del>Yes</del>	No	Escape route from the F/E on the west side blocked
Are all exit routes clearly lit?	Yes	<del>No</del>	
Are all escape route floor surfaces free from tripping and slipping hazards?	Yes	<del>No</del>	
Are all escape steps and stairs in good repair?	<del>Yes</del>	No	Escape stairs from upper level north side starting to rust
Are all internal doors clearly labelled?	Yes	<del>No</del>	
Can all fire safety and fire exit notices be clearly seen?	<del>Yes</del>	No	Exit sign in upper level of the office area hidden behind a locker
Do all exit doors open in the direction of travel?	Yes	<del>No</del>	
Are self-closing devices on fire doors in good working order?	<del>Yes</del>	No	Self-closer on the F/D between the office area and the workshop has been removed
Can all doors used for means of escape purposes always be open immediately without the use of a key?	Yes	<del>No</del>	
Is there always an adequate number of trained staff present to assist in an emergency?	Yes	<del>No</del>	
<b>Stage 3: Reduce the risk where possible</b> (a 'yes' answer highlights options for reducing risk)			Notes:
Can any unnecessary ignition sources (sources of heat) be removed from the workplace?	<del>Yes</del>	No	Would cause considerable disruption to work processes
Can any combustible materials present be removed, or significantly reduced?	Yes	<del>No</del>	Remove some stored materials from stores and upper workshop area
Can the general housekeeping and the arrangements for the disposal of waste and rubbish be improved?	Yes	<del>No</del>	For removal of timber offcuts

Cont.

Can additional measures be taken to prevent the occurrence of arson?	Yes	<del>No</del>	<i>Update security alarm system, improve site fencing</i>
<b>Stage 4: Are the existing fire safety arrangements satisfactory for the residual risk?</b>			
<b>Fire safety measures</b> (a 'no' answer highlights a concern)			Notes:
Are an adequate number of suitable fire extinguishers provided?	Yes	<del>No</del>	<i>See floor plans</i>
Are the fire extinguishers and the blankets suitably located and available for use?	Yes	<del>No</del>	
Does a competent person annually service the fire extinguishers?	Yes	<del>No</del>	<i>Register of servicing kept</i>
Where any form of fixed automatic fire suppression system is installed, is it in working order?	Yes	No	<i>None installed</i>
Is the fire alarm system in working order?	Yes	<del>No</del>	
Can the alarm be raised without anyone being placed at risk from fire?	Yes	<del>No</del>	
Are the fire alarm call points unobstructed and clearly visible?	Yes	<del>No</del>	
Is the fire alarm system tested weekly?	<del>Yes</del>	No	<i>Tested occasionally</i>
Where an automatic fire detection system is installed, is it in working order?	Yes	<del>No</del>	<i>Detection system in office area</i>
Where escape lighting is installed, is it in working order and maintained regularly?	Yes	<del>No</del>	<i>Escape lights installed in 1999</i>
<b>Fire safety management</b> (a 'no' answer highlights a concern)			Notes:
Are Fire Action notices clearly displayed throughout the workplace?	<del>Yes</del>	No	<i>Notices displayed but the assembly point not identified</i>
Is suitable fire safety training given to employees?	<del>Yes</del>	No	<i>Not contractors</i>
Are the duties and identity of employees who have specific responsibilities clearly understood?	<del>Yes</del>	No	<i>Key staff have recently left</i>
Are fire drills periodically conducted?	<del>Yes</del>	No	<i>None undertaken in the last year</i>

## Fire risk assessment: summary of findings and actions

Significant fire hazards	Persons at risk	Existing measures to control hazards	Actions required
<i>Excessive quantity of fabric stored at the north end of the store. Light fittings located close to fabrics.</i>	<i>Storeman and assistant</i>	<i>Good housekeeping in store</i>	<i>Limit the quantity of fabric located in the store</i>
<i>Metal grinding undertaken on the ground floor below the store. No fire protection to floor</i>	<i>Storeman and assistant</i>	<i>Good working practices of employees</i>	<i>Construct a 30 minute fire protected ceiling</i>
<i>Excessive quantity of timber off-cuts and furniture stored on the upper level workshop area. Potential ignition sources present</i>	<i>Personnel working in the upper workshop area</i>	<i>Good working practices of employees</i>	<i>Remove the furniture from the area. Remove the timber offcuts daily</i>
<i>Ignition sources close to the flammable liquid store Archive store located on top of the flammable liquid store. No fire protection to floor</i>	<i>All personnel in the factory</i>	<i>Good working practices of employees. Routine inspections by the Fire Safety Manager</i>	<i>Relocate flammable liquid store</i>
<i>Gas cylinder cage located beside the office area</i>	<i>Personnel in the offices</i>	<i>None</i>	<i>Remove cage to a location away from the factory wall</i>
Highlighted deficiencies in the existing fire safety arrangements	Persons at risk		Actions required
<i>Escape route from west fire exit blocked</i>	<i>All personnel using escape route</i>		<i>Unblock escape route from west fire exit</i>
<i>Fire escape stairs from the north side showing signs of rusting</i>	<i>All personnel using escape route</i>		<i>Refurbish north fire escape stairs</i>
<i>Exit sign in the upper office level hidden</i>	<i>All personnel escaping</i>		<i>Reposition exit sign in upper office level</i>
<i>Self-closer on fire door between the office area and the workshop has been removed</i>	<i>All personnel escaping</i>		<i>Replace the self-closer on fire door between the office area and the workshop</i>
<i>Assembly location on the fire action notices not filled out</i>	<i>All personnel in the factory</i>		<i>Identify the assembly location on the fire action notices</i>
<i>Fire drills not undertaken</i>	<i>All personnel in the factory</i>		<i>Undertake fire drills, start a record of fire drills</i>
<i>Contractors are not given any fire safety training or introduction to the factory layout</i>	<i>Contractors</i>		<i>Organise training and induction sessions for contractors</i>
<i>The duties and responsibilities of specific employees for fire safety are not clear as key personnel have recently left the company</i>	<i>All personnel in the factory</i>		<i>Review the duties and responsibilities of specific employees for fire safety and update the fire action plan</i>