



OCCUPATIONAL  
HEALTH  
AND SAFETY  
PRACTICES

A GUIDE FOR  
PRINTERS



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## ABOUT THIS GUIDE

This guide was developed with the unique needs of Alberta's printing industry in mind. *Occupational Health and Safety Practices: A Guide for Printers* includes the information most printers need to begin to create a safe and healthy workplace for their staff, including:

- An overview of their legal obligations under the *Occupational Health and Safety (OHS) Act*, Regulation and Code.
- The importance of management and organizational commitment to health and safety.
- The need for worker involvement in health and safety planning.
- Information and resources to help them ensure the health and safety of their workers.

The users of this guide are intended to be, but not limited to, employers and workers in the printing industry, including:

- Those engaged in the production of printed material like newspapers, magazines, brochures, leaflets, flyers, and office forms through various mechanical and electronic processes.
- Those engaged in preparatory offset services, which may include: reprographics, platemaking, stitching, collation of materials, and binding.
- Those engaged in bookbinding as a separate business. These activities include: collating, folding, stitching, trimming, and gluing.
- Delivery drivers and material handling relevant to the industry.

Not all requirements under the *OHS Act*, Regulations and Code are discussed in this resource. This resource is not intended to be legal advice nor is it a definitive guide to the legislation. You are advised to review the legislation thoroughly and to consult a lawyer if you have any specific legal issues. In case of inconsistency between this resource and the occupational health and safety legislation or any other legislation, the legislation will always prevail. For more detailed information, refer to the *OHS Act*, Regulation or Code, and OHS Code Explanation Guide, which can be found at: <http://humanservices.alberta.ca/ohs-legislation>.

## Legislation

The Alberta OHS legislation referenced in this guide is highlighted inside yellow boxes. These boxes contain the minimum requirements every work site must meet. Please note that the relevant legislation should be consulted for all purposes of interpreting and applying the law.



Other pieces of legislation that relate to work site health and safety are highlighted inside blue boxes.



- Employment Standards Code: <http://humanservices.alberta.ca/escode>
- Alberta Human Rights Legislation: [www.albertahumanrights.ab.ca](http://www.albertahumanrights.ab.ca)
- Workers' Compensation Board: [www.wcb.ab.ca](http://www.wcb.ab.ca)
- Alberta Building and Fire Codes: Available for purchase at [www.qp.alberta.ca](http://www.qp.alberta.ca)

## Definitions

Definitions for words or terms that require some explanation are highlighted in purple boxes. All terms that are **bolded** in the text of the guide are defined in the glossary at the end of the guide.



## Examples

Examples of different situations that help the reader better understand the information or how it may apply to their workplace are highlighted inside orange boxes.



## Resources

Resources that were referenced or quoted in the development of the text for each section or which may be useful to your company are highlighted in green boxes at the end of each section.



One resource used and quoted extensively in this guide is The Printer's Guide to Health and Safety, written and published by the Health and Safety Executive in the United Kingdom (UK). The UK guide contains detailed information on safe work practices in the printing industry that is also applicable in Alberta and was invaluable in the development of Occupational Health and Safety Practices: A Guide for Printers. The Government of Alberta, Occupational Health and Safety, appreciates the copyright permission granted to the department by the Health and Safety Executive.

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## Disclaimer

The information provided in this guide is solely for the user's information and convenience and, while thought to be accurate and functional, it is provided without warranty of any kind. If in doubt, please refer to the current edition of the *OHS Act*, Regulation and Code.

The Crown, its agents, employees or contractors will not be liable to you for any damages, direct or indirect, arising out of your use of the information contained in this guidance document.

This guidance document is current as of June 2012. The law is constantly changing with new legislation, amendments to existing legislation, and decisions from the courts. It is important that you keep up with these changes and keep yourself informed of the current law.

This guidance document is for general information only and may be applicable to assist in establishing a compliant health and safety system at your worksite. However, it is critical that you evaluate your own unique circumstances to ensure that an appropriate program is established for your worksite. It is strongly recommended that you consult relevant professionals (e.g. lawyers, health and safety professionals and specialists) to assist in the development of your own program.

## Acknowledgements

This guide, Occupational Health and Safety Practices: A Guide for Printers, has been developed in consultation with the:

Printing and Graphics Industries Associations of Alberta  
Northern Alberta Printers Association

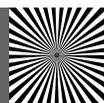
Government of Alberta, Occupational Health and Safety

We acknowledge the valuable contributions of the organizations and their representatives who participated in this project.

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## INTRODUCTION AND HIGHLIGHTS

### Introduction

Alberta's printing industry is a major contributor to our economy. This fast-paced, deadline-driven industry is Canada's fourth largest industry in the manufacturing sector. Alberta printers are one of the top three producers in the nation.

Whether injuries or illnesses result from unguarded printing equipment, chemicals used to clean the plates, or cutting and binding equipment, Albertans working in print shops face a significant risk of injury or illness. Tight deadlines, material handling and air quality also contribute to the need to make occupational health and safety plans essential for these employers.

Not only do employers experience increased pressure and cost when workers suffer an injury, the economic costs associated with these injuries are secondary to the negative impact injuries have on families, communities and workplaces.

The Alberta Government is committed to the prevention of work-related injuries, illnesses and fatalities across the province.

This guide, ***Occupational Health and Safety Practices: A Guide for Printers***, provides information to increase employers' awareness of their responsibilities under the OHS legislation for the prevention of work-related incidents.

### About the Printing Industry

Two recognized methods of printing are Offset and Digital. The Offset grouping is divided into:

- Web press, in which a continuous roll is fed through a press.
- Sheet fed printing, in which a press prints sheets of paper.

The most common printing methods include:

#### **Offset Lithography**

This method takes an image from a plate, offsets it onto a rubber blanket of an impression cylinder, and then transfers it onto a sheet of paper. The automatic process uses a flat (planographic) image carrier on which the image to be printed obtains ink from ink rollers, while the non-printing area attracts a water-based film (called "fountain solution"), keeping the non-printing areas ink-free.

### **Digital**

Digital printing includes any method in which the image is directly placed on the paper without the intervention of a plate. This includes everything from desktop systems and large format devices to automated high production machines with bindery components. With the exception of wide format, most digital printing machines are sheetfed.

### **Wide Format**

Wide format printing is a type of digital printing which is done on printers with a print width between 17" and 100". Printers over the 100" mark may be called "super-wide" or "grand". Wide format printing is used for banners, posters and general signage, and in some cases may be more economical than short-run methods such as screenprinting. Wide format printers generally use a roll of print material rather than individual sheets and may incorporate hot-air dryers to prevent prints from sticking to themselves as they are produced.

### **Resources**

Canada Printing Industry Association website:

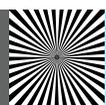
**[www.cpia-aci.ca/industry-information/index\\_e.php](http://www.cpia-aci.ca/industry-information/index_e.php)**

Alberta Workers Compensation Board, General Statistics:

**[www.my.wcb.ab.ca/lcr/public/RetrieveReports.aspx](http://www.my.wcb.ab.ca/lcr/public/RetrieveReports.aspx)**

The Printer's Guide to Health and Safety. Health and Safety Executive,

2002. (UK) **[www.hse.gov.uk/pubns/books/IACPrintersGuide.htm](http://www.hse.gov.uk/pubns/books/IACPrintersGuide.htm)**



## Highlights of This Guide

### Section 1: OHS Legislation

Employers are legally responsible for providing a safe and healthy working environment for workers.

Overview of Alberta Occupational Health and Safety (OHS) legislation.

### Section 2: Organizational Commitment to Health and Safety

Details of the importance of employers and workers taking responsibility for occupational health and safety.

Includes:

- Health & safety management systems.
- Health and safety policy.

### Section 3: Hazard Identification, Assessment and Control

Hazard identification, assessment and control are key elements in creating an effective health and safety system and important requirements under Alberta's OHS Code.

Includes:

- Hazard assessment and control sheet.
- Worksite inspection form.

### Section 4: Printing Industry: Physical Hazards

Identifies specific physical hazards in the print shop.

Includes:

- Hazard and control chart for selected printing processes, summarizing the physical hazards associated with noise, manual material handling, conveyers and controls for each process.

### Section 5: Chemical Hazards and WHMIS

Employers and workers are responsible for having adequate hazard information related to the chemicals common to the printing industry and to understand how WHMIS is used to manage hazardous materials in the workplace.

### Section 6: Psychosocial Hazards in the Printing Industry

The mental health of workers in the printing industry could be compromised if the psychosocial hazards that stem from human and social factors are not identified and addressed.

### Section 7: Worker Competency and Training

Employers and workers are responsible for ensuring they are capable of and trained for the work that is to be done.

Includes:

- Worker orientation record template.
- Record of training template.

### Section 8: Emergency Preparedness and Response Plan

An emergency response plan is a requirement in the workplace. The OHS Code requires employers to establish an emergency response plan for response to an emergency that may require rescue or evacuation.

Includes:

- Emergency response plan template.

### Section 9: First Aid

Employers must ensure that workers have access to appropriate first aid services and supplies.

### Section 10: Workplace Violence

Many workplaces are susceptible to violence from within the organization and from outside. This hazard has to be assessed and controlled like any others.

Includes:

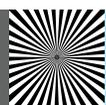
- Tips to identify and prevent workplace violence.

### Section 11: Working Alone

Working alone in a print shop can be dangerous. Employers are required to ensure workers working alone have effective ways to communicate and get assistance if there is an emergency or the worker is injured or ill.

### Section 12: Incident Management and Investigation

Workers must report incidents including near misses to their employer. Employers must ensure that all incidents are investigated and corrective measures to prevent incidents from happening again must be implemented.



**SECTION 1  
OHS LEGISLATION**

Current to June 2012

1



## SECTION 1: OHS LEGISLATION

### Employer responsibilities under the OHS Legislation

Whether your company is big or small, based at one location or many, as an employer you are legally responsible to make sure that the working environment is safe and healthy.

In Alberta, the requirements for occupational health and safety are outlined in the *Occupational Health and Safety Act (OHS Act)*, Regulation (OHS Regulation), and Code (OHS Code). These documents are available for viewing or downloading on the Government of Alberta, Occupational Health and Safety (OHS) web site at: **www.worksafe.alberta.ca**. Official printed copies may be purchased from the Queen's Printer at: **www.qp.gov.ab.ca** or at:

Main Floor, Park Plaza  
10611 - 98 Avenue  
Edmonton AB T5K 2P7  
Phone: 780-427-4952  
Fax: 780-452-0668

Call any Government of Alberta office toll-free. Dial 310-0000, then the area code and telephone number you want to reach. If the number is unknown, an operator will direct your call.

### Availability of Legislation

An employer must ensure that a current paper or electronic copy of each of the *Occupational Health and Safety Act*, the Occupational Health and Safety Regulation and the Occupational Health and Safety Code is readily available for reference by workers.

Reference: OHS Code, Part 1, Section 2.1

#### **What if I have questions about the legislation?**

If you have questions about the legislation, check the OHS website at: **http://humanservices.alberta.ca/ohs** or call the OHS Contact Centre at 1-866-415-8690 (Toll free in Alberta), 780-415-8690 (Edmonton and surrounding area)

## Employer Responsibilities

Under the *OHS Act* and Regulation, employers are responsible for ensuring the health and safety of all workers at the work site. There are also more specific requirements of employers in the OHS Code, depending on the hazards and the work that is to be done. These include, but are not limited to the following:

Every employer shall ensure, as far as it is reasonably practicable for the employer to do so, the health and safety of:

- Workers engaged in the work of that employer, and
- Those workers not engaged in the work of that employer but present at the work site at which that work is being carried out, and
- That the workers engaged in the work of that employer are aware of their responsibilities and duties under this Act, the regulations and the adopted code.

Reference: *OHS Act*, Section 2(1(a) and (b))

Employer means

- A person who is self employed in an occupation.
- A person who employs one or more workers.
- A person designated by an employer as the employer's representative.
- A director or officer of a corporation who oversees the occupational health and safety of the workers employed by the corporation.

Reference: *OHS Act*, Section 1(k)

## What is a Work Site?

“Work site” means a location where a worker is, or is likely to be, engaged in any occupation and includes any vehicle or mobile equipment used by a worker in an occupation.

Reference: *OHS Act*, Section 1(cc)

## Serious Injuries, Accidents and Reportable Incidents

If an injury or accident (described below) occurs at a work site, the employer shall notify a Director of Inspection of the time, place and nature of the injury or accident as soon as possible. Injuries and accidents to be reported are:

- An injury or accident that results in death.
- An injury or accident that results in a worker's being admitted to a hospital for more than 2 days.
- An unplanned or uncontrolled explosion, fire or flood that causes a serious injury or that has the potential of causing a serious injury.
- The collapse or upset of a crane, derrick or hoist.
- The collapse or failure of any component of a building or structure necessary for the structural integrity of the building or structure.

Reference: *OHS Act*, Section 18(2)

If an injury or accident referred to in subsection 18(2) occurs at a work site or if any other serious injury or any other accident that has the potential of causing serious injury to a person occurs at a work site, the prime contractor, the contractor or employer responsible for that work site shall:

- Carry out an investigation into the circumstances surrounding the serious injury or accident.
- Prepare a report outlining the circumstances of the serious injury or accident and the corrective action(s), if any, undertaken to prevent a recurrence of the serious injury or accident, and
- Ensure that a copy of the report is readily available for inspection by an officer.

Reference: *OHS Act*, Section 18(3)

### What if I'm not sure if I need to report it or not?

If you are in doubt about whether an incident at your work site needs to be reported, call the OHS Contact Centre and they will let you know what to do next. Sometimes incidents that don't seem that serious can end up being reportable. Making OHS aware of it will better allow them to respond and investigate if the situation changes.

Note: There are separate requirements for reporting injuries to the Worker's Compensation Board (WCB). These are covered under the *Worker's Compensation Act*, which is different from the Occupational Health and Safety legislation. For more information and access to WCB publications and forms go to: [www.wcb.ab.ca](http://www.wcb.ab.ca)

## Other Employer Responsibilities

### Equipment

An employer must ensure that all equipment used at a work site:

- Is maintained in a condition that will not compromise the health or safety of workers using or transporting it.
- Will safely perform the function for which it is intended or was designed.
- Is of adequate strength for its purpose, and
- Is free from obvious defects.

If a worker is required under the Act to use or wear specific equipment, the employer must ensure that the worker uses or wears the equipment at the work site.

Reference: OHS Regulation, Section 12

### General Protection of Workers

If work is to be done that may endanger a worker, the employer must ensure that the work is done:

- By a worker who is competent to do the work, or
- By a worker who is working under the direct supervision of a worker who is competent to do the work.

An employer who develops or implements a procedure or other measure respecting the work at a work site must ensure that all workers who are affected by the procedure or measure are familiar with it before the work is begun.

An employer must ensure that workers who may be required to use safety equipment or protective equipment are competent in the application, care, use, maintenance and limitations of that equipment.

If a regulation or an adopted code imposes a duty on a worker, the worker's employer must ensure that the worker performs that duty.

Reference: OHS Regulation, Section 13

### Safety Training

An employer must ensure that a worker is trained in the safe operation of the equipment the worker is required to operate.

An employer must ensure that the training includes the following:

- The selection of the appropriate equipment.
- The limitations of the equipment.
- An operator's pre use inspection.
- The use of the equipment.
- The operator skills required by the manufacturer's specifications for the equipment.
- The basic mechanical and maintenance requirements of the equipment.
- Loading and unloading the equipment if doing so is a job requirement.
- The hazards specific to the operation of the equipment at the work site.

If a worker may be exposed to a harmful substance at a work site, an employer must:

- Establish procedures that minimize the worker's exposure to the harmful substance, and
- Ensure that a worker who may be exposed to the harmful substance.
  - Is trained in the procedures.
  - Applies the training, and
  - Is informed of the health hazards associated with exposure to the harmful substance.

Reference: OHS Regulation, Section 15

### Worker Responsibilities

Under Occupational Health and Safety legislation, workers also have responsibilities. These are outlined throughout the *OHS Act*, Regulation, and Code and include, but are not limited to, the following:

Every worker shall, while engaged in an occupation:

- Take reasonable care to protect the health and safety of the worker and of other workers present while the worker is working, and
- Co-operate with the worker's employer for the purposes of protecting health and safety of:
  - The worker.
  - Other workers engaged in the work of the employer, and
  - Other workers not engaged in the work of that employer but present at the work site at which that work is being carried out.

Reference: *OHS Act*, Section 2(2)

### **Duties of Workers**

- A worker who is not competent to perform work that may endanger the worker or others must not perform the work except under the direct supervision of a worker who is competent to perform the work.
- A worker must immediately report to the employer equipment that:
  - Is in a condition that will compromise the health or safety of workers using or transporting it.
  - Will not perform the function for which it is intended or was designed.
  - Is not strong enough for its purpose, or
  - Has an obvious defect.
- If a regulation or an adopted code imposes a duty on a worker:
  - The duty must be treated as applying to circumstances and things that are within the worker's area of occupational responsibility, and
  - The worker must perform that duty.

Reference: OHS Regulation, Section 14

### **Safety Training**

- A worker must participate in the training provided by an employer.
- A worker must apply the training.

Reference: OHS Regulation, Section 15 (4) (5)

### **Personal Protective Equipment**

- A worker must:
  - Use and wear properly the appropriate personal protective equipment specified in the OHS Code in accordance with the training and instruction received.
  - Inspect the personal protective equipment before using it, and
  - Not use personal protective equipment that is unable to perform the function for which it was designed.

Reference: OHS Code, Part 18, Section 22

## Imminent Danger

Imminent danger means, in relation to any occupation,  
“a danger that is not normal for that occupation, or a danger under  
which a person engaged in that occupation would not normally carry out  
the person’s work”.

Reference: *OHS Act*, Section 35 (2 (a) (b))

### Example of Imminent Danger

- Work that may result in the uncontrolled release of a toxic or flammable substance without proper ventilation.
- Use of continuous feed machinery without the proper safeguards.
- Fire.

## Worker Responsibilities in Relation to Imminent Danger

No worker shall:

- Carry out any work, if on reasonable and probable grounds, the worker believes that there exists an imminent danger to the health or safety of that worker.
- Carry out any work if, on reasonable and probable grounds, the worker believes that it will cause to exist an imminent danger to the health or safety of that worker or another worker present at the work site.
- Operate any tool, appliance or equipment if, on reasonable and probable grounds, the worker believes that it will cause to exist an imminent danger to the health or safety of that worker or another worker present at the work site.

A worker who refuses to carry out work or operate a tool, appliance or equipment shall, as soon as practicable, notify the worker’s employer at the work site of the worker’s refusal and the reason for refusal.

Reference: *OHS Act*, Section 35 (1(a) (b) (c) (3))

## Employer Responsibilities in Relation to Imminent Danger

On being notified of refusal to work under imminent danger, the employer shall:

- Investigate and take action to eliminate the imminent danger.
- Ensure that no worker is assigned to use or operate the tool, appliance or equipment or perform the work for which a worker has made notification of refusal to work unless.
  - The worker to be assigned is not exposed to imminent danger or
  - The imminent danger has been eliminated.
- Prepare a written record of the worker's notification, the investigation and action taken.
- Give the worker who gave the notification a copy of the record.

Reference: *OHS Act*, Section 35 (4)(a) (b) (c) (d)

Where disciplinary action prohibited:

- No person shall dismiss or take any other disciplinary action against a worker by reason of that worker acting in compliance with the *OHS Act*, the regulation, the adopted code order given under this Act or regulation.

Reference: *OHS Act*, Section 36

## Role of the Occupational Health and Safety (OHS) Officer

The role of an OHS Officer is to ensure that employers are meeting the minimum legislated standards required in the *OHS Act*, Regulation and Code. Officers typically do this through a combination of education and inspections at work sites.

OHS Officers may visit work sites for a variety of reasons including, but not limited to:

- Addressing complaints received about possible health and safety concerns.
- Responding to a reportable incident under section 18 of the *OHS Act*.
- Conducting a presentation to provide information on the legislation.
- Conducting an inspection as a part of a strategic inspection initiative.
- Conducting an unannounced inspection of a worksite.

### **Inspection:**

An officer may:

- At any reasonable hour enter into any work site and inspect that work site.
- Require the production of any records, books, plans or other documents that relate to the health or safety of workers; and may examine them, make copies of them or remove them temporarily for the purpose of making copies.
- Inspect, seize or take samples of any material, product, tool, appliance or equipment being produced, used or on the work site that is being inspected.
- Make tests and take photographs or recordings in respect of any work site.
- Interview and obtain statements from persons at the work site.

Reference: *OHS Act*, Section 8 (1(a) (b) (c) (d) (e))

The Officer may write orders to the employer, worker, contractor or prime contractor to correct any deficiencies related to the legislation and follow-up at a later date to ensure compliance. If an OHS Officer sees something at a work site that could immediately be dangerous to workers, they can write a stop work order for activity or stop use order for a particular piece of equipment.

### **Order to remedy unhealthy or unsafe conditions**

When an officer believes that the work is unsafe or unhealthy at a work site, the officer may write an order for the person responsible for the work:

- To stop the work that is specified in the order, and
- To take measures to ensure that the work will be carried out in a healthy and safe manner.

Reference: *OHS Act*, Section 9 (1(a) (b))

OHS Officers have authority to enforce the *OHS Act*, Regulation and Code; however, they do not:

- Assist employers in writing or comment on the quality of health and safety policies and procedures. This is the employer's responsibility.
- Grant exceptions to legislated requirements. This must be done by making a written application to the occupational health and safety policy branch.
- Assist employers in conducting investigations.
- Have any involvement or influence with the Workers' Compensation Board.

## Penalties for Non-Compliance with the OHS Legislation

### Provincial Legislation

#### Under Alberta's *OHS Act*, the following penalties can be applied:

- A person who contravenes the *OHS Act*, the regulation of an adopted code or fails to comply with an order made under this *Act*, or the regulations or an acceptance, is guilty of an offence and liable
  - For a first offence,
    - To a fine of not more than \$500,000, and in the case of a continuing offence, to a further fine of not more than \$30,000 for each day during which the offence continues after the first day or part of a day; or
    - To imprisonment for a term not exceeding 6 months, or to both fines and imprisonment.
  - For a 2nd or subsequent offence,
    - To a fine of not more than \$1,000,000, and in the case of a continuing offence, to a further fine of not more than \$60,000 for each day during which the offence continues after the first day; or
    - To imprisonment for a term not exceeding 12 months, or to both fines and imprisonment.
- A person who fails to comply with an order made under section 10 or as varied under section 16 (*OHS Act*) is guilty of an offence and liable to a fine of not more than \$1,000,000 or imprisonment for a term not exceeding 12 months or to both fine and imprisonment.
- A person who knowingly makes any false statement or knowingly gives false information to an officer or a peace officer engaged in an inspection or investigation under section 8 or 19 (*OHS Act*) is guilty of an offence and liable to a fine of not more than \$1,000 or to imprisonment for a term not exceeding 6 months or to both fine and imprisonment.
- A prosecution under this *Act* may be commenced within 2 years after the commission of the alleged offence, but not afterwards.

Reference: *OHS Act*, Section 41

### Federal Legislation

Federal legislation is separate from the Alberta OHS legislation.

The *Criminal Code of Canada* holds organizations responsible for acts or omissions which result in workplace fatalities. Organizations are defined in the *Criminal Code* as:

- A public body, a body corporate, a society, a company.
- A firm, a partnership, a trade union or an association of persons created for a common purpose.

Everyone who undertakes, or has the authority, to direct how another person does work or performs a task is under a legal duty to take reasonable steps to prevent bodily harm to that person, or any other person, arising from that work or task.

Reference: Criminal Code of Canada, Section 217.1



## Occupational Health and Safety Code

Specific requirements for health and safety are included throughout the *OHS Act*, Regulation and Code. Parts of the OHS Code include:

OHS Code	
Part	Topic
1	Definitions and General Application
2	Hazard Identification, Assessment and Control
3	Specifications and Certifications
4	Chemical Hazards, Biological Hazards and Harmful Substances
5	Confined Spaces
6	Cranes, Hoists and Lifting Devices
7	Emergency Preparedness and Response
8	Entrances, Walkways, Stairways
9	Fall Protection
10	Fire and Explosion Hazards
11	First Aid
12	General Safety Precautions
13	Joint Work Site Health and Safety Committee
14	Lifting and Handling Loads
15	Managing the Control of Hazardous Energy
16	Noise Exposure

Part	Topic
17	Overhead Power Lines
18	Personal Protective Equipment
19	Powered Mobile Equipment
20	Radiation Exposure
21	Rigging
22	Safeguards
23	Scaffolds and Temporary Work Platforms
24	Toilets and Washing Facilities
25	Tools, Equipment and Machinery
26	Ventilation Systems
27	Workplace Violence
28	Working Alone
29	Workplace Hazardous Materials Information System (WHMIS)
30	Demolition
31	Diving Operations
32	Excavating and Tunnelling
33	Explosives
34	Forestry
35	Health Care and Industries with Biological Hazards
36	Mining
37	Oil and Gas Wells
39	Tree Care Operations
40	Utility Workers - Electrical
41	Work Requiring Rope Access



## Need to Look Something Up?

A quick and easy reference to Alberta's Occupational, Health and Safety Legislation is available online at <http://humanservices.alberta.ca/ohs-actregcode>.

For more detail and explanation of each part of the legislation, refer to the Explanation Guides available at: <http://humanservices.alberta.ca/ohscode-guide>.

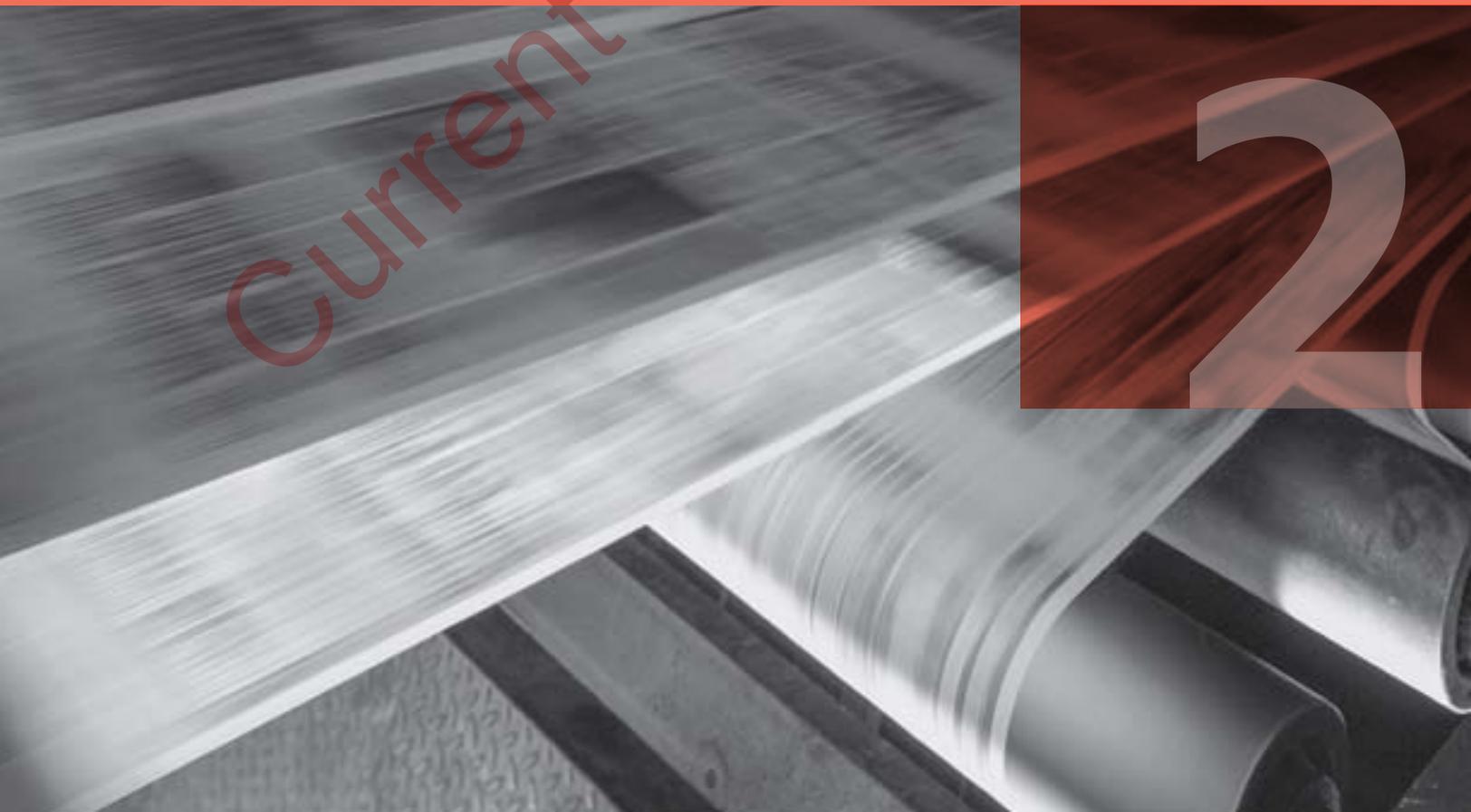
### Other Resources for OHS Laws

- eLearning tool on the legislation at: <http://humanservices.alberta.ca/elearning/Legislation/legislation.htm>
- *OHS Act*: [www.qp.alberta.ca/574.cfm?page=002.cfm&legtype=Acts&isbncIn=0779749200](http://www.qp.alberta.ca/574.cfm?page=002.cfm&legtype=Acts&isbncIn=0779749200)
- OHS Regulation: [www.qp.alberta.ca/574.cfm?page=2003\\_062.cfm&leg\\_type=Regs&isbncIn=077971752X](http://www.qp.alberta.ca/574.cfm?page=2003_062.cfm&leg_type=Regs&isbncIn=077971752X)
- OHS Code: <http://humanservices.alberta.ca/ohscode>
- Employer's Guide: *Occupational Health and Safety Act*: <http://humanservices.alberta.ca/LI009>
- Worker's Guide: *Occupational Health and Safety Act*: <http://humanservices.alberta.ca/LI008>
- Due Diligence: <http://humanservices.alberta.ca/LI015>
- Reporting Injuries and Incidents: <http://humanservices.alberta.ca/LI016>
- Bill C-45 - Overview: [www.ccOHS.ca/oshanswers/legisl/billc45.html](http://www.ccOHS.ca/oshanswers/legisl/billc45.html)
- A Plain Language Guide to Bill C-45: Amendments to the Criminal Code Affecting the Criminal Liability of Organizations: [www.justice.gc.ca/eng/dept-min/pub/c45/index.html#toc](http://www.justice.gc.ca/eng/dept-min/pub/c45/index.html#toc)

**SECTION 2  
ORGANIZATIONAL  
COMMITMENT  
TO HEALTH AND SAFETY**

Current to June 2012

2



## SECTION 2: ORGANIZATIONAL COMMITMENT TO HEALTH AND SAFETY

The most common reported injuries to workers employed in the printing industry are related to overexertion, contact with objects or equipment, falls, bodily reaction or exertion, or being struck by an object.

These injuries occur most commonly to the back, fingers, hands, wrists, trunk and arms. The most common nature of these injuries are sprains, open wounds, superficial wounds, fractures, dislocation, nerve damage and other traumatic injuries.<sup>1</sup>

### Did you know?

Workers age 35-50 are at the highest risk of injury in the printing industry?<sup>2</sup>

Why should we pay attention to health and safety?

#### ✓ It is the right thing to do.

Protecting workers from injury and illness is the right thing to do.

#### ✓ It's the law.

Occupational health and safety is about the prevention of workplace injury or illness. Because it is such an important issue, there are laws in place to ensure that Albertans have a safe and healthy place to work.

#### ✓ Health and Safety is also good business.

Informed employers also realize that health and safety is good business – and that health and safety pays in more ways than one.

#### ✓ More Business, Better Business.

A safe and healthy business is a well-managed business. That's why:

- Many companies check to ensure that suppliers have a good health and safety record before they contract them for work or to provide services.
- Often financial institutions are interested in a firm's health and safety record when considering a loan application.
- An unsafe business exposes you to liabilities that prospective purchasers may not want to assume.

#### ✓ More Motivated Workers

- An active commitment to health and safety lets workers know that they matter most. You have already invested in your workers through training and on-the-job experience. It makes sense to keep them in their jobs by preventing injury and illness.
- Having a safe and healthy workplace may help in attracting and retaining workers.

<sup>1</sup> Alberta Workers' Compensation Board, General Statistics

<sup>2</sup> Alberta Workers' Compensation Board, General Statistics

### ✓ **Better Quality**

Many businesses, large and small, have found that the quality of their products and services improved. Many factors contribute to improved quality, such as:

- Training.
- Effective communication.
- Worker involvement.
- A system for ensuring standards are met.

Like quality, health and safety has to start at the top with management commitment.

## **Measuring Your Commitment and Involvement**

As an employer, you should take every possible opportunity to show your workers that you are committed to health and safety practices by becoming actively involved. Talk to your workers about your health and safety practices. Offer your suggestions for improvement and ask for their suggestions. Make your workers feel comfortable coming to you to discuss their concerns. At meetings, make sure health and safety is discussed and take an active role.

A template for measuring your commitment and involvement can be found at the end of this section.

## **What is a Health and Safety Management System?**

A health and safety management system identifies, assesses, eliminates and controls workplace hazards. These systems should reduce the incidence of injury and illness at the workplace.

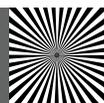
By using this guide and following up with the resources, employers and workers can build an effective health and safety management system.

When creating a health and safety management system, the scope and complexity varies depending on the type of workplace and the nature of the work performed.

Although health and safety management systems may vary in their content, application and evaluation, their goal is the same – to prevent work-related incidents, injuries, illnesses and fatalities.

Health and safety management systems generally include the following components:

- Management leadership and organizational commitment.
- Hazard identification and assessment.
- Hazard control.
- Ongoing worksite inspections.
- Qualifications, orientations and training.
- Emergency preparedness.
- Incident investigation.
- Program administration.



## Establishing a Company Health and Safety Policy

A clear, concise policy statement should reflect management's commitment, support and attitude to the health and safety program for the protection of workers.

A health and safety policy states:

- An employer's commitment to health and safety.
- The overall goals and objectives for health and safety.
  - Many employers set zero incidents as their ultimate goal.
  - To achieve their goals, employers must also have adequate systems of incident tracking, reporting and investigation.
  - The requirements set out in the *OHS Act* can serve as baseline goals for employers.
- The responsibilities of management, workers, as well as visitors and contractors if applicable.

## Getting Started

1. Draft your company health and safety policy and have it signed by the owner or CEO of the company.
2. Share copies of the signed policy with co-workers and make it available throughout the work site (e.g. talk about it at health and safety meetings; post it as reference on bulletin boards, lunch rooms).
3. Include the health and safety policy as a part of new worker orientation.
4. Include the health and safety policy in the health and safety manual.
5. Ensure everyone commits to health and safety. Build it into performance reviews at all levels.
6. Senior management should tour the work site at least annually to communicate and reinforce health and safety practices and behaviours.
7. Develop a process for addressing health and safety for contractors and visitors at your site.

A sample health and safety policy can be found at the end of this section.

## Where Can I Get Additional Help?

The Alberta Government, through associations called Certifying Partners, can provide training for the Partnerships in Injury Reduction and Certificate of Recognition (COR) programs. These programs support the company's commitment to health and safety and are available to provide training and assistance to develop and promote health and safety initiatives in the workplace.

A **Certifying Partner** is responsible for assessing the quality of health and safety management systems in Alberta, and issuing Certificates of Recognition to employers.



A **Partner in Injury Reduction** is an association, corporation or organization that wishes to take a leadership role through influencing its members, contractors and others.

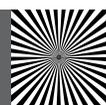


A **Certificate of Recognition (COR)** is awarded to employers who develop health and safety programs that meet established standards



Detailed contact information for the Partnerships in Injury Reduction (PIR) Program and the COR programs are available on the OHS website at: <http://humanservices.alberta.ca/ohs-partnerships>.

It is important to note that Canada also has a standard for health and safety programs known as the Canadian Standards Association (CSA) Z1000. The Standards Council of Canada (SCC) encourages the use of CSA Z1000 by Canadian jurisdictions and industries. For more information visit CSA Z1000 Occupational Health and Safety Management at: [www.shopcsa.ca/onlinestore/GetCatalogDrillDown.asp?Parent=4321](http://www.shopcsa.ca/onlinestore/GetCatalogDrillDown.asp?Parent=4321).

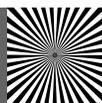


### Resources for Health and Safety Management Systems

- eLearning tool on the Health and Safety Management Systems: <http://humanservices.alberta.ca/elearning/HealthAndSafety/data/HealthAndSafety.html>
- Building an Effective Health and Safety Management System - Partnerships in Injury Reduction: <http://humanservices.alberta.ca/ohs-hsmanagement>
- CCOHS - to Writing an OHS Policy Statement: [www.ccohs.ca/oshanswers/hsprograms/osh\\_policy.html](http://www.ccohs.ca/oshanswers/hsprograms/osh_policy.html)
- Ontario Ministry of Labour- How to prepare an Occupational Health and Safety Policy: [www.labour.gov.on.ca/english/hs/pubs/ohsa/ohsag\\_appa.php](http://www.labour.gov.on.ca/english/hs/pubs/ohsa/ohsag_appa.php)



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## Measuring Management's Commitment and Involvement - Sample Template

To determine the extent of your commitment to and involvement in health and safety, read the questions in the following list:

		Yes	No
1.	Do you set health and safety goals, assign responsibilities and hold people accountable for them?	<input type="checkbox"/>	<input type="checkbox"/>
2.	Do you hold yourself accountable for all your health and safety responsibilities?	<input type="checkbox"/>	<input type="checkbox"/>
3.	Do you have a joint worksite health and safety committee?	<input type="checkbox"/>	<input type="checkbox"/>
4.	Is health and safety discussed at all your meetings?	<input type="checkbox"/>	<input type="checkbox"/>
5.	Are your workers given the opportunity to express their concerns?	<input type="checkbox"/>	<input type="checkbox"/>
6.	Do they feel comfortable about doing this?	<input type="checkbox"/>	<input type="checkbox"/>
7.	Do you follow up on the concerns raised by your workers?	<input type="checkbox"/>	<input type="checkbox"/>
8.	Do you do regular maintenance of equipment or machinery?	<input type="checkbox"/>	<input type="checkbox"/>
9.	Do you enforce proper work procedures regardless of the work schedule?	<input type="checkbox"/>	<input type="checkbox"/>
10.	Do you ensure that proper safety procedures are reviewed regularly?	<input type="checkbox"/>	<input type="checkbox"/>
11.	Are health and safety concerns considered in budget planning?	<input type="checkbox"/>	<input type="checkbox"/>
12.	Do you take an active role in all aspects of your health and safety system?	<input type="checkbox"/>	<input type="checkbox"/>

This form is for example purposes only. Completing this form alone will not necessarily put you in compliance with the legislation. It is important and necessary that you customize this document to meet the unique circumstances of your worksite. Further, it is essential that this document is not only completed, but is used, communicated, and implemented in accordance with the legislation. The Crown, its agents, employees or contractors will not be liable to you for any damages, direct or indirect, arising out of your use of this form.



## Sample Health and Safety Policy

### Corporate Policy on Health and Safety

This company is committed to providing a safe and healthy work environment that meets or exceeds the standards of the Provincial *Occupational Health and Safety Act*, Regulation and Code with a purpose of protecting employees, visitors, contractors, client's company property and the environment.

**Everyone** employed by this company (management, employees, contractors, and sub-contractors) is responsible for maintaining the health and safety management system by setting a good example as well as understanding their assigned responsibilities and the legislative requirements as they apply to their work site and job tasks.

It is the responsibility of **management** to provide leadership and the required resources to promote the health and safety management system. Management will:

- Establish and maintain acceptable standards for the worksite.
- Ensure that safety and health hazards are identified, controlled or eliminated.
- Develop work procedures that will achieve operational targets without incidents or illness.
- Provide training and required personal protective equipment where necessary.
- Monitor worker health and safety performance.

It is the responsibility of **every supervisor** to set an example and provide leadership in the health and safety management system. Supervisors will:

- Ensure that work site inspections are completed.
- Employees receive appropriate training in safe work procedures.
- Monitor worker health and safety performance.
- Correct unsafe practices or conditions.
- Enforce site safety rules and legislation.
- Investigate all work site incidents.

It is the responsibility of every worker to:

- Follow all safe work procedures.
- Perform all duties in a safe and healthy manner.
- Report any identified hazards.
- Observe all site health and safety rules and legislation.
- Cooperate in creating a safe and healthy working environment.
- Refuse unsafe work.

It is the responsibility of every other employer on that site to:

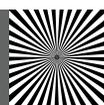
- Follow safe work procedures.
- Perform duties in a safe and healthy manner.
- Report any identified hazards.
- Observe all site health and safety rules and legislation.
- Cooperate in creating a safe and healthy working environment.

Our company's goal is a healthy, injury-free workplace. Through everyone's personal commitment and active participation, we can achieve this goal.

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

This form is for example purposes only. Completing this form alone will not necessarily put you in compliance with the legislation. It is important and necessary that you customize this document to meet the unique circumstances of your worksite. Further, it is essential that this document is not only completed, but is used, communicated, and implemented in accordance with the legislation. The Crown, its agents, employees or contractors will not be liable to you for any damages, direct or indirect, arising out of your use of this form.



**SECTION 3  
HAZARD IDENTIFICATION,  
ASSESSMENT AND CONTROL**

**3**

## SECTION 3: HAZARD IDENTIFICATION, ASSESSMENT AND CONTROL

“The printing and graphic communications industry employs over 274,000 people working in more than 25,900 establishments across Canada. Small firms dominate the industry, with about 87% of companies employing fewer than 10 people. To remain competitive, the industry requires a highly skilled workforce”.

*Canadian Printing Industries Sector Council*

Given the number of people working in the printing industry in Alberta and across Canada, and the need for those workers to be highly skilled in occupations that may expose them to hazards, health and safety must be a priority for everyone in the industry. Hazard identification, assessment and control are at the foundation of occupational health and safety, and are an important requirement under the Alberta OHS Code.

This section outlines some general information on hazard assessment and control that can apply to a broad range of occupations.

### **Why Conduct a Hazard Assessment?**

Identifying workplace hazards is an important first step toward preventing work-related injuries or illnesses. Hazard identification and assessment means taking a thorough look at what could harm workers and setting priorities for preventing or controlling exposure of workers to the identified hazards.

In its simplest form, a hazard assessment answers the question “What if ...”

- There was no personal protective equipment available to workers when handling inks or coatings?
- Guards are removed?
- A roll stand did not have a hoist?
- Workers could not change the height of equipment (i.e. For folders, guillotine cutter)?
- The local exhaust ventilation system did not work?

Performing hazard assessments:

- Identifies the need for worker training.
- Identifies poor or missing procedures.
- Increases worker participation and ownership of workplace health and safety.
- Reduces production losses and damage to equipment and property.
- Provides a useful tool when investigating incidents.

## Employer Responsibilities

### Employers must:

- Assess a work site and identify existing and potential hazards before work begins at the work site or prior to the construction of a new work site.
- Prepare a report of the results of a hazard assessment and the methods used to control or eliminate the hazards identified.
- Ensure the date on which the hazard assessment is prepared or revised is recorded on it.
- Involve affected workers in the hazard assessment and in the control or elimination of the hazards identified.
- Ensure workers affected by the hazards identified are informed of the hazards and of the methods used to control or eliminate the hazards.

Reference: OHS Code, Part 2

### When to Repeat the Hazard Assessment

An employer must make sure that a hazard assessment is done:

- At **reasonably practicable** intervals to prevent the development of unsafe and unhealthy working conditions.
- When a new work process is introduced.
- When a work process or operation changes, or
- Before the construction of significant additions or alternations a work site.

Reference: OHS Code, Section 7(4)

Hazard assessments should be performed periodically, even when nothing has changed. Doing so confirms that workers are continuing to follow correct procedures and that equipment is in proper working condition. Assessments should be done at intervals that anticipate problems before the safety and health of workers is affected.

## Step 1: Identifying and Assessing Hazards

### What is a Hazard?

A hazard is any situation, condition or thing that may be dangerous to the safety or health of workers.

Reference: OHS Code, Part 1

Hazards may be grouped into four categories. They may include but are not limited to:

#### Physical Hazards

- Lifting and handling loads e.g. manual materials handling.
- Repetitive motions.
- Slipping and tripping hazards e.g. poorly maintained floors.
- Moving parts of machinery.
- Sharp objects and tools e.g. knives, needles, box cutters.
- Working at heights e.g. elevated platforms, roofs.
- Pressurized systems e.g. compressed air.
- Vehicles e.g. forklift trucks, trucks.
- Fire.
- Electricity e.g. poor wiring, frayed cords.
- Excess noise e.g. loud printing presses or other processes.
- Inadequate lighting.
- Extreme temperatures.
- Vibration.
- Non - Ionizing radiation.
- Restricted spaces.

#### Chemical Hazards

- Chemicals e.g. cleaning solvents, inks, lacquers.
- Dusts e.g. spray powder, paper dust, thermography.
- Mists and vapours e.g. inhalation of UV ink mist/cleaning solvent.
- Gases e.g. ozone from UV curing lamps.

#### Biological Hazards

- Viruses, fungi, bacteria.
- Moulds.
- Blood and body fluids.

## Psychosocial Hazards

- Working conditions.
- Workplace violence.
- Working alone.
- Harassment and bullying.
- Stress.
- Fatigue.

## Who Should Conduct a Hazard Assessment?

It is best to have a few trained people with different perspectives involved with the process to ensure all the hazards are identified and the appropriate control measures are in place. It can be beneficial to have a representative from the work site health and safety committee, if one exists. At a minimum, the employer(s) and affected worker(s) must be involved.

## How to Conduct a Hazard Assessment

There are a number of ways to find hazards in the workplace:

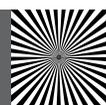
- Walk around and look at your workplace and observe how work is done. Ask your workers what they consider unsafe or unhealthy.
- Think about what could possibly go wrong and do not overlook the things that people may have 'worked around' for years. Ask yourself "what if....?"
- Review any information you may have on a particular piece of equipment (manufacturer's specifications) or chemical (Material Safety Data Sheets - MSDS) to see what it says about safety precautions.
- Talk to others in similar industries to find out what sort of incidents they have had.

More formal processes for conducting a hazard assessment may include:

- Physical inspections - using a checklist or job task hazard assessment (see end of section) - breaking jobs down into tasks or a series of events and identifying the hazards involved with each task.
- Manufacturing process analysis - following a process from start to finish and identifying the hazards involved at each stage.
- Incident investigation - results of incident investigation and analysis of first-aid records may identify the hazards involved.

## Considerations When Looking for Hazards

- What is your work site? e.g. an office, press room, etc.
- How suitable are the tools you use for the task? Are they easy to access?
- How might people be hurt directly by equipment, machinery and tools?
- How might people be hurt indirectly through noise, fumes, radiation, etc?



- How might people be hurt by using chemicals and/or other materials (solvents, fuels, toner, acids, gases)?
- Are workers using equipment and materials correctly?

## Step 2: Eliminating and Controlling Hazards

Whenever possible, hazards should be eliminated. If this is not possible, they must be controlled. Control means reducing the hazard to levels that do not present a risk to worker health and safety. There are many different ways to control workers' exposures to hazards:

<b>1st</b>	<p><b>Engineering controls</b></p> <ul style="list-style-type: none"> <li>• First try to <b>eliminate</b> the hazard completely. This could mean removing trip hazards on the floor, replacing a noisy piece of equipment with one that is not noisy, etc.</li> <li>• If it is not practical to eliminate the hazard completely, try to <b>substitute</b> it with something safer, such as using smaller packages to reduce the weight of items that have to be manually handled; using a less toxic chemical, etc.</li> <li>• <b>Isolate</b> the hazard: for example, use sound proof barriers to reduce noise levels, use an enclosed spray booth for spray painting, use remote control systems to operate machinery.</li> <li>• Use forklifts to move heavy loads, place guards around moving parts of machinery.</li> <li>• Ventilation.</li> </ul>
<b>2nd</b>	<p><b>Administrative controls</b></p> <ul style="list-style-type: none"> <li>• Use safe work procedures.</li> <li>• Provide training and supervision for workers.</li> <li>• Ensure regular maintenance of machinery and equipment.</li> <li>• Limit exposure times by using job rotation.</li> </ul>
<b>Last</b>	<p><b>Personal Protective Equipment (PPE)</b></p> <ul style="list-style-type: none"> <li>• Includes gloves, hard hats, hearing and eye protection, protective clothing, respirators, CSA approved footwear, protective headwear.</li> <li>• Ensure that <ul style="list-style-type: none"> <li>• The right type of PPE is selected for the job.</li> <li>• PPE fits properly and is comfortable under working conditions.</li> <li>• Workers are trained in the need for PPE, its use and maintenance.</li> <li>• PPE is stored in a clean and fully operational condition.</li> </ul> </li> </ul>
	<p><b>Combination of the above may be required</b></p> <ul style="list-style-type: none"> <li>• Engineering.</li> <li>• Administrative.</li> <li>• PPE.</li> </ul> <p>Reference: OHS Code, Section 9</p>

Samples of a completed hazard assessment and a blank template are included at the end of this section. It is important that whichever tool you use addresses all existing and potential hazards at your work site.

## Work Site Inspections

Work site inspections can be conducted at any time by a supervisor and a worker, and should occur as often as possible. Work site inspections are an important way to ensure the health and safety of your workplace by identifying hazards and then eliminating or controlling the hazards.

Inspections should be ongoing especially where workplaces are constantly changing. Scheduled and unscheduled inspections make identifying and controlling hazards a normal part of everyday work. Formal inspections should be conducted by a supervisor and a worker whenever possible.

### Inspections provide:

- Information about hazards or potential hazards not previously noted.
- Information about the effectiveness of the control(s) for eliminating (or reducing the risk) of the existing or potential hazards.

### During the inspection

- Look at how work is performed.
- Identify unsafe or unhealthy conditions and acts that can cause injury or illness, so you can take corrective measures.

### Example

Observe workers to ensure they are using proper lifting techniques for moving heavy materials.



### After the inspection

Develop ways to eliminate or control all hazards you have found by:

- Fixing serious hazards or unsafe work practices *immediately*.
- Controlling other hazards as soon as possible.

### Example

If you find that a ladder has a loose or damaged rung, immediately remove it from service. This ladder can then be repaired or replaced with a new ladder.



At the end of this section you will find a number of forms to assist you in your hazard assessment and control process. The forms are for example purposes only and aren't mandatory. However, they are meant to provide you with a guideline and checklist for conducting your hazard assessment and control processes.

### Resources for Hazard Assessment and Control and Work Site Inspections

- Hazard Assessment eLearning tool at: <http://humanservices.alberta.ca/elearning/hazard/Hazard.htm>
- Canadian Centre for Occupational Health and Safety: [www.ccohs.ca/oshanswers/](http://www.ccohs.ca/oshanswers/)
- Reference: OHS Explanation Guide: Part 2: <http://humanservices.alberta.ca/ohscode-guide>
- CCOHS Prevention & Control of Hazards: Effective Workplace Inspections: [www.ccohs.ca/oshanswers/prevention/effectiv.html](http://www.ccohs.ca/oshanswers/prevention/effectiv.html)
- CCOHS Health & Safety Programs: Workplace Housekeeping – Sample Checklist for General Inspection: [www.ccohs.ca/oshanswers/hsprograms/cklstgen.html](http://www.ccohs.ca/oshanswers/hsprograms/cklstgen.html)
- CCOHS Health & Safety Programs: Inspection Checklists – Sample Checklist for Offices: [www.ccohs.ca/oshanswers/hsprograms/list\\_off.html](http://www.ccohs.ca/oshanswers/hsprograms/list_off.html)
- <http://humanservices.alberta.ca/F001>

## Hazard Assessment Form (Completed Sample)

Company: XYZ Printer

Location: Stony Creek, Alberta

Date: January 15, 2011

Completed by worker representative(s):  
employer representative(s):

Job or Task: \_\_\_\_\_

### Step 1: Identifying Hazards

On the Hazard Identification checklist, check off all the hazards or potential hazards that are present at your work site. Add any identified hazards specific to your work site to the list.

Hazard Identification	
Check off all hazards or potential hazards at your worksite	
Physical Hazards	Chemical Hazards
Lifting and handling loads	<input checked="" type="checkbox"/> Chemicals (identify types)
Repetitive motion	<input type="checkbox"/> Type: <input type="checkbox"/>
Slipping and tripping	<input checked="" type="checkbox"/> Type: <input type="checkbox"/>
Moving parts of machinery	<input type="checkbox"/> Type: <input type="checkbox"/>
Working at heights	<input type="checkbox"/> Type: <input type="checkbox"/>
Pressurized systems	<input type="checkbox"/> Type: <input type="checkbox"/>
Vehicles	<input type="checkbox"/> Dusts <input type="checkbox"/>
Fire	<input type="checkbox"/> Vapour (identify types) <input type="checkbox"/>
Electricity	<input type="checkbox"/> Type: <input type="checkbox"/>
Noise	<input type="checkbox"/> Type: <input type="checkbox"/>
Lighting	<input type="checkbox"/> Type: <input type="checkbox"/>
Temperature - heat or cold	<input type="checkbox"/> Mists (identify types) <input type="checkbox"/>
Vibration	<input type="checkbox"/> Type: <input type="checkbox"/>
Non - Ionizing Radiation	<input type="checkbox"/> Type: <input type="checkbox"/>
Workplace Violence	<input type="checkbox"/> Type: <input type="checkbox"/>
Working Alone	<input checked="" type="checkbox"/> Other: <input type="checkbox"/>
Other:	<input type="checkbox"/> Other: <input type="checkbox"/>
Other:	<input type="checkbox"/> Other: <input type="checkbox"/>
Other:	<input type="checkbox"/> Other: <input type="checkbox"/>



Biological Hazards	Psychosocial Hazards
Add any additional identified hazards specific to your worksite that are not already listed	
Viruses	Working conditions
Fungi (mould)	Fatigue
Bacteria	Stress
Blood and Body Fluids	Other:
	Other:
Other:	Other:
Other:	Other:

Current to June 2012



## Step 2: Hazard Assessment and Control Sheet (completed sample)

- Take the hazards identified on the checklist above and list them on the Hazard Assessment and Control Sheet
- Identify the controls that are in place: engineering, administrative, personal protection equipment or a combination for each hazard
  - Where controls are identified that are not in place, develop an action plan to ensure they are completed.

Hazard	Controls in Place (list)			Priority to Implement Controls (Low, Medium, High)	Follow-up Action(s) For Controls Not in Place	Due Date/Person Responsible
	Engineering	Administrative	Personal Protective Equipment			
Lifting and handling loads	<ul style="list-style-type: none"> <li>• Mechanical lift</li> </ul>	<ul style="list-style-type: none"> <li>• Safe work procedures</li> <li>• Worker training</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	Medium	Worker training program needs to be repeated in 1 month	January 31, 2012 Will B. Safe
Slipping and tripping	<ul style="list-style-type: none"> <li>• Use high visibility cord guards or route cords above doorways</li> </ul>	<ul style="list-style-type: none"> <li>• Safe work procedures for housekeeping</li> </ul>	<ul style="list-style-type: none"> <li>• Non-slip footwear</li> </ul>	Medium	Conduct a work site inspection to ensure cords have been managed appropriately	January 31, 2012 Will B. Safe
Working alone	<ul style="list-style-type: none"> <li>• Panic button</li> </ul>	<ul style="list-style-type: none"> <li>• Contact supervisor when leaving work site</li> <li>• No unauthorized overtime</li> </ul>	<ul style="list-style-type: none"> <li>• Cellular phone</li> </ul>	Medium	Ensure all staff are trained on the working alone procedures	January 31, 2012 Will B. Safe

Signatures: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Hazard Assessment Form

Location: \_\_\_\_\_

Date: \_\_\_\_\_

Completed by worker representative(s): \_\_\_\_\_

employer representative(s): \_\_\_\_\_

Job or Task: \_\_\_\_\_

### Step 1: Identifying Hazards

On the Hazard Identification checklist, check off all the hazards or potential hazards that are present at your work site. Managers and affected workers must be involved in the assessment. Add any identified hazards specific to your work site to the list.

Hazard Identification		
Physical Hazards		Chemical Hazards
Lifting and handling loads	<input type="checkbox"/>	Chemicals (identify types) <input type="checkbox"/>
Repetitive motion	<input type="checkbox"/>	Type: <input type="checkbox"/>
Slipping and tripping	<input type="checkbox"/>	Type: <input type="checkbox"/>
Moving parts of machinery	<input type="checkbox"/>	Type: <input type="checkbox"/>
Working at heights	<input type="checkbox"/>	Type: <input type="checkbox"/>
Pressurized systems	<input type="checkbox"/>	Type: <input type="checkbox"/>
Vehicles	<input type="checkbox"/>	Dusts <input type="checkbox"/>
Fire	<input type="checkbox"/>	Fumes (identify types) <input type="checkbox"/>
Electricity	<input type="checkbox"/>	Type: <input type="checkbox"/>
Noise	<input type="checkbox"/>	Type: <input type="checkbox"/>
Lighting	<input type="checkbox"/>	Type: <input type="checkbox"/>
Temperature – hot or cold	<input type="checkbox"/>	Mists and Vapors (identify types) <input type="checkbox"/>
Vibration	<input type="checkbox"/>	Type: <input type="checkbox"/>
Ionizing radiation	<input type="checkbox"/>	Type: <input type="checkbox"/>
Workplace violence	<input type="checkbox"/>	Type: <input type="checkbox"/>
Working alone	<input type="checkbox"/>	Other: <input type="checkbox"/>
Confined space	<input type="checkbox"/>	Other: <input type="checkbox"/>
Restricted space	<input type="checkbox"/>	Other: <input type="checkbox"/>
Other:	<input type="checkbox"/>	Other: <input type="checkbox"/>
Restricted space	<input type="checkbox"/>	Other: <input type="checkbox"/>
Other:	<input type="checkbox"/>	Other: <input type="checkbox"/>

Biological Hazards	Psychosocial Hazards
Viruses	Working conditions
Fungi (mould)	Fatigue
Bacteria	Stress
Blood and body fluids	Other:
Sewage	Other:
Other:	Other:

Current to June 2012





## Job Task Hazard Assessment and Control Sample Form

Hazard assessment can also be done for each task or process at a work site by identifying the hazards and controls for each task.

- Identify the tasks.
- Identify the existing or potential hazards related to each task.
- Identify the controls that are in place: engineering, administrative, Personal Protection Equipment or combination for each hazard.
  - Where controls are identified that are not in place, develop an action plan to ensure they are completed.

Tasks	Hazard	Plans to eliminate or control the hazards)			Follow-up Actions Required	Due Date/Person Responsible
		Engineering	Administrative	Personal Protective Equipment		

This form is for example purposes only. Completing this form alone will not necessarily put you in compliance with the legislation. It is important and necessary that you customize this document to meet the unique circumstances of your worksite. Further, it is essential that this document is not only completed, but is used, communicated, and implemented in accordance with the legislation. The Crown, its agents, employees or contractors will not be liable to you for any damages, direct or indirect, arising out of your use of this form.



**SECTION 4  
PRINTING INDUSTRY:  
PHYSICAL HAZARDS**

Current to online 2012

4



## SECTION 4: PRINTING INDUSTRY: PHYSICAL HAZARDS

### Health and Safety in the Printing Industry

The Alberta Government promotes safe, healthy and productive workplaces for Alberta's workers. As work is central to people's lives, the stability of families and to our economy, it is important that workers enter into a workplace where their health and safety are protected.

While not all inclusive, this section details many of the physical hazards that are known to be specific to the printing industry and discusses the relevant legislation and possible practices to control these hazards.

### Physical Hazards in the Printing Industry

#### Noise

Exposure to high levels of noise is common in the printing industry and can cause temporary or permanent hearing loss. Temporary hearing loss can result from short-term exposures to noise, with normal hearing returning after a period of rest. Permanent hearing loss can also result depending on the nature of the noise. Noise induced hearing loss is preventable through controls that are aimed at eliminating or reducing noise at the source, along the path or at the worker.

#### Legislated Responsibilities:

An employer must ensure that all reasonably practicable measures are used to reduce the noise to which workers are exposed in areas of the work site where workers may be present.

An employer must ensure that a worker's exposure to noise does not exceed

- the noise exposure limits in Schedule 3, Table 1
- 85dBA Lex

Reference: OHS Code, Part 16, Sections 216, 218



Occupational exposure limits for noise are set out in Part 16 of the Code and Schedule 3 and is shown in Table 1, below.

Exposure Level (dBA)	Exposure Duration
82	16 hours
83	12 hours and 41 minutes
84	10 hours and 4 minutes
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 minutes
100	15 minutes
103	8 minutes
106	4 minutes
109	2 minutes
112	56 seconds
115 and greater	0

Table 1. Occupational Exposure Limits for Noise

Note: Exposure levels and exposure durations to be prorated if not specified

### Noise Exposure Assessment

If workers are, or may be, exposed to noise at a work site in excess of 85 dBA Lex and the noise exposure limits in Schedule 3, Table 1, an employer must do a noise exposure assessment under section 7.

An employer must ensure that a noise exposure assessment is:

- Conducted and interpreted by a competent person, and
- Updated if a change in equipment or process affects the noise level or the length of time a worker is exposed to noise.

Reference: OHS Code, Part 16, Section 219



### **Noise Management Program**

If a noise exposure assessment confirms that workers are exposed to excess noise at a work site, the employer must develop and implement a noise management program that includes policies and procedures.

The employer must ensure that the noise management program includes the following:

- A plan to educate workers in the hazards of exposure to excess noise and to train workers in the correct use of control measures and hearing protection.
- The methods and procedures to be used when measuring or monitoring worker exposure to noise.
- The posting of suitable warning signs in any work area where the noise level exceeds 85 dBA.
- The methods of noise control to be used.
- The selection, use and maintenance of hearing protection devices to be worn by workers.
- The requirements for audiometric testing and the maintenance of test records.
- An annual review of the policies and procedures to address
  - The effectiveness of the education and training plan.
  - The need for further noise measurement, and
  - The adequacy of noise control measures.

A worker who is subject to noise management must cooperate with the employer in implementing the policies and procedures.

Reference: OHS Code, Part 16, Section 221

### **Audiometric Testing**

An employer must provide, at the employer's expense, the following audiometric tests for a worker exposed to excess noise:

- An initial baseline test as soon as is practicable, but not later than six months after the worker is employed or within six months after a worker is exposed to excess noise because of a change in the worker's duties or process conditions.
- Not more than 12 months after the initial baseline test, and
- At least every second year after the test under clause (b).

Reference: OHS Code, Part 16, Section 223

## Controlling the Hazard

### Engineering Controls:

**Substitution** – replace noisy equipment, machinery or processes with quieter ones.

**Modification** – modify the way equipment operates so that it generates less noise. This may include:

- Installing a muffler,
- Reducing equipment vibration by dampening or bracing,
- Improved lubrication, or balancing rotating parts or operating equipment at a lower speed.
- Alternatively, the area itself can be modified. Reverberation, for example, can be reduced by covering walls with sound absorbing materials.

**Isolation** – this may involve isolating workers from a noisy area by having them work in an enclosed room. Examples of this approach include:

- Segregating areas with sound barriers and partitions.
- Isolating equipment by placing it in an enclosure; and
- Using sound absorbent material and covers over noisy equipment.

**Maintenance** – malfunctioning or poorly maintained equipment generates more noise than properly maintained equipment. Noise control equipment must also be properly maintained to be effective.

### Administrative Controls

- Worker education.
- Noise management programs.
- Scheduling of work hours.
- Breaks.

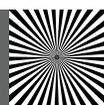
### Personal Protective Equipment (PPE)

- Ear plugs.
- Ear muffs.

More information on noise and hearing protection can be found in the eLearning program at: <http://humanservices.alberta.ca/elearning/noise/index.html>

## Manual Handling

At almost every step of the print process there may be a need to manually lift boxes, paper, bundles, plates, etc. In fact, in Alberta the most common injuries are back strain, primarily due to manual handling of supplies throughout the print process. Improper manual handling can



lead to injuries and musculoskeletal disorders most often in the back, abdomen, neck, upper and lower limbs, and joints. Careful job design can avoid problems, better protect workers and boost productivity.

### **Legislative Requirements**

An employer must provide, where reasonably practicable, appropriate equipment for lifting, lowering, pushing, pulling, carrying, handling or transporting heavy or awkward loads.

An employer must ensure that workers use the equipment provided.

Workers must use the equipment provided for lifting, lowering, pushing, pulling, carrying, handling or transporting heavy or awkward loads.

A heavy or awkward load includes equipment, goods, supplies, persons and animals.

If the equipment provided is not reasonably practicable in a particular circumstance or for a particular heavy or awkward load, the employer must take all practicable means to:

- Adapt the load to facilitate lifting, lowering, pushing, pulling, carrying, handling or transporting the load without injuring workers, or
- Otherwise minimize the manual handling required to move the load.

### **Assessing manual handling hazards**

Before a worker manually lifts, lowers, pushes, pulls, carries, handles or transports a load that could injure the worker, an employer must perform a hazard assessment that considers:

- The weight of the load.
- The size of the load.
- The shape of the load.
- The number of times the load will be moved.
- The manner in which the load will be moved.

If the hazard assessment determines that there is a potential for musculoskeletal injury, an employer must ensure that all reasonably practicable measures are used to eliminate or reduce that potential.

### **Musculoskeletal injuries**

If a worker reports to the employer what the worker believes to be work related symptoms of a musculoskeletal injury, the employer must promptly

- Review the activities of that worker, and of other workers doing similar tasks, to identify work-related causes of the symptoms, if any, and
- Take corrective measures to avoid further injuries if the causes of the symptoms are work related.

Reference: OHS Code, Part 14

Materials handling must be considered when conducting the written hazard assessment. Whenever possible, try to eliminate the need for workers to handle loads manually.

## Controlling the Hazard

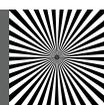
### Administrative Controls

Administrative controls may include such things as:

- Worker training
- Reorganizing or redesigning the tasks to reduce the effort required

Below is a quick reference chart for manual handling safely.

Example tasks	Short-term action	Long-term solution
Loading and unloading deliveries by hand.	Provide help for heavy loads. Reduce the load size.	Palletize loads. Use forklift, pallet jacks, vehicles with tailgate lifts, etc.
Moving materials to and from machines.	Break down the loads into easily handled units.	Use conveyors, hoists, forklifts, pallet jacks, etc. Use air tables (e.g. at guillotine cutters).
Loading and unloading machines.	Raise pallets, etc. to the right height and position.	Automate loading/unloading operations. Use mechanical aids (e.g. scissor lifts and pile hoists).
Assembling and packing.	Use appropriately trained personnel. Rotate the work to reduce repetition.	Provide adjustable workstations. Automate. Provide mechanical aids.
Preparing, maintaining, moving and repairing presses and other equipment.	Use appropriately trained personnel. Ensure adequate working space.	Provide mechanical aids (e.g. hoists).



### Engineering Controls

Wherever possible, if material must be moved, mechanical assistance should be used. Examples include, but are not limited to:

- Scissor lifts and elevating tables at folders and guillotine cutters.
- Pile turners and joggers to reduce the need for hand turning and jogging.
- Mechanical or free-running conveyors to reduce lifting and carrying.
- Hoists and slings at reel stands to reduce manual lifting of paper rolls, especially those mounted on swing arms.
- Roll conveyor carts for localized movement of paper rolls into and out of reel stands.
- Cylinder and roller cart.
- Roll shaft cart.

Other ways of controlling the hazards include:

- Making the load smaller/lighter or easier to grasp (e.g. Buying smaller paper bundles or chemical containers).
- Altering workstation heights to suit the worker.
- Improving the layout of the workplace to make the work more efficient.
- Ensuring adequate manoeuvring space has been provided.

### Workstation Ergonomics

Ergonomics is matching the job to the worker and product to the user. Ergonomics and human factors are often used interchangeably in workplaces. Both describe the interaction between the worker and the job demands. The difference is that ergonomics focuses on how work affects workers and human factors emphasize designs that reduce the potential for human error.<sup>4</sup>

Ergonomic hazards refer to workplace conditions that pose the risk of injury to the musculoskeletal system of the worker. Examples of musculoskeletal injuries include tennis elbow (an inflammation of a tendon in the elbow) and carpal tunnel syndrome (a condition affecting the hand and wrist). Ergonomic hazards include repetitive and forceful movements, vibration, temperature extremes and awkward postures that arise from improper work methods and improperly designed workstations, tools and equipment.<sup>5</sup>

The printing industry has several processes where these types of injuries may occur. To protect workers, the following controls should be considered for this working environment.

<sup>4</sup> COHS [www.ccohs.ca/oshanswers/ergonomics/](http://www.ccohs.ca/oshanswers/ergonomics/) obtained May 17, 2011

<sup>5</sup> COHS [www.ccohs.ca/oshanswers/ergonomics/](http://www.ccohs.ca/oshanswers/ergonomics/)

## Controlling the Hazards

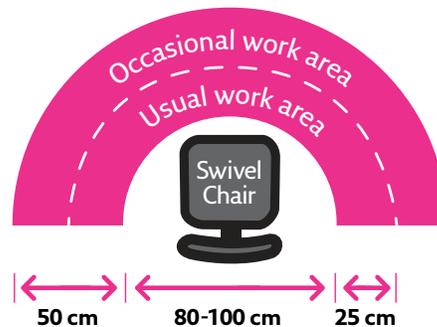
Continuous standing or sitting while working is a common source of discomfort and fatigue. Frequent changes of body positions, including alternating between sitting and standing, helps to avoid fatigue.

- Adjust the workstation to the proper height.
- Use a swivel chair with an adjustable seat height .
- Adjust the chair seat height to 25-35 cm (about 10 - 14 in.) below the work surface.
- Use a footrest with a height of 40-50 cm (about 16 - 20 in.).
- Use anti-fatigue matting.



*Example of sit/stand workstation*

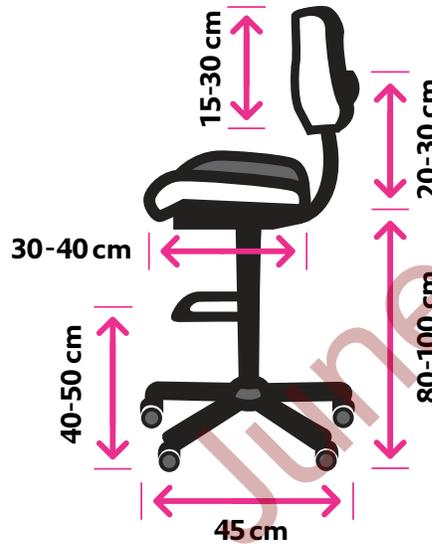
- Arrange work in a semi-circle.
- Use a swivel chair to reduce body twisting, to allow easy movements, and to reduce side-to-side motions.
- Use sloping work tables whenever possible to reduce bending, and to encourage an upright position while sitting or standing.



*Example of a semi-circular workstation*

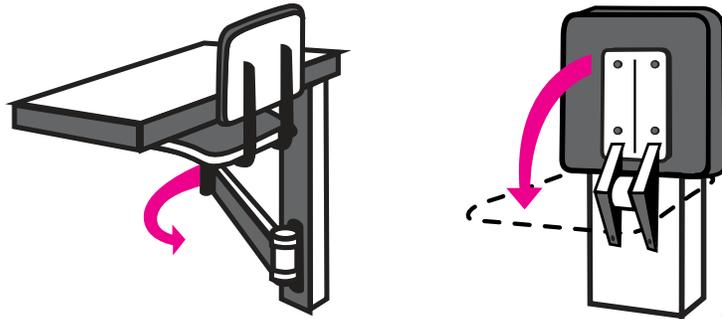
Whenever possible, a worker should be able to work sitting or standing at will.

- Ensure that the seat has a minimum width of 40 cm (about 16 in.).
- Choose back rests that are contoured vertically and horizontally.
- Use a seat covering of non-slip, breathable fabric.
- Select seat padding that is about 2-3 cm (1 in.) thick.



*Example of chair for sit/stand workstation*

- Provide a chair that can fold up and be stored out of the way where space is limited.
- Ensure that chairs have a back support.
- Provide a chair for resting purposes even when work can only be done standing.



*Example of fold-away seat design for sit/stand workstation*

Standing is a natural human posture and by itself poses no particular health hazard. However, working in a standing position on a regular basis can cause sore feet, swelling of the legs, varicose veins, general muscular fatigue, low back pain, stiffness in the neck and shoulders, and other health problems. These are common complaints among salespeople, machine operators, assembly-line workers and others whose jobs require prolonged standing.

The basic principles of good job design for standing work are:

- Change working positions frequently so that working in one position is of a reasonably short duration.
- Avoid extreme bending, stretching and twisting.
- Pace work appropriately.
- Allow workers suitable rest periods to relax; exercises may also help.
- Provide instruction on proper work practices and the use of rest breaks.
- Allow workers an adjustment period when they return to work after an absence for vacation or illness so they can gradually return to a regular work pace.

## Improving Workplace Design

In a well-designed workplace, the worker has the opportunity to choose from a variety of well-balanced working positions and to change between them frequently.

### **Adjustable Work Space**

Work tables and benches should be adjustable. It is particularly important to match the workstation to the worker's individual body size and to the worker's particular task. Adjustability ensures that the worker has an opportunity to carry out work in well-balanced body positions. If the workstation cannot be adjusted, platforms to raise the shorter worker or pedestals on top of workstations for the tall worker should be considered.

### **Organization of Work Space**

Organization of the work space is another important aspect. There should be enough room to move around and to change body position. Providing built-in foot rails or portable footrests allows the worker to shift body weight from one leg to the other. Elbow supports for precision work help reduce tension in the upper arms and neck. Controls and tools should be positioned so the worker can reach them easily and without twisting or bending.

Where it is possible, a seat should be provided so that the worker can do the job either sitting or standing. The seat must place the worker at a height that suits the type of work being done. For work that requires standing only, a seat should be provided to allow the worker to sit occasionally. Seats at the workplace expand the variety of possible body positions and give the worker more flexibility.

The benefits from greater flexibility and a variety of body positions are twofold. The number of muscles involved in the work is increased which equalizes the distribution of loads on different parts of the body. Thus, there is less strain on the individual muscles and joints used to maintain the upright position. Changing body positions also improves blood supply to the working muscles. Both effects contribute to the reduction of overall fatigue.

Quality of footwear and type of flooring materials are also major factors contributing to standing comfort.

## Footwear

Footwear that fits poorly or is in need of repair also contributes heavily to foot discomfort. Not knowing about the need for foot protection in workplaces can play a role in the onset of foot problems and workplace injuries.

### Legislative Requirements

An employer must ensure that a worker uses footwear that is appropriate to the hazards associated with the work being performed and the work site.

Reference: OHS Code Part 18, Section 233

What are some specific examples of workplace foot injuries?<sup>6</sup>

Injuries	Common Causes
Crushed or broken feet, amputations of toes or feet	Feet trapped between objects or caught in a crack, falls of heavy objects, moving vehicles (lift trucks, bulldozers, etc.), conveyor belts (feet drawn between belt and roller)
Punctures of the sole of the foot	Loose nails, sharp metal or glass objects
Cuts or severed feet or toes, lacerations	Unguarded machinery
Burns	Chemical splashes, flammable or explosive atmospheres
Electric shocks	Contact with sources of electricity
Sprained or twisted ankles, fractured or broken bones because of slips, trips or falls	Slippery floors, littered walkways, incorrect footwear, poor lighting

<sup>6</sup> [www.ccohs.ca/oshanswers/prevention/ppe/foot\\_com.html](http://www.ccohs.ca/oshanswers/prevention/ppe/foot_com.html)

## Flooring and Anti-Fatigue Mats

Hard, unyielding floors are the least comfortable surface to work on. Walking on a hard floor is similar to the impact of a hammer pounding the heel at every step. Wood, cork, carpeting, or rubber - anything that provides some elasticity - is gentler on workers' feet. More than that, softer floor coverings reduce fatigue and improve safety by reducing slips and falls on slippery floors.

There are two options to alleviate foot discomfort where resilient floors are not practical. One is footwear with thick insulating soles and shock-absorbing insoles. Anti-fatigue matting is the other option. Anti-fatigue mats absorb the shock due to walking and this cushioning effect reduces foot fatigue. However, the use of matting requires caution because mats can lead to tripping and falling accidents when installed improperly.

Another type of floor covering, anti-slip matting, is useful for increasing foot comfort and safety. However, workers may find that their feet burn and feel sore because the non-slip properties of anti-slip matting cause their shoes to grab suddenly on the flooring, making their feet slide forward inside their shoes. Friction inside the shoes produces heat which creates soreness. Non-slip resilient insoles can reduce this discomfort.

While the use of anti-fatigue mats or placing carpeting on the floor does not eliminate sore feet, when combined with proper work design and quality footwear, it should improve working conditions.

## Slips, Trips and Falls

Many lower back injuries occur when a person carrying or lifting an object tries to recover from a slip or loss of balance.

### Legislative Requirements

An employer must ensure that a work site is kept clean and free from materials or equipment that could cause workers to slip or trip.

Reference: OHS Code Part 12, Section 185

To prevent slips:

- Wear appropriate footwear and keep walking surfaces clean. Using high resistance surfaces as the answer to every slipping problem should be avoided. They can increase the potential for trips. You can easily strain muscles while trying to regain your balance.
- Walking surfaces should be suitable for the pushing, pulling and carrying tasks performed on them. They should provide adequate foot grip but allow wheels to roll freely. Rough, deeply textured surfaces may reduce the potential for slips but increase the potential for trips.

To prevent trips:

- Keep as few objects as possible on walking and working surfaces.
- Eliminate abrupt changes in walking surface height.
- Where possible, replace stairs with ramps between levels. Be aware that when a ramp angle increases to as much as 20 degrees, the friction or slip resistance of the surface must increase approximately threefold in order to prevent slips.

Unsafe ladder use can cause falls, but even stairs present a hazard. People lose their balance, slip on poor slip-resistant material on the nosing of the stair, or do not bother to use handrails, perhaps because they're carrying something.

Falls associated with the operation of vehicles and equipment are often the result of a combination of a slip, loss of balance, and misjudging the height of a surface or step. To prevent such falls, get in and out of equipment safely, maintaining three-point contact and using handles when available.

## Conveyors

Conveyors are common equipment found in the printing industry. They are used to move paper out of the machines.

Specific legislation related to equipment, including conveyors, is outlined in Part 25 of the OHS Code: Tools, Equipment and Machinery. Both employers and workers should be aware of the requirements related to their specific work site.

More information on conveyor safety can be found in the bulletin at: <http://humanservices.alberta.ca/BP008>

## Pinch Points

Pinch point injuries may occur in print shops as a result of unguarded or inadequately maintained machinery. Pinch points occur at any point where parts of the body, clothing and cleaning cloths can become entangled in rotating parts such as inking and dampening rollers, conveyors, printing cylinders, nipping rollers, bindery equipment, gears or transmission machinery.

### Legislative Requirements:

Employers must provide safeguards for machinery or equipment that may cause injury. Any machine part, function or process that may cause injury must be safeguarded. When the operation of a machine or accidental contact with it can injure the operator or other workers in the vicinity, the hazards must be eliminated or controlled.

The employer must install positive means to prevent equipment from starting up when a worker is feeding material into the equipment or a part of the worker's body is within the machine's danger zone.

Reference: OHS Code, Parts 22 and 25

### Control of Hazardous Energy (Lock-out)

Machine guards should be designed, constructed and fitted to ensure that they:<sup>7</sup>

- Are sufficiently robust (e.g. Nip bars do not become deflected).
- Interlocking guards are light and easy to use.
- Are designed to allow operators to see certain machine functions (e.g. Gluing unit on an perfect binder).
- Are designed to be compatible with machinery operations (e.g. Fitting of wash-up trays).

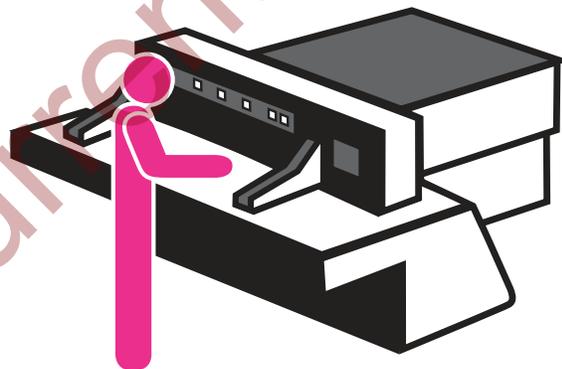
<sup>7</sup> *The Printer's Guide to Health and Safety*, Health and Safety Executive

- Meet electrical standards.
- Are located close enough to a roller if they are nip bars (e.g. No more than 6mm from the cylinder surface).
- Are designed so that they do not cause a hazard themselves.

All safeguards should also do the following:

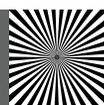
- Prevent contact – the safeguard must prevent the worker’s hands, arms and any other part of the body from making contact with dangerous moving parts. A good safeguarding system eliminates the possibility of the operator or another worker placing parts of their bodies near hazardous moving parts.
- Be secure – workers should not be able to easily remove or tamper with the safeguard. Guards and safety devices must be able to withstand conditions of normal use.
- Protect moving parts from the entry of falling objects – the safeguard should ensure that objects such as tools and materials cannot fall into moving parts.
- Create no new hazards – a safeguard must not create a hazard of its own such as a shear point, a jagged edge, or an unfinished surface that can cause a cut. The edges of guards for example, should be rolled or bolted in such a way as to eliminate sharp edges.
- Create no interference – any safeguard that prevents workers from doing their work quickly and comfortably may soon be overridden, ignored or disabled.
- Permit safe lubrication – if possible, workers should be able to lubricate the machine without having to remove safeguards. Locate oil reservoirs outside the guard, with a line leading to the lubrication point.<sup>8</sup>

Example of machinery hazards:



*Cutting and severing can occur at sharp edges or surfaces (e.g. web-severers, slitters, and guillotine blades.) Materials can be ejected from machinery (e.g. reels from reel stands and hot glues from adhesive binding machines). Electricity can also cause accidents (see page 50 of this section).*

<sup>8</sup> The OHS Code Explanation, Section 310



### Isolation

If machinery, equipment or powered mobile equipment is to be serviced, repaired, tested, adjusted or inspected, an employer must ensure that no worker performs such work on the machinery, equipment or powered mobile equipment until it has come to a complete stop and:

- All hazardous energy at the location at which the work is to be carried out is isolated by activation of an energy-isolating device and the energy-isolating device is secured in accordance with section 214, 215, or 215.1 As designated by the employer, or
- The machinery, equipment or powered mobile equipment is otherwise rendered inoperative in a manner that prevents its accidental activation and provides equal or greater protection than the protection afforded under (a).

An employer must develop and implement procedures and controls that ensure the machinery, equipment or powered mobile equipment is serviced, repaired, tested, adjusted or inspected safely if:

- The manufacturer's specifications require the machinery, equipment or powered mobile equipment to remain operative while it is being serviced, repaired, tested, adjusted, or inspected, or
- There are no manufacturer's specifications and it is not reasonably practicable to stop or render the machinery, equipment or powered mobile equipment inoperative.

If piping, a pipeline or a process system containing a harmful substance under pressure is to be serviced, repaired, tested, adjusted or inspected, an employer must ensure that no worker performs such work on the piping, pipeline or process system until flow in the piping, pipeline or process system has been stopped or regulated to a safe level, and the location at which the work is to be carried out is isolated and secured in according to the OHS Code.

Reference: OHS Code, Part 15, Section 212

## Operation of Forklifts and Pallet Jacks

Forklift trucks and manual pallet jacks provide secure and efficient loading and unloading of straight trucks, tractor trailers and elevators.<sup>9</sup>

### Legislative Requirements

An employer must ensure that a forklift truck has a durable and legible load rating chart that is readily available to the operator.

If a forklift truck is equipped with a seat belt by the original equipment manufacturer or a seat belt is added to the equipment at some later date an employer must ensure that the seat belt is present and in useable condition.

Reference: Part 19 Sections 283 and 284

Work involving the use of forklifts and/or pallet jacks, should have a comprehensive forklift health and safety program in place, which includes the following:

- Hazard assessment.
- Training and information.
- Management, supervision and internal responsibility (includes forklift selection).
- Safe operating procedures.
- Forklift maintenance and modification.
- Facility design.
- Preventing injuries to muscles, joints and bones.

More information on forklift safety can be found in the bulletin at: <http://humanservices.alberta.ca/BP015>

## Electrical

There is a multitude of electrical equipment used in the printing industry. Failures in electrical equipment, misuse and inadequate repair and maintenance of electrical equipment and services can result in serious injury to workers.

The most common shock-related injuries are burns. Shock-related burns can be of three types:

1. Electrical burns - resulting from heat generated by electric current flowing through tissues or bones.
2. Thermal burns - resulting from skin contacting hot surfaces of electrical components or equipment. Thermal burns can also result from clothing that catches fire as a result of an electric arc.

<sup>9</sup> [www.ccohs.ca/oshanswers/safety\\_haz/forklift/loading.html](http://www.ccohs.ca/oshanswers/safety_haz/forklift/loading.html)

3. Arc or flash burns – resulting from very high temperatures produced from an electric arc or explosion.

Most electrical incidents result from one of three factors:

- Unsafe equipment or installation.
- Unsafe environment.
- Unsafe work practices.

The employer must meet the requirements for isolating energy sources, verifying that energy sources are isolated, securing isolation, and returning equipment to operation. This is sometimes referred to as lockout. Isolation or lockout requirements, as prescribed in OHS Code, Section 212(1)(2) have been noted in the previous section.

## Controls for Electrical Hazards

Static electricity may present a hazard in the workplace; the greatest danger is when flammable liquids are poured or transferred, as static electricity may present a source of ignition. Static charges can be controlled by bonding (creating an electrical connection) between two conductive containers and grounding.

Grounding electrical equipment with an electrical path to earth (ground) is an engineering control. Grounding provides some protection to equipment operators if there was a fault in the equipment or insulation that energizes the equipment housing; electricity would flow to the ground rather than through the worker.

Grounding for equipment that is plugged into electrical receptacles can be identified by the third prong on the electrical plug. Similarly, electrical cords commonly have a third prong on the plug end and must not be removed or defeated. The housings of all equipment should be suitably grounded. Some electrical cords for tools or other equipment do not have a third grounding prong. This equipment is called double insulated.

### Definition

Double insulated electrical cords or tools have additional insulating considerations to prevent the housing of the device



from becoming energized. Such a device will be labeled with the term “double insulated” or with a symbol comprised of a square box within another square box.



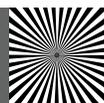
Other considerations include:

- Protecting cords from damage; do not allow vehicles to drive over cords.
- Keeping extension cords unplugged when not in use.
- Not using a damaged extension cord.
- Polarized plugs, which most extension cords and appliances have (one blade wider than the other). These plugs are designed to prevent electric shock by properly aligning circuit conductors.
- Never filing or cutting the plug blades or grounding pin of an extension cord.
- Not plugging one extension cord into another. Use a single cord of sufficient length.
- De-energizing electric equipment before inspection or repair.
- Locking out and tagging (by each individual working on the equipment) any switch or fuse used to de-energize the equipment.
- Keeping electric tools properly maintained.
- Exercising caution when working near energized lines.
- Using appropriate protective equipment.
- The development of written electrical safe work procedures and policies for electrical service and maintenance work.
- Hazard assessments to guide the development of work procedures to assess and control electrical hazards.
- Hiring only qualified electricians who are trained in safe work procedures to repair or service electrical equipment.

### **Personal Protective Equipment (PPE)**

Workers performing work on energized electrical systems need to wear PPE to protect from electrical shock, burns and arcs. PPE is selected on the risk level that is presented by the electrical equipment that is worked on, voltage and the potential for arcs. CSA Standard Z462 provides detailed selection criteria for PPE including body, hand, head, face, eye and hearing protection. PPE must be approved or certified by agencies as required by the OHS Code.

Eye protection should be worn by all workers who work on energized equipment to protect from burns and flying particles. Face shields must be worn, based on the risk level presented to workers, to protect from burns and flying particles.



## Resources

### Physical Hazards:

- Industrial Ventilation, A Manual of Recommended Practice, 26th Edition, Chapter 13, pages 13-149 to 13-151. Available for purchase at: [www.acgih.org/store](http://www.acgih.org/store)
- Physical Hazards – Noise, Radiation, Temperature Extremes: <http://humanservices.alberta.ca/ohs-pubs-healthy>
- Ergonomics, Canadian Centre for Occupational Health & Safety: [www.ccohs.ca/oshanswers/ergonomics/](http://www.ccohs.ca/oshanswers/ergonomics/)
- *Best Practices on Conveyor Safety*: <http://humanservices.alberta.ca/BP008>
- *Forklift Health and Safety Best Practices Guideline*: <http://humanservices.alberta.ca/BP015>
- eLearning Program: Noise and Hearing Protection: <http://humanservices.alberta.ca/elearning/noise/index.html>
- eLearning Program: Working at Heights: <http://humanservices.alberta.ca/elearning/fall/index.html>
- eLearning Program: Backs and Bums: Applying Basic Ergonomics: <http://humanservices.alberta.ca/elearning/ergonomics/data/ergonomics.html>



**SECTION 5  
CHEMICAL HAZARDS & WORKPLACE  
HAZARDOUS MATERIALS INFORMATION  
SYSTEMS (WHMIS)**

**5**



## SECTION 5: CHEMICAL HAZARDS AND WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

### Chemical Hazards in the Printing Industry

In addition to the number of physical hazards that exist in Alberta's printing industry, chemical hazards are also prevalent due to the use of chemicals and chemical-related processes. This Section on chemical hazards and the Workplace Hazardous Materials Information System (WHMIS) details specific chemicals used in the printing process for platemaking and in inks, lacquers and coatings. It also explains how to reduce the risk of dermatitis, a preventable industry specific health and safety concern.

Many printers, through the course of their work, will encounter harmful substances. The WHMIS is a national hazard communication system developed to ensure that workers receive adequate hazard information about chemicals used at their work site. WHMIS is an information system that helps effectively manage hazardous materials in the workplace and applies to commonly used printing chemicals. Whether handling lead type, curing coatings with UV equipment or being exposed to methyl ethyl ketone in a digital printer, having a basic understanding of how to deal with such situations will help ensure worker safety.

### Harmful Substances and Controlled Products

#### Defining a Harmful Substance

A harmful substance means a substance that, because of its properties, application or presence, creates or could create a danger, including a chemical or biological hazard, to the health and safety of a worker exposed to it.

Reference: OHS Code, Part 1



### Defining a Controlled Product

A “controlled product” means any product material or substance specified by the regulations made pursuant to paragraph 15(1)(a) to be included in any of the classes listed in Schedule II of the Hazardous Products Act

Reference: Health Canada’s, *Hazardous Products Act*, R.S., c. H-3, s.1

## Employer Responsibilities

If a worker may be exposed to a harmful substance at a work site, the employer must:

- Establish procedures that minimize the worker’s exposure to the harmful substance.
- Ensure that a worker who may be exposed to the harmful substance is:
  - Trained in the procedures.
  - Applies the training, and
  - Informed of the health hazards associated with exposure to the harmful substance.

Reference: OHS Regulation, Section 16

## Worker Exposure

If a worker may be exposed to a harmful substance at a work site, the employer must:

- Ensure the worker's exposure is kept as low as reasonably achievable, and
- The worker's exposure does not exceed the occupational exposure limit (OEL).

The employer must ensure that a worker who may be exposed to a harmful substance at a work site:

- Is informed of the health hazards associated with exposure to that substance
- Is informed of measurements made of airborne concentrations of harmful substances at the work site, and
- Is trained in procedures developed by the employer to minimize the worker's exposure to harmful substances, and understands the procedures.

If a worker is exposed to a harmful substance above the OEL, the employer must

- Identify the cause of the exposure, and
- Control the exposure immediately.

Reference: OHS Code, Sections 16, 21, 22

## What is an Occupational Exposure Limit?

### Defining Occupational Exposure Limit

Means the occupational exposure limit (OEL) established in Schedule 1, Table 2 for that substance.

Reference: OHS Code, Part 1 Definitions and General Application

An occupational exposure limit (OEL) is the airborne concentration of substance for which it is believed that nearly all workers may be repeatedly exposed on a day-to-day basis without suffering adverse health effects. The OEL refers to the concentration of the substance to which the worker is exposed, not the concentration of the substance in the workplace.

Reference: OHS Code, Explanation Guide, Part 1 Definitions and General Application

Because of individual sensitivity to controlled products, some workers may exhibit adverse health effects well below the prescribed OEL. Therefore, employers are required to keep concentrations of controlled products as low as reasonably achievable, as well as below the OEL. For specific details about exposure limits to hazardous materials, please refer to Schedule 1, Table 2 of the Occupational Health and Safety Code.

## Training

An employer must ensure that a worker who works with or near a controlled product has training that includes information on:

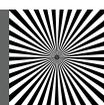
- Product labeling requirements.
- Material safety data sheets (msds), their significance and information contained on them.
- Storage, use and handling procedures.
- How to transfer products between containers.
- How to deal with emergencies, spills and fugitive emissions.

Reference: OHS Code, Section 397

## Chemical Hazards in the Printing Industry

Below are some of the most common chemical hazards in the printing industry and how to manage them. While some general safety measures are provided in the text below, the Material Safety Data Sheet for the corresponding product provides specific precautionary measures, safe handling procedures and first aid treatment. To accurately mitigate the risk of chemical, or any other hazards in the workplace, a hazard assessment is needed to determine the potential level of exposure and the most effective and practical controls.

The hierarchy of controls suggests that we first eliminate the product or hazard, if possible. With many of the harmful products being used we must ask, is it necessary or is there a less hazardous product or procedure available. Engineering controls are the next method of reducing exposure. An example of engineering controls would include equipment that produces fewer emissions or allows the use of less harmful products. The next means of control to consider is administrative controls such as worker training, equipment maintenance and work rotation. Personal protective equipment is to be considered as a last line of defense. Section 3 on hazard recognition, assessment and control contains more information on the subject.



### **Deletion Fluids**

Deletion fluids containing hydrofluoric acid in toxic and corrosive concentrations may be used to make minor alterations to printing plates. These products are harmful; if skin or eye contact occurs and is also very harmful to tissue if inhaled or swallowed. Where possible, use deletions pens as an alternative to small jars or pots of deletion fluid to reduce the risk of injury.

### **Ultraviolet (UV) Curable Materials**

Particular care is needed when handling UV and electron beam curable materials (inks, varnishes and lacquers). Clear UV-curable varnishes and lacquers give a protective and high-gloss finish. They are used in all types of printing and packaging applications in which the fast drying and film-forming properties allow immediate processing (i.e. labels, carton printing, plastic substrates, pharmaceutical packaging, printing of the outer surface of food packages and metal decorating). Most UV-curable inks can be considered solvent-free; however, handling uncured materials has a number of risks, as noted in the table at the end of this section.

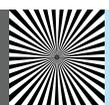
Ozone and other chemicals can occur above the OEL (occupational exposure limit) when the copying room is small, ventilation is inadequate and/or the photocopier is used a lot.

### **Ozone and Nitrogen Oxide**

Ozone is a gas produced during the high voltage electrical discharge in photocopiers and laser printers. It is sweet smelling and highly toxic. If you can smell ozone, the levels are too high. Ozone breaks down in air quite quickly though it can be slowed by high humidity, temperature and some effects of office furnishings. Adverse health effects include eye, nose, throat and lung irritation, dermatitis, headaches and nausea, premature aging, and potential reproductive dangers. Itching, can occur on the face, neck and areas of skin exposed to ozone. When mixed with nitrogen oxide in certain proportions, ozone can also have an effect on the central nervous system. Nitrogen oxide may be produced when there is a spark in electrostatic photocopiers.

### **Volatile Organic Compounds (VOCs)**

VOCs are also emitted during photocopying. These can contain traces of decane (carcinogenic), 1,1,1- trichloroethane (can cause skin irritation), iso-octane, toluene (causes fatigue, drowsiness, throat and eye irritation), xylene (can cause menstrual disorder and kidney failure), and benzene (carcinogenic and potential teratogenic).



### **Selenium and Cadmium Sulphide**

Some copiers use a drum containing selenium or cadmium sulphide. The gas emitted from these materials, especially when hot, can cause throat irritation and sensitization (i.e. adverse reaction to very tiny quantities of chemical) to exposed workers. Short-term exposure to high levels of selenium by ingestion causes nausea, vomiting, skin rashes and rhinitis. This is more of a risk to maintenance staff when cleaning or grinding the surface of the drum.

### **Carbon Monoxide**

Carbon monoxide is produced when toner (containing carbon black) is heated in an inadequate air supply. Some copiers can reach half the OEL in well ventilated rooms. In poorly ventilated conditions the effects include headaches, drowsiness, faintness and increased pulse rate. Carbon monoxide can cross the placenta and affect an unborn child.

### **Toners**

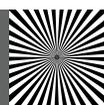
Toners are generally a mixture of plastic resin and carbon black, often with other additives. Carbon black is classified as a nuisance dust (i.e. is only mildly toxic in itself) but contains impurities known to be carcinogens. Toners should be handled with care, protective gloves should be worn, and dust release minimized. Contact with the tongue (e.g. by touching copied papers with a wetted finger) can lead to small growths on the tongue. Other health effects may be irritated eyes, headache and itching skin. Maintenance workers are at risk from repeated exposure which can lead to skin and eye sensitization.

### **Carbon Monoxide (from forklifts and other machines)**

The indoor use of propane or gasoline-fuelled equipment such as forklifts has been linked to carbon monoxide exposure in workers. To protect workers' health, consideration should be given to replacing such equipment with electric or diesel-powered alternatives. If the equipment cannot be replaced, employers must ensure there is regular engine maintenance and it is equipped with catalytic converters.

Proper driving techniques can also help reduce the amount of carbon monoxide vehicles produce. Drivers increase the amount of carbon monoxide produced (as well as burn more fuel) when they:

- Race a vehicle's engine.
- Brake erratically.
- Allow vehicles to idle.
- Operate hydraulic systems in a jerky manner.
- Start forklift trucks after they have been parked in cold areas such as freezers, or outdoors in winter (cold starts tend to generate higher concentrations of carbon monoxide).



## Other Chemical Generating Processes

### Photocopying and Printing

Photocopiers and laser printers are safe when used occasionally and serviced regularly. However, if they are badly positioned, poorly maintained or used frequently or for long runs, there are risks to health, ranging from irritated eyes, nose and throat to dermatitis, headaches, reproductive and cancer hazards. Proper ventilation and maintenance are essential in eliminating hazards.

### Graphic Reproduction

Darkrooms with automatic film processors need mechanical ventilation to ensure healthy and comfortable working conditions. The following are common photographic agents and their hazards:

- **Developer** - May cause skin irritation and allergic reactions.
- **Stop-bath** - May cause burns and throat irritation.
- **Intensifier** - Very corrosive and may cause lung cancer.
- **Reducer** - Contact with heat, concentrated acids, or ultraviolet radiation produces poisonous gas.
- **Toners** - Highly toxic.
- **Hardeners and stabilizers** - Often contain formaldehyde, which is poisonous, a skin irritant, and a known carcinogen.

### Platemaking

Automatic processing effectively reduces the likelihood of skin contact with chemicals during normal operation. Some developers can cause aggressive skin reactions, so nitrile or butyl rubber gloves and protective clothing are needed when handling chemical containers. Goggles and face shields are to be provided and worn if there is a risk of splashing. To contain spillage (and protect the floor), keep drums of replenisher solution feeding the process equipment in shallow trays.

### Lithographic Printing

Cleaning solvents have commonly included white spirit and similar mixtures of petroleum distillates. Less flammable vegetable oil and high-boiling point solvents are now available for use as roller and blanket cleaners, and these products usually reduce health risks due to inhalation. Skin contact may still be hazardous so skin care is still important.

More volatile organic solvents are sometimes used for removal of dried ink or to swell low areas on the blanket. Check with the suppliers to make sure that the least hazardous product is used. Whatever solvent is chosen, use a safe system of work to control it and reduce exposure. Use of these products should be kept to a minimum.

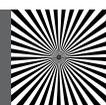
Isopropyl alcohol (IPA) is a major contributor to the total solvent content of press room air. Make sure that the percentage concentration in the fount does not exceed 5% and consider suitable alternatives.

## Controlling Chemical Hazards

The following tables summarize many of the chemical hazards and processes that generate chemical hazards found in the printing industry. **Table 1** below lists many of the common chemical hazards and respective controls, while **Table 2** lists the some common chemical hazard generating processes and their associated hazards.

**Table 1 : Chemical-Related Health Hazards and Controls**

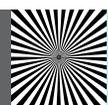
Hazard and type of exposure	Potential Health hazards	Possible Controls
Contact with UV-curable materials	Skin irritation	Consider less irritating substitutes and enclosed handling systems or automatic dispensers. Use impervious aprons, gloves and eye protection.
Inhalation of UV ink mist or ink fly	Upper and lower respiratory tract irritation	Reformulation of inks, cylinder cooling, etc.  Shrouding of rollers and local exhaust ventilation
Contact with cleaning solutions	Skin irritation Respiratory tract irritation	Consider use of local exhaust ventilation. Devise and use safe systems of work including use of Personal Protection Equipment where necessary (eg. spillage and leakage)
Inhalation of ozone	Eye, nose and throat irritation  Headaches and nausea	Local exhaust ventilation



## Identifying and Assessing Hazardous Materials by print process

Process or activity	Type /name of substance	Potential Health Hazard
Etching, engraving, platemaking, certain photographic reproduction systems, correction of litho plates.	Corrosive acids (eg. concentrated nitric and sulphuric acids, hydrofluoric acid)	Skin burns and blisters Burns with concentrated hydrofluoric acid are very severe Eye damage
Cleaning of screens in screen printing	Strong alkalis (eg. concentrated sodium or potassium hydroxide)	Corrosive to skin, eyes and mucous membrane
Concentrated photographic developer solutions	Hydroquinone	Irritant to eyes but may cause permanent damage Irritant and may cause dermatitis
UV and electron beam curable inks, varnishes and lacquers	Reactive acrylates or methacrylates	Irritant
Hardener added to photographic fixer solutions	Diluted formaldehyde solution	Irritant Probable carcinogen Skin sensitizer
Litho platemaking, gravure cylinder preparation, photoengraving, photographic bleaches	Dichromates (eg. ammonium, potassium and sodium dichromates)	Very corrosive In high concentration can cause deep ulcers Skin sensitizer
Photographic fixer solutions	Acetic acid, acidic salt solutions (eg. sodium thiosuphate).	Irritant and corrosive
Litho printing: fount solution, blanket restorers, cleaning solvents	Isopropylalcohol (IPA), methyl ethyl ketone (MEK), white spirit	Dermatitis Dizziness, drowsiness and other effects on the central nervous system

Process or activity	Type /name of substance	Potential Health Hazard
Gravure and flexographic: various inks	MEK Alcohols (eg. industrial methylated spirits (IMS) IPA) Esters (eg. ethyl acetate) Aromatic hydrocarbons (eg. toluene, xylene)	Dermatitis
Screen printing: UV-cured inks	N-vinyl pyrrolidone (NVP) and Michler's Ketone	Cancer, can harm unborn child
Screen printing: inks	Ketones (eg. cyclohexanone) Aromatic hydrocarbons (eg. toluene, xylene)	Dermatitis
Making flexographic and letterpress plates	Perchloroethylene	Dizziness, drowsiness and other effects on the central nervous system
Cleaning rollers, cylinders and blanket restoring	Chlorinated hydrocarbons (eg. dichloromethane) Ketones, (MEK)	Dizziness, drowsiness and other effects on the central nervous system Cardiac arrhythmia Affects liver and kidneys on long-term exposure
Gravure and flexographic printing	Inks containing ketones (eg. cyclohexanone), alcohols (IMS), esters (eg. ethyl acetate, isopropyl acetate) or aromatic hydrocarbons, (eg. toluene, xylene)	Central nervous system Cardiac arrhythmia Affects liver and kidneys
Screen printing	Inks containing ketones or aromatic hydrocarbons	Central nervous system Cardiac arrhythmia Affects liver and kidneys



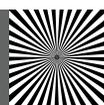
Process or activity	Type / name of substance	Potential Health Hazard
Screen printing: UV-cured inks	N-vinyl pyrrolidone (NVP) and Michler's Ketone	Cancer and harm to the unborn child
Adhesive laminating Use of polyurethane lacquers	Isocyanateprepolymers	Irritation of respiratory track Occupational asthma
Handling, cutting, grinding lead type, hot metal work	Lead dust/fume	Lead is a neurotoxin and when absorbed in bloodstream leads to headaches, tiredness, stomach pains, constipation and loss of appetite
Dyeline printing	Ammonium hydroxide	Irritation of respiratory tract (from ammonia vapour)
High-speed printing using UV ink-leading to ink misting	Reactive acrylates contained in UV inks	Irritation of respiratory tract Occupational asthma
Laser engraving (gravure cylinders) Maintenance involving welding	Metal fume	Irritation of respiratory tract, 'flu-like' illness (metal fume fever depending on the metal)  Poisoning from substances in the fume
Use of UV lamps for photo processing. UV curling, corona discharge	Ozone	Irritation of the upper respiratory tract  Headaches and nausea
Digital (ink-jet) printing	Methyl ethyl ketone  Propanol	Cardiac arrhythmia Affects liver and kidneys on long-term exposure  Dizziness, drowsiness and other effects on the central nervous system

Dusts		
Process or activity	Type /name of substance	Potential Health Hazard
Saw/knife milling in bindery	Paper	
Use of anti-set-off powder	Sugar/ starch	Dust of any kind can irritate the respiratory tract and block the nose.
Thermography	Plasticisers	
Bronzing machines, mixing aluminium pastes	Metal	
Manufacture of forms	Softwood dust	Respiratory disorders including occupational asthma

#### Resources for Harmful Substances and Workplace Hazardous Materials Information System



- Workplace Health & Safety Bulletin - WHMIS Information for Workers: <http://humanservices.alberta.ca/CH007>
- Workplace Health & Safety Bulletin - WHMIS Information for Employers: <http://humanservices.alberta.ca/CH008>
- *The Printer's Guide to Health and Safety*, Health and Safety Executive (UK). [www.hse.gov.ukk](http://www.hse.gov.ukk)
- The NIOSH Pocket Guide to Chemical Hazards [www.cdc.gov/niosh/npg/](http://www.cdc.gov/niosh/npg/)



Current to June 2012

**SECTION 6  
PSYCHOSOCIAL HAZARDS  
IN THE PRINTING INDUSTRY**



## SECTION 6: PSYCHOSOCIAL HAZARDS IN THE PRINTING INDUSTRY

Psychosocial hazards are those that stem from human behaviours and social factors. In pressure- filled print shops, where so much of the work that is done is driven by tight deadlines, workers can often be affected by the strain of the busy work environment. Many workplace injuries and types of illness can be caused by tired workers who are struggling to balance shift work and as a result, experience work-related stress. This sometimes results in high risk behaviours which can impair judgment and result in unsafe practices in the workplace.

### Fatigue

Long work hours and/or many consecutive days of work can fatigue workers and result in them feeling tired, irritable, depressed or giddy. They may lose their appetite, have digestive problems, and are more likely to catch a cold or flu.

Fatigued workers tend to:

- React more slowly than usual.
- Fail to respond to things going on around them or respond incorrectly.
- Show poor logic and judgement.
- Be unable to concentrate.
- Be less motivated and more forgetful.
- Have a greater tendency for taking risks.

Workers commonly cope with their reduced level of function by:

- Working more slowly.
- Checking and rechecking their work.
- Relying on fellow workers.
- Choosing to carry out less critical tasks.

Most people need 7.5 to 8.5 uninterrupted hours of sleep each day; less than this amount can lead to a sleep debt that adds up over time. A single night's shortened or disrupted sleep may not affect a worker's performance immediately, but repeated disruptions over days and weeks can affect performance.

## Controlling the Hazards

Fatigue is increased by:

- Dim lighting.
- Limited visual acuity (i.e. Due to weather).
- High temperatures.
- High noise.
- High comfort.
- Tasks which must be sustained for long periods of time.
- Work tasks which are long, repetitive, paced, difficult, boring and monotonous.

Employers can help reduce worker fatigue by providing environments which have good lighting, comfortable temperatures and reasonable noise levels. Work tasks that provide variety and change throughout a shift also help reduce fatigue.

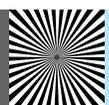
## Drugs and Alcohol

Many aspects of the workplace today require alertness and accurate, quick reflexes. Impairment due to alcohol or drug use can cause serious incidents leading to injury or death and can interfere with the accuracy and efficiency of work. Impairment related to drug or alcohol use or fatigue should be considered as part of the employer's hazard assessment.

Substance abuse can cause other problems at work, including:

- Poor job performance due to the after-effects of substance use (e.g. hangover, withdrawal).
- Absenteeism, illness and/or reduced productivity.
- Preoccupation with obtaining and using substances while at work, interfering with attention and concentration.
- Illegal activities at work such as selling drugs to other employees.

Psychological or stress-related problems can also result from substance abuse by a family member, friend or co-worker, affecting a worker's performance.



## Controlling the Hazards

The risk of injuries related to drugs and alcohol can be lowered by addressing other primary concerns like fatigue and workplace stress. Employers and employees can also collaborate to design policies which outline what is an acceptable code of behaviour and what is not. By establishing or promoting programs such as an employee assistance program, employers can help troubled employees more directly or provide referrals to appropriate community services.

Workplaces are also encouraged to establish a procedure or policy so that help can be provided in a professional and consistent manner. It is important for supervisors and managers to have a resource or procedure that they can rely on if the need arises. Employees need to know that everyone will be treated the same way. Pre-planning, as for many other occupational health and safety issues, is the best way to avoid confusion and frustration.

Managers and supervisors should be educated in how to recognize and deal with substance abuse issues and employees should be offered educational programs.

## Stress

Workplace stress is the harmful physical and emotional responses that can happen when there is a conflict between job demands on the employee and the amount of control an employee has over meeting these demands. In general, the combination of high demands in a job and limited control over the situation can lead to stress.

Stress in the workplace can have many origins or come from one single event. It can impact both employees and employers.

People respond to stress differently. The body's pre-programmed response to stress has been called the "*generalized stress response*" and includes:

- Increased blood pressure.
- Increased metabolism (e.g. faster heartbeat, faster respiration).
- Decreased protein synthesis, intestinal movement (digestion), immune and allergic response systems.
- Increased cholesterol and fatty acids in blood for energy production systems.
- Localized inflammation (redness, swelling, heat and pain).
- Faster blood clotting.
- Increased production of blood sugar for energy.
- Increased stomach acids.

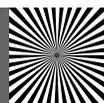
## Controlling the Hazards

Employers should assess workplace psychosocial hazards. Employers can address stress in many ways by:

- Treating all employees in a fair and respectful manner.
- Taking stress seriously and being understanding of staff under too much pressure.
- Being aware of the signs and symptoms that a person may be having trouble coping with stress.
- Involving employees in decision-making and allowing for their input directly or through committees.
- Encouraging managers to have an understanding attitude and to be proactive by looking for signs of stress among their staff.
- Providing workplace health and wellness programs that target the true source of the stress. The source of stress at work can be from any number of causes such as safety, ergonomics and job demands. Survey employees and ask them for help identifying the actual cause.
- Making sure staff have the training, skills and resources they need.
- Designing jobs to allow for a balanced workload. Allow employees to have control over the tasks they do as much as possible.
- Keeping job demands reasonable by providing manageable deadlines, hours of work, and clear duties as well as work that is interesting and varied.
- Providing access to employee assistance programs (eaps) for those who wish to use them.

Employers should not:

- Tolerate bullying or harassment in any form.
- Ignore signs that employees are under pressure or feeling stressed.
- Forget that elements of the workplace itself can be a cause of stress. Stress management training and counselling services can be helpful to individuals, but do not forget to look for the root cause of the stress and to address it as quickly as possible.



## Shift Work

The Institute for Work and Health (IWH) reports that there is strong evidence that night, evening, rotating and irregular shifts are associated with an increased risk of occupational injury. This risk is associated with worker fatigue, and less supervision and co-worker support during non-daytime shifts.

One study reported that night shifts had the most incidents, followed by afternoon shifts (least incidents in the morning shift). The risk of an incident was 20% more during the first to second hour of a night shift, as well as a small rise between 3:00 and 4:00 a.m. More incidents are reported on the fourth successive night shift than the first night shift.

### Employment Standards

In its quest to create fair and safe workplaces for all Albertans, Alberta Human Services Occupational Health and Safety legislation is complemented with Employment Standards<sup>1</sup> that govern many terms of employment such as the minimum wage, minimum age, hours of work and more. More information is available online at: <http://humanservices.alberta.ca/es>

## Controlling the Hazards

Shift work is a reality for a large percentage of Canadian workers. However, there are steps that can be taken to mitigate the adverse effects of shift work. Improvements can be made at the *organizational level* – primarily through the design of shift schedules, education and better facilities – and at the *individual level* by helping workers get a better sleep, have a healthier diet, and reduce their stress.

### What are some organizational approaches?

There are several approaches a company can take to reduce the effects of shift work. There are also several important considerations.

**Shift Schedule Design:** Optimizing the design of the shift schedule is the most effective way of reducing the health and safety problems. Satisfaction with a particular shift system is the result of a complicated balancing act that is the best compromise for personal, psychological, social and medical concerns.

**Length of the rotation period:** This is the number of days on any one shift before switching to the next shift. The optimum length of the rotation period has been disputed. The most common system has a rotation period of one week, with five to seven consecutive night shifts. However, since it generally takes at least seven days for adjustment of the circadian rhythms, it is argued that just as adjustment starts to occur, it is time to rotate to the next shift.

Some schedule designers feel that a longer shift rotation should be arranged so that the worker spends from two weeks to one month on the same shift that would allow circadian rhythms to adjust. A problem occurs when the worker reverts to a “normal” day/night schedule on days off, thus, possibly cancelling any adaptation. Also, longer periods of social isolation may result.

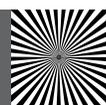
Others suggest a rapid shift rotation where different shifts are worked every two to three days. This system may reduce disruption to body rhythms because the readjustment of circadian rhythms is minimized. It also provides time for some social interaction each week.

**Direction of rotation of shifts:** It is recommended that shifts rotate forward from day to afternoon to night because circadian rhythms adjust better when moving ahead than back.

**Start and finish times:** Early morning shifts are associated with shorter sleep and greater fatigue. It is advisable to avoid shift start times as early as 5 or 6 a.m. The social customs and desires of the specific work force should be considered as well as the availability of public transportation. The safety on the streets, in terms of crime and violence, is another consideration.

**Length of rest between shifts:** It is recommended that a rest period of at least 24 hours occur after each set of night shifts. The more consecutive nights worked, the more rest time should be allowed before the next rotation occurs.

**Alternative forms of organizing work schedules:** For example, extended work days of 10 or 12 hours have been used. It has the advantage of fewer consecutive night shifts and longer blocks of time off. However, the additional fatigue from long work hours may also have adverse effects. The physical and mental load of the task should be considered when selecting the length of a work shift. Exposure to chemical or physical agents should also be considered when selecting a shift system, as well as ergonomic hazards.



### **Additional Considerations**

Provide time off at “socially advantageous” times, like weekends, whenever possible.

- Start a special shift system if production demands result in extended periods of overtime work.
- Inform shift workers of their work schedules well ahead of time so they can better plan their personal lives. Allow as much flexibility as possible for shift changes. Keep schedules as simple and predictable as possible.

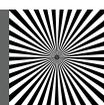
### **Facilities**

The provision of certain facilities can help the shift worker cope better.

- Give attention to the work environment. For example, good lighting and ventilation are important on all shifts. Do not widely separate workstations so those working at night can remain in contact with each other.
- Provide rest facilities where possible. Whenever a person must remain at work after a night shift to attend a meeting or a training session, providing rest facilities is advisable. When a night worker is “on call” and must remain in the building, it is advantageous for this person to be well rested rather than tired and bored.
- Provide healthy cafeteria services so a balanced diet can be maintained. The nutritional needs differ between day shifts and other shifts because of circadian rhythms. Provide educational and awareness materials on the benefits of eating a balanced meal.
- Consider offering facilities for social activities with the needs of the shift worker in mind. Recreational opportunities are often minimal for workers on “non-day/night” shifts.
- Consider access to quality day-care for shift workers’ children. Some strain on all family members would be alleviated.

### **Education**

Educate employees on the potential health and safety effects of rotational shift work and what can be done to stop these effects. In particular, education in stress recognition and reduction techniques is helpful.



**SECTION 7  
WORKER COMPETENCY  
AND TRAINING**

Current to June 2012

7

## SECTION 7: WORKER COMPETENCY AND TRAINING

Worker competency and training are necessary for all occupations. The general requirements for worker training are included in the OHS Regulation. Specific requirements for different types of training are identified throughout the OHS Code. Training is only one part of becoming competent at a particular task.

“Competent” in relation to a worker, means adequately qualified, suitably trained, and with sufficient experience to safely perform work without supervision or with only a minimal degree of supervision.

Reference: OHS Regulation, Section 1 (g)

A worker must demonstrate competency whenever undertaking a new task, or whenever a task has changed to include new hazards. There isn't an easy answer for what it means to be competent; it will vary based on the worker and the hazards of the task. It's important to understand that training and competency are not the same things.

If work is to be done that may endanger a worker, the employer must ensure that the work is done:

- By a worker who is competent to do the work or
- By a worker who is working under the direct supervision of a worker who is competent to do the work.

Reference: OHS Regulation, Section 13 (1) (a), (b)

### **Employer Responsibilities**

An employer must ensure that a worker is trained in the safe operation of the equipment the worker needs to operate.

An employer must ensure that the training includes the following:

- The selection of the appropriate equipment.
- The limitations of the equipment.
- An operator's pre-use inspection.
- The use of the equipment.
- The operator skills required by the manufacturer's specifications for the equipment.
- The mechanical and maintenance requirements of the equipment.
- Loading and unloading the equipment if doing so is a job requirement.
- The hazards specific to the operation of the equipment at the work site.

Reference: OHS Regulation, Section 15 (1), (2)

Employer responsibilities are also referenced in the OHS regulations:

If work is to be done that may endanger the worker, the employer must ensure that the work is done:

- By a worker who is competent to do the work, or
- By a worker working under the supervision of a competent worker.

Reference: OHS Regulation, Section 13 (1)

### **Worker Responsibilities**

A worker must:

- Participate in the training provided by an employer.
- Apply the training.

Reference: OHS Regulation, Section 15 (4), (5)

Samples of a Worker Orientation Record, Training Record, and Training Attendance form are included at the end of this section. They are not required under OHS legislation but may be useful in identifying the training completed or needed for workers.

## Worker Orientation Record

This is an example of a checklist you may wish to use when training new workers on health and safety in your workplace. Ensure you include any topics that are relevant to your specific job site.

Worker's Name: \_\_\_\_\_

Job Title: \_\_\_\_\_

Date of Hire: \_\_\_\_\_

Date of Orientation: \_\_\_\_\_

Supervisor's Name: \_\_\_\_\_

Orientation Topics Covered?	Yes	No	Supervisor's Initials	Comments:
Health and safety responsibilities	<input type="checkbox"/>	<input type="checkbox"/>		Other topics covered (list here):
Health and safety rules	<input type="checkbox"/>	<input type="checkbox"/>		
How to get first aid	<input type="checkbox"/>	<input type="checkbox"/>		
Location of first aid kit(s)	<input type="checkbox"/>	<input type="checkbox"/>		
Emergency procedures	<input type="checkbox"/>	<input type="checkbox"/>		
How to report unsafe conditions	<input type="checkbox"/>	<input type="checkbox"/>		
Responsibility to refuse unsafe work	<input type="checkbox"/>	<input type="checkbox"/>		
WHMIS	<input type="checkbox"/>	<input type="checkbox"/>		
Location of MSDSs	<input type="checkbox"/>	<input type="checkbox"/>		
Use of personal protective equipment	<input type="checkbox"/>	<input type="checkbox"/>		
Violence policies and procedures	<input type="checkbox"/>	<input type="checkbox"/>		
Working alone procedures	<input type="checkbox"/>	<input type="checkbox"/>		
Job specific orientation (list below):	<input type="checkbox"/>	<input type="checkbox"/>		

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## Training Attendance

Company: \_\_\_\_\_

Location: \_\_\_\_\_

Name of Course: \_\_\_\_\_

Name of Trainer: \_\_\_\_\_

Date(s) of Training: \_\_\_\_\_

Agenda/Content Covered:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Date	Printed Name	Signature

Trainer's Signature: \_\_\_\_\_

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**SECTION 8  
EMERGENCY PREPAREDNESS  
AND RESPONSE PLAN**

Current to June 2012

8

## SECTION 8: EMERGENCY PREPAREDNESS AND RESPONSE PLAN

### Defining an emergency

The Canadian Centre for Occupational Health and Safety defines an emergency as *“any situation or occurrence of a serious nature, developing suddenly and unexpectedly, and demanding immediate attention.”*<sup>11</sup>



Many different kinds of emergencies can occur on a work site. These may include emergencies such as a chemical explosion, a chemical spill, a fire, a critical injury or a natural disaster (i.e. ice storm, tornado, flood). Your hazard assessment will help identify potential emergencies and the elements needed for planning the response to those emergencies.

Planning and preparing in advance for emergencies is important. An emergency response plan will protect the health, safety and lives of people at your work site. It will also minimize business losses related to damage to the environment and property. The OHS Code, Part 7, requires employers to establish an emergency response plan for response to an emergency that may require rescue or evacuation. It is important that an emergency response plan be prepared that is specific to the work site.

<sup>11</sup> Canadian Centre for Occupational Health and Safety.(2004).  
Emergency Response Planning Guide.First Edition. p. 2.

## Emergency Response Plans

### Legislative Requirements

An employer must:

- Involve affected workers in establishing the emergency response plan.
- Ensure that an emergency response plan is current.

An emergency response plan must include the following:

- The identification of potential emergencies (based on the hazard assessment).
- Procedures for dealing with the identified emergencies.
- The identification of, location of and operational procedures for emergency equipment.
- The emergency response training requirements.
- The location and use of emergency facilities.
- The fire protection requirements.
- The alarm and emergency communication requirements.
- The first aid services required.
- Procedures for rescue and evacuation.
- Conducting drills regularly.
- The designated rescue and evacuation workers.

Reference: OHS Code , Section 115 (2) (3), 116 (a-j)

## Coordinating Emergency Response Plans

A number of print shops in Alberta are located in buildings with other tenants. Although every employer in a multi-tenant building will have their own emergency preparedness and response plan, the Alberta Fire Code requires a coordinated response to ensure everyone's safety in the following situations:

Emergency planning is required for occupancies that include:

- Assembly, daycares or detention occupancy.
- Every building required by the Alberta building code to have a fire alarm system.
- Demolition and construction sites.
- Storage areas required to have a fire safety plan – examples include indoor rack storage.
- Facilities, outdoor storage of hazardous materials.
- Areas where flammable and combustible liquids are stored or handled.
- Areas where hazardous processes or operations occur.

Reference: Alberta Fire Code 2006, Section 2.8.1.1, Division B

## How to develop an emergency response plan

A simple plan is appropriate in offices settings where there are few or no hazardous materials or processes and workers evacuate when alarms sound or when notified by public address systems.

More complex plans are required in workplaces like print shops that contain hazardous materials or that must delay evacuation after alarms sound to shut down critical equipment.

It is essential that the emergency response plan be site specific. To assist you in your planning, a sample of a completed response plan and a blank plan are provided at the end of this section. You may use this or develop your own format, as long as all components outlined in the OHS Code are addressed.

### Resources for Emergency Preparedness and Response Planning

- Canadian Centre for Occupational Health and Safety: [www.ccohs.ca/oshanswers/hsprograms/planning.html](http://www.ccohs.ca/oshanswers/hsprograms/planning.html)
- Canadian Centre for Occupational Health and Safety, Emergency Planning Response Guide: [www.ccohs.ca/products/publications/emergency.html](http://www.ccohs.ca/products/publications/emergency.html)
- How to prepare an Emergency Response Plan for your Small Business: [www.worksafebc.com/publications/health\\_and\\_safety/by\\_topic/assets/pdf/emergency\\_response\\_guide.pdf](http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/emergency_response_guide.pdf)
- Alberta Fire Code – Alberta Government Learning Resources Centre: [www.lrc.education.gov.ab.ca/pro/resources/item-title.htm](http://www.lrc.education.gov.ab.ca/pro/resources/item-title.htm)
- Alberta Municipal Affairs Web Site, Fire: [www.municipalaffairs.alberta.ca/cp\\_fire.cfm](http://www.municipalaffairs.alberta.ca/cp_fire.cfm)



## Emergency Response Plan (Completed Sample)

For rural sites, put the legal land description - this is the address you will give to emergency services

Company: Sam's Printing  
Address or Location: 50 Elm Street, Small Town, Alberta  
Completed by: Sam Smith, Owner  
Date: January 15, 2011

### POTENTIAL EMERGENCIES

(refer to your hazard assessment to determine which hazards could require rescue or evacuation)

The following is identified as a potential emergency:

- Fire.

### EMERGENCY PROCEDURES

(detail procedures to be followed for each identified emergency)

In the event of a fire occurring within or affecting the work site,

- The office manager is the fire warden.
- Pull the fire alarm to initiate an evacuation and alert the fire station.
- All staff are to calmly exit the buildings via the stairs and meet at the muster point or alternate muster point as determined by the fire warden.
- The fire warden is to ensure all staff, clients and visitors are accounted for and provide this information to emergency services personnel.
- No one may enter the building until the Fire Warden allows it.

### LOCATIONS OF EMERGENCY EQUIPMENT

Location of emergency equipment:

- Fire Alarm
  - 1 at the reception desk
  - 1 by the back door
- Fire Extinguisher
  - 1 in the press room
- Fire Hose
  - 1 in the press room next to the fire extinguisher
- Panic Alarm
  - 1 at the main reception desk under the computer desk

This information could also be shown on a site diagram and posted at various locations through out the work.

### EMERGENCY RESPONSE EQUIPMENT TRAINING & REQUIREMENTS

(List the names of workers trained to use each type of emergency equipment)

Name	Training Received	Frequency
Jane Doe	Fire extinguisher Fire Warden training	Orientation and annual refresher training
Will B. Safe	Standard First Aid	Every 3 years, with annual CPR retraining

### LOCATION AND USE OF EMERGENCY FACILITIES

The nearest emergency services are located:

- **Fire Station:** 10 Fir Street – 2 blocks east: 780-555-1234
- **Ambulance:** 40 Sun Street – 10 blocks south: 780-555-4567
- **Police:** 1 Police Plaza – 20 blocks west: 780-555-3456
- **Hospital:** 101 Hospital Avenue – 4 blocks east: 780-555-2345

### FIRE PROTECTION REQUIREMENTS

- Sprinkler systems are located in all rooms of the work site.
- Appropriate fire extinguishers are placed at various locations.
- Fire hose – only for the use by emergency services personnel.

### ALARM AND EMERGENCY COMMUNICATION REQUIREMENTS

- Pulling the fire alarm will automatically alert the fire department and initiate an alarm within the building.
- The fire alarm signal is intermittent sharp beeps.

### FIRST AID

First Aid Supplies are located at:

- No. 2 First Aid Kit at the main reception desk.
- Blankets in the storage room.

First Aiders are: Jane Doe – Reception

Transportation for ill or injured workers is by ambulance – Call 911.

If there is more than 1 shift per day, ensure there are enough trained first aiders for each shift.

## PROCEDURES FOR RESCUE AND EVACUATION

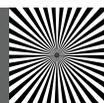
- Evacuate and direct all persons via stairs to the safe designated gathering point in the staff parking lot and account for staff, visitors and clients.
- Assist ill or injured workers to evacuate the building.
- Provide first aid to injured workers if required.
- Call 911 to arrange for transportation of ill or injured workers to the nearest health care facility if required.

## DESIGNATED RESCUE AND EVACUATION WORKERS

The following workers are trained in rescue and evacuation:

- Jane Doe – Fire Warden
- Will B. Safe – Standard First Aider

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## Emergency Response Plan Template

Company: \_\_\_\_\_

Address or Location: \_\_\_\_\_

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

### POTENTIAL EMERGENCIES

(refer to your hazard assessment to determine which hazards could require rescue or evacuation)

The following are identified as potential emergencies:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### EMERGENCY PROCEDURES

(detail procedures to be followed for each identified emergency)

If an emergency identified above occurs, these steps need to be taken by the assigned personnel:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### LOCATIONS OF EMERGENCY EQUIPMENT

Emergency equipment is located at:

Fire Alarm \_\_\_\_\_

Fire Extinguisher \_\_\_\_\_

Fire Hose \_\_\_\_\_

Panic Button \_\_\_\_\_

Other \_\_\_\_\_

**EMERGENCY RESPONSE EQUIPMENT TRAINING & REQUIREMENTS**  
 (List the names of workers trained to use each type of emergency equipment)

Name	Training Received	Frequency

**LOCATION AND USE OF EMERGENCY FACILITIES**

The nearest emergency services are located at:

Fire Station \_\_\_\_\_  
 Ambulance \_\_\_\_\_  
 Police \_\_\_\_\_  
 Hospital \_\_\_\_\_  
 Other \_\_\_\_\_

**FIRE PROTECTION REQUIREMENTS**

Fire protection equipment listed below can be accessed by trained personnel at the following locations

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**ALARM AND EMERGENCY COMMUNICATION REQUIREMENTS**

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**FIRST AID**

First Aid Kit Type: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Other Supplies: \_\_\_\_\_  
 \_\_\_\_\_  
 First Aiders are: \_\_\_\_\_  
 \_\_\_\_\_  
 Work Station & Shift: \_\_\_\_\_  
 \_\_\_\_\_  
 Transportation arrangements: \_\_\_\_\_



**PROCEDURES FOR RESCUE AND EVACUATION**

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**DESIGNATED RESCUE AND EVACUATION WORKERS**

Name: \_\_\_\_\_

Work Station/Area: \_\_\_\_\_

Name: \_\_\_\_\_

Work Station/Area: \_\_\_\_\_

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Current to June 2012



**SECTION 9  
FIRST AID**

Current to June 2012

9



## SECTION 9: FIRST AID

In the event of an injury at a work site, first aid arrangements need to be in place. Everyone must have access to first aid services and supplies.

First aid means the immediate and temporary care given to an injured or ill person at a work site using available equipment, supplies, facilities, or services, including treatment to sustain life, to prevent a condition from becoming worse or to promote recovery.

A first aider means an emergency first aider, standard first aider or advanced first aider designated by an employer to provide first aid to workers at a work site.

Reference: OHS Code, Part 1

Each level of first aid training can provide specific skills summarized below:

### Emergency First Aid

The purpose of emergency first aid is to provide basic first aid for life threatening situations. It covers the essentials of maintaining an airway, effective breathing and cardiopulmonary resuscitation (CPR), control of bleeding and how to prevent further injury until medical care is available.

### Standard First Aid

The standard first aid course covers the basic areas of preserving life, preventing further injury and providing first aid care until medical aid is available.

### Advanced First Aid

The advanced first aid course provides a more in-depth coverage of basic first aid and also includes triage, rescue, transportation of casualties and oxygen administration.

First aiders must be trained by an approved training agency that meets the standards of the Director of Medical Services. (GOA)

The number and level of first aiders is specified in Schedule 7 or the OHS Code.

Reference: OHS Code, Section 177

A list of approved first aid training agencies is available at:  
<http://humanservices.alberta.ca/ohs-firstaid>

## Employer Responsibilities

Employers must ensure adequate first aid training, supplies and equipment for their workers. Part 11 of the OHS Code details first aid requirements and employers should be familiar with these requirements.

An employer and prime contractor must:

- Ensure that first aid services, first aid equipment, supplies and the first aid room required by the ohs code are:
  - Located at or near the work site they are intended to serve, and
  - Available and accessible during all working hours.
- Ensure that first aid equipment and supplies are:
  - Maintained in a clean, dry and serviceable condition.
  - Contained in a material that protects the contents from the environment, and
  - Clearly identified as first aid equipment and supplies.
- Post, at conspicuous places at the work site, signs indicating the location of first aid services, equipment and supplies or, if posting of signs is not practicable, ensure that each worker knows the location of first aid services, equipment and supplies; and
- Ensure that an emergency communication system is in place for workers to summon first aid services.

Reference: OHS Code, Part 11, Section 179 (a), (b), (c), (d)

The employers and prime contractor at a project may enter into a written agreement to collectively provide first aid services, supplies and equipment and provide a first aid room for workers.

Reference: OHS Code, Part 11, Section 178 (3)

## First Aid Kits

All places of employment must have a first aid kit on site. The contents of first aid kits are standardized and are available at many safety supply stores. To select a first aid kit, determine the number of workers and the hazard level of the work site using Schedule 2 of the OHS Code and the related tables. <http://humanservices.alberta.ca/ohscode>.

## Kits for Vehicles

There is not a specific first aid kit for a vehicle. It is still based on the hazard level of the work site (driving would generally be considered medium hazard) and how many workers there are. It is best to use the kit for the maximum number of people the vehicle can safely hold.

## First Aid Records

An employer is required to create and maintain an accurate written record of all work-related injuries or sudden occurrences of illness that workers experience while on a work site, including mobile work sites.

### Legislative Requirements

An employer must record every acute illness or injury that occurs at the work site in a record kept for the purpose as soon as is practicable after the illness or injury is reported to the employer.

A record must include the following:

- The name of the worker.
- The name and qualifications of the person giving first aid.
- Description of the illness or injury.
- The first aid given to the worker.
- The date and time of the illness or injury.
- The date and time the illness or injury was reported.
- Where at the work site the incident occurred.
- The work-related cause of the incident, if any.

(1) The employer must retain the records for three years from the date the incident is recorded.

Reference: OHS Code, Part 11, Sections 183(1) (2) (3)

A sample first aid record and a blank record are included at the end of this section.

## Worker Responsibilities

Workers are required to report any work-related physical injury or sudden occurrence of illness experienced while at work as soon as possible. An employer must ensure workers know who the first aiders are and how to contact them. Prompt reporting ensures complete and accurate information and allows the injury or illness to be assessed and treated as necessary.

If a worker has an acute illness or injury at the work site, the worker must report the illness or injury to the employer as soon as is practicable.

Reference: OHS Code, Part 11, Section 182

### Resources for First Aid

- First Aid Agencies: <http://humanservices.alberta.ca/ohs-firstaid>
- Workplace Health and Safety Bulletin – First Aid Records: <http://humanservices.alberta.ca/FA009>
- Workplace Health and Safety Bulletin – Developing a First Aid Plan: <http://humanservices.alberta.ca/FA012>
- Workplace Health and Safety Bulletin – Workplace First Aiders and Legal Requirements: <http://humanservices.alberta.ca/FA011>
- Workplace Health and Safety Bulletin – Quality Management Plan Requirements for First Aid Training in Alberta Workplaces: <http://humanservices.alberta.ca/FA010>

## First Aid Record (Completed Sample)

### Joe's Printing

**Date of injury or illness:** 01/16/2012      Time: 10:00 AM   
Month/Day/Year      PM

**Date injury or illness reported to First aider:** 01/16/2012      Time: 10:12 AM   
Month/Day/Year      PM

**Full name of injured or ill worker:** Jane Doe

### Description of the injury or illness:

Worker slipped and fell in the mechanical room. When she fell she cut her left hand on improperly stored tools.

### Description of where the injury or illness occurred/began:

Incident occurred in the mechanical room of Joe's Printing

### Causes of the injury or illness:

**Direct cause(s):**  
Worker fell over debris while carrying tools

Look for all the possible causes of the incident

### Contributing cause(s):

Poor lighting  
Poor housekeeping  
Poor tool storage

**First aid provided?** No  Yes  (If yes, complete the rest of this page)

**Name of first aider:** Bill Jones

### First aid qualifications:

Emergency First Aider  Emergency Medical Technician- Paramedic   
Standard First Aider  Emergency Medical Technician - Ambulance   
Advanced First Aider  Emergency Medical Technician   
Registered Nurse  Emergency Medical Responder

### First Aid provided:

Cut cleaned with water and gauze dressing applied. Worker returned to work.

### CONFIDENTIAL

Keep this record for at least 3 years from date of injury or illness reported. This form is for example purposes only. Completing this form alone will not necessarily put you in compliance with the legislation. It is important and necessary that you customize this document to meet the unique circumstances of your worksite. Further, it is essential that this document is not only completed, but is used, communicated, and implemented in accordance with the legislation. The Crown, its agents, employees or contractors will not be liable to you for any damages, direct or indirect, arising out of your use of this form.

## First Aid Record Template

**Date of injury or illness:** \_\_\_\_\_ Time: \_\_\_\_\_ AM   
Month/Day/Year \_\_\_\_\_ PM

**Date injury or illness reported to First aider:** \_\_\_\_\_ Time: \_\_\_\_\_ AM   
Month/Day/Year \_\_\_\_\_ PM

**Full name of injured or ill worker:** \_\_\_\_\_

**Description of the injury or illness:**

\_\_\_\_\_  
\_\_\_\_\_

**Description of where the injury or illness occurred/began:**

\_\_\_\_\_

**Causes of the injury or illness:**

Direct cause(s):

\_\_\_\_\_

Contributing cause(s):

\_\_\_\_\_

\_\_\_\_\_

**First aid provided?** No  Yes  (If yes, complete the rest of this page)

**Name of first aider:** \_\_\_\_\_

**First aid qualifications:**

Emergency First Aider  Emergency Medical Technician- Paramedic

Standard First Aider  Emergency Medical Technician - Ambulance

Advanced First Aider  Emergency Medical Technician

Registered Nurse  Emergency Medical Responder

**First Aid provided:**

\_\_\_\_\_  
\_\_\_\_\_

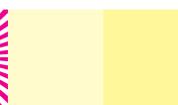
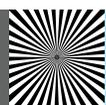
Copy provided  
to worker

Copy refused  Injured  
worker's initials \_\_\_\_\_

CONFIDENTIAL

Keep this record for at least 3 years from date of injury or illness reported

This form is for example purposes only. Completing this form alone will not necessarily put you in compliance with the legislation. It is important and necessary that you customize this document to meet the unique circumstances of your worksite. Further, it is essential that this document is not only completed, but is used, communicated, and implemented in accordance with the legislation. The Crown, its agents, employees or contractors will not be liable to you for any damages, direct or indirect, arising out of your use of this form.



**SECTION 10  
WORKPLACE VIOLENCE**

Current to June 2012

10

## SECTION 10: WORKPLACE VIOLENCE

The potential for violence in the workplace must be considered as a hazard. Identifying situations where workers may be exposed to violence assists the employer in implementing controls to improve workers' safety.

### Assessing your risk of workplace violence

When assessing the potential for violence, ask yourself if your work could include any of the following. Look at the day-to-day concerns for routine operations, but consider other things that may occur and impact your workers' health and safety, such as:

- Working alone or in small numbers.
- Working between 11 pm and 6 am.
- Working with unstable or violent individuals.
- Working near businesses that experience an elevated risk from any of the industry-related risks.
- Working in or near high crime areas.
- Working in isolated or remote areas.
- Working during a time of significant organizational change.
- Working in a business to which the public has access.

Be aware of your workers' safety when they are coming to or leaving from the business, when they are waiting for public transit or in parking lots.

## Employer Responsibilities

Employers must consider workplace violence when conducting their hazard assessment. Identifying situations where workers may be exposed to violence assists the employer in putting controls in place such as policies and procedures to lower the possibility of workers being exposed to violence.

### Legislative Requirements

Workplace violence is considered a hazard for the purposes of conducting a hazard assessment.

An employer must develop a policy and procedures respecting potential workplace violence.

An employer must ensure that workers are instructed in:

- How to recognize workplace violence.
- The policy, procedures and workplace arrangements that effectively minimize or eliminate workplace violence.
- The appropriate response to workplace violence including how to obtain assistance, and procedures for reporting, investigating and documenting incidents of workplace violence.

### Hazard assessment

- Workplace violence is considered a hazard.

### Policy and procedures

- An employer must develop a policy and procedures respecting potential workplace violence.

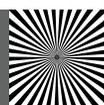
### Instruction of workers

- An employer must ensure that workers are instructed in:
  - How to recognize workplace violence.
  - The policy, procedures and workplace arrangements that effectively minimize or eliminate workplace violence.
  - The appropriate response to workplace violence, including how to obtain assistance.
  - Procedures for reporting, investigating and documenting incidents of workplace violence.

### Response to incidents

- Sections 18(3) to (6) and 19 of the Act apply to an incident of workplace violence.
- An employer must ensure that a worker is advised to consult a health professional of the worker's choice for treatment or referral if the worker.
  - Reports an injury or adverse symptom resulting from workplace violence, or is exposed to workplace violence.

Reference: OHS Code, Part 27, Sections 389, 390, 391



## Workplace Violence Policy Statement

A policy will inform workers about:

- What behaviours (i.e. Violence, intimidation, bullying, harassment, etc.) Management considers inappropriate and unacceptable.
- What to do when incidents covered by the policy occur.
- Contacts for reporting any incidents.

It will also encourage workers to report such incidents and will show that management is committed to dealing with incidents.

A sample policy statement is included at the end of this section.

## Workplace Violence Procedures

Workplace violence procedures outline the methods or processes required to make the policy operate on a day-to-day basis. The procedures may vary considerably from employer to employer depending on size, role and local conditions. They may include the following areas:

### How potential hazards will be identified and communicated to staff

#### Example

Hazard assessments regarding workplace violence will be completed as part of the regular hazard assessment program. The results of the hazard assessment will be communicated to workers at the regular staff meetings.



### How to respond to workplace violence

#### Example

All workers who are exposed to potential or real situations of workplace violence should leave the immediate area if possible. Call for assistance or 911 immediately.



### How to report workplace violence

#### Example

Workers are required to report all incidents of workplace violence to their supervisor as soon as it is safe to do so.



## How to investigate and document incidents of workplace violence

### Example

All incidents of workplace violence will be documented on the Incident Report and Investigation Form and the supervisor is responsible for investigating the incident to determine the causes and to identify how to prevent future occurrences..



For more information on conducting an incident investigation and sample incident investigation forms, see Section 11 of this guide or access the Work Safe Alberta, eLearning program on incident investigation at:

**<http://humanservices.alberta.ca/elearning/Incident/Incident.htm>**

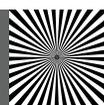
All workers exposed to workplace violence will be advised to consult with a health care professional for counseling.

All workers will be instructed in the workplace violence policy and procedures in orientation and a review will be done annually or as new related work processes or hazards arise. A sample template for Workplace Violence Procedures is included at the end of this section.

The Alberta WCB offers half day courses on preventing workplace violence. More information can be found at: **[www.wcb.ab.ca/public/preventing\\_violence.asp](http://www.wcb.ab.ca/public/preventing_violence.asp)**

### Resources for Workplace Violence

- Workplace Health and Safety Bulletin - *Preventing Violence and Harassment at the Workplace*: **<http://humanservices.alberta.ca/VAH001>**
- Workplace Health and Safety Teacher Resources Binder - *Psychosocial Hazards*: **<http://humanservices.alberta.ca/ohs-trb-chapter7>**
- Canadian Centre for Occupational Health and Safety - Health Promotion/Wellness/Psychosocial Resources: **[www.ccohs.ca/oshanswers/psychosocial/](http://www.ccohs.ca/oshanswers/psychosocial/)**
- OHS Code Explanation GuideGuide 2009, Part 27: **<http://humanservices.alberta.ca/ohscode-guide>**
- Worker's Compensation Board - Preventing Workplace Violence: **[www.wcb.ab.ca/public/preventing\\_violence.asp](http://www.wcb.ab.ca/public/preventing_violence.asp)**



## Prevention of Workplace Violence Policy Statement

The management of \_\_\_\_\_ recognizes the potential for workplace violence and other aggressive behavior directed at our employees. We will not tolerate behavior from anyone that intimidates, threatens, harasses, abuses, injures or otherwise victimizes our workers and will take whatever steps are appropriate to protect our workers from the potential hazards associated with workplace violence. We are committed to providing our employees with an appropriate level of protection from the hazards associated with workplace violence.

### Management Responsibilities

Management will:

- Inform workers if they are working in an area where there is a potential for violence and identify any risks that are specific to that area.
- Ensure that appropriate procedures are in place to minimize the risk to our workers from violence.
- Ensure that workers are trained in recognizing and responding to situations involving workplace violence.
- Ensure that every reported incident of workplace violence is investigated, and potential areas for improvement are identified.

### Worker Responsibilities

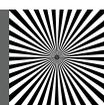
- Workers of \_\_\_\_\_ are required to be familiar with and follow the procedures that are in place to protect them from workplace violence.
- All workers must participate in the instruction of workplace violence prevention.
- Workers are required to immediately report all incidents of workplace violence to their supervisor or alternate \_\_\_\_\_ e.g. manager, foreman, security.
- Workers are also responsible for participating in work site hazard assessments and implementing controls and procedures to eliminate or control the associated hazards.

No worker can be penalized, reprimanded or in any way criticized when acting in good faith while following the procedures for addressing situations involving workplace violence.

\_\_\_\_\_  
Signature of Company  
Owner/President

\_\_\_\_\_  
Date

Reference: Alberta WCB: Preventing Violence at Work available from: [www.wcb.ab.ca/preventing\\_violence.asp](http://www.wcb.ab.ca/preventing_violence.asp) This form is for example purposes only. Completing this form alone will not necessarily put you in compliance with the legislation. It is important and necessary that you customize this document to meet the unique circumstances of your worksite. Further, it is essential that this document is not only completed, but is used, communicated, and implemented in accordance with the legislation. The Crown, its agents, employees or contractors will not be liable to you for any damages, direct or indirect, arising out of your use of this form.



## Workplace Violence Procedures Template

The procedures for dealing with workplace violence are as stated below.

### **How potential hazards will be identified and communicated to staff**

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### **How to respond to workplace violence**

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### **How to report workplace violence**

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### **How to investigate and document incidents of workplace violence**

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### The support available for victims of workplace violence

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### Training of workers

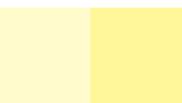
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**SECTION 11  
WORKING ALONE**

Current to June 2012

11

## SECTION 11: WORKING ALONE

A worker is “working alone” if they are at a work site and assistance is not readily available in case of emergency, injury, or illness.

Reference: OHS Code, Part 28, Section 393

Worker expectations of the availability of assistance increase as the probability of injury associated with the work increases. Employers are reminded that this probability may change over time and with changing workplace conditions. Three factors to consider when determining if assistance is “readily available” are:

- (1) *Awareness* — will other persons capable of providing assistance be aware of the worker’s needs?
- (2) *Willingness* — is it reasonable to expect those other persons will provide helpful assistance?
- (3) *Timelines* — will assistance be provided within a reasonable period of time?

### Employer Responsibilities

Employers have responsibilities for minimizing and eliminating risks associated with workers working alone. Under the OHS Code, employers are required to assess their workplace and take preventive measures that eliminate or control risks when their workers work alone.

Employers are also required to ensure workers working alone have some effective way of communicating with individuals who can respond immediately if there is an emergency or the worker is injured or ill.

An employer must, for any worker working alone, provide an effective communication system consisting of:

- Radio communication.
- Landline or cellular telephone communication, or
- Some other effective means of electronic communication that includes regular contact by the employer or designate at intervals appropriate to the nature of the hazard associated with the worker’s work.

If effective electronic communication is not practicable at the work site, the employer must ensure that:

- The employer or designate visits the worker, or
- The worker contacts the employer or designate at intervals appropriate to the nature of the hazard associated with the worker’s work.

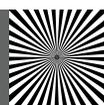
Reference: OHS Code, Part 28, Section 394 (1) (1.1)

### Resources for Working Alone

- Canadian Centre for Occupational Health and Safety: Working Alone FAQ: [www.ccohs.ca/oshanswers/hsprograms/workingalone.html](http://www.ccohs.ca/oshanswers/hsprograms/workingalone.html)
- Canadian Centre for Occupational Health and Safety: Working Alone Off-Site: [www.ccohs.ca/oshanswers/hsprograms/workingalone\\_offsite.html](http://www.ccohs.ca/oshanswers/hsprograms/workingalone_offsite.html)
- Alberta Human Services - Working Alone: <http://humanservices.alberta.ca/ohs-workalone>
- Work Safe Alberta: Working Alone Safely: a Guide for Employers and Employees: <http://humanservices.alberta.ca/workingalone>



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**SECTION 12  
INCIDENT MANAGEMENT  
AND INVESTIGATION**

**12**



## SECTION 12: INCIDENT MANAGEMENT AND INVESTIGATION

### Defining an incident

“Incidents” are any occurrence at a work site that causes or has the potential to cause injury or illness to a worker or damage to property. For the purposes of this Guide, this term has the same meaning as the term accident.



When an incident occurs, it must be everyone’s first priority to ensure an injured worker gets prompt and appropriate medical care, if required. After this, by investigating the incident and implementing corrective measures, it is possible to prevent it from happening again or to prevent a more serious incident.

### Employer Responsibilities

Employers must report to the Government of Alberta, Occupational Health and Safety:

- An injury or accident that results in death.
- An injury or accident that results in a worker being admitted to a hospital for more than 2 days.
- An unplanned or uncontrolled explosion, fire or flood that causes a serious injury or that has the potential of causing a serious injury.
- The collapse or upset of a crane, derrick or hoist.
- The collapse or failure of any component of a building or structure necessary for the structural integrity of the building or structure.

Reference: OHS Act, Section 18 (2)



### Reporting to WCB

Reporting an incident to OHS is different and separate from reporting an injury incident to WCB. Employers are required to report incidents to the WCB within 72 hours and can do this online at [www.wcb.ab.ca/employers/report\\_injury.asp](http://www.wcb.ab.ca/employers/report_injury.asp)

### Incident Investigation

Reportable or serious incidents that occur at a work site must be investigated, however it is a good practice to investigate and document all incidents to determine the root cause and prevent their reoccurrence.

If an injury or accident occurs at a work site or if any other serious injury or any other accident that has the potential of causing serious injury to a person occurs at a work site, the prime contractor or, if there is no prime contractor, the contractor or employer responsible for that work site shall

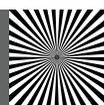
- Carry out an investigation into the circumstances surrounding the serious injury.
- Prepare a report outlining the circumstances of the serious injury or accident and the corrective action, if any, undertaken to prevent a recurrence of the serious injury or accident, and
- Ensure that a copy of the report is readily available for inspection by an officer.

Reference: OHS Act, Section 18 (3)

For more information on conducting your incident investigation, access the Reporting and Investigation Injuries and Incidents Bulletin at: <http://humanservices.alberta.ca/LI016>

### Goal of Incident Investigation

A successful incident investigation will determine the root cause(s) of the incident and find ways to prevent similar and more serious incidents.



## Conducting an Incident Investigation

It is important to use people with appropriate training in the applicable fields to ensure you will get the most complete incident investigation possible. By following a standardized process, you should be able to gather enough information to answer these questions:

- WHO was involved or injured?
- WHAT occurred?
- WHERE did the incident occur?
- WHEN did the incident occur?
- WHY was the unsafe act or condition allowed?
- HOW can a similar incident be prevented?

## Sources of Information

There are many places to find information during an incident investigation. The kind of information you will require varies based on the situation. Here are some sources to start your investigation:

- Observations.
- Interview witnesses.
- Training records of injured worker.
- Interview supervisor or person directing work even if they didn't witness the incident.
- Work permits (if applicable).
- Safety meeting minutes if that issue was discussed.
- Inspection and maintenance records for equipment.
- Engineering analysis.
- Pictures of the area, the work conditions, equipment.
- First aid record form.

## Incident Investigation Report

When any reportable incident or injury happens, or when an incident occurs that had the potential to cause a serious injury, an investigation has to be conducted and an investigation report completed.

The investigation report is an internal company document and must be kept on file for a minimum of two years following the incident or injury. You're not required to send a copy to the government. However, the report has to be readily available for inspection by an OHS officer when requested.

A template for an Incident Reporting and Investigation Form can be found at the end of this section.

## Incident Causation

Usually there are several factors that cause or contribute to an incident. It is important not to focus only on the direct causes, but also look for other factors that may have contributed to the incident. If you do this, you will be better able to prevent it from happening again.

- Direct Cause – action, event or force that is the immediate, initiating or primary agent which leads to the incident.
- Indirect Cause – this alone did not cause the incident however it contributed to the outcomes. There may be several indirect causes for an incident. For example:
  - Poorly maintained, unsafe or defective equipment.
  - Unsafe environment or conditions.
  - Poor housekeeping.
  - Physical hazards.
  - Poor planning.
  - Poor training.
  - Unsafe work practices – for example cutting corners.
  - Unusual or unfamiliar work conditions.
  - Personnel and behavioural factors – for example, stress, fatigue, etc.

The **root causes** of the incident are the source of each of the direct and indirect causes; the most basic conditions that allowed them to occur.

**Control measures that address the root causes are best able to prevent future incidents.**

### Defining a near miss

“Near misses” are the most common incidents. They cause no visible injury or damage but could cause serious injuries or property damage under slightly different circumstances. Near misses identify conditions or work practices that must be changed to prevent future incidents. Making the most of these early warnings will help to keep your workers as safe as possible.



### Example

A press operator tries to fix a paper jam without turning off the press. As he reaches for the sheet that is causing the jam, his jacket sleeve gets caught in a roller. He is able to pull his arm out of the jacket and turn the machine off. The operator is not injured but would most certainly have been if his arm had been caught in the roller with the machine operating.

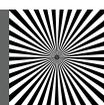


### Resources for Reporting and Investigating Incidents and Injuries



- Work Safe Alberta, Incident Investigation eLearning tool at:  
<http://humanservices.alberta.ca/elearning/Incident/Incident.htm>
- Workplace Health and Safety Bulletin - Reporting Injuries and Incidents:  
<http://humanservices.alberta.ca/LI016>
- Canadian Centre for Occupational Health & Safety - Risk-based Approach to Near Miss: [www.ccohs.ca/hscanada/contributions/RITWIKARTICLE.pdf](http://www.ccohs.ca/hscanada/contributions/RITWIKARTICLE.pdf)

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## Incident Investigation Report Template

Name of Worker\* \_\_\_\_\_ Job Title\* \_\_\_\_\_

Name of Employer \_\_\_\_\_

Date of Incident \_\_\_\_\_ Time of Injury  
Month/Day/Year or Illness \_\_\_\_\_ AM  PM

Date incident \_\_\_\_\_ Time  
 reported Month/Day/Year Reported \_\_\_\_\_ AM  PM

Incident Reported to \_\_\_\_\_ Job Title \_\_\_\_\_

wLocation of Incident \_\_\_\_\_

Type of Incident Near Miss  First Aid   
 Production Loss  Medical Aid   
 Property Damage  Serious Injury   
 Reportable Incident  if Date time reported to OHS \_\_\_\_\_

Injured/Ill worker #1	Name	_____
	Job Title	_____
	Nature of Injury/ Illness	_____
	Severity	[ ] Fatal [ ] More than 2 days in hospital [ ] Medical aid [ ] First aid [ ] Lost time [ ] Permanent disability
Injured/Ill worker #2	Name	_____
	Job Title	_____
	Nature of Injury/ Illness	_____
	Severity	[ ] Fatal [ ] More than 2 days in hospital [ ] Medical aid [ ] First aid [ ] Lost time [ ] Permanent disability



Witnesses (sample witness statement forms on CD)	Name	Job Title	Statement Attached?

\* This information must be kept confidential

### Circumstances and Description of Incident

Describe the relevant details of what happened immediately before, during, and after the incident.

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### Site Diagram or sketch

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		Recommended Corrective Action(s)			
		Action <small>(ensure it addresses the root cause)</small>	Assigned to	Completed on	Follow up
Direct Causes					
Indirect Causes					

Name(s) of Investigators \_\_\_\_\_ Date \_\_\_\_\_  
 \_\_\_\_\_ Month/Day/Year \_\_\_\_\_

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# GLOSSARY OF TERMS

Current to June 2012



## GLOSSARY OF TERMS

### Certificate of Recognition (COR)

A COR is awarded to employers who develop health and safety programs that meet established standards.

Reference: OHS Code, Section 1

### Competent

“Competent”, in relation to a worker, means adequately qualified, suitably trained, and with sufficient experience to safely perform work without supervision or with only a minimal degree of supervision.

Reference: OHS Code, Section 1

### Double Insulated

Double insulated electrical cords or tools have additional insulating considerations to prevent the housing of the device from becoming energized. Such a device will be labeled with the term “double insulated” or with a symbol comprised of a square box within another square box.

### First Aid

“First aid” means the immediate and temporary care given to an injured or ill person at a work site using available equipment, supplies, facilities, or services, including treatment to sustain life, to prevent a condition from becoming worse or to promote recovery

Reference: OHS Code, Section 1

### First Aider

“First aider” means an emergency first aider, standard first aider or advanced first aider designated by an employer to provide first aid to workers at a work site.

Reference: OHS Code, Section 1

### Harmful Substance

A harmful substance means a substance that, because of its properties, application or presence, creates or could create a danger, including a chemical or biological hazard, to the health and safety of a worker exposed to it. See the list at the end of this section

Reference: OHS Code, Section 1

### Hazard

A situation, condition, or behaviour that has the potential to cause a danger to the health or safety of a worker.

Reference: OHS Code, Section 1

### Hazard Assessment

A process used to identify and evaluate the health and safety hazards associated with job tasks. Provides a method for prioritizing health and safety hazards.

Reference: OHS Code, Section 1

### Hazardous Energy

Hazardous energy is defined as electrical, mechanical, hydraulic, pneumatic, chemical, nuclear, thermal, gravitational, or any other form of energy that could cause injury due to the unintended motion energizing, start-up, or release of such stored or residual energy in machinery, equipment, piping, pipelines, or process systems

Reference: OHS Code, Section 1

### Imminent Danger

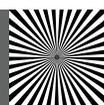
Imminent danger means “a danger that is not normal for that occupation, or a danger under which a person engaged in that occupation would not normally carry out the person’s work”. Both the employers and workers have specific roles in regard to the workers’ responsibility to refuse work where an imminent danger exists.

### Incident

“Incidents” are any occurrence at a work site that causes or has the potential to cause injury or illness to a worker. For the purposes of this Guide, this term has the same meaning as the term accident.

### Letterpress

The oldest form of printing. It involves impressing paper onto a raised ink surface. It is nearly obsolete, with the exception of cottage print shops. Metal engraving has also been replaced by lithography.



### Letterset

A form of printing that uses a blanket for transferring an image from plate to paper. Unlike offset lithography, it uses a relief plate and requires no dampening system. It is also known as *dry offset*.

### Near Miss

“Near misses” are the most common incidents. They cause no visible injury or damage but could cause serious injuries or property damage under slightly different circumstances. Near misses identify conditions or work practices that must be changed to prevent future incidents. Making the most of these early warnings will help to keep your workers as safe as possible.

### Occupational Exposure Limit

The maximum level of a harmful substance that a worker can be exposed to during an eight hour work day. Specific limits are defined within the Occupational Health & Safety Code.

Reference: OHS Code, Section 1

### Offset Lithography

A form of printing that takes an image from a plate, offsets it onto a rubber blanket of an impression cylinder, and then transfers it onto a sheet of paper. The process is automatic and aluminum plates are rolled through water, then ink. The inked image is transferred onto a rubber pad and onto another roller, going through the same process again with another colored ink. Where there is no image, water sticks to the plate and only the ink is absorbed. When printing pictures or brochures, four basic colors are used: yellow, red, blue and black.

### Prime Contractor

The contractor, employer or other person who enters into an agreement with the owner of the work site to be the prime contractor, or the owner of the work site if no agreement exists.

### Sheet Printing

A type of printing in which a press prints sheets of paper.

### Web Printing

A type of printing in which a continuous roll is fed through a press.

# REFERENCES AND RESOURCES

Current to June 2012



## REFERENCES AND RESOURCES

Main web sites and resources referenced in Occupational Health & Safety Practices: A Guide for Printers:

Work Safe Alberta:

- Occupational Health & Safety  
**[www.worksafe.alberta.ca](http://www.worksafe.alberta.ca)**
- Occupational Health & Safety Legislation  
**<http://humanservices.alberta.ca/ohs-legislation>**
- Employment Standards  
**<http://humanservices.alberta.ca/es>**

Alberta Municipal Affairs, Fire:  
**[www.municipalaffairs.alberta.ca/cp\\_fire.cfm](http://www.municipalaffairs.alberta.ca/cp_fire.cfm)**

Workers' Compensation Board:  
**[www.wcb.ab.ca](http://www.wcb.ab.ca)**

American Conference of Governmental Industrial Hygienists, Industrial Ventilation - A Manual of Recommended Practice, 26th Edition:  
**[www.acgih.org/store](http://www.acgih.org/store)**

Canada Printing Industry Association:  
**[www.cpia-aci.ca/industry-information/index\\_e.php](http://www.cpia-aci.ca/industry-information/index_e.php)**

Canadian Centre for Occupational Health & Safety:  
**[www.ccohs.ca/ohsanswers](http://www.ccohs.ca/ohsanswers)**

Government of Canada – Department of Justice:  
**[laws.justice.gc.ca](http://laws.justice.gc.ca)**

Health and Safety Executive, *The Printer's Guide to Health and Safety*, UK, 2nd Edition, 2002.

Ontario Ministry of Labour:  
**[www.labour.gov.on.ca/english/hs/pubs/ohsa](http://www.labour.gov.on.ca/english/hs/pubs/ohsa)**

Worksafe BC – Health & Safety Information:  
**[www.worksafebc.com/publications/health\\_and\\_safety](http://www.worksafebc.com/publications/health_and_safety)**

**EVALUATION  
FORM**

Current to June 2012



## EVALUATION FORM

Occupational Health and Safety would like your feedback on the *Occupational Health and Safety Practices: A Guide for Printers*. All responses are kept confidential and will be grouped with other responses to provide an overall evaluation of the guide. Please send the completed form to:

Gene Ozon, OHS Program Development and Research,  
8th Floor, 10808-99 Avenue Edmonton, Alberta T5K 0G5  
Fax: 1-780-422-0014 or Email to: gene.ozon@gov.ab.ca

Date: \_\_\_\_\_

1. How did you find out about this Guide?

- Industry Association – Specify \_\_\_\_\_
- Website: Government, other: Specify \_\_\_\_\_
- Conference (circle)
- Other – Specify \_\_\_\_\_

2. The following questions will help us determine the usefulness of the content available in the Guide. Please choose one answer.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	No opinion
a) The information was easy to find.	<input type="checkbox"/>				
b) The information was easy to understand.	<input type="checkbox"/>				
c) The information was useful.	<input type="checkbox"/>				
d) I will be able to apply this information to my workplace.	<input type="checkbox"/>				
e) There was enough information provided.	<input type="checkbox"/>				

f) What information, if any, would you like to see added to the Guide?

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g) What information, if any, should be deleted from the Guide?

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h) What information was most useful to you?

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i) Did you use the information in the Guide?  Yes  No - Why not?

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j) Did you use the sample forms provided in the Guide?

Yes - from CD  Yes - in book or copied from book

No - Why not?

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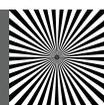
k) Would you recommend this Guide to others?  Yes  No - Why not?

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3. The following questions help us understand how the needs and views of groups of users are different, which will help improve our information products. All answers will be kept confidential.

a) Is your age category (select one):

- 15 or under
- 16 to 24
- 25 to 34
- 35 to 44
- 45 to 54
- 55 - 64
- 65 or over

b) What is the highest level of education you have completed? (select one):

- Less than Grade 12
- High school diploma
- Trades certificate or diploma
- College certificate or diploma
- Professional Certification; please list
- University certificate or diploma
- University - Bachelor degree
- Master's degree
- PhD

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c) Where do you live? (select one):

- Alberta
- Outside of Alberta, but within Canada
- Outside of Canada

d) Which type of industry sector(s) are you employed in? (select all that apply):

- Agriculture and Forestry
- Business, Personal and Professional Services (includes property management)
- Construction and Construction Trade Services
- Manufacturing and Processing



- Mining and Petroleum Development
- Public Administration, Education and Health Services
- Retail and Wholesale Trade Services
- Transportation, Communication and Utilities
- Other:

e) How many total workers are there in your company?

- Less than 10
- 10 -19
- 20 - 39
- 40 -99
- 100 or more

f) What is your current occupation or position? (select all that apply):

- Employer
- Labourer
- Front line manager
- Supervisor
- Industry Association Employee
- Health and Safety Professional
- Student
- Tradesperson
- Front line worker
- Senior manager
- Labour Organization Employee
- Government Agency /WCBEmployee
- Self-employed
- Other (please specify): \_\_\_\_\_

g) Does the company you represent have a Certificate of Recognition (COR)?

- Yes Skip to i).
- No. Why not? \_\_\_\_\_ Go to h).

h) Does your company intend to achieve a Certificate of Recognition (COR)?

- Yes - less than 1 year
- Yes - 3 - 5 years
- No
- No - have a different health and safety management system

i) If you would like a response to your comments please provide the following information:

Name: \_\_\_\_\_

Contact E-mail: \_\_\_\_\_

Contact Phone Number: \_\_\_\_\_

If you have any questions or comments about the feedback form, please contact Gene Ozon at gene.ozon@gov.ab.ca.

Thank you for taking the time to provide us with your feedback.



Contact us

Province-Wide Contact Centre  
Edmonton & surrounding area  
780-415-8690

Throughout Alberta  
1-866-415-8690

Deaf or hearing impaired  
In Edmonton: 780-427-9999  
or 1-888-232-7215 throughout Alberta

Website  
[www.worksafe.alberta.ca](http://www.worksafe.alberta.ca)

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