

**Student Monitor Training
Manual**

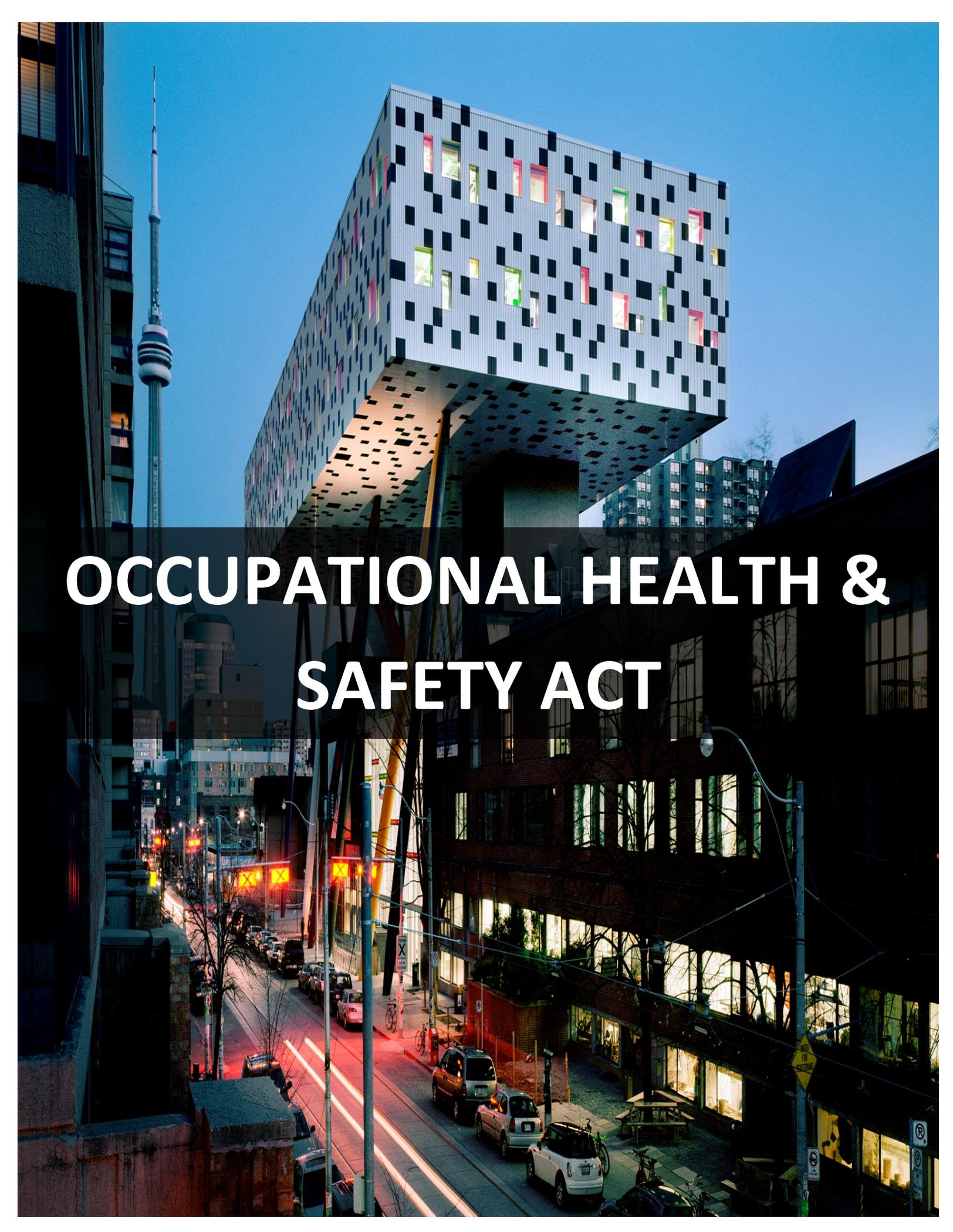
Wood Studio

Office of Safety & Risk Management
Rosalie Sharpe Pavilion
115 McCaul
Room 2210



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A photograph of a modern building with a perforated facade and colorful windows, set against a city street at dusk with the CN Tower in the background. The building's facade is white with a grid of black squares, and some windows are illuminated with colorful lights. The street below is dark, with some cars and streetlights visible. The CN Tower is visible in the background on the left side of the image.

OCCUPATIONAL HEALTH & SAFETY ACT

LEGISLATION

Ontario Occupational Health & Safety Act

In Ontario, health and safety requirements are legislated under the Ontario Occupational Health & Safety Act (OHS Act). The Act outlines the roles and responsibilities of various workplace parties. You can find a copy of The Act located on the Health & Safety board at 100 McCaul's main floor.

OCAD University, as an employer, is responsible for ensuring compliance with the Act and regulations, and for taking every precaution reasonable for the protection of faculty, staff (Section 25(2) h of the OHS Act) and students.

As a Student Monitor, you are now considered a worker at OCAD University and you will have specific rights, roles and responsibilities that you will need to understand which we will discuss further in this section.

Internal Responsibility System

The Occupational Health and Safety Act outlines the different roles of the employer, supervisor and worker, and how these parties work together to contribute to making their workplace safe. This is the Internal Responsibility System, or IRS.

Communication is a big part of the IRS in any workplace, and the ability to communicate effectively is an important skill. To communicate effectively, you need to be good at both listening and speaking.

If a worker sees a hazard or practice that goes against the OHS Act or workplace health and safety policies or procedures, that worker has a duty to tell their supervisor or employer. This should be done as soon as possible so that the hazard can be addressed. That's how employers, supervisors and workers come together to make the workplace safer. This is an example of the Internal Responsibility System in action.

You should inform the employer of any health and safety concern, even if you have the ability and authority to handle it yourself. Your employer may need to know about the problem in order to fulfill his or her duties.

WORKER RIGHTS & RESPONSIBILITIES

1. WORKER RIGHTS:

The OHS Act gives workers three important rights:

- a) The **right to know** about workplace hazards and what to do about them
- b) The **right to participate** in solving workplace health and safety problems
- c) The **right to refuse** work that they believe is unsafe



1.1. The Right to Know

It's the employer's responsibility to inform the workers about any health or safety hazards and to show them how to work safely. This supports workers' right to know about hazards to which they might be exposed. For example, the law says workers have to receive information and training on the chemicals or hazardous materials that are used, handled or stored at work. This information is available either on warning labels or information sheets. Sometimes you may also have to give the worker written instructions on how to do the work. The employer supports the workers' right to know by making sure they get:

- Information about the hazards in the work they are doing
- Training to do the work in a healthy and safe way.
- Competent supervision to stay healthy and safe. That means the employer has made sure that you know how to do your job.

1.2. The Right to Participate

Supervisors support the workers' right to participate in health and safety by encouraging them to get involved. There are various ways to be involved in workplace health and safety such as asking questions, raising concerns and giving positive feedback. One of the most effective ways workers can participate in health and safety is by becoming or communicating with a **Joint Health and Safety Committee (JHSC)** member.

What is a Joint Health and Safety Committee (JHSC)?

In Ontario, organizations that employ more than 20 employees must have a formal Joint Health and Safety Committee. The JHSC consists of worker (union employee) and management members.

Worker representatives are selected by the union and management members are appointed by the employer.

What do OCAD University JHSC Members do?

- Act as an advisory body to OCADU in areas of health and safety
- Identify hazards and obtain information about them
- Assist in resolving work refusal cases
- Participate in accident investigations and workplace inspections that involved OCADU employees
- Recommend corrective actions required to resolve health and safety concerns
- Meet every month to discuss safety issues at OCADU
- Inspect the workplace (or at least some areas of the workplace) each month

Who are the JHSC Members?

Management Representatives:

Nick Hooper (Studio Management) – Co-Chair
Connie Arezes-Reis (Human Resources)
Christine Wallace (Facilities and Planning)

Contact:

Ext. 2202
Ext. 209
Ext. 620

Worker Representatives:

Eric Steenbergen (Printmaking) – Co-Chair	Ext. 268
Alvaro Araya (IT Services)	Ext. 240
Angela Del Buono (Photography)	Ext. 264
Ted Hunter (Faculty)	Ext. 313
Myly Pham (IT Services)	Ext. 3846
Katrina Tompkins (ED/ID)	Ext. 397
Adam Wilkinson (Distribution Services)	Ext. 612

Where Can I find the JHSC's Monthly Meeting Minutes and Inspection Sheets?

Your JHSC's monthly meeting minutes and inspection reports are posted on the Safety & Risk Management Bulletin Board located at the main floor at 100 McCaul.

1.3. The Right to Refuse.

The third right of workers in the OHS Act is the right to refuse to do work that you have reason to believe is unsafe for yourself or another worker. The OHS Act prohibits the employer from reprimanding a worker for such things as complying with the OHS Act or seeking its enforcement.

Your supervisor will respect that right by taking "every precaution reasonable" in the circumstances to protect workers and by complying with the process for work refusals specified in the Act. When a worker is refusing to do particular work because it is likely to endanger him or herself, the supervisor must look into the worker's concerns and do everything they can to help the employer address them. Most of the time, the employer or the supervisor will be able to solve the problem with the worker's JHSC member. But if an agreement can't be met on how to solve it and the worker still feels the work is unsafe, a Ministry of Labour inspector will be called in to investigate.

For details on how this process works, refer to our policy: 5004 - Work Refusal Procedures (*Attached: Appendix 4*).

2. DUTIES OF A WORKER

The OHS Act gives workers certain duties, as a student monitor you must:

- a) Follow the law and the workplace health and safety policies and procedures.
- b) Always wear or use the protective equipment that the employer requires.
- c) Work and act in a way that won't hurt them or any other worker.
- d) Report any hazard they find in the workplace to your supervisor.

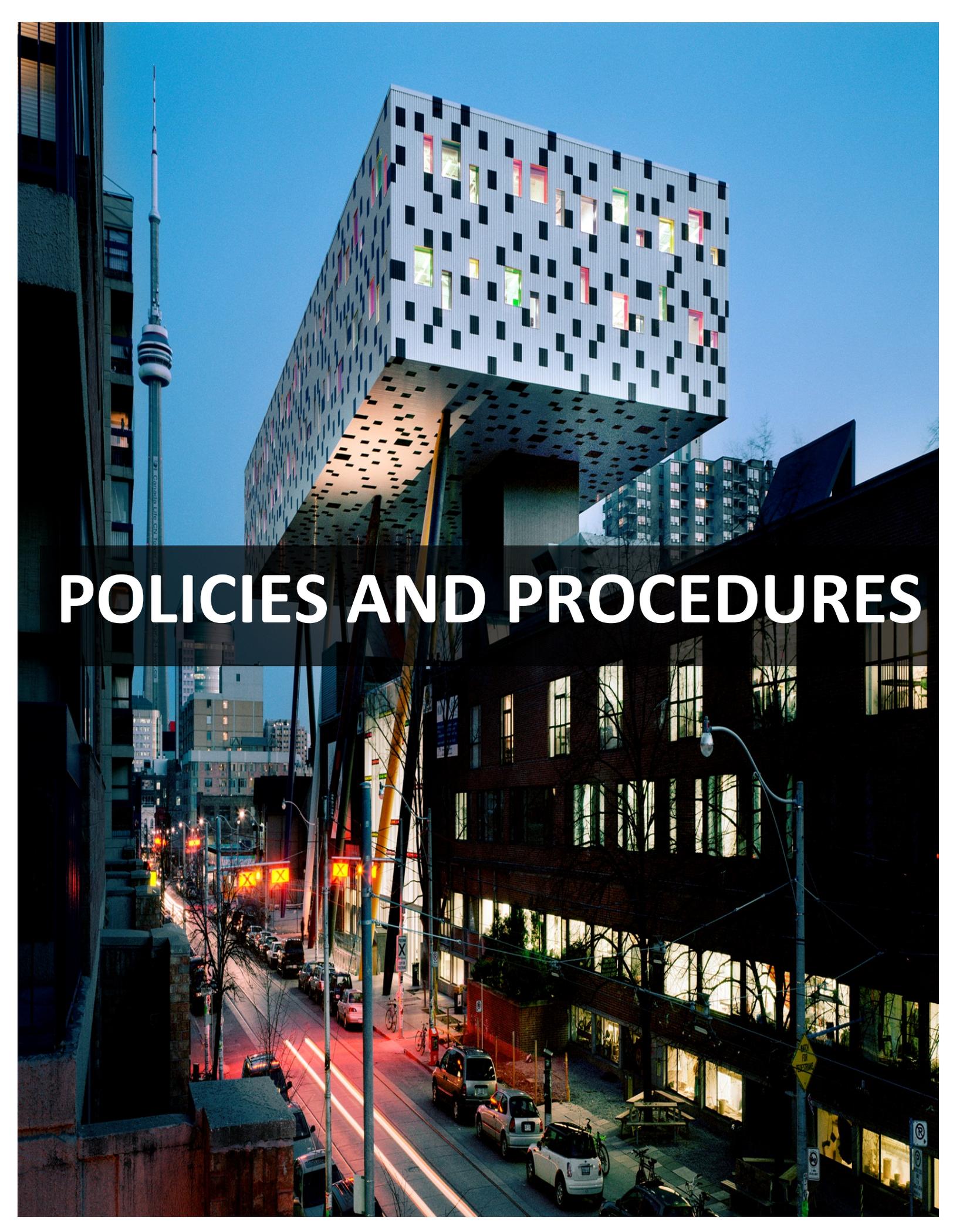


SUPERVISOR RIGHTS & RESPONSIBILITIES

Every supervisor is also considered to be a worker and has the same workplace duties and rights as a worker. But if you are also supervising others, the OSHA also gives you specific duties related to your role as a supervisor, including:

- a) Telling workers about hazards and dangers and responding to their concerns
- b) Showing workers how to work safely and making sure they follow the law, and the workplace health and safety policies and procedures
- c) Making sure workers wear and use the right protective equipment
- d) Doing everything reasonable in the circumstances to protect workers from being hurt or getting a work related illness



A photograph of a modern building with a perforated facade and colorful windows, set against a city street at dusk with the CN Tower in the background. The building's facade is a grid of white panels with black perforations, and some windows are illuminated with vibrant colors like red, green, and yellow. The building is cantilevered over a street. In the background, the CN Tower is visible against a blue twilight sky. The foreground shows a city street with cars, streetlights, and a brick building with large windows.

POLICIES AND PROCEDURES

POLICIES

The policies relating to Safety and Risk Management can be downloaded at:
http://www.ocadu.ca/about_ocad/risk_management/policies.htm. The policies that you will likely reference to are:

- **Health and Safety Policy** - This policy is mandated by law; outlines OCAD U's commitment to health and safety; updated annually and approved by the Board.
- **Fire & Flame Policy** - This policy prohibits incorporating fire or flame into artwork without obtaining a written Fire and Flame Permit. Smoke producing equipment are strictly prohibited.
- **Work Refusal Procedure** - This procedure outlines the process for work refusals, identifies the parties involved and the responsibilities and procedure to follow for work refusals.
- **Scented Products Guidelines** - Raises awareness of the effects of scented products on some individuals and provides "best practices" for the management of scent-related complaints
- **Temporary Installation of Student Art Work** - Facilitates the safe exhibition of artwork and applies to student artwork installed in OCAD U public spaces
- **Smoke Free Policy** - This policy protects the OCAD U community from unwanted exposure to tobacco smoke
- **Reporting and Resolving Health and Safety Concerns** - This procedure provides direction on how to report health & safety concerns that affect you and your colleagues.



PROCEDURES

1) Dealing with Emergencies

In the event of an emergency wherein incidents or behaviours presenting immediate or imminent danger should be reported immediately to OCAD U Security:

- a) If you can do so safely, pick up a red emergency phone to connect to Security immediately. (Knocking a red emergency phone off the hook alerts Security of your location and sends assistance).
- b) Or, pick up a white courtesy phone or OCAD office phone and dial 511.
- c) If none of the above options are possible, use a mobile phone to dial 911



2) Injured person(s)

Campus Security personnel are certified in First Aid/CPR and will be the first responder for all medical emergency situations on campus. First Aid Kits (*Attached: Appendix 5*) and A.E.D.s are located throughout the campus and Campus Security is equipped with First Aid Response Bags. The Incident & Investigation Report Form (*Attached: Appendix 2*) should be filled out following any incident.

Non-injury incidents, near misses or “close calls” should also be reported on the Incident & Investigation Report Form. This will help us ensure that the situation is dealt with and other staff, faculty or students are not exposed to the hazard.

For incidents resulting as a critical injury, where the injury:

- a) Places life in jeopardy;
- b) Produces unconsciousness;
- c) Results in substantial loss of blood;
- d) Involves the fracture of a leg or arm but not a finger or toe;
- e) Involves the amputation of a leg, arm, hand or foot but not a finger or toe;
- f) Consists of burns to a major portion of the body; or
- g) Causes the loss of sight in an eye.

Please refer to Policy 5002 – Critical Injury Procedures (*Attached: Appendix 3*) or online:

http://www.ocadu.ca/Assets/pdf_media/ocad/about/policies/administrative_policies_5002_critical_injury_procedures.pdf

3) Workplace Violence

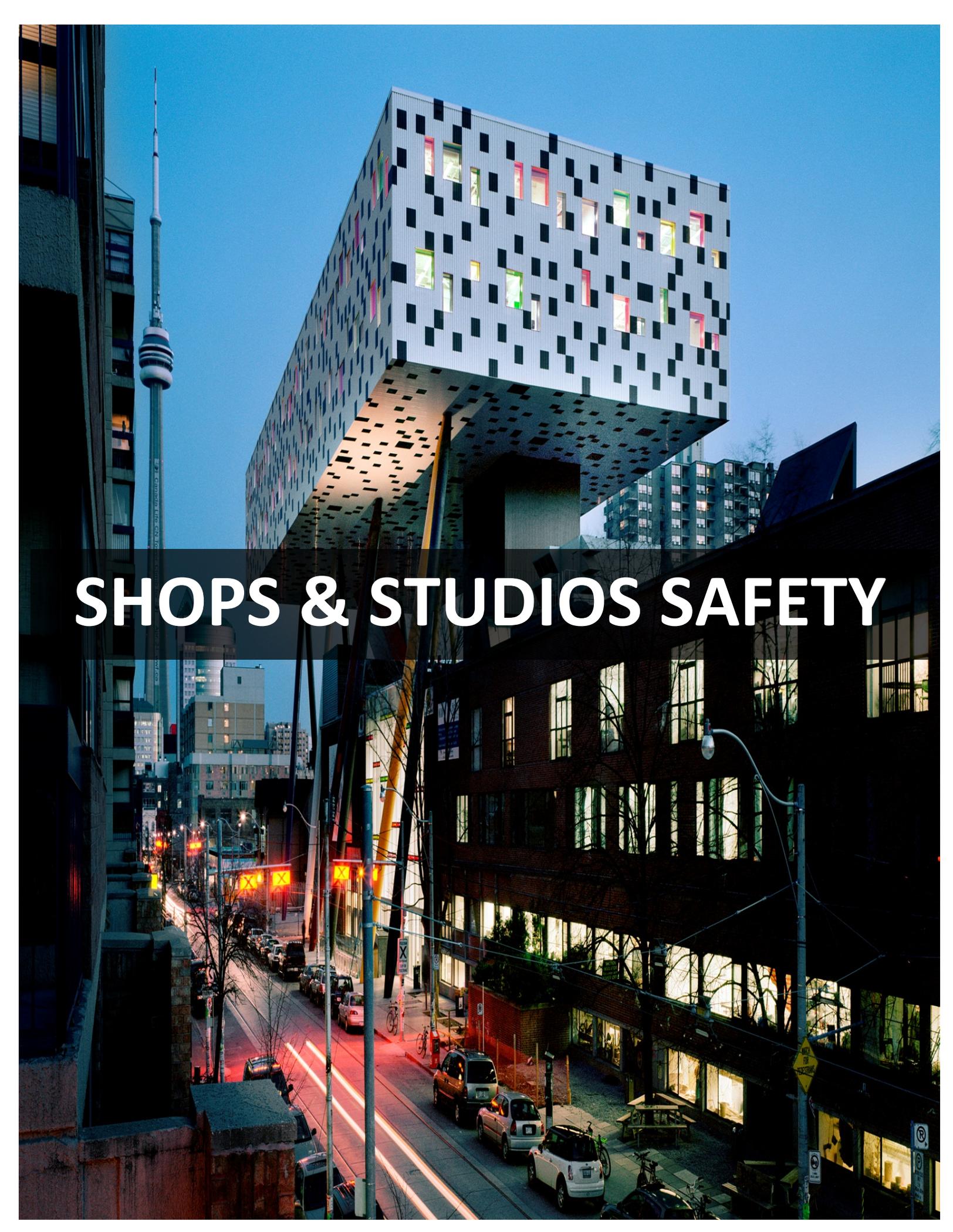
OCAD University expects that any incidents of violence or threatening behaviour in its work and learning environment will be investigated and dealt with promptly by all relevant parties in a fair, consistent, thorough, and confidential manner

Incidents of a potentially violent or threatening nature but not presenting immediate or imminent danger should be reported immediately to:

- a) For students – relevant Chair, Associate Dean or Associate VP, Students;
- b) For staff – relevant Supervising Manager or Director, Human Resources; or
- c) For faculty – relevant Chair, Associate Dean or Director, Human Resources.

For more information see Policy 5005 – Response to Violent or Threatening

Behaviour: http://www.ocadu.ca/Assets/pdf_media/ocad/about/policies/administrative_policies_5005_response_to_threatening_or_disturburing_behaviour_policy.pdf



SHOPS & STUDIOS SAFETY

SHOPS & STUDIOS PROGRAM

This section contains specific information for your studio in relation to:

1. Shop & Studio Dress Code
2. Chemical Safety
3. Equipment Safety

Within the program, you will be provided with the necessary tools and information to help guide you through the processes and procedures to work safely in the shop and studio. This form of work information and instruction is called: Safe Operating Procedures. Safe Operating Procedures (SOPs) are developed to ensure that where hazardous processes, techniques, chemicals or equipment are performed or used there are clear written instructions that identify the potential hazards and the correct steps to follow to complete the task safely. SOPs are used to train new staff and students, as a reference when a task is to be performed, and as documentation of the correct procedure.

The Studio's chemical, equipment and operational safe operating procedures are included in the appendix 8 for your review.

SHOPS & STUDIOS DRESS CODE

Studio Management asks all faculty, staff and students to observe the following rules in all shops, and in certain studios.

Faculty and technicians will expect students' cooperation if they wish to use the shops and studios. Faculty and technicians are empowered to suspend shop privileges if in their opinion a user may be putting him/herself or others in danger.

- a) **Wear sturdy and appropriate shoes:** e.g., sneakers, closed leather shoes or work boots - NOT open-toed sandals, flip-flops or high heels.
- b) **No bare midribs if exposure** to chemicals or tools/machinery is likely, wear an apron if necessary.
- c) Face-shields or safety glasses **MUST** be worn when using machinery, and other **personal protective equipment** (e.g., gloves, splash goggles, dust mask, respirator, hearing protection) must be worn if needed.
- d) **No long, dangling clothing or accessories:** (scarves, flowing sleeves, chains, long necklaces, etc.). Long hair must be tied back.



CHEMICAL SAFETY

The Chemical Safety Program includes:

1. Training Requirements

WHMIS (Workplace Hazardous Materials Information System) is a Canada-wide system designed to give employers and workers information about hazardous materials used in the workplace. Under WHMIS, there are three ways in which information on hazardous materials is to be provided:

- Labels
- Material Safety Data Sheets
- Worker Education Programs

It is important for you to understand the purpose of the WHMIS program. Any worker who handles, works with, or works in proximity to a hazardous material (controlled product) or has a potential for exposure will receive training regarding the potential hazards of exposure.

This training program is available online, please log into CANVAS to complete the Chemical Safety Training.

2. Chemical Matrix *(Attached: Appendix 8)*

This is an inventory of all the chemicals for the studio. This will serve as a quick overview of the chemical which includes the WHMIS classification, safe handling, storage and disposal procedures.

3. Spill Kits

Spill kits are found in each studio *(Attached: Appendix 7)* and used to help contain spills in the case of an accidental spill. Please refer to the procedure - Responding to Chemical Emergencies for further details and instructions.

Inside a spill kit, you will find:

- Sorbent Pads – 17" x 19"
- Sorbent Socks – 3" x 48"
- Sorbent Pillows – 8" x 18"
- Safety Goggles
- Nitrile Gloves
- Disposal Bag



The Chemical Matrix, Spill Kit and MSDS binder located inside each studio. Ask your Studio Technician to help you find this and if you need additional assistance with any unfamiliarity to chemicals you may have.

4. Procedures for working with chemicals

Please review the following procedures (*Attached: Appendix 8*):

- a) Screening procedures for introducing new chemicals to OCAD U
- b) Managing MSDS and Labels
- c) Transporting Chemicals within OCAD U
- d) Storing Chemicals
- e) Responding to Chemical Emergencies
- f) Safety Procedures for Chemical Users
- g) Chemical Waste Disposal Procedures



5. Personal Protective Equipment (PPE)

The following type of Personal Protective Equipment (PPE) is available in your studio. Please talk to your faculty or technician for more information and how you can obtain the specific PPE to increase your protection.

Please ensure that the students under your care are all wearing the required Personal Protective Equipment.

Type	Brand
Safety Glasses	Safety Glass
	Safety Glass (Ztek)- regular
	Safety Glass (Ztek)- mini
	Visitor Safety Glass
	Chemical Splash Goggle
Gloves	Mapa Stansolv Glove (8-8 1/2, 9-9 1/2, 10-10 1/2)
	Nitrile disposable glove (S-XL)
Aprons	PVC Apron

EQUIPMENT SAFETY

Where specific questions related to machine use arises, they should first be directed to your immediate supervisor. The Office of Safety & Risk Management is also available to assist you in fulfilling the health and safety responsibilities of your job.

1. Studio Equipment Safe Operating Procedures

These SOPs will provide a step-by-step guide on how to use the machines. It is important that you familiarize yourself with these SOPs prior to using any of the equipment in the studio.

The contents of each SOP include:

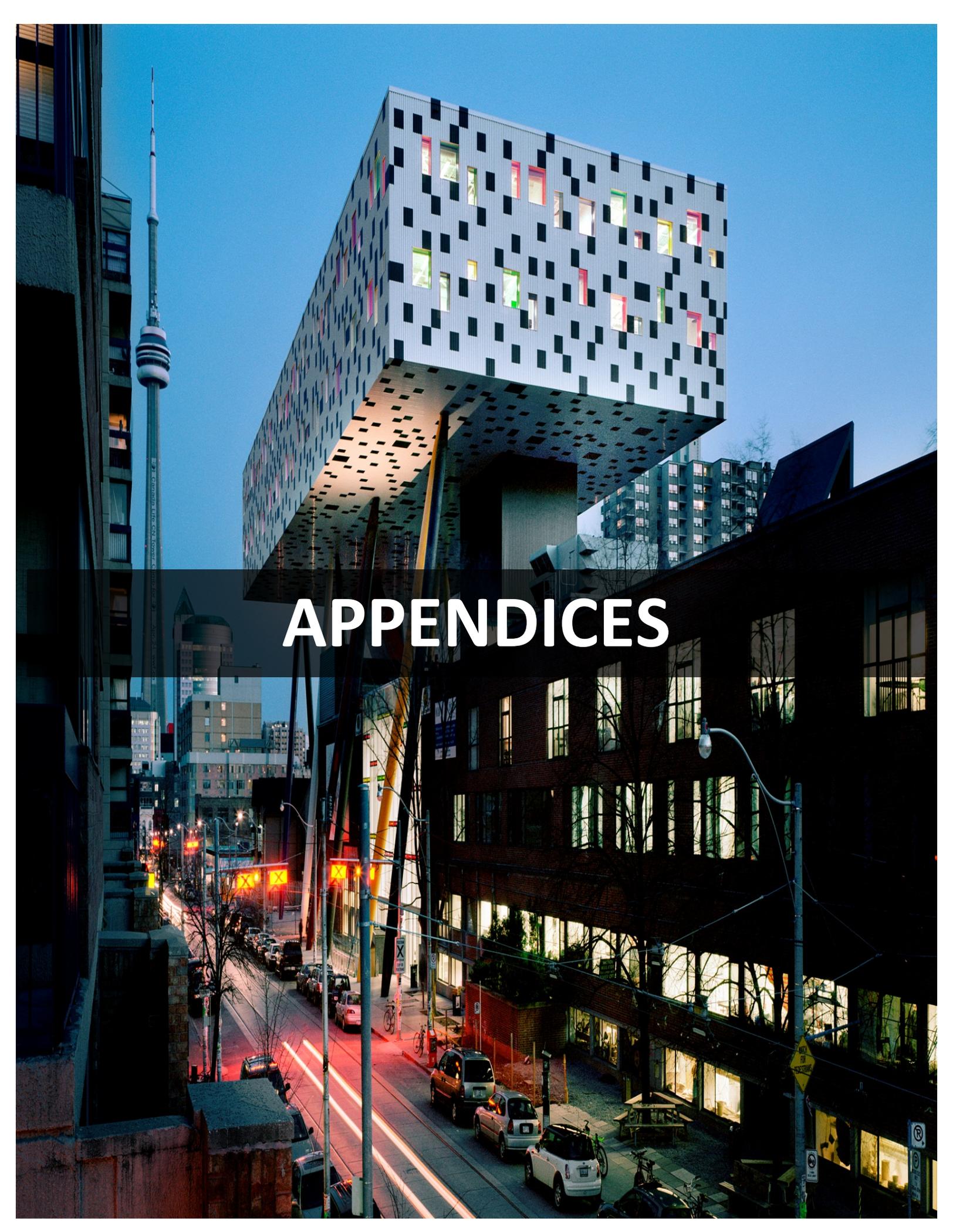
- a) Personal Protective Equipment requirements and recommendations
- b) Pre-use Inspection Checklist
- c) General Safety Guidelines
- d) Safe Operating Procedure
- e) Lockout / Tag-out
- f) Maintenance and Inspection Checklist

2. Wood Studio SOPs

The following SOP's are available for your review (*Attached: Appendix 8*):

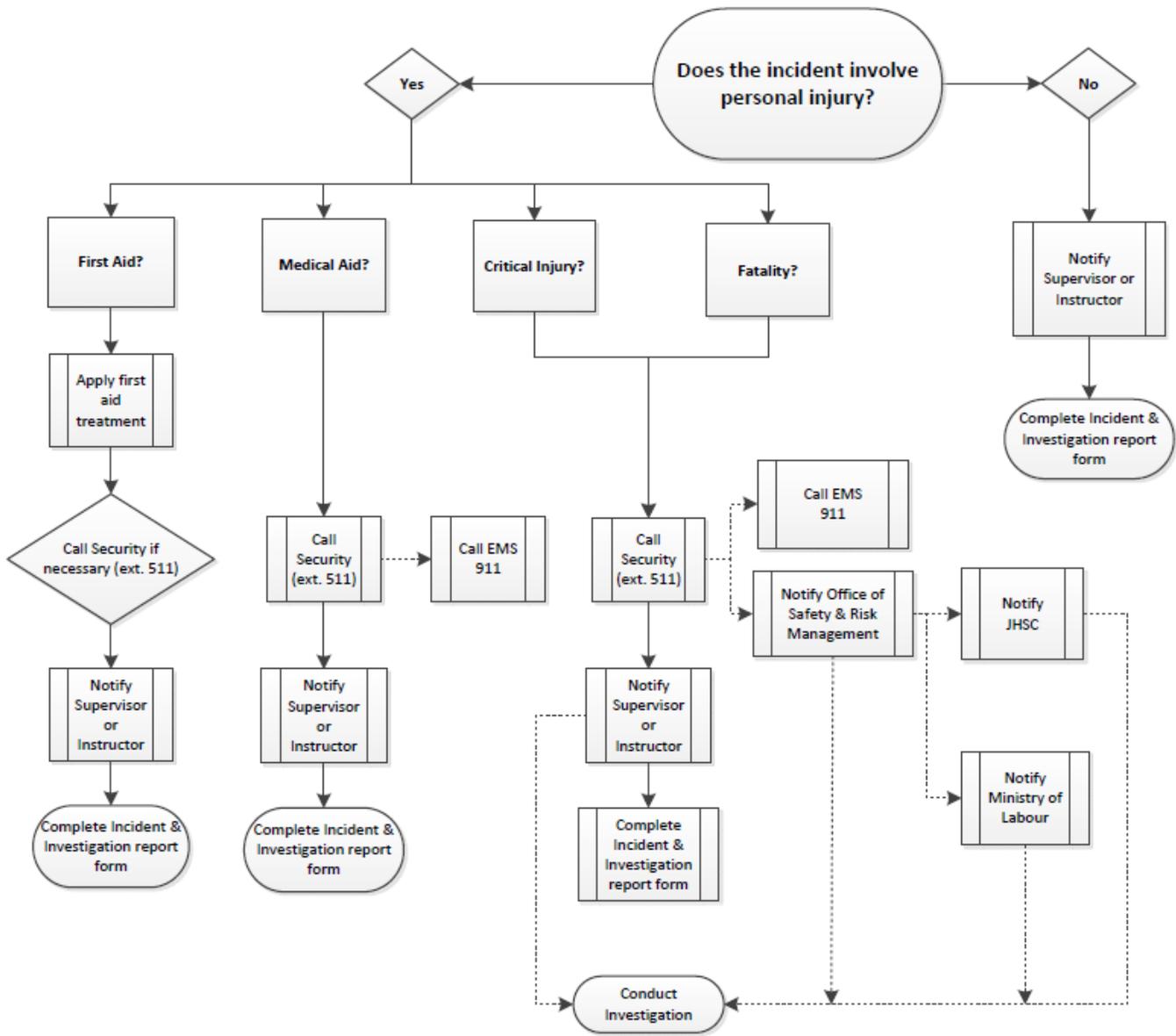
- | | |
|-------------------------------|---------------------|
| a) Band Saw | q) Radial Arm Saw |
| b) Belt Disc Sander | r) Scroll Saw |
| c) Bench Grinder | s) Spindle Sander |
| d) Die Grinder | t) Table Saw |
| e) Drill Press | u) Thickness Planer |
| f) Electric Chain Saw | v) Thickness Sander |
| g) Electric Screwdriver | w) Wood Lathe |
| h) Flexible Shaft Power Tool | |
| i) Hand Drill | |
| j) Jointer | |
| k) Mitre Saw | |
| l) Mortiser | |
| m) Narrow Belt Sander | |
| n) Oscillating Spindle Sander | |
| o) Plate Joiner | |



A photograph of a modern building with a perforated facade and colorful windows, set against a city street at dusk. The CN Tower is visible in the background. The building's facade is white with a grid of black squares, and some windows are illuminated with vibrant colors like red, green, and yellow. The building is cantilevered over a street. The street below has cars, streetlights, and a brick building with large windows. The sky is a deep blue.

APPENDICES

Appendix 1: What To Do In Case Of An Incident



Appendix 2: Incident & Investigation Report Form



OCAD UNIVERSITY
INCIDENT & INVESTIGATION REPORT FORM

Send to The Office of Safety & Risk Management within 24 hours of the incident – 115 McCaul r.2210
PERSON INVOLVED: Employee Student Contractor Visitor

I. INCIDENT TYPE

- First Aid (immediate care) Medical Aid (hospital or physician) Loss Time (medical aid, missed work)
 Near Miss (no injury, potential hazard) Occupational Illness (skin, respiratory etc) Property Damage
 Critical Injury Fatality

II. PERSONAL INFORMATION (Bold – Mandatory)

Name: _____ Male Female
Telephone: (____) _____ **Age:** _____
Address: _____

III. EMPLOYEE SECTION

Position: _____ **Department:** _____
Supervisor/Instructor: _____

IV. CONTRACTOR and VISITOR SECTION

OCAD U Contact: _____ Company name: _____
 Company address: _____
 Visitor reason for being at OCAD U: _____

V. INCIDENT DESCRIPTION (Please complete all)

Date (dd/mm/yy): _____ **Time:** _____ a.m. / p.m. **Date Reported (dd/mm/yy):** _____ **Time:** _____ a.m. / p.m.
Reported to: _____ **Position:** _____ **Telephone:** (____) _____
Witness: _____ **Telephone:** (____) _____
Location of Incident: _____ **Room Number:** _____
Incident Description: (what you were doing, what happened, what injuries occurred, equipment details, environmental conditions?)

Type of Incident:

- Cut Overexertion Fall from heights Assault
 Slip/Trip Repetitive Strain Harmful Substances Fire/Explosion
 Fall Caught/Struck by Burn Motor vehicle
 Other (specify): _____

Body Part(s) Affected:

- | | | | | | | |
|---------------------------------|----------------------------------|-------------------------------------|--|--|--|--|
| <input type="checkbox"/> Head | <input type="checkbox"/> Neck | <input type="checkbox"/> Upper Back | Left <input type="checkbox"/> Right <input type="checkbox"/> |
| <input type="checkbox"/> Face | <input type="checkbox"/> Chest | <input type="checkbox"/> Lower Back | <input type="checkbox"/> Shoulder | <input type="checkbox"/> Wrist | <input type="checkbox"/> Hip | <input type="checkbox"/> Ankle |
| <input type="checkbox"/> Eye(s) | <input type="checkbox"/> Abdomen | | <input type="checkbox"/> Upper Arm | <input type="checkbox"/> Hand | <input type="checkbox"/> Upper Leg | <input type="checkbox"/> Foot |
| <input type="checkbox"/> Ear(s) | <input type="checkbox"/> Pelvis | | <input type="checkbox"/> Elbow | <input type="checkbox"/> Finger(s) | <input type="checkbox"/> Knee | <input type="checkbox"/> Toe(s) |
| <input type="checkbox"/> Teeth | | | <input type="checkbox"/> Lower arm | | <input type="checkbox"/> Lower Leg | |

Has injury/problem occurred in the past? Yes No If yes, explain:

VI. TREATMENT INFORMATION

Check all that apply:

- First Aid Ambulance Emergency Room Hospital
 Physician's Office Health and Wellness Clinic

Name of Hospital/Provider: _____ Date Visited (dd/mm/yy): _____

VII. PROPERTY DAMAGE

Damaged property, equipment or material: _____

Describe Damage: (how, what happened?) _____

VIII. SUPERVISOR'S ACTION PLAN

Root Cause Analysis: (check all that apply)

Unsafe Acts

- Improper work technique
- Safety rule violation
- Improper PPE or PPE not used
- Operating without authority
- Failure to warn or secure
- Operating at improper speeds
- By-passing safety devices
- Guards not used
- Improper loading or placement
- Improper lifting
- Servicing machinery in motion
- Horseplay
- Drug or Alcohol use
- Unnecessary haste
- Unsafe act of others
- Other: _____

Unsafe Conditions

- Poor workstation design or layout
- Congested work area
- Hazardous substances
- Fire or explosion hazard
- Inadequate ventilation
- Improper material storage
- Improper tool or equipment
- Insufficient knowledge of job
- Slippery conditions
- Poor housekeeping
- Excessive noise
- Inadequate guarding of hazards
- Defective tools/equipment
- Insufficient lighting
- Inadequate fall protection
- Other: _____

Management

- Lack of written procedures or policies
- Safety rules not enforced
- Hazards not identified
- PPE unavailable
- Insufficient worker training
- Insufficient supervisor training
- Improper maintenance
- Inadequate supervision
- Inadequate job planning
- Inadequate hiring practices
- Inadequate workplace inspection
- Inadequate equipment
- Unsafe design or construction
- Unrealistic scheduling
- Poor process design
- Other: _____

Preventive Action (explain corrective measures and recommendations):

1. _____
2. _____
3. _____
4. _____
5. _____

IX. SIGNATURES (Grey area for the Office of Safety & Risk Management)

Person Involved:	Supervisor/Instructor/OCAD U contact:	Date (dd/mm/yy):
Reviewed by:	Signature:	Date (dd/mm/yy):

FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY ACT, 1987

The information on this form is collected under the legal authority of the Colleges and Universities Act, R.S.O. 1980, C.272, s5. R.R.O. 1980, Reg. 640, and the Occupational Health and Safety Act, R.S.O. 1990, C.O.1, S51, S52. R.R.O. 1990 Reg 851, S5. This information is used for the purpose of documenting and investigating incidents/accidents occurring on University property. For further information, please contact The Director, Risk Management, 100 McCaul, Toronto, Ontario M5T 1W1 (416)977-6000, ext. 2920

Appendix 3: Critical Injury Procedures

1. Purpose

As per the “Occupational Health & Safety Act - Section 51.(1) Notice of death or injury – Where a person is killed or critically injured from any cause at a workplace, the constructor, if any and the employer shall notify an inspector, and the committee, health and safety representative and trade union, if any, immediately of the occurrence by telephone, telegram or other direct means...”. In the case of death or critical injury, OCAD is required to immediately report the incident to the Ministry of Labour.

Further, as per “Section 51.(2) Preservation of wreckage – Where a person is killed or is critically injured at a workplace, no person shall, except for the purpose of,

- a. saving life or relieving human suffering;
- b. maintaining an essential public utility service or a public transportation system; or
- c. preventing unnecessary damage to equipment or other property,

interfere with, disturb, destroy, alter or carry away any wreckage, article or thing at the scene of or connected with the occurrence until permission so to do has been given by an inspector.”

2. Scope

Following the requirements of OCAD’s Health & Safety Policy # 5001, these procedures apply to all incidents involving a faculty, staff, contractor, or student monitor while working on campus.

As per the “Occupational Health & Safety Act ONT. REG. 834 – CRITICAL INJURY – DEFINED

R.R. O. 1990, Reg. 834, as am. O. Reg., 351/91 (Fr.).

1. For the purposes of the Act and Regulations, ‘critically injured’ means an injury of a serious nature that,

- a) places life in jeopardy;
- b) produces unconsciousness;
- c) results in substantial loss of blood;
- d) involves the fracture of a leg or arm but not a finger or toe;
- e) involves the amputation of a leg, arm, hand or foot but not a finger or toe;
- f) consists of burns to a major portion of the body; or
- g) causes the loss of sight in an eye.”

3. Policy

The following procedures must be followed carefully:

- Notify Security immediately (x 511) so that the necessary emergency response measures can be taken, and the site secured
- Notify the Director Safety & Risk Management (x 2920) or via cell (647) 210-9611 so that they can:
 - Immediately notify the Ministry of Labour (MoL) with a brief report.
Note: This is required even if the injury is deemed a “possible” critical injury
 - Attend the scene to begin investigations
 - Notify a Joint Health & Safety Committee worker representative to assist with the investigation
- The scene is to be photographed if at all possible
- Important - Never move anything at a critical injury site until the MoL Inspector has arrived, except to alleviate human suffering or to preserve property from further damage.

Appendix 4: Work Refusal Policy

1. Purpose:

The purpose of this procedure is to describe the process to address work refusals should they occur; it identifies the various workplace parties involved in a work refusal and the process which must be followed to assure that the safety concern, which triggered the work refusal process, is adequately addressed.

It also ensures that the OCAD University ("OCAD U" or the "University" complies with the Occupational Health and Safety Act (OHSA), R.S.O. 1990, Section 43 ("The Act").

2. Scope:

This procedure applies to all employees, faculty, and students who are paid to do research, or carrying out any other work that takes place on or off-campus that is under the purview of OCAD U.

3. Definitions:

- a. **Certified member:** a Joint Health and safety Committee member who is certified in accordance with the OHSA.
- b. **Dangerous circumstance:** a situation in which a provision of the Act is contravened; the contravention poses a danger or a hazard to a worker and the danger or hazard is such that any delay in controlling it may seriously endanger a worker.
- c. **Safety hazard:** something that has the potential to cause physical harm to people or damage to property.

4. Procedure:

4.1 *Application of OHSA Work Refusals*

- All OCAD U employees can exercise their right to refuse unsafe work when they believe a safety hazard or dangerous circumstance exists in the workplace.
- Supervisors and employees must distinguish this work refusal procedure from every day due diligence associated with the recognition, reporting and correcting of workplace safety hazards.

4.2 *Initiating OHSA Work Refusals*

The worker shall:

- Notify his or her supervisor that he or she is refusing to perform unsafe work because he or she has reason to believe that performing the work may endanger themselves or another worker.
- Please be specific and explain in detail your reason for refusing work.
- Remain in a safe place near the workstation until the investigation takes place.

4.3 OHS Work Refusal Investigation

Step 1: Internal Resolution:

- a. Upon an employee reporting a work refusal, the Supervisor requests the employee to specifically explain why he or she is refusing work.
- b. If the work refusal is not safety related, the work refusal stops, and the employee returns to work, and addresses the concern using other appropriate venues.
- c. However, if the work refusal is safety related, the Supervisor must immediately contact:
 - JHSC worker member (preferably a certified member)
 - Director, Safety and Risk Management (or designate)
- d. Supervisor leads a joint investigation of the matter with the refusing employee, the JHSC worker member, and the Director Safety and Risk Management.
- e. If the employee feels that their safety is no longer threatened with the results and corrective measures implemented following the investigation, they may return to work.

Step 2: External Resolution:

- a. The employee may not be satisfied with the remedial action that is taken, and they may continue to refuse work if he or she has reasonable grounds to believe that the work is still likely to endanger someone at OCAD U.
- b. At this point, a Ministry of Labour inspector must be called in to investigate. The Director, Safety and Risk Management will contact the Ministry of Labour and report the work refusal.
- c. Pending the arrival of the Ministry of Labour inspector:
 - The refusing employee remains in a safe place near the workstation.
 - The refusing employee may be assigned reasonable alternate work.
 - The Supervisor may ask another employee to perform the work that was refused; however this employee must be advised of the other employee's refusal and of his reasons for the refusal in the presence of the JHSC worker member.
- d. Once the Ministry of Labour Inspector is onsite, a joint investigation will be carried out with the MOL inspector, the employee, the Supervisor, the JHSC member, and the Director, Safety and Risk Management.
- e. The MOL inspector will issue a directive, and this must be complied with, pending appeals (if necessary)
- f. The employee, Supervisor, JHSC member, and Director Safety and Risk Management must complete the "Work Refusal Report"

4.4 MOL Decision

- a. Following the investigation, the MOL will issue a decision.
- b. The decision must be complied with
- c. The decision can be appealed, pending which it must still be complied with

5. Related Documents

- Work Refusal Report
- Work Refusal Flow Chart

Work Refusal Report Form

SECTION A: WORKER INFORMATION (to be completed by employee)	
Employee Name:	Employee #:
Department:	
Supervisor Reported to:	Date & Time Reported:
Location of work refusal:	Task Assigned:
Employee's reason for work refusal (please provide specific details):	
Employee's Signature:	Date:

SECTION B: SUPERVISOR INFORMATION (to be completed by Supervisor)	
Supervisor Name:	Date & Time Notified of Work Refusal:
Immediate action taken (if any):	
INVESTIGATION DETAILS: (STEP 1 - INTERNAL RESOLUTION)	
Date and Time of Investigation:	
JHSC Worker Member:	Office of Safety and Risk Mgmt:
Supervisor's observations of existing conditions and hazards during investigation (please provide specific details):	
Does Supervisor agree that hazardous conditions exist?	
<input type="checkbox"/> YES-Complete Section C Action Plan <input type="checkbox"/> NO-PROCEED TO SECTION D(2)	
Supervisor's Signature:	Date:

SECTION C: RECOMMENDED ACTION PLAN TO RESOLVE CONCERN (completed by Supervisor and Employee)

Action	Target Date	Completion Date
This Action Plan agreed upon by both the worker and Supervisor on (Date):		
Employee's Signature:	Supervisor's Signature:	
Once Action Items are complete, proceed to Section D1 below for signature. If this Action Plan is not agreed upon by Employee and Supervisor, proceed to Section D2.		

SECTION D: RESOLUTION OF WORK REFUSAL (completed by Safety and Risk Mgmt. and JHSC Worker Member)

D1) COMPLAINT RESOLVED - Employee is satisfied that the work is no longer hazardous	
Date:	Time:
Employee Signature:	JHSC Worker Member Signature:
Supervisor Signature:	Safety and Risk Mgmt. Signature:

D2) COMPLAINT IS NOT RESOLVED – (STEP 2: EXTERNAL RESOLUTION)

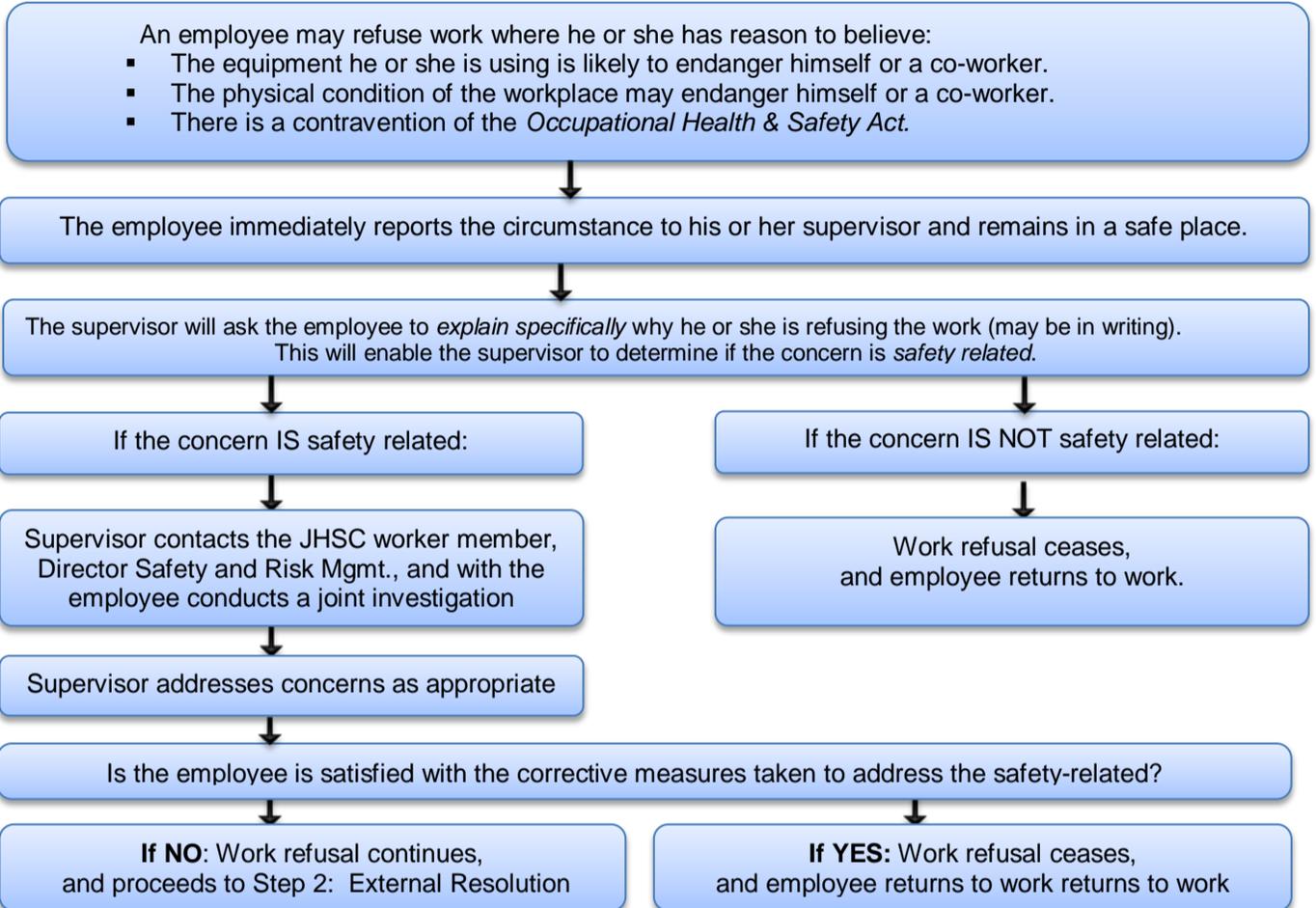
Explain why work refusal is not resolved:		
Date:	Time:	
Employee Signature:	JHSC Worker Member Signature:	
Supervisor Signature:	Safety and Risk Mgmt. Signature:	
MINISTRY OF LABOUR INSPECTOR TO BE CONTACTED FOR INVESTIGATION & DECISION 1-877-202-0008		
Time MOL contacted:	Time MOL Inspector arrived:	Time MOL Inspector departed:
MOL Investigation Notes (Findings, Decision, Orders Written, etc.):		

Work Refusal Flow-Chart

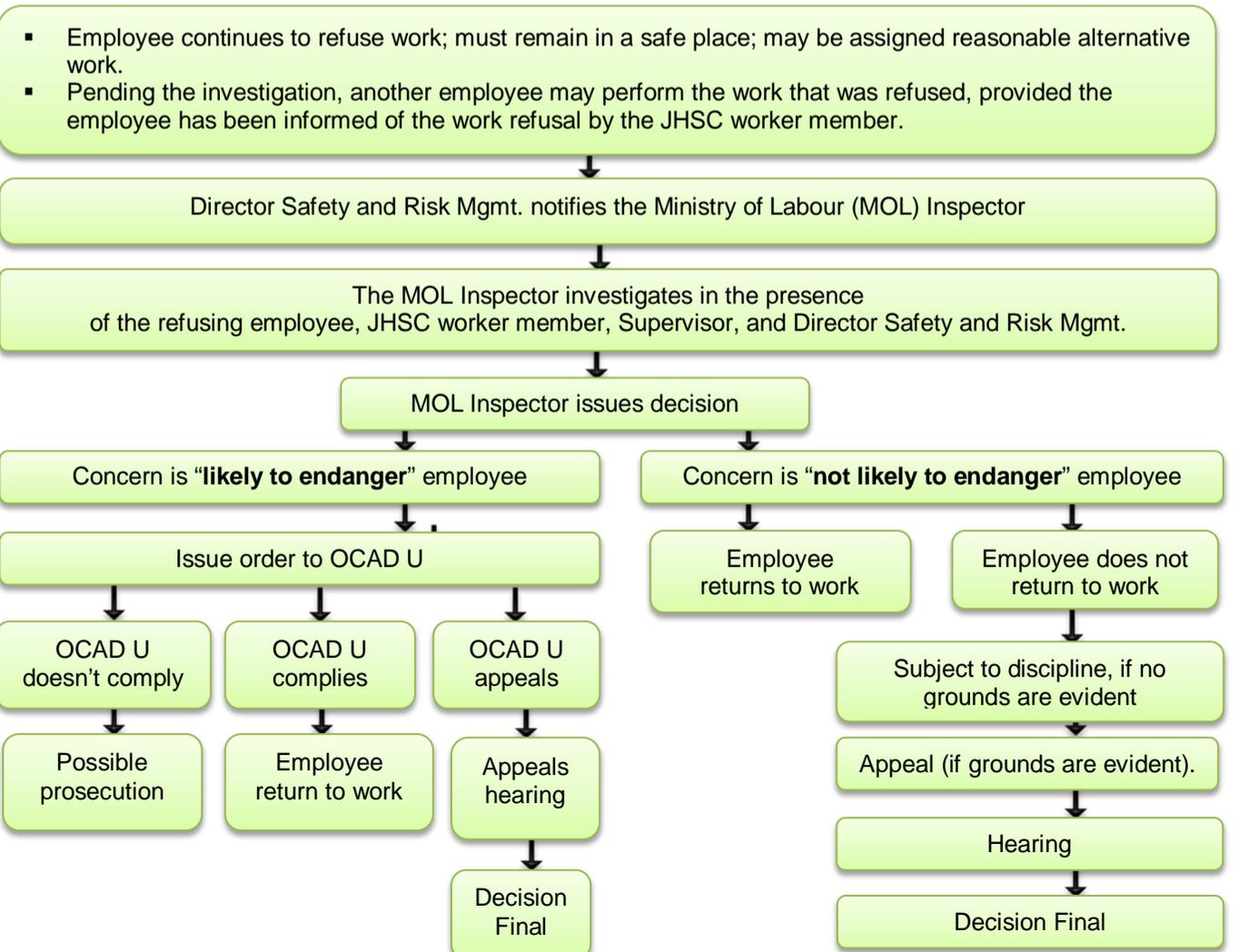
Using your right to refuse unsafe work

The *Occupational Health and Safety Act*, Section 43, gives an employee the right to refuse unsafe work. The flowchart below outlines the procedure to follow when this right is exercised in the workplace.

STEP 1: Internal Resolution



STEP 2: External Resolution



Appendix 5: First Aid Kit Locations

Location	Level	Room	Description
100 McCaul	1	-	Front desk lobby
		100	Security office
		108	Wood Shop
		117f	Plastics Shop
		122	Metal Shop
		130	Rapid Prototype
		152	Foundry/Mouldmaking Studio
		159	First year sculpture installation shop
	2	201	Fibre Studio
		217	Jewellery Studio
		225	Print Services
		239	Mail Room
		241	Central Storage
		253	Ceramics Studio
	3	315a	Faculty of liberal studies
		317a	IT Services Helpdesk
		341	AV loans
		352	Integrated Media
		375	Printmaking Studio - Intaglio/etching
		384	Printmaking Studio - Relief
		387	Printmaking Studio – Lithography
	389	Printmaking Studio - Screen printing	
	4	401	Faculty of Art offices
		417	Photography Studio
		466	Media and Colour studio
		475	Drawing & Painting studio
	5	500	Faculty of Design offices
		517	ED/ID shop
		540	ED/ID open space
	6	662	Open space
664		Mobile Computing Helpdesk	
49 McCaul	1	-	Kitchenette
51 McCaul	1	5120	Campus Life and Career Services
	2	5215	Centre for Students with Disabilities
52 McCaul	1	-	Kitchenette
	2	-	Open Studio Space
	3	-	Open Studio Space
60 McCaul	1	-	Kitchenette
		-	Drawing & Painting/Printmaking Studio
205 Richmond	LL	7000	4th year drawing & painting studio
	G	7110	CCP studio
	3	7314	Workspace
	4	7415	Assembly space
	5	7515	Photocopy room
	6	7620	IAMD studio
	6		DIGF/CADN studio
7	7701	DMRii office	

Appendix 6: Emergency Eyewash and Shower Station Locations

Building	Department	Room	Bottle	Station	Shower
100 McCaul	Foundry	152		√	
	Mouldmaking	154	√		
	SCIN	170	√		
	Metal	123		√	
	Plastics	117e		√	
	Fibre	201	√		
	Ceramics	253	√		
	Jewellery	217		√	
	Jewellery	218		√	
	Integrated Media	358		√	
	Printmaking	375a		√	√
	Printmaking	387		√	
	Printmaking	389a		√	
	Printmaking	381a		√	
	Photography	417p		√	
	Photography	417g		√	
	Photography	417		√	
	Photography	Hallway		√	
	D&P	466		√	
D&P	475		√		
ED/ID	517		√		
60 McCaul	Kitchenette	-	√		
	Open Studio	-	√		
52 McCaul	2 nd floor	-	√		
	3 rd floor	-	√		
205 Richmond	Basement	-	√		

Appendix 7: Spill Kit Locations

Location	Level	Room	Description
100 McCaul	1	108	Wood Shop
		117f	Plastics Shop
		122	Metal Shop
		130	Rapid Prototyping
		152	Foundry Studio
		154	Mouldmaking Studio
		159	First year sculpture installation shop
	2	201	Fibre Studio
		217	Jewellery Studio
		253	Ceramics Studio
	3	352	Integrated Media
		375	Printmaking Studio
	4	417	Photography Studio
			Drawing & Painting Studio
5	517	ED/ID shop	



**Studio Equipment
Safe Operating Procedures**

Wood Studio

Office of Safety & Risk Management
Rosalie Sharpe Pavilion
115 McCaul
Room 2210



Band Saw



Machine	Band Saw	
Location	Wood Studio	
Manufacturer	Name: General® International MFG Co. Ltd Model: 390 Address: 8360 Champ-d'Eau, Montreal, QC H1P 1Y3 Telephone: 1-888-949-1161	Name: Centauro S.p.A Model: MM16 Address: 41010 Limidi (Modena), Italy Telephone: 059 855411
Applicable Legislation	CAN/CSA-Z432-04 "Safeguarding of Machinery" CSA Z460-05 "Control of hazardous energy-lockout and other methods"	
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians	



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		✓
Respirator		
Ear Plugs / Ear Muffs	✓	
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  		✓
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Do you know where the emergency stop feature is located (button/switch/cord)?			
3	Are guards in place and in good working order?			
4	Are the saw doors closed, the red safety switch in the fully out position and the foot brake in the fully up position?			
5	Is the area around the saw free of slip/trip hazards?			
6	Has the debris/material from previous operations been removed?			
7	Are all tools/wrenches removed from the table?			
8	Is the blade and its teeth free of defects?			
9	Is the blade centered?			
10	Are you using the proper size and type of blade? –(¼ - 1 ¼” blades).			
11	Does the work piece have a flat surface facing down, or a suitable support is being used?			
12	Are all adjusting and locking handles tight?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Make sure the power cord is kept away from heat, oil, sharp edges or moving parts and does not pose a trip hazard.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Ensure you know where the emergency stops for your equipment are prior to use and within reach during operation. In the absence of an emergency stop, ensure that the power switch is within reach.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before sawing



Picture 1



Picture 2

- a) Put on your PPE
- b) Mark the desired area(s) to be sawed.
- c) There is always danger of kickback when using the band saw.
- d) If required, Adjust the table height and tilt the table to produce cuts at various angles (see picture 1).
- e) Adjust upper blade guard. (see picture 2) – adjust this guard so that it is just above the material being cut. **CAUTION**; this guard does not completely enclose the hazard zone nor does it prevent operation if the guard is not in place-be careful when operating the bandsaw.
- f) Use the fence (see picture 3) on the left of the blade to reduce guesswork when cutting and to assist in parallel cuts or repetitive cuts and adjust the fence for the drift of the blade and also the thickness of the cut.
- g) Ensure the push stick is close at hand. This will limit hand to blade distance.
- h) Extreme caution must be exercised to avoid cuts from the blade's sharp teeth.



Picture 3

2. Sawing



Picture 4

- a) It is unsafe to cut material that is unsupported by the table and should never be attempted. **Only cut wood materials.**
- b) Start the band saw and allow it to gather speed before beginning the cut.
- c) Do not feed work until the blade has reached full speed.
- d) Place the work piece on the table (picture 4). Keep hands clear of the blade.
- e) Use a push stick/holding fixture (picture 5) at the end of a work piece-this is the **most dangerous** time because the cut is complete and the blade is exposed.



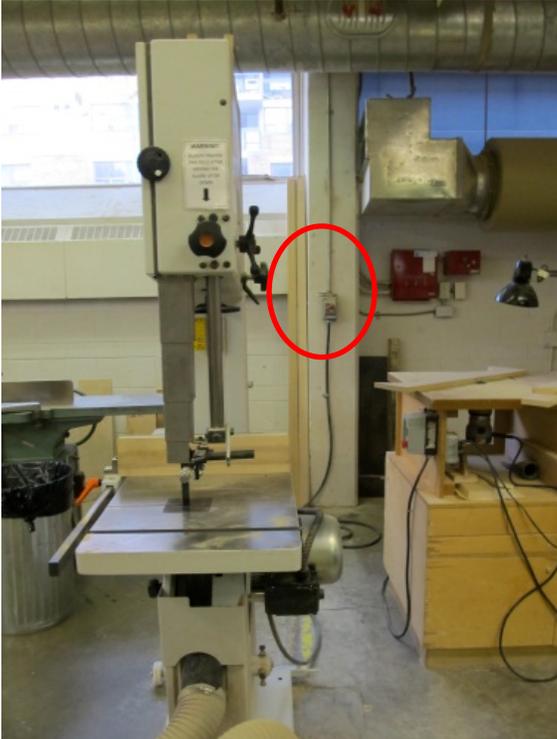
Picture 5

- f) Feed the work piece in to the blade at a moderate speed.
- g) If the material gets jammed, turn off the machine.
- h) Ease up on sawing pressure as the saw starts to break through the material.
- i) The guide blocks must not come in contact with the blade teeth.
- j) **Do not** stop or back out of a cut.
- k) **Never** reach around or over the saw when in operation.
- l) Use as little pressure as possible on the material to complete the task. Too much pressure can put the operator's hands and fingers at risk.
- m) When making intricate cuts, it is best to cut off excessive excess wood first. This way the pieces will fall away off and will not cause any pinch or jam to the blade.
- n) When cutting curves turn the material slowly so the blade follows without twisting.
- o) When making angle cuts, adjust the table to an appropriate angle and clamp the material.
- p) Stop the band saw completely when making partial saw cuts before withdrawing the material.
- q) If anything unexpected occurs, immediately disable the equipment by using the emergency shut-off switch and/or removing the attachment plug.

3. After sawing

- a) Turn off the band saw and disconnect.
- b) The machine will continue to spin after being switched off-let the saw stop on its own accord after turning the power off. NEVER try to stop the saw with your hand.
- c) Remove the chips from the surrounding area with a brush, NEVER by hand.
- d) Clean the band saw area upon completion of the task-use a rag to clean the blade -careful that the cloth does not hook on the teeth. NEVER clean the machine while it is in motion.
- e) Sweep the floor surrounding the Band Saw.

4.1. LOTO Procedure

LOCKOUT TAGOUT PROCEDURE	
Equipment Identification	Equipment Name/Description: Band saw
	Equipment Location: Wood Studio Room 115
	Total # of Energy Isolation Devices/locks: 1
NOTICE BEFORE SERVICING THIS MACHINE , NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE	
	

Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	Local Switch	Padlock	Stop machine, pull switch down to off position, and install lock and tag.	Attempt to start machine, visually confirm it will not start.

IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR	
* LOTO Procedure # A-xxxxxxx	Revision #:
Approved by:	Date:

LOCKOUT TAGOUT PROCEDURE

Equipment Identification	Equipment Name/Description:	Band saw (Centauro)
	Equipment Location:	Wood Studio Room 115
	Total # of Energy Isolation Devices/locks:	1

NOTICE ⚠️ **BEFORE SERVICING THIS MACHINE , NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE**



Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	Local Switch	Plastic clamshell and padlock	Stop machine, pull switch down to off position, and install clamshell, lock and tag.	Attempt to start machine, visually confirm it will not start.

IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR	
* LOTO Procedure # A-xxxxxxx	Revision #:
Approved by:	Date:

4.2 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of damage.	
Ensure that all guards are in place and in good working order	
Ensure that the band saw is secured.	
Ensure that the area around the saw is free of slip/trip hazards.	
Ensure that the debris/material from previous operations is removed.	
Ensure that all tools/wrenches are removed from the table.	
Ensure that the flywheels are aligned.	
The speed setting knob is in good working condition and not loose.	
All adjusting and locking handles are tight.	
The side guides are parallel to the blade.	
Ensure that the blade is properly tensioned and tracked. Don't over-tension the blade, which may result in blade breakage and injury mid-operation.	
Ensure that the blade movement left/right/forward/back is kept to a minimum.	
Ensure that the blade is tracking in the correct position-if it is tracking too far forward or backward, adjust with the tracking adjustment knob.	
Ensure that blades are balanced on the center of the wheels.	
Ensure that the amount of blade exposed is kept to a minimum.	
Ensure that the blade and teeth are free of defects and dullness-replace if necessary - use gloves.	
Ensure the work rest filler plate has a clearance not greater than 1/8 inch on either side of the cutting blade	
WEEKLY	✓
Ensure that buildup is not occurring on the rubber tires; especially on the lower wheel. Clean the surface by sanding it with sand paper.	
Lubricate the saw with a Teflon-based lubricant.	
MONTHLY	✓
Inspect the ceramic side and back guides for cracks and chips-replace if necessary.	
Inspect the drive belts for cracks, cuts and wear-replace if necessary-never replace just one belt as this could cause vibration.	
Clean the guides with a solvent and then lubricate with a Teflon-based lubricant.	
Lubricate all moving non-painted parts with a Teflon based lubricant.	
Protect the table and fence bar by coating with wax, if the machine is not in constant use.	
Ensure that the blade is free of defects-replace if necessary-use gloves.	
ANNUALLY	✓
Ensure that the body of the band saw is rigid as this takes the strain of the blade being tensioned.	
Redress the tire surface if hardened and glazed-over by sanding the wheel, exposing new rubber. Rotate the wheels by hand with the blade removed.	
Inspect entire machine and perform maintenance as required.	

Any changes or updates to this document must be recorded and maintained.

Initially Created By: The Office of Safety and Risk Management	Date: September 2011
Consultation: <ul style="list-style-type: none"> ▪ Studio Managers and Technicians ▪ Program Chairs and faculty 	Date: January-April 2013 April – May, 2013
Approval By: VPFA and VPA	Date: September, 2013
Review and Revisions Made By:	Date Revised:
Changes Made (<i>indicate sections</i>):	
Revisions Approved By:	Date of Approval:

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Belt and Disc Sander



Machine	Belt and Disc Sander Model: 100
Location	Wood Studio
Manufacturer	Name: General Mfg. Corporation Ltd. Address: 8360, Champ-d'Eau, Montreal (Quebec) Canada H1P 1Y3 Telephone:(514) 326-1161
Applicable Legislation	CAN/CSA-Z432-04 "Safeguarding of Machinery" CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		✓
Respirator		
Ear Plugs / Ear Muffs	✓	
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  		✓
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Do you know where the emergency stop feature is located?			
3	Is the power cord free of frays or damage?			
4	Are guards in place and in good working order?			
5	Is the area around the sander free of slip/trip hazards?			
6	Has the debris/material from previous operations been removed?			
7	Are the sanding surfaces free of defects?			
8	Are lock knobs and handles tight so they do not loosen during operation (caused by vibrations)?			
9	Is the dust collection system on?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

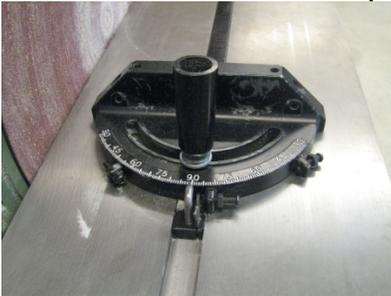
- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Make sure the power cord is kept away from heat, oil, sharp edges or moving parts and does not pose a trip hazard.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Ensure you know where the emergency stops for your equipment are prior to use and within reach during operation. In the absence of an emergency stop, ensure that the power switch is within reach.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before sanding		
	Picture 1	<ul style="list-style-type: none">a) Put on your PPE. Never wear gloves while using a belt-disc sander; they may become caught in the rotating mechanism and cause severe injury.b) Ensure the dust collection system is on.c) Position the belt sander arm vertically, horizontally (picture 1) or angled. NEVER adjust the table angle while sander is running.d) Turn on the power.e) Check the sanders stability while running BEFORE operating on it-ensure the belt/disc does not wobble or run out.f) Beware of pinch point and entanglement hazards between the belt and machine frame.
2. Belt Sanding - Vertically		
	Picture 2	<ul style="list-style-type: none">a) Wait for the belt to reach full speed before sanding or polishing. The belt should travel clockwise. (picture 2)b) Do not force any part of a work piece on any sanding surface.c) Use the miter gauge for sanding accurate angles, if required: carefully place the work piece against the miter reference surface (picture 3) and slide it along the reference surface and in to the sanding belt.d) Sanding a flat surface: Firmly hold the work piece with both hands; keep your fingers away from the belt.e) Using the backstop: The backstop is used to support and position your work piece. Place an end of your work piece against the backstop and then apply it to the belt. Be careful when sanding thin work pieces.
	Picture 3	<ul style="list-style-type: none">f) Sanding long pieces: Do not apply too much pressure on a long work piece. Apply only enough pressure so that the sanding belt removes the material.g) Sanding curved sides: External curves must be sanded on the flat portion of the belt. Internal curves must be sanded on the drum portion of the belt.h) End sanding: It is more practical to end sand a long work piece with the belt in its vertical position. The work piece must be moved equally along the belt. Use the miter gauge (picture 3) for precise work. Make sure the belt table is perfectly square with the belt.

3. Belt Sanding - Horizontally



Picture 4



Picture 5



Picture 6

- a) Use backstop to support your work piece.
- b) **Do not** force any part of a work piece on any sanding surface.
- c) Place the material on the sander in a way to prevent kickback (picture 4). Do not place the work piece in a position that may cause kickback (picture 5).
- d) To sand curved surfaces, the end drum can be used.
- e) To sand curved surfaces, the end drum can be used (see picture 6).
- f) **Do not** place your hands near the opening between the belt and the machine frame. This can cause a pinch point hazard.
- g) If sanding accurate angles, carefully place the work piece against the miter reference surface (picture 3) and slide it along the reference surface and in to the sanding belt.

4. Disc Sanding



Picture 7

- a) When sanding small flat surfaces or convex edges is needed, disc sanding (picture 7) is the best method.
- b) The disc rotates fast in a clockwise motion, removing more of the external edge of the work piece – be cautious and keep fingertips as far away from the disc as possible.
- c) **Do not** force any part of a work piece on any sanding surface.
- d) Hold small or thin pieces of stock in a jig or holding device to prevent injuries to the fingers or hands.
- e) Always present the work piece to the wheel while resting the work piece firmly on the table (to prevent throwing of the work piece off the wheel causing injury).
- f) Keep the material held flat against the table and pushed up against the disc.

5. After Sanding

- a) Turn off the power and disconnect the sander.
- b) Clean the sander and the workspace. NEVER clean the machine while it is in motion.
- c) Remove all accumulated debris on the sander.
- d) Clean the drums to prevent tracking problems and slippage of the sanding belt.
- e) Clean the dust chute to avoid major accumulation of dust inside the sander.
- f) Use a vacuum to clean the motor.
- g) Sweep the floor surrounding the sander.

4.1. Lockout/Tagout Procedure

LOCKOUT TAGOUT PROCEDURE		
Equipment Identification	Equipment Name/Description:	Disc and Belt Sander (General Mfg. Co. Ltd)
	Equipment Location:	Wood Studio Room 115
	Total # of Energy Isolation Devices/locks:	2
NOTICE BEFORE SERVICING THIS MACHINE , NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE		
<div style="display: flex; justify-content: space-around;"> <div style="width: 45%; text-align: center;">  </div> <div style="width: 45%; text-align: center;">  </div> </div>		

Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	Local Switch	Padlock	Stop machine, pull switch down to off position, and install lock and tag.	Attempt to start machine, visually confirm it will not start.

IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR	
LOTO Procedure # A-xxxxxxx	Revision #:
Approved by:	Date:

4.2 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of damage.	
Ensure guards are in place and in good working order.	
Sander is secured and balanced	
Ensure the area around the sander free of slip/trip hazards.	
Ensure the debris/material from previous operations has been removed.	
Examine the face of the disc; ensure it is not showing backing, curling, buckling, nicks or cuts on the surface or edge, or damage due to ceasing or poor handling-replace the disc if necessary-when installing a new disc, be certain it is centered on the drive wheel and position the disc drive so that it is no more than 1/16 inch away from the table.	
Examine the face of the belt; ensure it is not showing backing, curling, buckling, nicks or cuts on the surface or edge, or damage due to ceasing or poor handling-replace the belt if necessary-when installing a new belt, always check the tracking.	
Make sure lock knobs and handles are tight.	
Ensure the opening between the belt and the machine frame is not too large. The opening should not be greater than ¼ inch at any point.	
WEEKLY	✓
Lightly apply wax paste on the table surface.	
Check the drums for scrolling, signs of wear, or looseness that might cause tracking problems. Tighten or replace parts as required.	
MONTHLY	✓
Using a scale, check the gap between the edge of the table and the face of the disc-it should be very close to 3/32 inch. If it is much more or less than that, adjust it.	
Check all bearings for excessive heat or loose shafts-replace if necessary.	
Inspect entire machine and perform maintenance as required.	
Follow lock out tag out procedures when removing the guard from the machine.	
ANNUALLY	✓
Check rotations; ensure that the motor is running counterclockwise, the belt is moving downwards and the disc is rotating clockwise.	
Clean the drive disc surface using naphtha or a similar nonflammable solvent that will dry film-free.	
Clean accumulated dust from the tracking system, to prevent tracking problems.	
Inspect entire machine and perform maintenance as required.	

Any changes or updates to this document must be recorded and maintained.

Initially Created By: The Office of Safety and Risk Management	Date: September 2011
Consultation: <ul style="list-style-type: none"> ▪ Studio Managers and Technicians ▪ Program Chairs and faculty 	Date: January-April 2013 April – May, 2013
Approval By: VPFA and VPA	Date: September, 2013
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Bench Grinder



Machine	Bench Grinder Model: YIM-A-150
Location	Wood Studio
Manufacturer	Name: Heavy Duty Ball Bearings Address: Telephone:
Applicable Legislation	CAN/CSA-Z432-04 "Safeguarding of Machinery" CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask 		✓
Respirator 		
Ear Plugs / Ear Muffs 		✓
Gloves 		
Closed-Toe Foot Wear (no heels) 	✓	
Lab Coat / Protective Apron  		✓
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Do you know where the emergency stop feature is located? The grinder has an attachment plug and receptacle (plug/socket combination) and so it may be used to disable the machine in the event of an emergency.			
3	Are guards in place and in good working order?			
4	Is the area around the grinder free of slip/trip hazards?			
5	Has the debris/material from previous operations been removed?			
6	Do the wheels move freely without obstruction?			
7	Is the work/tool rest adjusted to within 1/8-inch (3mm) gap to the wheel? (The gap should be not greater than 3mm gap).			
8	Is the material/tool you are grinding suitable for the grinder and wheel being used? Wheels are made only for grinding certain items. Do not grind wood or non-iron metal.			
9	Is the material/tool the correct size for the grinder being used? (Ensure the material is not too big or too small).			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Make sure the power cord is kept away from heat, oil, sharp edges or moving parts and does not pose a trip hazard.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Ensure you know where the emergency stops for your equipment are prior to use and within reach during operation. In the absence of an emergency stop, ensure that the power switch is within reach.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before using the grinder	
	<p style="text-align: center;">Picture 1</p> <ol style="list-style-type: none"> a) Put on your PPE. Never wear gloves while using a grinder; they may become caught in the rotating mechanism and cause severe injury. b) Turn the wheel by hand to ensure it doesn't touch the guard, particle shield or tool rest (see picture 1) and runs freely. c) Make sure that the wheel is not in contact with the work when you go to start the grinder. d) Stand to one side, turn the switch on and allow the motor to reach full speed. e) Be cautious of the pinch point and entanglement hazards between the grinding wheel and tool rest. f) This Grinder is used for sharpening tools; do not grind wood or non-iron metals.
2. Using the Grinder	
	<p style="text-align: center;">Picture 2</p> <ol style="list-style-type: none"> a) Once the wheel is at full speed, apply the material/tool in a controlled and slow manner to the front (see picture 2), bottom ¼ of the wheel and not the sides. b) Use the tool rest to keep the material/tool in place. c) NEVER try to stop the grinder with your hands. d) Apply gradual pressure to allow the wheel to warm. e) Do not force the material/tool into the wheel in an attempt to speed the process. f) Use as little pressure as possible, too much pressure will burn the tool and put the operator's hands and fingers at risk should the material/tool get pulled from the grip of the operator. g) Move the work back and forth across the face of the wheel. h) Keep the material/tool moving in slow, even strokes. i) If the material gets hot, dip the work piece in coolant to cool down the material. j) If anything unexpected occurs, immediately disable the equipment by switching off the machine and/or removing the attachment plug.
3. After Sanding	
	<ol style="list-style-type: none"> a) Once finished, remove the work from the grinder. b) Turn off the grinder. c) Don't touch the work immediately in case of burns. d) Wait until the wheel has come to a complete stop - Never leave the machine unattended until completely stopped. e) Clean the grinder area upon completion of the task. NEVER clean the machine while it is in motion. f) Sweep the floor surrounding the grinder.

4.1. Lockout/Tagout Procedure

LOCKOUT TAGOUT PROCEDURE	
Equipment Identification	Equipment Name/Description: Bench Grinder
	Equipment Location: Wood Studio Room 115
	Total # of Energy Isolation Devices/locks: 1
NOTICE BEFORE SERVICING THIS MACHINE , NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE	
	

Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	End of cord	Plastic clamshell and padlock	Stop machine, unplug cord, and install clamshell, lock, and tag.	Attempt to start machine, visually confirm it will not start.

IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR	
LOTO Procedure # A-xxxxxxx	Revision #:
Approved by:	Date:

4.2 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of damage.	
Ensure guards are in place and in good working order.	
Machine is secured and balanced	
Ensure the area around the grinder free of slip/trip hazards.	
Ensure the debris/material from previous operations has been removed.	
Ensure that the wheels are free of defects (tears in the wheels can be very hazardous as they can propel debris towards the operator).	
Ensure that the wheels move freely without obstruction.	
WEEKLY	✓
Dress wheels-frequent, light dressings rather than one heavy dressing. Dress on the face of the wheel.	
Ensure your grinder is kept clean. Use a suitable silicon carbide stick type dresser to keep it clean.	
Ensure that the work rest is kept to within 1/8-inch (3mm) of the wheel. This clearance is necessary in preventing the work piece from becoming wedged between the wheel and tool rest. Never adjust the tool rest while the wheels are moving.	
Ensure that the spark breaker is kept within 1/16-inch of the wheel.	
Ensure the grinder-buffer is operated at a speed that does not exceed manufactures' recommendations.	
MONTHLY	✓
Ensure appropriate grinding wheels are installed and that wheels have blotters on each side.	
Ensure that the wheels fit and don't overly vibrate. If loose, get another wheel.	
Ensure that the wheels are free of cracks or chips. If replacing, inspect wheels before mounting. Don't use a wheel that was dropped or doesn't fit properly. Don't use excessive force to tighten wheels. Test run a new wheel before use.	
ANNUALLY	✓
Check that all nuts, bolts and other fixings are properly tightened.	
Inspect entire machine and perform maintenance as required.	

5.0 Document Control

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Die Grinder



Machine	Die Grinder Model: GD0600/906H/9503B
Location	Wood Studio
Manufacturer	Name: Makita Electric Works Ltd. Address: 1950 Forbes Street, Whitby, ON, L1N 7B7 Tel: 1(800) 263-3734
Applicable Legislation	CAN/CSA-Z432-04 "Safeguarding of Machinery" CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask 	✓	
Respirator 		
Ear Plugs / Ear Muffs 	✓	
Gloves 		
Closed-Toe Foot Wear (no heels) 	✓	
Lab Coat / Protective Apron  	✓	
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Is the grinder secure with no loose parts?			
3	Is the area free of slip/trip hazards?			
4	Is the trigger lock off lock-off lever in good condition? (this prevents the switch lever from being accidentally pulled).			
5	Is the tool attachment balanced?			
6	Is the tool attachment free of defects, damage and debris?			
7	Is the work piece free of nails, wires and other foreign objects?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Make sure the power cord is kept away from heat, oil, sharp edges or moving parts and does not pose a trip hazard.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before using the grinder		
	Picture 1	<ul style="list-style-type: none">a) Put on your PPE.b) Be cautious of flying sparks and debris that are generated from this tool.c) Secure the work piece with a clamp/vise-never work free hand as this can lead to loss of control and injury.d) Attach the tool attachment securely (see picture 1).e) Before using the tool on a work piece, test run it for a minute to ensure it is not unbalanced or vibrating.
2. Using the Grinder		
	Picture 2	<ul style="list-style-type: none">a) Hold the tool firmly by the insulated gripping handle-hold it so that debris is directed away from you and others.b) Ensure that the tool attachment is not contacting the work piece before the switch is turned on and kickback can occur, resulting in injury.c) Turn the grinder on (pull the lock-lever toward you and then pull the switch lever) without the tool attachment making contact with the work piece-allow the tool to attain full speed.d) Apply the tool to the work piece slow and steady-apply light pressure on the tool-excessive pressure may cause overloading of the motor,e) Move the tool in the leftward direction slowly.f) Keep hands as far away from rotating parts as possible and never allow your hands to pass directly over the tool.g) Do not overwork the tool for long periods-it could get very hot-Allow cooling periods.
3. After using the Grinder		
		<ul style="list-style-type: none">a) Release the switch lever to stop the grinder.b) Disconnect when not in use-never leave the tool running unattended.c) Do not touch the work piece immediately following operation-it may be hot.d) Clean the tool-NEVER clean while tool is in motion.e) Sweep the floor surrounding the grinder.

4.0 Maintenance and Repair

4.1 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of damage.	
Ensure that the grinder is secure with no loose parts.	
Ensure the area is free of slip/trip hazards.	
Ensure the lock-off lever in good condition (this prevents the switch lever from being accidentally pulled).	
Ensure the side handle is tightened securely to the tool.	
Ensure the wheel attachment tools free of defects, damage and debris. Replace as necessary	
WEEKLY	✓
Check the carbon brushes. Replace when they wear down to about 5 mm or less.	
MONTHLY	✓
Clean and lubricate the tool.	
ANNUALLY	✓
Inspect entire tool and perform maintenance as required.	

5.0 Document Control

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Drill Press



Machine	Drill Press (15" Drill Press) Model: 340
Location	Wood
Manufacturer	Name: Delta Corporation Ltd. Address: 4825 Hwy. 45 North, P.O. Box 2468, Jackson, USA. Telephone Number: (800) 463-3582
Applicable Legislation	CAN/CSA-Z432-04 "Safeguarding of Machinery" CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask 		
Respirator 		
Ear Plugs / Ear Muffs 		✓
Gloves 		
Closed-Toe Foot Wear (no heels) 	✓	
Lab Coat / Protective Apron  		
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Do you know where the emergency stop feature is located (electrical cord)?			
2	Are guards in place and in good working order?			
3	Is the area around the drill press free of slip/trip hazards?			
4	Has the debris/material from previous operations been removed?			
5	Are all tools/wrenches removed from the table?			
6	Are the drill bits and chuck free of defects?			
7	Does the table adjustment setting and pinion handle move freely without obstruction?			
8	Is the clamp or vise in good condition, suitable to secure the work piece?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

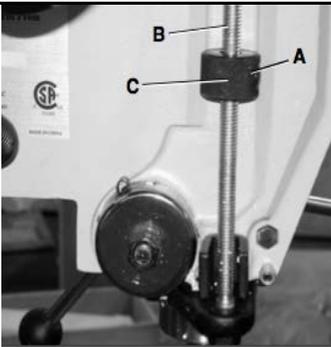
- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Make sure the power cord is kept away from heat, oil, sharp edges or moving parts and does not pose a trip hazard.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Ensure you know where the emergency stops for your equipment are prior to use and within reach during operation. In the absence of an emergency stop, ensure that the power switch is within reach.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Installing drill bit		
	Picture 1	<ul style="list-style-type: none">a) Put on your PPE. Do not wear gloves when operating the drill press.b) Insert the drill bit shank securely into the chuck and tighten the chuck by hand (see picture 1). Use a correctly ground drill bit for the material being drilledc) Use the chuck key to further secure the drill bit.d) Ensure the chuck safety guard is in place.e) Caution: The 'adjustable barrier' guard does not completely enclose the hazard zone-be careful when operating the drill to prevent an entanglement hazard.f) REMOVE the chuck key before operating the drill press.
2. Before drilling		
	Picture 2	<ul style="list-style-type: none">a) Adjust the nut stop to set the desired depth of the drill bit (see picture 2) e.g. if you want the hole being drilled to be a specific depthb) Note the desired area(s) to be drilled; mark the area(s).c) Place a backing board beneath the work material on the drill table to prevent splintering of the material/bit damage/table damage.
3. Adjusting the table		
	Picture 3	<ul style="list-style-type: none">a) The table can be raised/lowered on the drill press column by loosening the table clamp handle and turning the table raising and lowering handle (see picture 3).b) After the table is at the desired height, tighten handle.c) The table can be rotated 360 degrees by loosening the table rotation lock handle and rotating the table to the desired position, then tighten the table.
4. Drilling		



Picture 4

- a) Turn on the light switch if required.
- b) Use a clamp or vice (see picture 4) to secure the material to the table via the T channels to prevent the work piece from spinning. NEVER work free hand.
- c) Ensure that the longest dimension of the work piece is to the left of your body, so that if it does come lose it can be stopped from spinning a complete revolution. (Drill Presses turn clockwise when cutting; the material has a tendency to spin clockwise as well).
- d) Turn on the drill and allow it to gain full speed before drilling.
- e) Lower the bit on to the desired area(s), holding it there so that it digs in to the work material slightly.
- f) Rotate the pilot wheel (which lowersthe spindle) (see picture 5), down and towards you slowly to begin drilling. Be careful when using this spring-loaded wheel that it does not come in contact with you if accidentally released.



Picture 5

- g) Withdraw the drill bit frequently to clear the chips and lubricate the bit.
- h) Ease up on drilling pressure as the drill starts to break through the other side of the material.
- i) If the drill binds in a hole, stop the machine and turn the spindle backwards by hand to release the bit.
- j) Let the spindle stop on its own accord after turning the power off. NEVER try to stop the spindle with your hand and DON'T touch the bit immediately, as it may be hot.
- k) If anything unexpected occurs, immediately disable the equipment by using the emergency shut-off switch and/or removing the attachment plug.

3. After drilling

- a) Turn off the machine when not in use.
- b) Once drilling is ceased, remove the chips from the drill bit and surrounding area with a brush, NEVER by hand.
- c) Loosen the clamp/vice and remove the work piece.
- d) Remove the drill bit from the chuck using the chuck key.
- e) Clean the drill press table and work area upon completion of the task. NEVER clean the machine while it is in motion.
- f) Sweep the floor surrounding the drill press.

4.1. LOTO Procedure

LOCKOUT TAGOUT PROCEDURE				
Equipment Identification	Equipment Name/Description:		Drill Press	
	Equipment Location:		Wood Studio	
	Total # of Energy Isolation Devices/locks:		1	
NOTICE ⚠ BEFORE SERVICING THIS MACHINE , NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE				
				
Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	End of cord	Plastic clamshell and padlock	Stop machine, unplug cord, and install clamshell, lock, and tag.	Attempt to start machine, visually confirm it will not start.
STOP IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR				
* LOTO Procedure # A-xxxxxxx			Revision #:	

4.2 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of damage.	
Ensure that all guards are in place and in good working order, and that the foot break and red safety stitch are in the fully up and out position.	
Inspect the chuck on a daily basis to ensure that the teeth are not worn down, since this may restrict tightening and securing of the material. The fingers [pieces] that come in contact with the drill bit should also be checked to ensure there are no cracks and that they close evenly. If necessary replace the chuck immediately.	
Ensure that the table is level on two axes and must be on stable, level ground to prevent any movement during operation.	
Ensure that the clamp and pinion handle are operational.	
Inspect the quill and chuck assembly - should move smoothly via the pinion handles and return to the start position easily and promptly.	
Ensure that the work area is free of slip, trip and fall hazards	
Clean and lubricate the table. Blow down and check dust collection.	
Ensure use of proper cutting fluid for the material being drilled.	
Keep tools sharp and clean for best and safest performance.	
Inspect drill bits to ensure that there are no chips or damage.	
Ensure the lamp (light) is in good working condition.	
WEEKLY	✓
Inspect the levers on the table top and the column regularly for any defects (stripped levers or bolts). If necessary, replace them immediately.	
Grease all points.	
Inspect levers on the table top and adjust as required.	
MONTHLY	✓
Ensure that the belts are not cracked or broken. If necessary replace.	
The pulleys have closed bearings - check to ensure that they are running smoothly.	
ANNUALLY	✓
Inspect entire machine and perform maintenance as required.	

5.0 Document Control

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Electrical Chain Saw



Machine	Electrical Chain Saw Model: E-14
Location	Wood Studio – 117
Manufacturer	Name: STIHL- Oneida Power Equipment Ltd Address: 41 Toro Road, Downsview, Ont, M3J 2A4 Tel: (416) 630-4260
Applicable Legislation	CAN/CSA-Z432-04 Safeguarding of Machinery
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		
Respirator		
Ear Plugs / Ear Muffs	✓	
Gloves		✓
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  	✓	
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Are guards in place and in good working order?			
3	Is the saw secure with no loose parts?			
4	Is the area around where you will be working free of slip/trip hazards?			
5	Are all bolts/adjustments tight?			
6	Is the chain properly mounted on the saw?			
7	Is the chain properly tensioned? (if not properly tensioned it can become loose during operation).			
8	Is the chain free of defects and dullness?			
9	Is the chain brake device in good working condition?			
10	Does the work piece have a flat surface facing down, or a suitable support is being used?			
11	Are the handles free from grease/oil?			
12	Is the work piece free from nails or other foreign objects?			
13	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Do not remove or render machine guarding ineffective in any way.

f) Ensure the work area is both well-lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before sawing		
	Picture 1	<ul style="list-style-type: none"> a) Put on your PPEs. b) Secure the work piece. Do not work freehand. It is unsafe to cut wood that is unsupported and should never be attempted. c) Pour cutting oil in to the chain saw tank before use. d) Place the power cord out of the way of the tool. e) Extreme caution must be exercised to avoid laceration and other hazards from the blade (see picture 1).
2. Sawing		
	Picture 2	<ul style="list-style-type: none"> a) There is always danger of kickback when using the chain saw. Press the chain break button to stop the chain if this occurs. b) Ensure that the blade is not contacting the work piece before the switch is turned on. c) Never use the saw above shoulder height. d) Hold the chain saw with both hands for maximum control and minimum vibration- e) Turn on the chain saw (press in the trigger switch interlock and pull the trigger switch -see picture 2) and allow it to reach full speed-keep hands as far away from the saw as possible to prevent injury. f) Gently move the tool forward along the marked cutting line, without forcing the blade. g) If the material gets jammed, turn off the machine, and remove jamb. h) Don't put pressure on the saw when cutting. Let the chain saw do the job. i) Always switch off the motor before putting an electrical chain saw down and disconnect before carrying it. j) Never leave the saw unattended, if connected to the power supply.
3. After Sawing		
		<ul style="list-style-type: none"> a) Turn off the chain saw by releasing the trigger switch but do not place it down until it has come to a complete stop (danger of backlash). b) Disconnect the saw when not in use. c) Don't touch the chain or work piece immediately; they may be extremely hot, resulting in burns. d) Remove the chips from the surrounding area with a brush-NEVER by hand. e) Clean the saw-use a rag to clean the chain-careful that the cloth does not hook on the teeth-NEVER clean while in motion. f) Sweep the floor surrounding the saw and ensure to remove clean up any slip, trip hazards created by the debris.

4.0 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of frays and damage.	
Ensure that all guards are in place and in good working order.	
Ensure that the saw is secure with no loose parts.	
Ensure that all bolts/adjustments are tight.	
Ensure that the chain tension is proper. If the chain is loose, tighten immediately.	
Ensure that the chain and sprockets are free of defects and dullness –keep the chain sharp, replace if necessary-use gloves.	
Check the oil level in the chain tank and add oil if necessary.	
WEEKLY	✓
Keep the chain, bar and sprockets clean and lubricated- replace worn sprockets or chain.	
Clean the chain and lubricate it	
Check the cooling air slots and the filter- ensure they are well maintained.	
MONTHLY	✓
Maintain the chain brake and ensure it is in good condition.	
Clean the bar guides with a solvent and then lubricate.	
ANNUALLY	✓
Inspect entire tool and perform maintenance as required.	

5.0 Document Control

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Revisions Approved By:	Date of Approval:

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Electric Screwdriver



Machine	Electrical Screwdriver Model: 7531
Location	Wood Studio - 108/115
Manufacturer	Name: Rockwell International- Power Tool Division Address: 400 North Lexington Avenue, Pittsburg, Pa. 5208
Applicable Legislation	CAN/CSA-Z432-04 Safeguarding of Machinery
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians
 DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!	

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		
Respirator		
Ear Plugs / Ear Muffs		✓
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  		
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Is the screwdriver secure with no loose parts?			
2	Is the work area free of slip/trip hazards?			
3	Is the tool free from cracks and defects?			
4	Is proper driver bit selected for the task?			
5	Is the driver bit free of defects?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- a) Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- b) If you have any questions or uncertainties, please ask your studio technician before use.
- c) Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- d) Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- e) Do not remove or render machine guarding ineffective in any way.
- f) Ensure the work area is both well-lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before using the screwdriver		
	Picture 1	<ul style="list-style-type: none">a) Put on your PPEsb) Secure the work piece with a clamp/vise-NEVER work free hand.c) Load the tool with the bit (see picture) and lock it in place.d) Determine the rotation of the screwdriver before operation.
2. Using the screwdriver		
	Picture 2	<ul style="list-style-type: none">a) Do not point the tool toward yourself or anyone else and keep hands away from the rotation area to prevent injury.b) Firmly hold the screwdriver with your hand (see picture 2).c) Press the trigger to start the motor.d) Place the driver bit in the screw/fastener and apply pressure.e) For removing the screw, change the direction of the bit by reversing the switch.
3. After using the screwdriver		
		<ul style="list-style-type: none">a) Remove the driver bit from the tool.b) Put away the tool.c) Loosen the clamp/vise and remove the work piece.d) Sweep the floor surrounding the screwdriver.e)

4.0 Maintenance and Repair

4.1 Inspection Checklist

DAILY	✓
Ensure that the electrical screwdriver is secure.	
Ensure that the tool is free from cracks and defects.	
Ensure that the driver bits are free of defects.	
WEEKLY	✓
Clean the tool with compressed air to remove dust and debris built up from small openings.	
Clean and lubricate the tool.	
MONTHLY	✓
Clean and wipe off all dust from the parts with a damp cloth.	
Check the brushes of the tool and replace them when necessary.	
ANNUALLY	✓
Inspect entire machine and perform maintenance as required.	

5.0 Document Control

Any changes or updates to this document must be recorded and maintained.

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Flexible Shaft Power Tool



Machine	Flexible Shaft Power Tool
Location	Wood r. 105/118
Manufacturer	Name: The Foredom Electric Company Model: Address: 16 Stony Hill Rd., Bethel, CT 06801, USA Tel: (203) 792-8622
Applicable Legislation	CAN/CSA-Z432-04 "Safeguarding of Machinery" CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask 		✓
Respirator 		
Ear Plugs / Ear Muffs 		✓
Gloves 	✓	
Closed-Toe Foot Wear (no heels) 	✓	
Lab Coat / Protective Apron  	✓	
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Do you know where the emergency stop feature is located? The tool has an attachment plug and receptacle (plug/socket combination) and so it may be used to disable the machine in the event of an emergency.			
3	Is the work area free of slip/trip hazards?			
4	Are the tool and accessories free from defects?			
5	Is the tool in the off position before plugging it in?			
6	Is the motor hanger securely attached to the workbench?			
7	Is the motor hanger height adjusted according to your height?			
8	Is the motor securely attached to the motor hanger or work surface to prevent it from vibrating off the motor hanger?			
9	Is the shaft arranged so that it does not interfere with your line of work, to one side of you and maintained at a 4" or larger radius? Do not drape the flexible shaft across anything.			
10	Is the shaft and other cords kept from trailing across walkways to prevent a trip and fall hazard?			
11	Is the outer sheath still attached to the flexible shaft? (never operate the shaft with this removed)			
12	Are you using accessories rated for use at the maximum speed of the tool?			
13	Is the work piece suitable for the tool?			
14	Is the work piece free from any defects which could catch in the accessory, causing injury?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Make sure the cord is kept away from heat, oil, sharp edges or moving parts and does not pose a trip hazard.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Ensure you know where the emergency stop for your equipment is prior to use and within reach during operation.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before using the Flexible Shaft Power Tool		
		<ul style="list-style-type: none"> a) Put on your PPE b) Insert the shank or arbor of an accessory into the collet or chuck of the hand piece as far as possible in order to provide proper support and tighten the collet or chuck securely. c) Be cautious of flying debris, chips or sparks.
2. Using the Flexible Shaft Power Tool		
	Picture 1	<ul style="list-style-type: none"> a) Hold the hand piece firmly (see picture 1). b) Control the speed with the foot control. c) Do not bend the flexible shaft too much at either the hand piece or motor shaft connections (see picture 2). Excessive heat will occur, possibly resulting in burn injuries. A 4" or larger radius should be maintained for shafts on all motors. d) Apply the accessory to the work piece surface – keep it as far away from your body and other people as possible. e) Let the speed of the tool do the work rather than applying heavy pressure to the accessory. Never use excessive side pressure, which may break the accessory and cause injury mid operation. f) The motor may develop a high operating temperature after prolonged use-allow time to cool
	Picture 2	
3. After using the Flexible Shaft Power Tool		
		<ul style="list-style-type: none"> a) Disconnect the tool when not in use. b) Allow cooling period. c) Clean the tool. Do not touch the motor or accessory, which may be hot. d) Clean the work area and sweep the floor.

4.1. Lockout/Tagout Procedure

LOCKOUT TAGOUT PROCEDURE				
Equipment Identification	Equipment Name/Description:		Flexible Shaft Power Tool	
	Equipment Location:		Wood Studio	
	Total # of Energy Isolation Devices/locks:		1	
NOTICE ⚠ BEFORE SERVICING THIS MACHINE, NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE				
				
Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	End of cord	Plastic clamshell and padlock	Stop machine, unplug cord, and install clamshell, lock, and tag.	Attempt to start machine, visually confirm it will not start.
STOP IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR				
*LOTO Procedure # A-xxxxxxx			Revision #:	
Approved by:			Date:	

4.2 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of damage.	
Ensure guards are in place and in good working order.	
Ensure the tool is secured and balanced	
Ensure the area around the tool is free of slip/trip hazards.	
Ensure that the tool and accessories are free of defects.	
Ensure that the tool in the off position.	
Ensure that the motor is securely attached to the motor hanger or work surface to prevent it from vibrating off the motor hanger.	
Ensure that the shaft and other cords are kept from trailing across walkways to prevent a trip and fall hazard or draped across anything	
Ensure that the outer sheath is still attached to the flexible shaft.	
Ensure that only accessories rated for use at the maximum speed of the tool are being used.	
WEEKLY	✓
Expose the shaft by removing the hand piece and sheath. Apply a light film of grease along the entire length of the shaft. Hang and run the motor for about 10 minutes. Turn off motor, wipe off excess grease from the tip of the drive shaft and reconnect hand piece. Replace the sheath.	
Clean and lubricate the shaft.	
Clean the motor by blowing air through it to remove dust and conductive debris	
Clean and lubricate the tool and hand piece.	
MONTHLY	✓
Check the brushes for wear (replace when worn down to ¼”), remove them and clean them.	
ANNUALLY	✓
Inspect entire machine and perform maintenance as required.	

5.0 Document Control

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Hand Drill



Machine	Hand Drill Model: 10mm 6510LVR Drill / 6260D (cordless)
Location	Wood Studio - 105/118
Manufacturer	Name: Makita Electric Works, Ltd. Address: 1950 Forbes Street, Whitby, Ontario, L1N 7B7 Tel: 1(800) 263-3734
Applicable Legislation	CAN/CSA-Z432-04 Safeguarding of Machinery
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians
 DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!	

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		✓
Respirator		
Ear Plugs / Ear Muffs	✓	
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  	✓	
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Is the drill secure with no loose parts?			
3	Is the work area free of slip/trip hazards?			
4	Are the drill, chuck and bit free from cracks and defects?			
5	Are you aware of the direction of rotation?			
6	Is the work piece free from nails, wires or other foreign objects?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

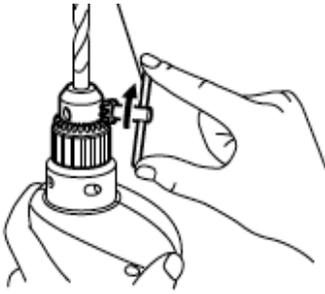
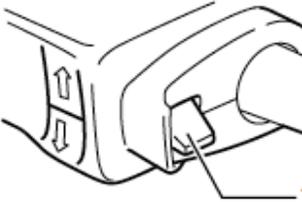
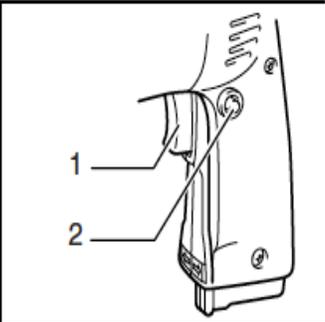
- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- a) Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- b) If you have any questions or uncertainties, please ask your studio technician before use.
- c) Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- d) Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- e) Do not remove or render machine guarding ineffective in any way.
- f) Ensure the work area is both well-lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before Drilling	
	<p style="text-align: center;">Picture 1</p> <p>a) Put on your PPE. b) Secure the work piece with a clamp/vise-NEVER work free hand. c) Install the bit as far into the chuck as possible- d) Tighten the chuck by hand. e) Place the chuck key (see picture 1) in each of the chuckholes and tighten clockwise-tighten all three evenly. f) Select the direction of rotation using the reversing switch lever (see picture 2).</p>
	
2. Drilling	
 <p>1. Switch trigger 2. Lock button</p>	<p style="text-align: center;">Picture 3</p> <p>a) Plug in and turn on the drill-Do not point the drill toward yourself or anyone else and keep hands away from the rotating bit, to prevent injury. b) Do not place your hands on the work piece-keep them as far away from the rotating bit as possible to prevent an entanglement or other hazard. c) If drilling a large diameter hole, hold the tool firmly with both hands. d) Place the tool firmly against the work piece-do not actuate the tool unless this is done. e) Pull the trigger (see picture 3) to drive the bit and drill a hole- f) Exert care when the drill starts to break through the work piece. g) Do not apply too much pressure on the tool - pressing excessively on the tool will not speed up drilling. h) For continuous drilling, use the lock button but ensure you are able to turn it off in case of an emergency. i) Keep the tool in position and prevent it from slipping from the hole, which could result in injury. j) NEVER try to stop the drill with your hand. k) If the bit becomes jammed, disconnect the tool and set the reversing switch to reverse rotation to back it out. Hold it firmly while doing so though, in case the tools backs out abruptly</p>
3. After Drilling	
	<p>a) Release the trigger (see picture 3) to turn off the drill and disconnect when not in use. b) Remove the bit-turn the chuck key counterclockwise in just one hole and then loosen the chuck by hand. c) Loosen the clamp/vise and remove the work piece. d) Remove the chips from the area with a brush, NEVER by hand. e) Clean the drill-NEVER clean the tool while it is in motion. f) Sweep the floor surrounding the drill.</p>

4.0 Maintenance and Repair

4.1 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of frays and damage.	
Ensure that the drill is secure with no loose parts.	
Ensure that the drill, chuck and bit are free from cracks and defects.	
WEEKLY	✓
Clean all drill parts.	
MONTHLY	✓
Lubricate moving parts to prevent rusting and minimize friction related wear.	
ANNUALLY	✓
Inspect entire machine and perform maintenance as required.	

5.0 Document Control

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Jointer



Machine	Jointer Model: K7412295
Location	Wood Studio
Manufacturer	Name: Joe Poitras
Applicable Legislation	CAN/CSA-Z432-04 "Safeguarding of Machinery" CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask 		✓
Respirator 		
Ear Plugs / Ear Muffs 	✓	
Gloves 		
Closed-Toe Foot Wear (no heels) 	✓	
Lab Coat / Protective Apron  		✓
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Do you know where the emergency stop feature is located?			
3	Are guards in place and in good working order?			
4	Is the area around the jointer free of slip/trip hazards?			
5	Has the debris/material from previous operations been removed?			
6	Does the guard move freely without obstruction, automatically adjusting itself to cover the unused portion of the head and remain in contact with the material at all times.			
7	Is the fence square (90 degrees), secure and adjusted?			
8	Is the depth of cut adjusted?			
9	Is the dust collection system turned on?			
10	Is the stock being used no less than 12" in length?			
11	Is the stock free of knots and splits?			
12	Is the direction of the wood grain determined?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Make sure the power cord is kept away from heat, oil, sharp edges or moving parts and does not pose a trip hazard.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Ensure you know where the emergency stops for your equipment are prior to use and within reach during operation. In the absence of an emergency stop, ensure that the power switch is within reach.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

		1. Before using the jointer
	Picture 1	<ul style="list-style-type: none"> a) Put on your PPE. b) Adjust the fence accordingly (see picture 1). c) Set the depth of the cut with the hand-wheel; unlock and lock the table as required. d) Be cautious of the pinch point and laceration hazards of the jointer blades.
		2. Using the jointer
	Picture 2	<ul style="list-style-type: none"> a) Turn the switch on and allow the motor to reach full speed. Joint one piece of stock at a time. b) Use the hold down push shoes and/or push sticks when feeding stock through the cutting head to avoid physical contact with the blades when the guard is displaced. c) Provide a minimum clearance of at least 3 feet greater than the length, or use extensions for long stock. d) Feed the material along the table, against the fence and through the guard, in opposition to the blade rotation (see picture 2)-joint with the grain of the material.
	Picture 3	<ul style="list-style-type: none"> e) The 'awareness barrier' guard moves as the stock is being fed. CAUTION; this guard does not completely enclose the hazard zone, it still poses a "residual risk"-be careful when operating the jointer to prevent a laceration hazard. f) Keep hands as far away as possible and never allow your hands to pass directly over the cutter head (see picture 3). g) Use a slow steady advance when jointing. h) Maintain the proper relationship of the in-feed and out-feed table surfaces and the cutter head knife path. i) Never back your work piece into the spinning cutter head and never drag stock back against the guard. j) Don't make cuts deeper than 1/16" in a single pass to prevent overloading the machine and dangerous kickback. k) Don't adjust the fence while the machine is running. l) If anything unexpected occurs, immediately disable the equipment by switching off the equipment and/or removing the attachment plug.
		3. After using the jointer
		<ul style="list-style-type: none"> a) Once finished, remove the work from the jointer. b) Turn off the jointer. c) Wait until the blade has come to a complete stop - Never leave the machine unattended until completely stopped. d) Clean the jointer area upon completion of the task. NEVER clean the machine while it is in motion. e) Use a brush to remove debris. f) Sweep the floor surrounding the jointer.

4.1. Lockout/Tagout Procedure

LOCKOUT TAGOUT PROCEDURE				
Equipment Identification	Equipment Name/Description:		Jointer	
	Equipment Location:		Wood Studio Room 115	
	Total # of Energy Isolation Devices/locks:		1	
NOTICE BEFORE SERVICING THIS MACHINE, NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE				
				
Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	Junction Box	Lockout Hasp	Stop machine, pull disconnect arm to the off position, align the holes, install lockout hasp, lock and tag.	Attempt to start machine, visually confirm it will not start.
IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR				
* LOTO Procedure # A-xxxxxxx			Revision #:	
Approved by:			Date:	

4.2 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of frays and damage.	
Ensure that guards are in place and in good working order.	
Ensure that the jointer is secure.	
Ensure that the area around the jointer is free of slip/trip hazards.	
Ensure that flammable/combustible materials are removed from the immediate work area.	
Ensure that debris/material from previous operations has been removed.	
Ensure that all tools/wrenches are removed from the table.	
Ensure that the cutter heads are free of defects and kept sharp.	
Ensure that the guard moves freely without obstruction, automatically adjusting itself to cover the unused portion of the head and remain in contact with the material at all times.	
Ensure that the fence is square (90 degrees) and secure.	
Ensure that the operation of fence and in-feed table is in good condition.	
Ensure the distance between the out-feed table and the knife-cutting circle does not exceed 0.125 inches.	
WEEKLY	✓
Ensure that the guard is kept to within 1/4-inch of the wheel.	
Spray fence with WD40.	
Lubricate all connecting points.	
Clean the cutter head, spindle drum using mineral sprits.	
Check belt tension- if slack (should only be able to deflect it ½" - ¾"), adjust or replace.	
Clean the dust collection system to prevent build-up, respiratory and fire hazards.	
Wax the in-feed and out-feed table.	
Check to see if in-feed/ out-feed tables are aligned and level-adjust if necessary to ensure parallel alignment.	
MONTHLY	✓
Check to see that the setscrews in the cutter block can be fully tightened.	
Ensure that the cutter block is free of defects (cracks, scratches).	
Ensure that the cutter heads are free of defects and sharp-replace if necessary.	
ANNUALLY	✓
Check that all nuts, bolts and other fixings are properly tightened.	
Inspect entire machine and perform maintenance as required.	

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Mitre Saw



Machine	Mitre Saw Model: DW716
Location	Wood Studio
Manufacturer	Name: Dewalt Industrial Tool Co. Address: 701 E. Joppa Road. Baltimore, MD 21286 Tel: (1800) 4-dewalt
Applicable Legislation	CAN/CSA-Z432-04 "Safeguarding of Machinery" CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		✓
Respirator		
Ear Plugs / Ear Muffs	✓	
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  		✓
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Do you know where the emergency stop feature is located? The saw's attachment plug may be used to disable the machine in the event of an emergency.			
3	Are guards in place and in good working order?			
4	Is the saw secure and level?			
5	Is the area around the saw free of slip/trip hazards?			
6	Has the debris/material from previous operations been removed?			
7	Are tools/wrenches removed from the table?			
8	Is the angle lock knob in good working condition and not loose?			
9	Is the saw free of defects and damage?			
10	Is the cutting bed free from defects/damage?			
11	Is the work piece free from flaws, nails, or other foreign objects?			
12	Does the work piece have a flat surface facing down, or a suitable support is being used?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Make sure the power cord is kept away from heat, oil, sharp edges or moving parts and does not pose a trip hazard.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Ensure you know where the emergency stops for your equipment are prior to use. The plug can also be used to disable the saw.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before sawing		
	Picture 1	<ul style="list-style-type: none"> a) Put on your PPE. b) Mark the desired area(s) to be cut. Adjust the cutting angle with the miter scale and lock knob (see picture 1).
	Picture 2	<ul style="list-style-type: none"> c) Place the work piece on the table-don't cut multiple stock at once. d) If cutting longer material, place on the bed extension affixed to the table (see picture 2). Do not saw stock that is too long for the bed. e) Ensure the stock is tight against the fence. f) Clamp the stock to the fence (see picture 3) to prevent impact hazards from ejected material-ensure the clamp is not in the blades line of movement to prevent the clamp and blade making contact, which could result in personal injury.
	Picture 3	<ul style="list-style-type: none"> g) Put a stop in for repeated cuts. h) Extreme caution must be exercised to avoid injury from the blade's pinch point and laceration hazards. Be cautious of potential kickback if used improperly. i) The saw's attachment plug may be used to disable the machine in the event of an emergency.
2. Sawing		
	Picture 4	<ul style="list-style-type: none"> a) It is unsafe to cut plastic that is unsupported/not clamped and should never be attempted. b) Check that mitre saw is power cord plugged in. c) Hold the operator handle (see picture 4), pressing the trigger-don't try to force the handle. d) DON'T place your hand anywhere on the table/stock or near the blade. e) Pull the handle down carefully until the blade approaches the work piece. f) The 'interlocked awareness barrier' guard (see picture 5) rises as the saw is lowered. CAUTION; this guard does not completely enclose the hazard zone-be careful when operating the saw to prevent a laceration hazard.
	Picture 5	<ul style="list-style-type: none"> g) If the saw/material gets jammed release trigger, unplug the machine, allow saw to come to full stop, and clean the jam. h) Never lift the guard while the blade is rotating. i) Ease up on sawing pressure as the saw breaks through the stock. j) Release the trigger on the handle but leave the blade down on the work piece until it stops rotating - if the handle is raised while the blade is rotating, the cut-off piece may become jammed against the blade causing fragments to scatter about dangerously. k) Excessive cutting can result in overheating – if the motor is hot, stop cutting and rest machine for 10 minutes.

3. After sawing

- | | |
|--|---|
| | <ul style="list-style-type: none">a) Ensure that the blade has stopped rotating - never leave the saw running unattended - NEVER try to stop the saw with your hand and don't touch the sawed plastic immediately, as it is hot.b) Remove the chips from the surrounding area with a brush, NEVER by hand.c) Clean the mitre saw area upon completion of the task- NEVER clean the machine while it is in motion.d) Sweep the floor surrounding the saw. |
|--|---|

4.1. Lockout/Tagout Procedure

LOCKOUT TAGOUT PROCEDURE				
Equipment Identification	Equipment Name/Description:		Mitre Saw	
	Equipment Location:		Wood Studio Room 115	
	Total # of Energy Isolation Devices/locks:		1	
<p>NOTICE ⚠️ BEFORE SERVICING THIS MACHINE , NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE</p>				
				
Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	End of cord	Plastic clamshell and padlock	Stop machine, unplug cord, and install clamshell, lock, and tag.	Attempt to start machine, visually confirm it will not start.
<p>STOP IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR</p>				
* LOTO Procedure # A-xxxxxxx			Revision #:	
Approved by:			Date:	

4.2 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of frays and damage.	
Ensure that guards are in place and in good working order.	
Ensure that the machine is secure.	
Ensure that the area around the machine is free of slip/trip hazards.	
Ensure that flammable/combustible materials are removed from the immediate work area.	
Ensure that debris/material from previous operations has been removed.	
Ensure that all tools/wrenches are removed from the table.	
Ensure that the angle lock knob is in good working condition and not loose.	
Ensure that the cutting bed is free from defects/damage (to prevent binding of the blade or fragmenting of the material and injury). Replace if necessary.	
Ensure that the blade is centered and tracking in the correct position.	
Ensure that the blade and teeth are free of defects and dullness.	
WEEKLY	✓
Ensure that parts have not become loose due to vibration.	
Ensure that the bolts are tightened to prevent the blade coming off, the safety cover getting damaged and injury.	
MONTHLY	✓
For precise cutting, rotate the saw blade and check for deflection to confirm that the blade is not unstable; or else vibrations might occur, resulting in injury	
Clean machine with damp soapy cloth and let dry	
ANNUALLY	✓
Inspect entire machine and perform maintenance as required.	

5.0 Document Control

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Mortiser



Machine	Mortiser Model: 3850
Location	Wood Studio
Manufacturer	Name: Jos.Poitras
Applicable Legislation	CAN/CSA-Z432-04 "Safeguarding of Machinery" CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		✓
Respirator		
Ear Plugs / Ear Muffs	✓	
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  		
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Do you know where the emergency stop feature is located?			
3	Is the power cord free of frays or damage?			
4	Are guards in place and in good working order?			
5	Is the area around the machine free of slip/trip hazards?			
6	Has the debris/material from previous operations been removed?			
7	Are lock knobs and handles tight so they do not loosen during operation (caused by vibrations)?			
8	Is the dust collection system on?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Make sure the power cord is kept away from heat, oil, sharp edges or moving parts and does not pose a trip hazard.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Ensure you know where the emergency stops for your equipment are prior to use and within reach during operation. In the absence of an emergency stop, ensure that the power switch is within reach.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Installing chisel and drill bit		
	Picture 1	
	Picture 2	<ul style="list-style-type: none"> a) Put on your PPE. Never wear gloves while using the mortiser; they may become caught in the rotating mechanism and cause severe injury. b) Select appropriate hallow chisel bit and drill bit for the material being drilled (see picture 1). c) install the chisel and bit securely into the chuck and tighten the chuck using the chuck key (see picture 2). d) The tip of the bit should be approximately 1/16" to 3/16" (2 mm to 5 mm) out from the tip of the chisel. e) For visibility, ensure the chisel chip-clearing slot is facing either to the left, right or front side. This way the sawdust will be pushed out of your way. f) Ensure the chuck safety guard is in place. g) REMOVE the chuck key before operating the mortiser.
2. Before using the mortiser		
	Picture 3	<ul style="list-style-type: none"> a) Place a backing board beneath the work material on the table to prevent splintering of the material/bit damage/table damage if you are passing through the material. b) Place the wood stock against the fence and adjust the depthnut stop to set the desired depth of the chisel and bit (e.g. if you want only 1 inch of the material to be drilled).
	Picture 4	<ul style="list-style-type: none"> c) Adjust the fence so the chisel sits right on top of the stock and is aligned with the layout line (see picture 3). d) Ensure the workpiece 'hold down' is over the stock (see picture 4) and enables the stock to slide easily. e) If necessary, use a clamp or vice to secure the material to the table to prevent the work piece from spinning.

3. Adjusting the table height



Picture 5

- a) The table can be raised/lowered if required on the mortiser column by loosening the table clamp handle and turning the table raising and lowering handle (see picture 6).
- b) After the table is at the desired height, tighten handle.
- c) Use table extension when working with longer stock.

3. Using the mortiser



Picture 6

- a) Turn on the machine
- b) Rotate the pilot wheel (which lowers the bit) (see picture 6), down and towards you slowly to begin drilling.
- c) Lower the chisel and bit into the workpiece until it bottoms out on the depth stop.
- d) Slide the stock to make the desired cuts.
- e) If drilling a large and deep hole, withdraw the chisel and bit frequently to clear the chips.
- f) Ease up on drilling pressure as the chisel starts to break through the other side of the material.
- g) Let the spindle stop on its own accord after turning the power off. NEVER try to stop the spindle with your hand and DON'T touch the chisel and bit immediately, as it may be hot.
- h) If anything unexpected occurs, immediately disable the equipment by switching off the equipment and/or removing the attachment plug.

3. After using the mortiser

- a) Turn off the mortiser when not in use.
- b) Once drilling is ceased, remove the chips from the chisel and bit and surrounding area with a brush, NEVER by hand.
- c) Remove the work piece.
- d) Remove the chisel and bit from the chuck using the chuck key.
- e) Clean the mortiser table and work area upon completion of the task. NEVER clean the machine while it is in motion.
- f) Sweep the floor surrounding the mortise

4.1. Lockout/Tagout Procedure

LOCKOUT TAGOUT PROCEDURE				
Equipment Identification	Equipment Name/Description:		Mortiser	
	Equipment Location:		Wood Studio	
	Total # of Energy Isolation Devices/locks:		1	
<p>NOTICE  BEFORE SERVICING THIS MACHINE , NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE</p>				
				
Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	End of cord	Plastic clamshell and padlock	Stop machine, unplug cord, and install clamshell, lock, and tag.	Attempt to start machine, visually confirm it will not start.
 IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR				
* LOTO Procedure # A-xxxxxxx			Revision #:	
Approved by:			Date:	

4.2 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of damage.	
Ensure guards are in place and in good working order.	
Ensure that the mortiser is on stable, level ground to prevent any movement during operation.	
Inspect the chuck on a daily basis to ensure that the teeth are not worn down, since this may restrict tightening and securing of the material.	
Inspect the fingers [pieces] that come in contact with the chisel and bit, to see if they are free from cracks and that they close evenly. If necessary replace the chuck immediately.	
Ensure that the clamp and pinion handle are operational.	
Inspect the chuck assembly –it should move smoothly via the pinion handles and return to the start position easily and promptly.	
Ensure that the adjustment settings are in working condition.	
Ensure that the work area is free of slip, trip and fall hazards.	
Ensure table is cleaned and lubricated. Blow down and check dust collection.	
Inspect the power cord and plug for damage.	
Keep tools sharp and clean for best and safest performance.	
Inspect chisel and bit to ensure that there are no chips or damage-sharpen if dull.	
Ensure that the mortiser is on stable, level ground to prevent any movement during operation.	
WEEKLY	✓
Inspect the levers on the table top and the column regularly for any defects (stripped levers or bolts). If necessary, replace them immediately.	
Coat the table with paste wax to protect the table surface.	
Inspect levers on the table top and adjust as required.	
MONTHLY	✓
Ensure that the belts are not cracked or broken. If necessary replace.	
Grease all points.	
ANNUALLY	✓
Tighten all the nuts and screws of the mortiser as needed.	
Inspect entire machine and perform maintenance as required.	

5.0 Document Control

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Narrow Belt Sander



Machine	Narrow Belt Sander Model: 3K771G
Location	Wood Studio
Manufacturer	Name: Dayton
Applicable Legislation	CAN/CSA-Z432-04 "Safeguarding of Machinery" CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians
 DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!	

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		✓
Respirator		
Ear Plugs / Ear Muffs		✓
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  		✓
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Do you know where the emergency stop feature is located? The belt sander has an attachment plug and receptacle (plug/socket combination) and so it may be used to disable the machine in the event of an emergency.			
3	Are guards in place and in good working order?			
4	Is the area around the sander free of slip/trip hazards?			
5	Has the debris/material from previous operations been removed?			
6	Are the sanding surfaces free of defects?			
7	Are lock knobs and handles tight so they do not loosen during operation (caused by vibrations)?			
8	Is the dust collection system on?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Make sure the power cord is kept away from heat, oil, sharp edges or moving parts and does not pose a trip hazard.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Ensure you know where the emergency stops for your equipment are prior to use and within reach during operation. In the absence of an emergency stop, ensure that the power switch is within reach.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before sanding		
	Picture 1	<ul style="list-style-type: none">a) Put on your PPE. Never wear gloves while using a sander; they may become caught in the rotating mechanism and cause severe injury.b) Ensure the dust collection system is on.c) Plug in the machine and turn on the power.d) Check the sander stability while running BEFORE operating on it-ensure the belt does not wobble or run out.
2. Belt Sanding		
	Picture 2	<ul style="list-style-type: none">a) Wait for the belt to reach full speed before sanding or polishing (the belt travels clockwise).b) This machine is best suited for sanding small material.c) Firmly hold the workpiece with both hands; keep your fingers away from the belt.d) Gently push the workpiece against the top or the bottom belt when sanding a flat surface.
	Picture 3	<ul style="list-style-type: none">e) If sanding internal curves use the front drum (see picture 3) of the belt. When sanding external curves sand on the flat portion of the belt.f) Do not force a work piece on any sanding surface.g) Do not rapidly apply a corner of a work piece against the belt.h) Always keep the material moving in slow, even strokes.i) Never leave the sander running unattended.j) If anything unexpected occurs, immediately disable the equipment by switching off the equipment and/or removing the attachment plug.
3. After Sanding		
		<ul style="list-style-type: none">a) Turn off the power and disconnect the sander.b) Clean the workspace. NEVER clean the machine while it is in motion.c) Sweep the floor surrounding the sander.

4.0 Maintenance and Repair

4.1. Lockout/Tagout Procedure

LOCKOUT TAGOUT PROCEDURE	
Equipment Identification	Equipment Name/Description: Belt Sander
	Equipment Location: Wood Studio Room 115
	Total # of Energy Isolation Devices/locks: 1
NOTICE  BEFORE SERVICING THIS MACHINE , NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE	
	

Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	End of cord	Plastic clamshell and padlock	Stop machine, unplug cord, and install clamshell, lock, and tag.	Attempt to start machine, visually confirm it will not start.

 IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR	
LOTO Procedure # A-xxxxxxx	Revision #:
Approved by:	Date:

4.2 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of damage.	
Ensure guards are in place and in good working order.	
Sander is secured and balanced	
Ensure the area around the sander free of slip/trip hazards.	
Ensure the debris/material from previous operations has been removed.	
Ensure sanding surface is free of defects	
Make sure lock knobs and handles are tight.	
WEEKLY	✓
Ensure the belt is secured on the rolling drums.	
Examine the face of the belt; ensure it is not showing backing, curling, buckling, nicks or cuts on the surface or edge, or damage due to ceasing or poor handling-replace the belt if necessary-when installing a new belt, always check the tracking.	
Check the drums for scrolling, signs of wear, or looseness that might cause tracking problems. Tighten or replace parts as required.	
MONTHLY	✓
Check all bearings for excessive heat or loose shafts-replace if necessary	
Inspect the wire and plug for any damage. Ensure there are no bends or crimps in the cord. Remove and repair damaged electrical equipment.	
ANNUALLY	✓
Check the motor to see if it is working properly	
Clean accumulated dust from the tracking system, to prevent tracking problems. Use a vacuum to clean the motor	
Inspect entire machine and perform maintenance as required.	

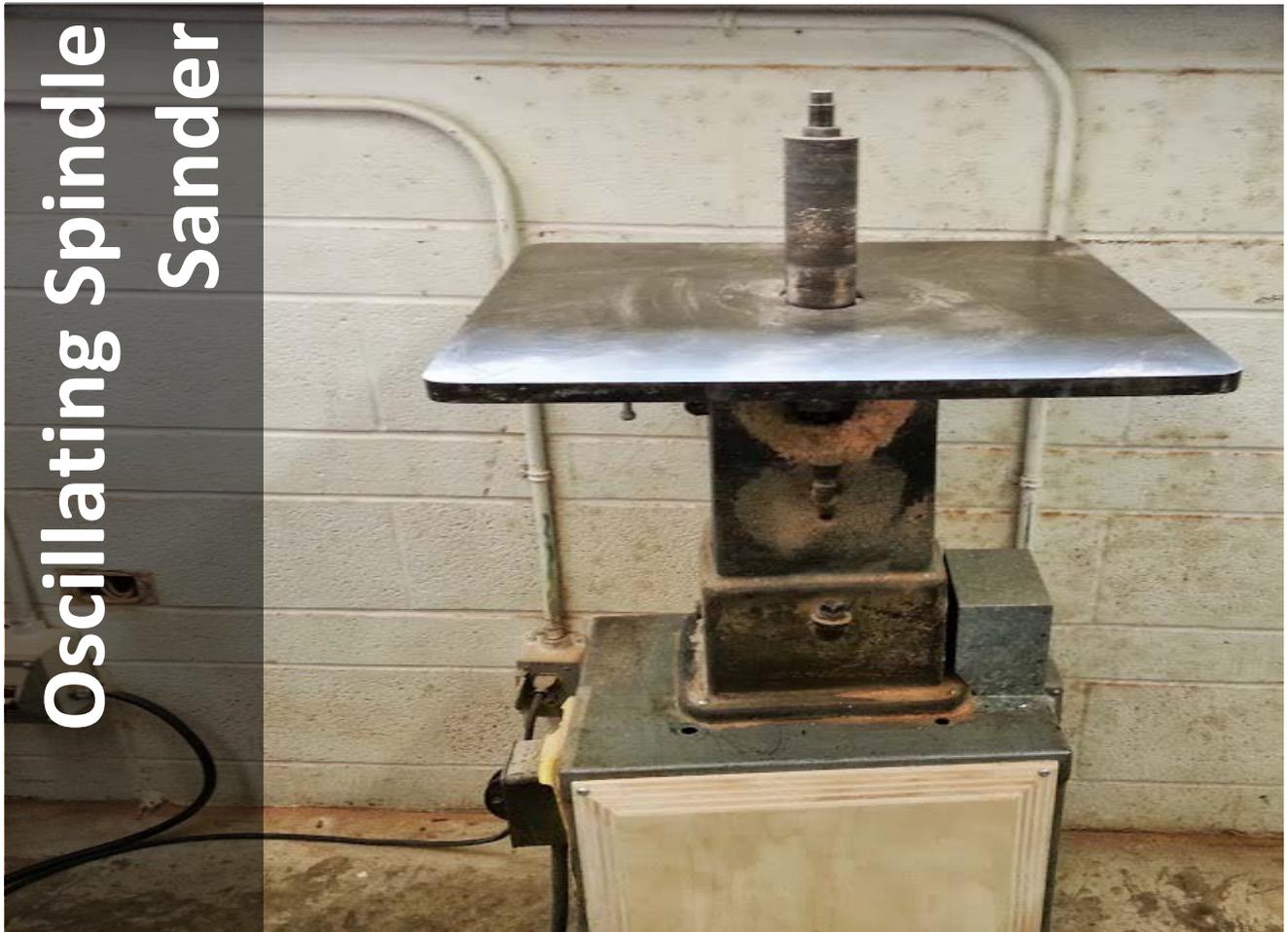
5.0 Document Control

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Oscillating Spindle Sander



Machine	Oscillating Spindle Sander Model: 15020-M1
Location	Wood Studio
Manufacturer	Name: General International Corporation Ltd. Address: 8360 Cham-d'Eau, Montreal (Quebec), Canada H1P 1Y3. Telephone Number: (514) 326-1161
Applicable Legislation	CAN/CSA-Z432-04 "Safeguarding of Machinery" CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		✓
Respirator		
Ear Plugs / Ear Muffs		✓
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  		✓
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Do you know where the emergency stop feature is located? The sander has an attachment plug and receptacle (plug/socket combination) and so it may be used to disable the machine in the event of an emergency.			
3	Are guards in place and in good working order?			
4	Is the area around the sander free of slip/trip hazards?			
5	Has the debris/material from previous operations been removed?			
6	Are all tools/wrenches removed from the table?			
7	Is the dust collection system on?			
8	Is the spindle stable, hand-tight and properly positioned?			
9	Is the spindle sander free of hazards? Ensure the spindle surfaces are free of defects.			
10	Are you using the correct spindle size for material being sanded? (Ensure it is smaller than the curve of the workpiece to be sanded).			
11	Is the table set to the correct angle?			
12	Does the spindle move freely without obstruction?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Make sure the power cord is kept away from heat, oil, sharp edges or moving parts and does not pose a trip hazard.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Ensure you know where the emergency stops for your equipment are prior to use and within reach during operation. In the absence of an emergency stop, ensure that the power switch is within reach.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before sanding		
	Picture 1	<ul style="list-style-type: none"> a) Put on your PPE. Never wear gloves while using a sander; they may become caught in the rotating mechanism and cause severe injury. b) Select the correct spindle (see picture 1) for the material being sanded. c) Select an insert plate that comes closest to the spindle without touching it. d) Clean the sanding arbor and the main shaft hole before inserting the sanding arbor into the shaft.
	Picture 2	<ul style="list-style-type: none"> e) Tilt the table to the correct angle (see picture 2) for the material being sanded (if at any angle other than 90 degrees, position the workpiece over the center line as shown on the table surface). Don't force the table if not tilting properly. f) To prevent movement mid-operation, lock the table with the hand nut for setting angles and lock the tilting gear shaft.
2. Sanding		
	Picture 3	<ul style="list-style-type: none"> a) Turn on the power. b) Place the material into position. c) The spindle (see picture 3) rotates fast, removing the external edge of the work piece - be cautious. d) Wait for the spindle to reach full speed before sanding or polishing. e) Don't force a work piece on the spindle. Gently ease the material into the spindle. f) Hold the material firmly and move the material from side to side around the spindle to obtain a smooth even surface. g) Do not use your hands to sand small objects that can't be gripped properly.
	Picture 4	<ul style="list-style-type: none"> h) Use a backing board if sanding thin work pieces or hold it in a jig or holding device to prevent injuries. i) Firmly hold the work piece with both hands; keep fingers as far away from the spindle as possible. j) Present the work piece to the spindle while holding the work piece flat on the table (see picture 4), to prevent throwing of the work piece off the wheel causing injury. k) Don't apply too much pressure-apply only enough pressure so that the sanding spindle removes the material. l) Always keep the material moving in slow, even strokes. m) Never try to stop the spindle sander with your hand and don't touch the work piece immediately. n) Once finished, remove the stock from the table. o) Never leave the machine running unattended. p) If anything unexpected occurs, immediately disable the equipment by switching off the equipment and/or removing the attachment plug.

3. After Sanding

- | | |
|--|--|
| | <ul style="list-style-type: none">a) Turn off the power and disconnect the sander when not in use.b) Clean the sander and the workspace. NEVER clean the machine while it is in motion.c) Readjust bench to 90 degrees.d) Sweep the floor surrounding the sander. |
|--|--|

4.1. Lockout/Tagout Procedure

LOCKOUT TAGOUT PROCEDURE				
Equipment Identification	Equipment Name/Description:		Spindle Sander	
	Equipment Location:		Wood Studio Room 115	
	Total # of Energy Isolation Devices/locks:		1	
<p>NOTICE ⚠ BEFORE SERVICING THIS MACHINE , NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE</p>				
				
Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	End of cord	Plastic clamshell and padlock	Stop machine, unplug cord, and install clamshell, lock, and tag.	Attempt to start machine, visually confirm it will not start.
<p>STOP IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR</p>				
* LOTO Procedure # A-xxxxxxx			Revision #:	
Approved by:			Date:	

4.2 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of damage.	
Ensure guards are in place and in good working order.	
Sander is secured and balanced	
Ensure the area around the sander free of slip/trip hazards.	
Ensure the debris/material from previous operations has been removed.	
Ensure all tools/wrenches are removed from the table.	
Ensure that the spindle surfaces are free of defects; ensure it is not showing backing, curling, buckling, nicks or cuts on the surface or edge, or damage due to ceasing or poor handling-replace if necessary.	
Ensure that the spindle is stable, properly positioned and hand-tight.	
Ensure that the table is set to a 90 degree angle.	
Clean the machine and attachments.	
Clean tapered sleeves and tapered sockets to protect spindle sleeves. Replace the sleeve on the spindle when it becomes worn.	
Clean the dust chute to avoid major accumulation of dust.	
Ensure all tools/wrenches are removed from the table.	
Ensure that the spindle surfaces are free of defects; ensure it is not showing backing, curling, buckling, nicks or cuts on the surface or edge, or damage due to ceasing or poor handling-replace if necessary.	
WEEKLY	✓
Lightly apply wax paste on the table surface to prevent rusting.	
Ensure that the gearbox has proper oil level (approx. ¼" up on sight glass).	
Clean all rust protected surfaces with a mild solvent or kerosene.	
Inspect the wire and plug for any damage. Ensure there are no bends or crimps in the cord. Remove and repair damaged electrical equipment.	
MONTHLY	✓
Lubricate the machine as required. Apply a small amount of grease to the table tilting screw.	
ANNUALLY	✓
Check that all nuts, bolts and other fixings are properly tightened.	
Inspect entire machine and perform maintenance as required.	

5.0 Document Control

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Changes Made (<i>indicate sections</i>):	
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Plate Joiner



Machine	Plate Joiner Model: 3901
Location	Wood Studio - Room #: 105/118
Manufacturer	Name: Makita Electric Works, Ltd. Address: 1950 Forbes Street, Whitby, Ontario, L1N 7B7 Tel: 1(800) 263-3734
Applicable Legislation	CAN/CSA-Z432-04 Safeguarding of Machinery
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians
 DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!	

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		✓
Respirator		
Ear Plugs / Ear Muffs	✓	
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  		
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Are guards in place and in good working order? Never operate the joiner with the blade locked in the exposed condition or without the blade cover secured properly in place.			
3	Is the joiner secure with no loose parts?			
4	Is the work area free of slip/trip hazards?			
5	Are the blades free of defects?			
6	Do the guides slide smoothly?			
7	Is the dust bag attached to the joiner dust nozzle, without being an obstacle to your work?			
8	Is the depth of cut adjusted?			
9	Is the special nozzle assembly (if attached) free of debris and in good condition, to minimize chip scatter?			
10	Is the work piece free of nails and other foreign objects?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

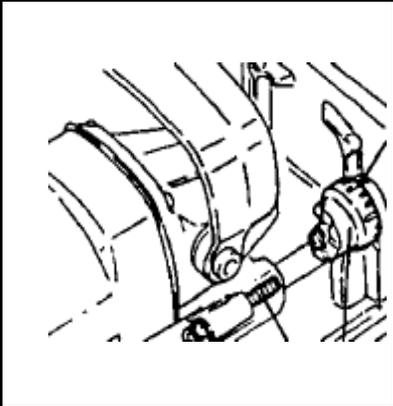
- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

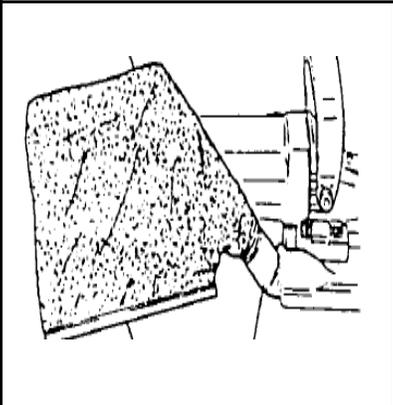
Before using the machine, perform the following general safety checks:

- a) Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- b) If you have any questions or uncertainties, please ask your studio technician before use.
- c) Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- d) Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- e) Do not remove or render machine guarding ineffective in any way.
- f) Ensure the work area is both well-lit and organized.

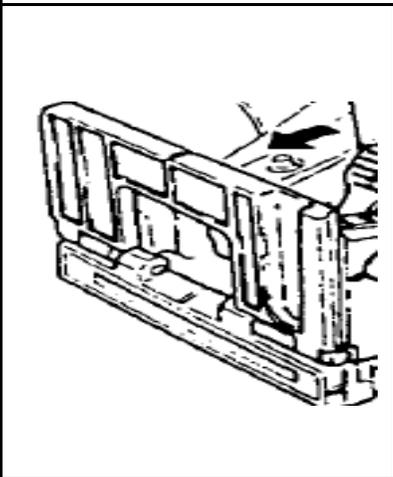
1. Before using the Plate Joiner



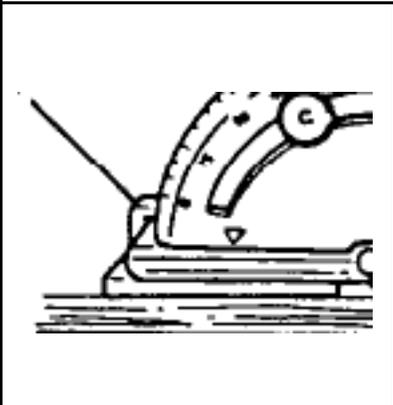
Picture 1



Picture 2



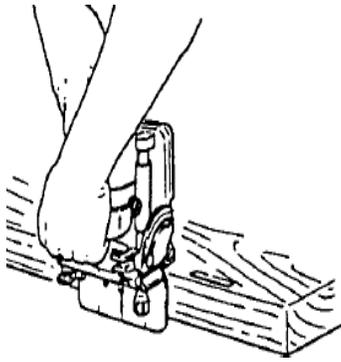
Picture 3



Picture 4

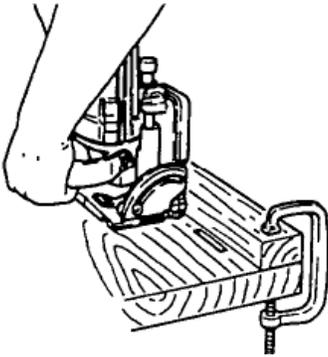
- a) Put on your PPEs
- b) **Don't** wear gloves to prevent an entanglement hazard!
- c) Mark the center of the intended biscuit slots on the work piece (the center should be at least 50mm from the outer edge of the work pieces)-Allow 100mm-150mm between slots in multiple biscuit applications.
- d) Fit the two work pieces together as they will appear in the finished joint position-
- e) Secure the work piece with a clamp-**never work freehand**. For corner/t-butt joints only, clamp the vertical work piece to the workbench. For miter joints only, clamp one work piece to the workbench with the mitered edge facing up. For frame/edge to edge joints only, clamp one work piece to the workbench.
- f) Adjust the depth of cut, according to the biscuit size, by rotating the stopper until the pointer points to the appropriate size marked on the stopper (see picture 1).
- g) Attach the dust bag to the dust nozzle, if not already done (see picture 2)-ensure it is not an obstacle to your work.
- h) Adjust the position of the blade in relation to the top of the work piece by moving the angle guide up and down. The scale on the angle guide indicated the distance from the top of the work piece to the center of the blade thickness. The blade should be centered in the board thickness.
- i) Adjust the fence (see picture 3) between 0 and 90 degrees (positive stops at 0, 45 and 90).
- j) Use the set plate (see picture 4) when cutting slots in thin work pieces.

2. Using the Plate Joiner



Picture 5

- a) Before using the joiner, allow it to run for a moment-ensure the blade is balanced -if it is unbalanced, ask your technician for assistance.
- b) Make sure the blade is not contacting the work piece before turning on the switch.
- c) Hold the joiner firmly with two hands-keep hands at least 200mm away from rotating parts and **never** allow your hands to pass directly over the blade or underneath the work piece while blade is running.
- d) Align the center mark on the base with the pencil line on the work piece.
- e) Slide the switch lever toward the 'on' position and allow the blades to attain full speed.
- f) Gently push it forward to extend the blade in to the work piece.
- g) Gently return the tool to the original position after the adjustment screw reaches the stopper.
- h) Empty the dust bag when required.
- i) For corner joints only, place the tool on the work piece so that the blade is facing down (see picture 5). For t-butt joint only, remove the angle guide from the tool-place the tool on the work piece so that the blade is facing down (see picture 6).
- j) Place the biscuits in the slots, joining work pieces together.



Picture 6

3. After using the Plate Joiner

- a) Disconnect the joiner when not in use.
- b) Clean the joiner-**NEVER** clean while it is in motion.
- c) Sweep the floor surrounding the joiner.

4.0 Maintenance and Repair

4.1 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of frays and damage.	
Ensure that guards are in place and in good working order. Ensure that the blade is not locked in the exposed condition and that the blade cover is secured properly in place.	
Ensure that the joiner is secure with no loose parts.	
Ensure that the blades are free of defects and kept sharp. Clean and re-sharpen the blades if required. Replace if necessary-use only blades specified for this tool. Make sure the flange fits in the arbor hole when installing the blade. Check the depth of cut after replacing the blade.	
Ensure that the blades slide smoothly.	
Ensure that the blade is properly mounted on the spindle between the inner flange and the lock nut and that the lock nut is securely tightened.	
Ensure that the special nozzle assembly (if attached) is free of debris and in good condition, to minimize chip scatter.	
WEEKLY	✓
Clean the dust collection system to prevent build-up, respiratory and fire hazards.	
MONTHLY	✓
Remove and check the carbon brushes. Replace when worn down to the limit mark. Keep clean and free to slip in the holders. Replace both at the same time and ensure they are identical.	
ANNUALLY	✓
Inspect entire machine and perform maintenance as required.	

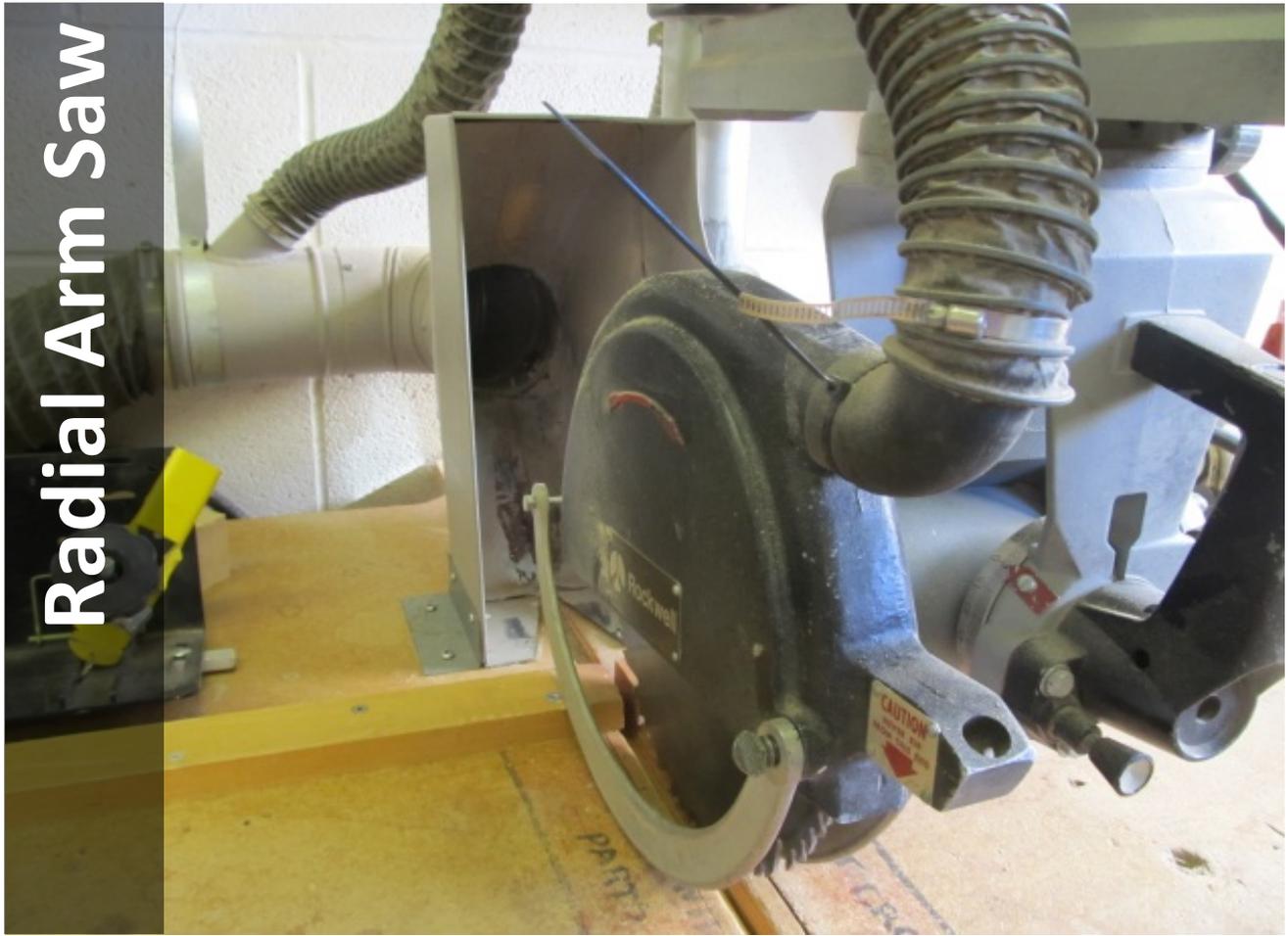
5.0 Document Control

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Radial Arm Saw



Machine	Radial Arm Saw (12" Radial Saw) Model: EX-700
Location	Wood Studio
Manufacturer	Name: Rockwell/Delta
Applicable Legislation	CAN/CSA-Z432-04 "Safeguarding of Machinery" CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians
 DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!	

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		✓
Respirator		
Ear Plugs / Ear Muffs	✓	
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron		
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Do you know where the emergency stop feature is located? The saw's attachment plug may be used to disable the machine in the event of an emergency.			
3	Are guards in place and in good working order?			
4	Is the saw secure and level?			
5	Is the area around the saw free of slip/trip hazards?			
6	Has the debris/material from previous operations been removed?			
7	Are tools/wrenches removed from the table?			
8	Is the splitter and anti-kickback device in place?			
9	Is the saw free of defects and damage?			
10	Does the track arm move freely without obstruction?			
11	Is the dust collection system turned on?			
12	Is the stock free of loose knots, flaws, nails, or other foreign objects?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Make sure the power cord is kept away from heat, oil, sharp edges or moving parts and does not pose a trip hazard.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Ensure you know where the emergency stops for your equipment are prior to use. The plug can also be used to disable the saw.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before sawing		
	Picture 1	<ul style="list-style-type: none"> a) Put on your PPE. b) Note the desired area(s) to be sawed; mark the area(s). c) Place the material on the table against the fence. d) Clamp small pieces of wood to the fence. e) Loosen the track lock (see picture 1) and pull out the index knob to adjust the track arm according to the type of cut.
	Picture 2	<ul style="list-style-type: none"> f) For cross cutting set it to 90 degree (see picture 2). g) Extreme caution must be exercised to avoid cuts from the blade's sharp teeth. h) Caution: Despite the presences of blade guards, the blade still pose a "residual risks". Be cautious when using the radial arm.
2. Sawing		
	Picture 3	<ul style="list-style-type: none"> a) Position slightly to one side of the work piece (the side would depend on whether you're right-handed or left-handed) for better visibility. b) Keep proper footing and balance. c) Turn on the saw and let it reach its full speed. d) Hold the operating handle with the dominant hand and slowly slide the blade outward (see picture 3). e) Do not slide the blade all the way out (beyond the positive stop limit), just far enough to complete the cut.
	Picture 4	<ul style="list-style-type: none"> f) Never force the saw to cut faster than it is capable. Pulling/pushing it too fast can cause the saw to bind, damaging the motor and stock. g) If the workpiece becomes trapped inside the guard, turn the saw off and remove the piece. h) After the cut is finished return the saw back to its resting position at the back of the saw table (see picture 4). i) Do not take your hand away from the operating handle until the cutting head is behind the fence. j) If anything unexpected occurs, immediately disable the equipment by using the emergency switch and/or removing the attachment plug.

3. After sawing

- | | |
|--|--|
| | <ul style="list-style-type: none">a) Turn the machine off, and wait for the blade to stop before touching the cut-off piece.b) Reinstall the blade guard on completion of task (if the guard was supported out of the protective position for specific cuts).c) Clean the Radial Arm saw area upon completion of the task. Never clean the machine while it is in motion, first disconnect.d) Remove the chips from the surrounding area with a brush, Never by hand.e) Sweep the floor surrounding the saw. |
|--|--|

4.1. Lockout/Tagout Procedure

LOCKOUT TAGOUT PROCEDURE				
Equipment Identification	Equipment Name/Description:		Radial Arm Saw	
	Equipment Location:		Wood Studio Room 115	
	Total # of Energy Isolation Devices/locks:		1	
<p>NOTICE  BEFORE SERVICING THIS MACHINE , NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE</p>				
				
Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	Breaker box	Plastic breaker adaptor	Stop machine, flip breaker switch to the off position, install plastic breaker adaptor, lock, and tag.	Attempt to start machine, visually confirm it will not start.
<p> IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR</p>				
* LOTO Procedure # A-xxxxxxx			Revision #:	
Approved by:			Date:	

4.2 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of frays and damage.	
Ensure that guards are in place and in good working order.	
Ensure that the saw is secure.	
Ensure that the area around the machine is free of slip/trip hazards.	
Ensure that flammable/combustible materials are removed from the immediate work area.	
Ensure that debris/material from previous operations has been removed.	
Inspect the blade for any broken teeth and other damage-replace if necessary- use gloves.	
Ensure that the blade is tracking in the correct position.	
WEEKLY	✓
Inspect the power cord and plug for damage.	
Inspect the on/off switch of the machine.	
Ensure that the saw is free of defects-replace if necessary.	
Clean and lubricate the saw.	
MONTHLY	✓
Lubricate the machine as required.	
ANNUALLY	✓
Check that all nuts, bolts and other fixings are properly tightened.	
Inspect entire machine and perform maintenance as required.	

5.0 Document Control

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Rotary Tool



Machine	Handheld Dremel Rotary Tool Model: 275T6/285T6
Location	Wood Studio – 108/115
Manufacturer	Name: Dremel Division of Robert Bosch Tool Corporation Address: P.O.Box 1468 Racine, Wisconsin 53401 Tel: 1-800-437-3635
Applicable Legislation	CAN/CSA-Z432-04 Safeguarding of Machinery
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians
 DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!	

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		✓
Respirator		
Ear Plugs / Ear Muffs	✓	
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  	✓	
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Is the rotary tool secure with no loose parts?			
3	Is the work area free of slip/trip hazards?			
4	Is the shaft lock button in good condition?			
5	Is the appropriate rotary tool accessory selected for the task? (drill bits, abrasive wheels, wire brushes, polishers, engraving cutter, router bits and attachments.			
6	Is the rotary tool accessory secured?			
7	Is the rotary tool accessory free of defects, damage and debris?			
8	Has the speed of the rotary tool been adjusted?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

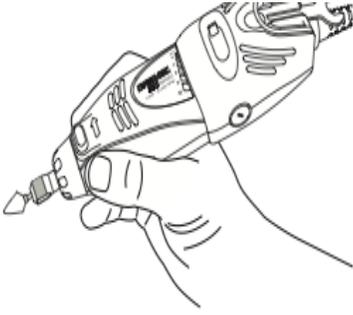
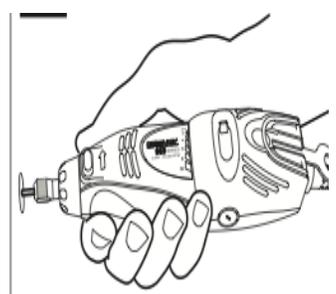
- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- a) Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- b) If you have any questions or uncertainties, please ask your studio technician before use.
- c) Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- d) Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- e) Do not remove or render machine guarding ineffective in any way.
- f) Ensure the work area is both well-lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before using the grinder		
	Picture 1	<ul style="list-style-type: none"> a) Put on your PPE b) Secure the work piece with a clamp/vise-never work free hand as this can lead to loss of control and injury. c) Attach the rotary tool accessory onto the tool (see picture 1). Ensure the accessory is tightened properly (insert the bit as far as possible. Use a wrench or chuck to further tighten the piece. d) Set the speed of the tool. Refer to the manufacture manual to determine the proper speed based on the material being worked and the type of accessory being used. e) Before using the tool on a work piece, test run it for a minute to ensure it is not unbalanced or vibrating and is at the right speed for the job. f) If using the flex shaft, attach the collar of the flex-shaft to the rotary tool (see picture). Ensure the rotary tool stand is available to hold the rotary tool at proper height. g) Place the power cord out of the way of the tool.
2. Using the grinder		
	Picture 2	<ul style="list-style-type: none"> a) Do not point the tool toward yourself or anyone else and keep hands away from the rotation area to prevent injury. b) Hold the tool firmly by the insulated gripping handle-grip it like a pencil between your thumb and forefinger (see picture 2) for best control in close work. Hold it in a “golf grip” (see picture 3) method when using the rotary tool for grinding a flat surface or using cutoff wheel. c) Do not cover the air vents, this will block the airflow and cause the motor to over heat. d) Ensure that the rotary accessory is not contacting the work piece before the switch is turned on. This can cause kickback to occur, resulting in injury.
	Picture 3	<ul style="list-style-type: none"> e) Turn the rotary tool on (pull the lock-lever toward you and then pull the switch lever) without the rotary tool accessory making contact with the work piece-allow the rotary tool to attain full speed. f) Apply the rotary tool to the work piece in a slow and steady manner. Apply light pressure on the tool-excessive pressure may cause overloading of the motor, resulting in injury. g) Do not push on the tool. Allow the accessory to do the work. h) Make series of passes with the tool until you reach the desired result. i) Keep hands as far away from rotating parts as possible and never allow your hands to pass directly over the spinning bit. j) Do not overwork the tool for long periods-it could get very hot-Allow cooling periods.
3. After using the grinder		
		<ul style="list-style-type: none"> a) Release the switch lever to stop the rotary tool. b) Disconnect when not in use-never leave the tool running unattended. c) Remove the accessory tool and put away the tool. d) Clean the tool-NEVER clean while it is in motion. e) Sweep the floor surrounding the work area.

4.0 Maintenance and Repair

4.1 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of frays and damage.	
Ensure that the grinder is secure with no loose parts.	
Ensure the lock-off lever in good condition (this prevents the switch lever from being accidentally pulled).	
Ensure the rotary tool is secured.	
Ensure the rotary tool accessory is free of defects, damage and debris. Replace if necessary.	
Ensure that the power cords are free of frays and damage.	
Ensure that the grinder is secure with no loose parts.	
WEEKLY	✓
Inspect the rotary tool brushes. If the brush is less than 1/8" long and the end surface of the brush rough or pitted they should be replaced. Replacing the brushes can improve speed and eliminate excessive noise and loss of power.	
Lubricate the flex shaft after every 25-30 hours of use	
MONTHLY	✓
Clean and lubricate the tool.	
Clean the tool with compressed air to remove dust and debris built up from small openings.	
ANNUALLY	✓
Inspect entire tool and perform maintenance as required.	

5.0 Document Control

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Revisions Approved By:	Date of Approval:

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Scroll Saw



Machine	Scroll Saw (16") Model: SJ401
Location	Wood studio and ED/ID
Manufacturer	Name: Makita Corporation Address: 1950 Forbes Street, Whitby, Ontario L1N 7B7 Telephone Number: 1(800)263-3734
Applicable Legislation	1. CAN/CSA-Z432-04 "Safeguarding of Machinery" 2. CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		✓
Respirator		
Ear Plugs / Ear Muffs	✓	
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  		
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Do you know where the emergency stop feature is located ?			
2	Is the blade guard and the hold down foot rest in place and in good working order?			
3	Is the area around the scroll saw free of slip/trip hazards?			
4	Has the debris/material from previous operations been removed?			
5	Is the blade and teeth free of defects?			
6	Are you using the proper size and type of blade? – use narrow blades for intricate cuts and wide blade for straight and large curve cuts.			
7	Does the work piece have a flat surface facing down, or a suitable support is being used?			
8	Are all adjusting and locking handles tight?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

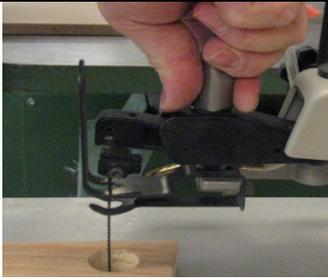
3.1 General Safety Guidelines

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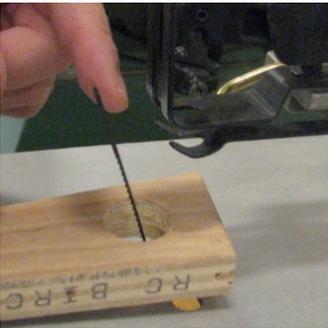
- a) Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- b) If you have any questions or uncertainties, please ask your studio technician before use.
- c) Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- d) Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- e) Do not remove or render machine guarding ineffective in any way.
- f) Ensure the work area is both well-lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

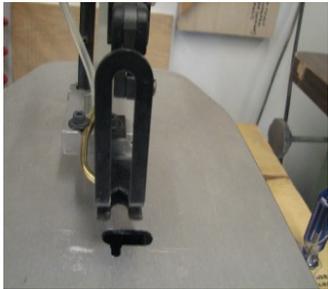
1. Before sawing



Picture 1



Picture 2



Picture 3



Picture 4

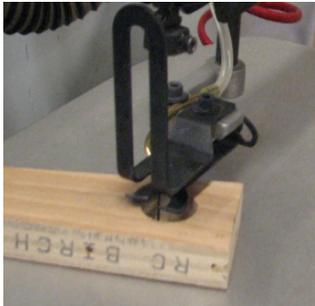
- a) Put on your PPE
- b) Mark the desired area(s) to be sawed.
- c) If required, tilt the table and lock it at desired angle.
- d) When making interior cuts. Remove the blade from the upper blade holder and slide the material into place (see picture 2).
- e) There is a hold down foot and blade guard on the upper blade guide (see picture 3) – adjust the foot so that it just rest on top of the workpiece (see picture 4).
- f) Ensure it is locked in position or the workpiece may lift and/or move out of position during operation.
- g) **Extreme caution** must be exercised to avoid cuts from the blade's sharp teeth.
- h) Use clamp, jigs or fixtures to hold small pieces.
- i) **Be cautious** of the pinch point and laceration hazards from the saw blade.

2. Sawing



Picture 5

- a) **It is unsafe to cut wood that is unsupported by the table and should never be attempted.**
- b) Start the scroll saw by pulling on the switch and rotate the knob to the desired speed (see picture 5).
- c) **Do not** feed work until the blade has reached full speed.
- d) Feed the material into the blade in a smooth, controlled manner.
- e) Ease up on sawing pressure as the saw starts to break through the material.
- f) **Do not** force materials into the blade faster than it can cut; it is very easy to break the blade.
- g) If the material gets jammed, turn off the scroll saw and remove the blade from the workpiece.
- h) When cutting curves turn the material slowly so the blade follows without twisting (see picture 6).
- i) If anything unexpected occurs, immediately disable the equipment by switching off the equipment and/or removing the attachment plug.



Picture 6

3. After sawing

- a) Turn off the scroll saw and disconnect when not in use.
- b) The machine continues to spin after being switched off-let the saw stop on its own accord after turning the power off. **NEVER** try to stop the saw with your hand.
- c) Loosen the upper blade holder screws and remove the material.
- d) Remove the chips from the surrounding area with a brush, **NEVER** by hand.
- e) Clean the scroll saw area upon completion of the task-use a rag to clean the blade -careful that the cloth does not hook on the teeth. **NEVER** clean the machine while it is in motion.
- f) Sweep the floor surrounding the Band Saw.

4.1. Lockout/Tagout (LOTO) Procedure:

LOCKOUT TAGOUT PROCEDURE				
Equipment Identification	Equipment Name/Description:		Scroll Saw (Makita)	
	Equipment Location:		Wood Studio Room 108	
	Total # of Energy Isolation Devices/locks:		1	
 <p>BEFORE SERVICING THIS MACHINE, NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE</p>				
				
Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	End of cord	Plastic clamshell and padlock	Stop machine, unplug cord, and install clamshell, lock, and tag.	Attempt to start machine, visually confirm it will not start.
 <p>IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR</p>				
LOTO Procedure # A-xxxxxxx			Revision #:	
Approved by:			Date:	

4.2 Inspection Checklist

DAILY	✓
Ensure that the power cords are free of frays and damage.	
Ensure that blade guard and the hold down foot is in good working order.	
Ensure that the area around the saw is free of slip/trip hazards.	
Ensure that the sawdust blower tube is in place and working.	
Check the blade for any visual defect. Do not run your hands against the blade teeth.	
Ensure that the speed setting knob is in good working condition and not loose.	
Ensure that all adjusting and locking handles are tight.	
Ensure that the saw blade teeth point downwards towards the table.	
Ensure that the blade is properly tensioned and tracked. Don't overly-tension the blade, which may result in blade breakage and injury mid operation.	
Ensure that the blade movement left/right/forward/back is kept to a minimum.	
Ensure that the blade is centered.	
Ensure that the amount of blade exposed is kept to a minimum.	
WEEKLY	✓
Ensure that the blade tension lever is free of defects.	
Ensure that all adjusting knobs are working properly.	
Lubricate the saw with a Teflon-based lubricant.	
Inspect the motor for any damage.	
MONTHLY	✓
Lubricate the arm bearings whenever there is squeak coming from the bearing.	
Lubricate all moving non-painted parts with a Teflon based lubricant.	
Protect the table and fence bar by coating with wax, if the machine is not in constant use.	
Ensure that the blade is free of defects-replace if necessary-use gloves.	
ANNUALLY	✓
Remove sawdust by attaching a vacuum hook up into the sawdust ejection port.	
Inspect entire machine and perform maintenance as required.	

5.0 Document Control

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Consultation:	Date:
<ul style="list-style-type: none"> ▪ Studio Managers and Technicians ▪ Program Chairs and faculty 	January-April 2013 April – May, 2013
Approval By: VPFA and VPA	Date: September, 2013
Review and Revisions Made By:	Date Revised:
Changes Made (<i>indicate sections</i>):	
Revisions Approved By:	Date of Approval:

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Oscillating Spindle Sander



Machine	Oscillating Spindle Sander Model: 15020-M1
Location	Wood Studio - 108/115
Manufacturer	Name: General International Corporation Ltd. Address: 8360 Cham-d'Eau, Montreal (Quebec), Canada H1P 1Y3. Telephone Number: (514) 326-1161
Applicable Legislation	1. CAN/CSA-Z432-04 "Safeguarding of Machinery" 2. CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		✓
Respirator		
Ear Plugs / Ear Muffs		✓
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  		✓
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Do you know where the emergency stop feature is located (button/switch/cord)? The spindle sander has an attachment plug and receptacle (plug/socket combination) and so it may be used to disable the machine in the event of an emergency.			
2	Are guards in place and in good working order?			
3	Is the area around the sander free of slip/trip hazards?			
4	Has the debris/material from previous operations been removed?			
5	Are all tools/wrenches removed from the table?			
6	Is the dust collection system on?			
7	Is the spindle stable, hand-tight and properly positioned?			
8	Is the spindle sander free of hazards? Ensure the spindle surfaces are free of defects.			
9	Are you using the correct spindle size for material being sanded? (Ensure it is smaller than the curve of the workpiece to be sanded).			
10	Is the table set to the correct angle?			
11	Does the spindle move freely without obstruction?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well-lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

		1. Before sanding
	Picture 1	<ul style="list-style-type: none"> a) Put on your PPEs. Never wear gloves while using a spindle sander; they may become caught in the rotating mechanism and cause severe injury. b) Select the correct spindle (see picture 1) for the material being sanded. c) Select an insert plate that comes closest to the spindle without touching it. d) Clean the sanding arbor and the main shaft hole before inserting the sanding arbor into the shaft. e) Tilt the table to the correct angle (see picture 2) for the material being sanded (if at any angle other than 90 degrees, position the workpiece over the center line as shown on the table surface). Don't force the table if not tilting properly. f) To prevent movement mid-operation, lock the table with the hand nut for setting angles and lock the tilting gear shaft.
	Picture 2	
		2. Sanding
	Picture 2	<ul style="list-style-type: none"> a) Turn on the power. b) Place the material into position. c) The spindle (see picture 3) rotates fast, - be cautious. d) Wait for the spindle to reach full speed before sanding e) Don't force a work piece on the spindle. Gently ease the material into the spindle. f) Hold the material firmly and move the material from side to side around the spindle to obtain a smooth even surface. g) Do not use your hands to sand small objects that can't be gripped properly. h) Use a backing board if sanding thin work pieces or hold it in a jig or holding device to prevent injuries. i) Firmly hold the work piece with both hands; keep fingers as far away from the spindle as possible. j) Present the work piece to the spindle while holding the work piece flat on the table (see picture 4), to prevent throwing of the work piece off the wheel causing injury. k) Don't apply too much pressure-apply only enough pressure so that the sanding spindle removes the material. l) Always keep the material moving in slow, even strokes. m) Never try to stop the spindle sander with your hand and don't touch the work piece immediately. n) Once finished, remove the stock from the table. o) Never leave the machine running unattended. p) If anything unexpected occurs, immediately disable the equipment by switching off the equipment and/or removing the attachment plug.
	Picture 3	

3. After sanding

- | | |
|--|---|
| | <ul style="list-style-type: none">a) Turn off the power and disconnect the sander when not in use.b) Clean the sander and the workspace. NEVER clean the machine while it is in motion.c) Readjust bench to 90 degrees.d) Sweep the floor surrounding the sander. |
|--|---|

4.1. Lockout/Tagout (LOTO) Procedure:

LOCKOUT TAGOUT PROCEDURE				
Equipment Identification	Equipment Name/Description:		Spindle Sander (General Mfg. Co. Ltd)	
	Equipment Location:		Wood Studio Room 115	
	Total # of Energy Isolation Devices/locks:		1	
 <p>BEFORE SERVICING THIS MACHINE, NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE</p>				
				
Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	End of cord	Plastic clamshell and padlock	Stop machine, unplug cord, and install clamshell, lock, and tag.	Attempt to start machine, visually confirm it will not start.
 <p>IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR</p>				
LOTO Procedure # A-xxxxxxx			Revision #:	
Approved by:			Date:	

4.2 Inspection Checklist

DAILY	✓
Ensure power cords are free of frays and damage.	
Ensure guards are in place and in good working order.	
Ensure the area around the sander free of slip/trip hazards.	
Ensure the debris/material from previous operations has been removed.	
Ensure all tools/wrenches are removed from the table.	
Ensure that the spindle surfaces are free of defects; ensure it is not showing backing, curling, buckling, nicks or cuts on the surface or edge, or damage due to ceasing or poor handling-replace if necessary.	
Ensure that the spindle is stable, properly positioned and hand-tight.	
Ensure that the table is set to a 90 degree angle.	
Clean the machine and attachments.	
Clean tapered sleeves and tapered sockets to protect spindle sleeves. Replace the sleeve on the spindle when it becomes worn.	
Clean the dust chute to avoid major accumulation of dust.	
WEEKLY	✓
Lightly apply wax paste on the table surface to prevent rusting.	
Ensure that the gearbox has proper oil level (approx. ¼" up on sight glass).	
Clean all rust protected surfaces with a mild solvent or kerosene.	
Inspect the wire and plug for any damage. Ensure there are no bends or crimps in the cord. Remove and repair damaged electrical equipment.	
MONTHLY	✓
Lubricate the machine as required. Apply a small amount of grease to the table tilting screw	
ANNUALLY	✓
Check that all nuts, bolts and other fixings are properly tightened.	
Inspect entire machine and perform maintenance as required.	

5.0 Document Control

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Table Saw



Machine	Table Saw (with Unifence Saw Guide) Model: 350
Location	Wood Studio
Manufacturer	Name: General MFG. CO. LTD. Address: 835 Cherrier Street, Drummondville, Quebec, Canada Tel: (819) 472-1161
Applicable Legislation	CAN/CSA-Z432-04 "Safeguarding of Machinery" CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		✓
Respirator		
Ear Plugs / Ear Muffs	✓	
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  		✓
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Do you know where the emergency stop feature is located? The saw's attachment plug may be used to disable the machine in the event of an emergency.			
3	Are guards in place and in good working order?			
4	Is the saw secure and level?			
5	Is the area around the saw free of slip/trip hazards?			
6	Has the debris/material from previous operations been removed?			
7	Are tools/wrenches removed from the table?			
8	Is the blade height and angle set using the hand wheels?			
9	Does the fence move smoothly and is it free of defects?			
10	Does the fence move smoothly and is it free of defects?			
11	Is the fence locking handle operating correctly (clamping the fence to the guide rail).			
12	Are you using the miter gauge (fitted with an auxiliary wood facing) or the wooden guide if crosscutting?			
13	Is the work piece dry, with a flat surface facing down, or a suitable support is being used?			
14	Is the work piece free of nails, foreign objects and debris?			
15	If cutting long stock, does it not interfere with other people in the area?			
16	Is the dust collection system turned on?			
	Comments/Corrective Action:			

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Notify the studio technician/class assistant or faculty that you are operating this machine.
- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Make sure the power cord is kept away from heat, oil, sharp edges or moving parts and does not pose a trip hazard.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Ensure you know where the emergency stops for your equipment are prior to use. The plug can also be used to disable the saw.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before sawing		
	Picture 1	
	Picture 2	<ul style="list-style-type: none"> a) Put on your PPE. b) Position and lock the fence along the guide rail (see picture 1) to reduce guesswork and to assist in parallel/repetitive cuts; adjust the fence for the thickness of the cut. c) Raise, lower or change the angle of the blade using the blade raising hand wheels (see picture 2). The blade should be set only slightly higher (3mm at most) than the height of the work piece to prevent serious injury if your hand slips.
	Picture 3	<ul style="list-style-type: none"> d) Use the ruller on the fence guide to indicate witness line to view the distance between the fence and the blade. e) If the fence is not parallel to the miter gage slots (see picture 3), adjust it so that it is. f) When ripping, and the stock exceeds 3ft, place a work support at the saw rear (to prevent the work piece falling off the table and possibly causing injury). g) Position your body so that it is NOT in line with the blade. This is to avoid being injured by flying sawdust, woodchips or the work piece. h) Ensure that the blade is free before turning on the power.
	Picture 4	<ul style="list-style-type: none"> i) Turn on the power to the table saw and allow it to reach full speed before feeding the work piece. j) There is a clear plastic guard and splitter available (see picture 5) -ensure this is placed on the table saw. k) When using the saw without the guard or using dado blade for certain cuts-Get help from the instructor! l) Extreme caution must be exercised to avoid cuts from the blade's sharp teeth (see picture 4).
	Picture 5	

2. Ripping (Lengthwise cuts, through a board)



Picture 6

- a) Place the work piece flat onto the table-it is unsafe to cut wood that is unsupported by the table and could result in the stock being thrown by the blade, resulting in injury.
- b) Use a push stick/holding fixture for narrow ripping cuts and/ or pieces less than 4" wide (see picture 6), except when it interferes with the guard, to prevent contacting the blade.
- c) Keep the work flat on the table and push it along the fence, against the direction of rotation of the blade (see picture 7).



Picture 7

- d) Maintain firm control and forward movement until the cut is complete (material is past the back of the blade)-do not reach over the blade to retain the cut-off stock.
- e) If the material gets jammed, turn off the machine and notify the studio technician-do not use again until rectified.
- f) Once the cut is complete, turn off the power.
- g) Leave the cut-off stock on the table and do not retain it until the blade has come to a complete stop.
- h)

3. Crosscutting



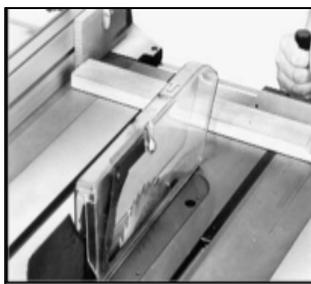
Picture 8

- a) Place the work piece on top of the wooden guide (see picture 8).
- b) If using the miter gauge, set it in a groove and ensure it is fitted with an auxiliary wood face for added safety (see picture 9).
- c) Clamp the work piece to the guide/miter gauge where possible, eliminating the tendency for the work piece to creep away or toward the blade-this is safer as the hands are not required to come near the blade.



Picture 9

- d) Using the handle, advance both slowly towards the blade (see picture 10).
- e) Ensure the clearance between the blade guard and the workpiece is not more than 0.25 inches.
- f) Never hold the free piece being cut.
- g) Be careful when bevel cutting (blade tilted) – use the groove that does not cause interference of your hand or miter gauge with the blade guards. Once the wood is cut, give it a little sideways shift to move it slightly away from the blade.
- h) Never pick up any cut-off work while the saw is running.



Picture 10

- i) Never use the fence as a cut off gage when crosscutting a number of pieces the same length. Instead, a block of wood can be clamped to the fence (see picture 10) and used as a stop block (it is important that this block always be positioned in front of the blade as shown) – this block allows the cut-off piece to move freely along the table without binding between the fence and the blade, therefore reducing the possibility of kickback and injury.

4. After sawing



Picture 11

- a) Turn off the table saw and disconnect when not in use.
- b) Allow the saw to stop on its own accord after turning the power off. NEVER try to stop the saw with your hand and don't touch the sawed wood immediately, as it is hot.
- c) Do not leave the saw running or connected when not in use.
- d) For safety, lower the blade when not in use (see picture 11).
- e) Remove the chips from the surrounding area with a brush, NEVER by hand.
- f) Clean the table saw and area upon completion of the task- NEVER clean the machine while it is in motion.
- g) Sweep the floor surrounding the table saw.

4.1. Lockout/Tagout Procedure

LOCKOUT TAGOUT PROCEDURE				
Equipment Identification	Equipment Name/Description:		Table Saw	
	Equipment Location:		Wood Studio Room 115	
	Total # of Energy Isolation Devices/locks:		1	
NOTICE  BEFORE SERVICING THIS MACHINE , NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE				
				
Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	Local Switch	Padlock	Stop machine, pull switch down to off position, and install lock and tag.	Attempt to start machine, visually confirm it will not start.
 IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR				
* LOTO Procedure # A-xxxxxxx			Revision #:	
Approved by:			Date:	

4.2 Inspection Checklist

DAILY	✓
Ensure that guards are in place and in good working order.	
Ensure that the saw is secure.	
Ensure that the area around the saw is free of slip/trip hazards.	
Ensure that flammable/combustible materials are removed from the immediate work area.	
Ensure that debris/material from previous operations has been removed.	
Ensure that the tabletop is smooth and polished.	
Ensure that the blade and teeth are sharp, properly set and free of defects and debris so that they will cut freely without having to force the work piece.	
Ensure that the blade height and angle hand wheels are moving smoothly and free of damage.	
Ensure that the fence is moving smoothly and free of damage.	
Ensure that the fence locking handle is operating correctly (clamping the fence to the guide rail).	
Ensure that the fence is positioned parallel to the blade and miter gauge slots, 90 degrees to the table (and level with the table) and is secure.	
Ensure that the dust collection system is operating sufficiently.	
Ensure the spreader and anti-kickback mechanism are functional at all times.	
WEEKLY	✓
Ensure that the table insert is level with the table.	
Ensure that the blade is square and that all blade adjustment knobs are tightened and locked.	
Lubricate and clean the moving surfaces with a Teflon based lubricant.	
MONTHLY	✓
Protect the table and fence with a wax coat.	
ANNUALLY	✓
Inspect entire machine and perform maintenance as required.	

5.0 Document Control

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Thickness Planer



Machine	Thickness Planer (20" Single Surface Planer) Model: 30-360HC M3
Location	Wood Shop - 108/115
Manufacturer	Name: General International Address: 8360, Champ-d'Eau, Montreal (Quebec) Canada H1P 1Y3 Tel: (514) 326-1161
Applicable Legislation	1. CAN/CSA-Z432-04 "Safeguarding of Machinery" 2. CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask		✓
Respirator		
Ear Plugs / Ear Muffs	✓	
Gloves		
Closed-Toe Foot Wear (no heels)	✓	
Lab Coat / Protective Apron  		
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Do you know where the emergency stop feature is located (button/switch/cord)?			
2	Is the area around the planer free of slip/trip hazards?			
3	Has the debris/material from previous operations been removed?			
4	Is the cut depth adjusted (maximum cutting depth is 1/8")?			
5	Is the dust collection system turned on?			
6	Is the stock being used no less than 9" (210mm) in length?			
7	Is the wood stock free of knots and splits?			
8	Is the direction of the wood grain determined?			
9	Is the material no thicker than 8", shorter than 3/16" or wider than 20", if planning?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- a) Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- b) If you have any questions or uncertainties, please ask your studio technician before use.
- c) Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- d) Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- e) Do not remove or render machine guarding ineffective in any way.
- f) Ensure the work area is both well-lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

		1. Before using the Planer
	Picture 1	<ol style="list-style-type: none"> a) Put on appropriate PPE's. b) Select appropriate size wood to be planned. c) Use the depth measurement scale when setting the depth. d) Set the depth of the cut with the hand-wheel (see picture 1); raise or lower the bed as needed. e) Set the desired speed for the feed rate based on the particular wood (i.e. hardwoods need to be fed in at a slower rate than soft woods). f) Turn on the dust collection system. g) Stand to one side. Do not stand in line or behind the material that is being fed in case of kickback. h) Be cautious of the pinch point
		2. When using the surface planer
	Picture 2	<ol style="list-style-type: none"> a) Turn the switch on and allow the motor to reach full speed. b) Place the workpiece on the in-feed table with the "faced" side down and the surface to be planed facing up (see picture 2). c) Be cautious of the drawing in hazards of the drive system. d) The workpiece should be fed through the planer in the direction of the grain in the wood. e) Slowly slide the workpiece forward until the in-feed roller grips the board. f) Do not push the board into the planer; allow the feed roller to automatically feed the board through the planer. g) Never attempt to back your workpiece out or re-position once it is in the control of the automatic feed rollers.
	Picture 3	<ol style="list-style-type: none"> h) Keep hands as far away as possible from the in-feed and out-feed table and never allow your hands to pass into the planer. i) Step to the rear of the machine and recover the planed board on the out-feed table. Do not pull the board as it is coming out (see picture 3). j) Do not feed more than one material at a time. k) Make the desired passes through the planer as needed. l) With each pass, adjust the depth of the cut by about 1/16inch (1/4 turn on the hand-wheel). m) If anything unexpected occurs, immediately disable the equipment by using the emergency switch
		3. After using planer
		<ol style="list-style-type: none"> a) Turn off the planer b) Wait until the knives stop turning - Never leave the machine unattended until completely stopped. c) Lower the bed and clean any debris from the bed of the planer. NEVER clean the machine while it is in motion. d) Use a brush to remove debris. e) Sweep the floor surrounding the planer.

4.0 Maintenance and Repair

4.1. Lockout/Tagout (LOTO) Procedure:

LOCKOUT TAGOUT PROCEDURE	
Equipment Identification	Equipment Name/Description: Thickness Planer
	Equipment Location: Wood Studio Room 115
	Total # of Energy Isolation Devices/locks: 1



**BEFORE SERVICING THIS MACHINE, NOTIFY AFFECTED PERSONNEL.
ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL
PERFORM LOCKOUT TAGOUT PROCEDURE**



Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	Remote junction	Lockout hasp	Stop machine, flip breaker switch or pull disconnect arm to the off position, align the holes and install lockout hasp	Attempt to start machine, visually confirm it will not start.



IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR

LOTO Procedure # A-xxxxxxx	Revision #:
Approved by:	Date:

4.2 Inspection Checklist

DAILY	✓
Ensure that the power cord and the plug are free of frays and damage.	
Inspect the ON/OFF switch –replace the damage switch immediately.	
Ensure that the area around the planer is free of slip/trip hazards.	
Ensure that debris/material from previous operations has been removed.	
Ensure that all tools/wrenches are removed from the table.	
Ensure that the cutter heads are free of defects and kept sharp.	
Inspect the cutter head knives(blade) for any damage-sharpen when necessary	
Ensure the table in-feed rollers are in good working condition.	
WEEKLY	✓
Apply grease to the drive gear, chain and elevation screws.	
Wax the in-feed and out-feed table.	
Lubricate all connecting points.	
Clean the cutter head and the feed roller with a brush.	
Clean the dust collection system to prevent build-up, respiratory and fire hazards.	
MONTHLY	✓
Inspect the belt for any wear or damage-replace when necessary.	
Ensure that the cutter heads are free of defects and sharp-replace if necessary.	
ANNUALLY	✓
Check that all nuts, bolts and other fixings are properly tightened. Tighten the set screws in the cutter block.	
Inspect entire machine and perform maintenance as required.	

5.0 Document Control

Any changes or updates to this document must be recorded and maintained.

Initially Created By: The Office of Safety and Risk Management	Date: September 2011
Consultation: <ul style="list-style-type: none"> ▪ Studio Managers and Technicians ▪ Program Chairs and faculty 	Date: January-April 2013 April – May, 2013
Approval By: VPFA and VPA	Date: September, 2013
Review and Revisions Made By:	Date Revised:
Changes Made (<i>indicate sections</i>):	
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Thickness Sander



Machine	Thickness Sander (24" Horizontal Double Drum Sander) Model:15-250 M1
Location	Wood Studio – 108/115
Manufacturer	Name: General International Corporation Ltd. Address: 8360, Champ-d'Eau, Montreal (Quebec) Canada H1P 1Y3 Telephone:(514) 326-1161
Applicable Legislation	1. CAN/CSA-Z432-04 "Safeguarding of Machinery" 2. CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians



DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)	REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields  	✓	
Dust Mask 		✓
Respirator 		
Ear Plugs / Ear Muffs 		✓
Gloves 		
Closed-Toe Foot Wear (no heels) 	✓	
Lab Coat / Protective Apron  	✓	
Other		



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Are the power cords free of frays and damage?			
2	Do you know where the emergency stop feature is located (button/switch/cord)? The sander has an attachment plug and receptacle (plug/socket combination) and so it may be used to disable the machine in the event of an emergency			
3	Is the area around the sander free of slip/trip hazards?			
4	Are the sanding drums in place and free of defects? Ensure the drum cover is in place.			
5	Is the sanding depth adjusted (minimum-1/4", maximum-5")?			
6	Does the conveyor belt move freely without obstruction?			
7	Has the conveyor speed been adjusted (3 to 20 FPM)?			
8	Is the stock, no less than 5"(127mm) in length and no wider than 24"(610mm)?			
9	Is the wood stock free of knots and splits?			
10	Is the dust collection system turned on?			
11	Is the out-feed table in place, If sanding workpiece of 4" or more in length?			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- If you have any questions or uncertainties, please ask your studio technician before use.
- Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Do not remove or render machine guarding ineffective in any way.
- Ensure the work area is both well-lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before using the Sander		
	Picture 1	<ol style="list-style-type: none"> a) Put on your PPE b) Select the appropriate size wood for sanding. c) Use the depth gauge on the front of the machine as a reference to determine sanding thickness. d) Set the height of the conveyor table with the hand-wheel (see picture 1); raise or lower the bed as needed. e) Adjust the speed knob to set the desired conveyor speed based on the particular wood (i.e. sanding wider boards should be done at a slower speed than narrow boards). f) Turn on the dust collection system. g) Stand to one side. Do not stand in line or behind the material that is being fed in case of kickback. h) Ensure proper out-feed support is available.
2. When using the Sander		
	Picture 2	<ol style="list-style-type: none"> a) Turn on the machine and allow the motor to reach full speed. b) Place the workpiece in the center of the conveyor belt c) Ensure there is enough clearance for the workpiece and it does not rub or catch on either side of the machine. d) Ensure the side to be sanded is facing up. e) Do not push the board into the sander; allow the conveyor belt to automatically feed the board through the sander. f) Never back your workpiece or re-position once it is in machine. g) Keep hands as far away as possible from the rotating drum and conveyor belt (see picture 2).
	Picture 3	<ol style="list-style-type: none"> h) Step to the rear of the machine and recover the sanded board from the out-feed (see picture 3). Do not pull the board as it is coming out. i) Do not feed more than one material at a time. j) Make the desired passes through the sander as needed. k) With each pass, adjust the table height not more than 1/8 of a turn (crank handle) at a time. l) If anything unexpected occurs, immediately disable the equipment by switching off the equipment and/or removing the attachment plug.
3. After using Sander		
		<ol style="list-style-type: none"> a) Once finished, remove the work from the sander. b) Press the "OFF" button to stop the rotation of the drums. c) Press the "OFF" switch to stop the conveyor belt. d) Wait until the conveyor stops turning - Never leave the machine unattended until completely stopped. e) Lower the table and clean any debris from the conveyor. NEVER clean the machine while it is in motion. f) Use a brush to remove debris. g) Sweep the floor surrounding the sander.

4.1. Lockout/Tagout (LOTO) Procedure:

LOCKOUT TAGOUT PROCEDURE		
Equipment Identification	Equipment Name/Description:	Thickness Sander
	Equipment Location:	Wood Studio Room 115
	Total # of Energy Isolation Devices/locks:	1



**BEFORE SERVICING THIS MACHINE, NOTIFY AFFECTED PERSONNEL.
ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL
PERFORM LOCKOUT TAGOUT PROCEDURE**



Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	End of cord	Plastic clamshell and padlock	Stop machine, unplug cord, and install clamshell, lock, and tag.	Attempt to start machine, visually confirm it will not start.



IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR

LOTO Procedure # A-xxxxxxx	Revision #:
Approved by:	Date:

4.2 Inspection Checklist

DAILY	✓
Ensure that the power cord and the plug are free of frays and damage.	
Inspect the ON/OFF switch –replace the damage switch immediately.	
Ensure that the sander is in a secure place.	
Ensure that the area around the sander is free of slip/trip hazards.	
Ensure that debris/material from previous operations has been removed.	
Ensure the drum cover/guard is in place.	
Ensure that the sanding belts are properly installed on the drums-they should be tight, with no space between the belt edges.	
Ensure the rear drum is lower than the front drum-if not than adjust it appropriately.	
Ensure the conveyor belt is in good working condition.	
Ensure the safety switch is in good working order.	
Make sure the dust collector is properly attached?	
Apply grease to the drive gear, chain and elevation screws.	
WEEKLY	✓
Ensure the sanding belts are not worn out- replace when worn out.	
Lubricate all connecting points.	
Ensure the drums and conveyor belt are kept clean.	
Clean the dust collection system to prevent build-up, respiratory and fire hazards.	
Inspect the pressure roller for any wear. Adjust the height or tension to increase the amount of pressure.	
MONTHLY	✓
Make sure lock knobs and handles are tight.	
Clean the sand paper with a belt dresser to extend its life span.	
Check the drums for scrolling, signs of wear, or looseness that might cause tracking problems. Tighten or replace parts as required.	
ANNUALLY	✓
Check that all nuts, bolts and other fixings are properly tightened.	
Check the motor assembly and ensure that it is running properly.	
Inspect entire machine and perform maintenance as required.	

5.0 Document Control

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Wood Lathe



Machine	Wood Lathe Model: 260
Location	Wood Studio - 108/115
Manufacturer	Name: General Mfg. Corporation Ltd. Address: 835, Cherrier St. Drummondville, Québec, H9P 2Y4 Tel: (819) 472-1161
Applicable Legislation	1. CAN/CSA-Z432-04 "Safeguarding of Machinery" 2. CSA Z460-05 "Control of hazardous energy-lockout and other methods"
Sources	Manufacturer's Manual Safe Work BC, CCOHS, and IAPA resources REA Engineer Specifications Studio Technicians
 DO NOT USE THIS MACHINE UNLESS YOU ARE TRAINED IN ITS SAFE USE!	

1.0 Personal Protective Equipment (PPE) Requirements

PERSONAL PROTECTIVE EQUIPMENT (PPE)		REQUIRED	RECOMMENDED
Face Shield / Safety Glasses with side shields	 	✓	
Dust Mask			✓
Respirator			
Ear Plugs / Ear Muffs		✓	
Gloves			
Closed-Toe Foot Wear (no heels)		✓	
Lab Coat / Protective Apron	 		✓
Other			



ALWAYS WEAR THE REQUIRED PPE WHEN USING THIS MACHINE!

2.0 Pre-use Inspection Checklist

	Check	Y	N	N/A
1	Do you know where the emergency stop feature is located (button/switch/cord)? The lathe has an attachment plug and receptacle (plug/socket combination) and so it may be used to disable the machine in the event of an emergency.			
2	Are guards in place and in good working order?			
3	Is the area around the lathe free of slip/trip hazards?			
4	Has the debris/material from previous operations been removed?			
5	Are all tools/wrenches removed from the lathe bed?			
6	Are the cutting tools (eg. Chisel) sharp and free of defects? Sharpen if required.			
7	Is the live/tail centerpiece securely in the tailstock?			
8	Is the tool rest properly installed and set for use?			
9	Does the tailstock and the tool rest move freely along the lathe bed without any obstruction?			
10	Is the distance between the tool rest and the workpiece no greater than 0.25 inches? (Ensure it is not greater than 0.25 inches).			
	Comments/Corrective Action:			

3.0 Safe Operating Procedure (SOP)

This procedure is outlined as follows:

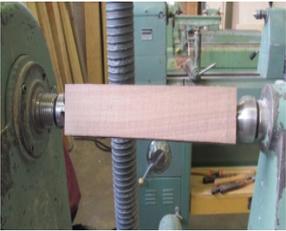
- General Safety Guidelines
- Equipment Specific Safety Operating Procedure

3.1 General Safety Guidelines

Before using the machine, perform the following general safety checks:

- a) Make sure you understand all of the instructional material before operating this equipment. Failure to follow safety instruction and warnings may result in serious personal injury, fire or property damage.
- b) If you have any questions or uncertainties, please ask your studio technician before use.
- c) Long hair, scarves, loose clothing, jewellery and ties pose an entanglement hazard. Please make sure these are all constrained prior to operating the equipment.
- d) Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- e) Do not remove or render machine guarding ineffective in any way.
- f) Ensure the work area is both well-lit and organized.

3.2 Equipment Specific Safe Operating Procedure (SOP)

1. Before operating the lathe		
	Picture 1	<ul style="list-style-type: none"> a) Select the appropriate wood piece (spindle, bowl, or cylindrical shapes) to be turned. b) Make relief cuts into the wood stock (in the front center and back center of the wood) prior to using the wood lathe. c) Make sure the tailstock is locked into position and properly supported. d) Select correct speed (RPM), depending on the machine and material. See the manufacturers Instruction manual for more detail. Note: The motor must be running to change the variable speed. e) Ensure you are using the correct lathe tool for the work piece and that it is sharp. f) Turn on the dust collection system.
	Picture 2	
2. Securing the work piece		
	Picture 3	<ul style="list-style-type: none"> a) Remove the spur center from the lathe and drive it into the end of the workpiece. b) Use the mallet (see picture 3) to sink the spur into the wood. c) Mount the spur center with workpiece in the headstock of the lathe. d) Turn the hand wheel of the tailstock so the point of the tail center enters into the wood piece. e) Ensure the workpiece is secured between the spur and tail center (see picture 4). f) A block of wood that is inadequately secured can fly off with enough force to inflict serious personal injury. g) Adjust the height and position of the tool rest (see picture 6) as needed. It should be 1/8 to 1/4 inch away from the piece being turned. h) Do not use the lathe without the tool rest. i) Turn the workpiece by hand to ensure it turns without any obstruction and does not hit the tool rest.
	Picture 4	
	Picture 5	
	Picture 6	

3. Operating the Lathe



Picture 7



Picture 8

- a) Stand in front of the lathe and set the cutting tool on the tool rest.
- b) Hold the front of the cutting tool with your dominant hand and the back of the cutting tool with your subordinate hand (see picture 7).
- c) Ensure the cutting tool stays on the dominant side of your body and does not touch the rotating workpiece
- d) Turn on the power to the machine.
- e) Keep your hands steady and have a controlled grip of the cutter – avoid putting your hand too close to the spinning workpiece
- f) Gently probe the tip of the cutter into the spinning block of wood.
- g) **Do not** force the cutting tool into wood piece in an attempt to speed the process.
- h) Use as little pressure as possible, too much pressure will destroy the workpiece and put the operator's hands and fingers at risk should the cutting tool get pulled from the grip of the operator.
- i) Move the cutting tool back and forth across the face of wood. Start work at one end of the workpiece and work your way to the side.
- j) Start off with slow speed and gradually increase the speed. Adjust the speed by turning the hand wheel located in the front of the lathe (see picture 8).
- k) **Do not** place your hand on the material to slow down the speed or to check the smoothness of the finish.
- l) **Never** leave the lathe unattended when in motion.
- m) If anything unexpected occurs, immediately disable the equipment by switching off the equipment

2. After Operating the Lathe

- a) Turn off the lathe.
- b) Wait until the workpiece has come to a complete stop and then remove the work from the wood lathe.
- c) Never leave the machine unattended until completely stopped.
- d) Clean the lathe and the workspace. **NEVER** clean the machine while it is in motion.
- e) Remove all accumulated debris on the lathe with a brush.
- f) Sweep the floor surrounding the lathe.

4.0 Maintenance and Repair

4.1. Lockout/Tagout (LOTO) Procedure:

LOCKOUT TAGOUT PROCEDURE				
Equipment Identification	Equipment Name/Description:		Wood Lathe (General Mfg. Co. Ltd)	
	Equipment Location:		Wood Studio Room 115	
	Total # of Energy Isolation Devices/locks:		1	
 <p>BEFORE SERVICING THIS MACHINE, NOTIFY AFFECTED PERSONNEL. ONLY PROPERLY TRAINED AND AUTHORIZED PERSONNEL SHALL PERFORM LOCKOUT TAGOUT PROCEDURE</p>				
				
Energy Source	Location	Type of EID/lock to be used	Steps for locking & tagging	Verification Procedure
Electrical	End of cord	Plastic clamshell and padlock	Stop machine, unplug cord, and install clamshell, lock, and tag.	Attempt to start machine, visually confirm it will not start.
 <p>IF SYSTEM CANNOT BE LOCKED OUT OR IF SYSTEM FAILS VERIFICATION PROCEDURE, STOP & CONTACT YOUR SUPERVISOR</p>				
LOTO Procedure # A-xxxxxxx			Revision #:	
Approved by:			Date:	

4.2 Inspection Checklist

DAILY	✓
Ensure the power cords free of frays and damage.	
Ensure the lathe is secured and does not cause vibration.	
Ensure the area around the lathe is free of slip/trip hazards.	
Ensure the cutting tools are free of defects. Dull cutting tools can catch in the work and kick back. Sharpen as necessary.	
Ensure the tool rest moves freely along the lathe bed.	
The hand wheels are used to move the mechanisms. Ensure they do not become loose-if so, tighten so it moves freely	
WEEKLY	✓
Ensure the headstock guard is in place.	
Inspect the lathe for any defects.	
MONTHLY	✓
When necessary, remove the spindle to change the belt in the headstock.	
Ensure the headstock has a cover to prevent access to the belt and pulley.	
Adjust the belt tension of the motor-ensure the belt is not too tight as tight belt causes excessive wear on the pulleys.	
ANNUALLY	✓
Lubricate the sliding surfaces. Refer to Lubrication points in the manufacturers Instruction Manual.	
Inspect entire machine and perform maintenance as required.	

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**Chemical Specific
Safe Operating Procedures**

Wood Studio

Office of Safety & Risk Management
Rosalie Sharpe Pavilion
115 McCaul
Room 2210



Chemical Matrix - Wood Studio

Product	Form / Phase	Key Composition	Key Hazardous Properties							Storage Location			Recommended Personal Protective Equipment			Disposal		
			Flash Point F	Strong Acid/Base	Strong Oxidizer / Reducer	Compressed Gas	Flammable/Explosive	Combustible	Potentially Sensitizing	High Toxicity	Flammable Cabinet	Non-Flam Cabinet	Non-Flam Cupboard / Shelving / Counter	Face Chemical Safety Glasses	Body Flame Resistant Shop Coat Chemical Splash Apron	Hands Chemical Protective Gloves per MSDS Nitrile Gloves	Non-Haz Disposal	Haz Waste Disposal
"Not Javex" - unknown	Liquid									X		X	X		X		X	
"Oil from grease gun"	Liquid									X		X	X		X		X	
10W30	Liquid	Motor oil								X		X			X		X	
AJAX CLEANSER	Powder	Trichlorocyanuric acid		X							X				X	X	X	X
Boeshield T-9 Liquid	Aerosol	Petroleum distillate and mineral oil	120			X		X		X		X	X		X		X	
Borax	Powder									X		X			X	X		
Bostik Spray Coats	Aerosol	Isobutane, isooctane, acetone, propane				X				X		X			X		X	
Champion Spraypaint	Aerosol	Mix of solvents, mostly toluene, assumed flammable (FP arbitrarily listed here as -5)	-5			X	X			X		X	X		X		X	
Cold Core										X								X
Danish Oil - Natural	Liquid	Petroluem Naphtha	41				X			X		X	X		X		X	
Danish Oil - Walnut	Liquid	Petroluem Naphtha	41				X			X		X	X		X		X	
East System 1032	Liquid	Epoxy resins in organic solvents, assume flammable					X			X		X	X		X		X	
East System 834	Liquid	Epoxy resins in organic solvents, assume flammable					X			X		X	X		X		X	
Edwards No. 45 Oil	Liquid	polyalphaolefin	>507								X						X	
Elmer's spray adhesive	Aerosol	Acetone and variety of other VOCs with resin	-156			X				X					X		X	
Exterior paint											X	X		X		X		X
India Ink - Dr Ph Martins	Liquid	Carbon black, urea, acrylic polymer, polyvinyl alcohol, water									X	X			X		X	
India Ink - Premo	Liquid	Carbon black, urea, acrylic polymer, polyvinyl alcohol, water									X	X			X		X	
Javex Bleach	Liquid	Chlorine aqueous			X					X		X			X			X
Krylon Clear Glaze	Aerosol	Resin in toluene, acetone solution with propane / butane propellant	<0			X	X			X		X	X		X		X	
Krylon Grey Glaze	Aerosol	Resin in toluene, acetone solution with propane / butane propellant	<0			X	X			X		X	X		X		X	
Liberon Wax	Solid	70% naphtha and wax	100				X			X		X	X		X		X	
LIQUID WRENCH PENETRATION OIL (Liquid)	Liquid	Naphtha, petroleum distillates, other solvents	137							X		X	X		X		X	
Loctite 242 Threadlocker	Paste	Polyglycol dimethacrylate, polyglycol oleate, cumene hydroperoxide, propylene glycol	>200						X		X	X	X		X		X	
Methanol (Methyl hydrate)	Liquid		54				X			X		X	X		X		X	
Min Wax Varathane	Liquid	Polyurethane?								X		X	X		X		X	
Minwax Wood Finish	Liquid	Mineral spirits and naphtha with resin	100				X			X		X	X		X		X	
Moore Spec Paints	Liquid	Either an acrylic or alkyd paint									X	X			X		X	
NGR Stain Reducer	Liquid	Typically light alcohols and ketones - assume flammable	1				X			X		X	X		X		X	
NGR Stains - various colours	Liquid	Dye in solution of isopropanol, isobutyl acetate, ethanol, dimethyl ketone, isobutyl alcohol, etc.	0				X			X		X	X		X		X	
Orange Wax	Liquid									X		X			X		X	
Orginal Wood Finish (linseed oil)	Liquid	Possibly beeswax, turpentine, and boiled linseed oil	95				X		X	X		X	X		X		X	
Painters Tools	Liquid	Alkyd water based paint									X						X	
Parrafin wax	Solid										X						X	
Paste floor wax	Solid										X				X	X		
Plastikote Spray	Aerosol	Naptha, propane, stoddart solvent, butane, toluene					X			X		X	X		X		X	
Poly Super Strippa Paint Stripper	Liquid	Naphtha, dichloromethane, methanol - assume flammable	100				X			X		X	X		X		X	
Polyfilla	Paste										X				X	X		
Polyurethane	Liquid									X					X		X	
Premier Paint	Liquid	Alkyd water based paint									X	X			X		X	
Professional Easy Off Oven and Grill Cleaner	Aerosol	Sodium hydroxide, glycol ether, n-butane propellant		X			X			X		X	X		X		X	X
Propane	Gas						X	X		X		X	X		X		X	
Pumice	Powder	Volcanic rock									X				X	X		

Chemical Matrix - Wood Studio

Product	Form / Phase	Key Composition	Key Hazardous Properties							Storage Location		Recommended Personal Protective Equipment			Disposal				
			Flash Point F	Strong Acid/Base	Strong Oxidizer / Reducer	Compressed Gas	Flammable/Explosive	Combustible	Potentially Sensitizing	High Toxicity	Flammable Cabinet	Non-Flam Cabinet	Non-Flam Cupboard / Shelving / Counter	Face	Body	Hands	Non-Haz Disposal	Haz Waste Disposal	Sanitary Drain
												Chemical Safety Glasses	Flame Resistant Shop Coat	Chemical Splash Apron	Chemical Protective Gloves per MSDS	Nitrile Gloves			
Radisson - Gesso	Liquid	Acrylic									X								X
Shellac flakes	Powder	Resinous bug secretion									X					X	X		
Silvo Multipurpose Metal Polish	Liquid	Quartz and amorphous silica in isopropanol	71							X		X				X			X
Solucryl	Liquid	Propylene glycol and carbon black in water									X	X							X
Starrett M-1 All Purpose Lubricant	Liquid	Hydrotreated petroleum distillate	162					X		X		X	X		X				X
Stokoderm	Liquid	fatty oil and water emulsion									X					X			X
STP Silicone Spray	Aerosol	Food grade silicone spray				X					X					X			X
Sunflower oil	Liquid										X					X	X		
Super Lube Spray	Aerosol	80% n-heptane with various other VOCs	25			X	X									X			X
Tamiya colour	Liquid	Acrylic paint									X					X			X
Tremclad Gloss Black	Aerosol	40% acetone, 40% LPG, 10% xylene, 10% butyl acetate, 0.1 - 1% crystalline silica	<0			X	X			X		X	X		X				X
Tremclad Real Orange	Aerosol	40% acetone, 40% LPG, 10% xylene, 10% butyl acetate, 0.1 - 1% crystalline silica	<0			X	X			X		X	X		X				X
Tremclad Red Oxide Primer	Aerosol	40% acetone, 40% LPG, 10% xylene, 10% butyl acetate, 0.1 - 1% crystalline silica	<0			X	X			X		X	X		X				X
Tremclad Rust paint	Aerosol	40% acetone, 40% LPG, 10% xylene, 10% butyl acetate, 0.1 - 1% crystalline silica	<0			X	X			X		X	X		X				X
Tung Oil	Liquid	Tung seed oil							X		X	X	X			X			X
Turpentine	Liquid		95				X			X		X	X		X				X
Varathane	Liquid	Polyurethane?								X		X	X		X				X
Vinegar	Liquid										X								X
WD40	Liquid	50% Aliphatic hydrocarbon, 25% petroleum base oil	122					X	X	X		X	X		X				X
WD-40 Aerosol	Aerosol	50% Aliphatic hydrocarbon, 25% petroleum base oil, CO2 propellant	122						X	X		X	X		X				X
West System Epoxy Resins 105	Liquid	Bisphenol A and benzyl alcohol	>200						X		X	X			X				X
West System Epoxy Resins 206	Liquid	Epichlorohydrin bisphenol A system	>200								X	X			X				X
West System Epoxy Resins 403 Microfibres	Powder	Cotton and amorphous silica (filler)									X	X			X				X
White glue	Liquid	PVA white glue									X								X
White shellac	Liquid	Shellac in methanol	54				X			X		X		X	X				X
Windex	Liquid	Water, isopropanol, ethylene glycol									X					X	X		

1. Screening procedures for Introducing new chemicals OCAD U

Purpose for this Procedure:

1. To define chemical products that are restricted and cannot be introduced to the facility without explicit permission of the Office of Safety and Risk Management.
2. To the extent practicable, avoid introducing to the facility any new products or chemicals that are:
 - a) highly hazardous to health, safety, the environment, or the property, or
 - b) require significant effort to maintain regulatory compliance.
3. To ensure that we comply with all applicable regulatory requirements and good safety practices in relation to any newly introduced products or chemicals.
4. Describe the information gathering activities and compliance actions that must be taken prior to or in connection with introducing and procuring chemicals and products.

Restricted Substances List:

1. No "new product" containing any substance on the OCAD U Restricted Substance List shall be purchased or brought onto OCAD U property unless prior written approval is obtained from the Office of Safety and Risk Management. A "new product" is one that was not listed on the OCAD U Master Chemical Inventory, as of December 2011.
2. "OCAD U Restricted Substances" are substances that are subject to significant health, safety or environmental regulatory compliance obligations, and / or may present significant hazards to health, safety or the environment. Approval to purchase or bring onto the property an OCAD U Restricted Substance shall only be granted if the compliance requirements identified in the list are complied with.
3. It is the responsibility of the "new product user" (i.e. the person wishing to obtain the new product, or his / her supervisor or manager) to ensure compliance with the requirements shown on the list.
4. For assistance and guidance in complying with any OCAD U Restricted Substances requirements, contact the Office of Safety and Risk Management.

List of OCAD U Restricted Substances

Restricted Substance	Reason for Restriction	Not Permitted on OCAD U Property	Designated Substance Assessment	Emergency Response Plan	Substance-Specific Safety Plan	Specific Regulatory Training	City of Toronto Pollution Prevention Plan
1,1,2,2-tetrachloroethane	City of Toronto Appendix 1 substance						√
1,2-dichlorobenzene	City of Toronto Appendix 1 substance						√
1,4-dichlorobenzene	City of Toronto Appendix 1 substance						√
3,3'-dichlorobenzidine	City of Toronto Appendix 1 substance						√
acrylonitrile (monomer)	Designated substance		√		√		
aldrin/dieldrin	City of Toronto Appendix 1 substance						√
alkylphenol ethoxylates	City of Toronto Appendix 1 substance						√
alkylphenols	City of Toronto Appendix 1 substance						√
ammonia (as a compressed gas)	Inherent hazard			√	√		
an ozone depleting substance (see Prohibited Substances list)	Federal and provincial environmental law prohibitions	√					
any radioisotope (unless contained within a consumer product)	Inherent hazard and regulatory control requirements	√					
arsenic as a salt or in solution	OHSA designated substance, and City of Toronto Appendix 1 substance		√		√		√
asbestos	OHSA designated substance		√				
benzene	OHSA designated substance, and City of Toronto Appendix 1 substance		√		√		√
bis (2-ethylhexyl) phthalate	City of Toronto Appendix 1 substance						√
carbon tetrachloride	Inherent hazard				√		
chlordane	City of Toronto Appendix 1 substance						√
chlorine (as a compressed gas)	Inherent hazard			√	√		
chloroform	City of Toronto Appendix 1 substance						√
chromium (in a metal, salt or in solution)	City of Toronto Appendix 1 substance				√		√
cis-1,2-dichloroethylene	City of Toronto Appendix 1 substance						√
cobalt	City of Toronto Appendix 1 substance						√
copper	City of Toronto Appendix 1 substance						√
DDT	City of Toronto Appendix 1 substance						√
di-n-butyl phthalate	City of Toronto Appendix 1 substance						√
ethyl benzene	City of Toronto Appendix 1 substance						√
ethylene oxide	OHSA designated substance		√		√		
hexachlorobenzene	City of Toronto Appendix 1 substance						√
hexachlorocyclohexane	City of Toronto Appendix 1 substance						√
hydrofluoric acid	Inherent hazard				√		
hydrogen (as a compressed gas)	Inherent hazard, Ontario Fire Code requirements				√	√	
isocyanates (any type of monomer)	OHSA designated substance		√		√		
lead	OHSA designated substance, and City of Toronto Appendix 1 substance		√		√		√

Restricted Substance	Reason for Restriction	Not Permitted on OCAD U Property	Designated Substance Assessment	Emergency Response Plan	Substance-Specific Safety Plan	Specific Regulatory Training	City of Toronto Pollution Prevention Plan
manganese (as a salt or in solution)	Toxicity				√		
mercury	OHSA designated substance, and City of Toronto Appendix 1 substance		√		√		√
methylene chloride	City of Toronto Appendix 1 substance						√
mirex	City of Toronto Appendix 1 substance						√
molybdenum	City of Toronto Appendix 1 substance						√
nickel (as a salt or in solution)	City of Toronto Appendix 1 substance				√		√
polychlorinated biphenyl	City of Toronto Appendix 1 substance, provincial and federal environmental law prohibitions	√					√
pentachlorophenol	City of Toronto Appendix 1 substance						√
picric acid	Inherent hazard	√					
propane	Inherent hazard, Ontario Fire Code requirements				√	√	√
selenium	City of Toronto Appendix 1 substance						√
silica (any crystalline form)	OHSA designated substance		√		√		
styrene (monomer)	Inherent hazard				√		
tetrachloroethylene	City of Toronto Appendix 1 substance						√
toluene	City of Toronto Appendix 1 substance						√
xylene	City of Toronto Appendix 1 substance						√
trans-1,3-dichloropropylene	City of Toronto Appendix 1 substance						√
trinitrotoluene ("TNT")	Inherent hazard	√					
vermiculite	Potential asbestos content, resultant OHSA regulatory controls	√					
vinyl chloride (monomer)	OHSA designated substance		√		√		
zinc	City of Toronto Appendix 1 substance						√

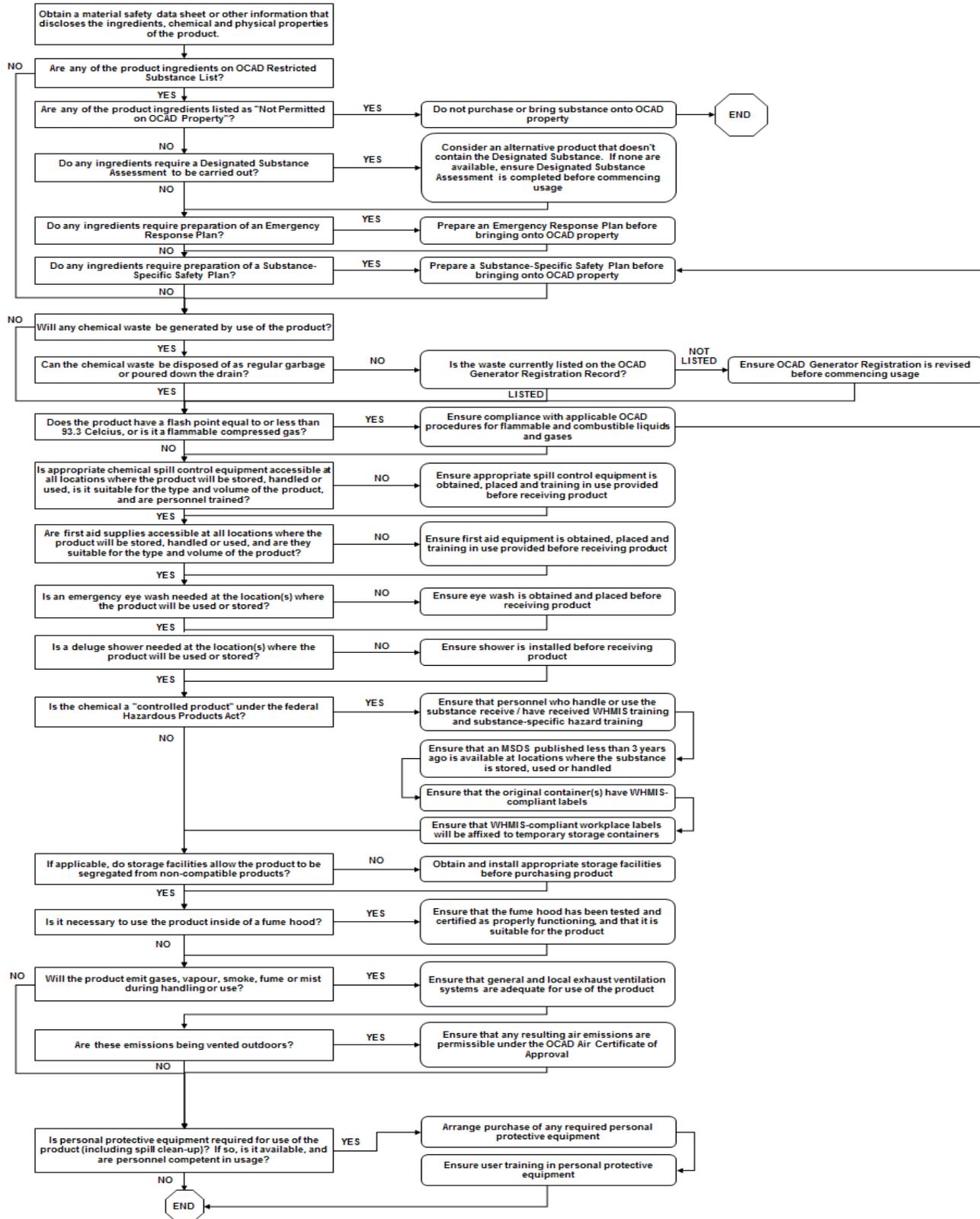
List of OCAD U Prohibited Substances

Environmental Protection Act Ozone Depleting Substances	
EPA, 718/94 and 717/94 Class 1 ODS	CFC-11, also known as fluorotrichloromethane
EPA, 718/94 and 717/94 Class 1 ODS	CFC-12, also known as dichlorodifluoromethane
718/94 and 717/94 Class 1 ODS	CFC-13, also known as chlorotrifluoromethane
718/94 and 717/94 Class 1 ODS	CFC-111, also known as pentachlorofluoroethane
718/94 and 717/94 Class 1 ODS	CFC-112, also known as tetrachlorodifluoroethane
EPA, 718/94 and 717/94 Class 1 ODS	CFC-113, also known as trichlorotrifluoroethane
EPA, 718/94 and 717/94 Class 1 ODS	CFC-114, also known as dichlorotetrafluoroethane
EPA, 718/94 and 717/94 Class 1 ODS	CFC-115, also known as monochloropentafluoroethane
718/94 and 717/94 Class 1 ODS	CFC-211, also known as fluoroheptachloropropane
718/94 and 717/94 Class 1 ODS	CFC-212, also known as difluorohexachloropropane
718/94 and 717/94 Class 1 ODS	CFC-213, also known as trifluoropentachloropropane
718/94 and 717/94 Class 1 ODS	CFC-214, also known as tetrafluorotetrachloropropane
718/94 and 717/94 Class 1 ODS	CFC-215, also known as pentafluorotrchloropropane
718/94 and 717/94 Class 1 ODS	CFC-216, also known as hexafluorodichloropropane
718/94 and 717/94 Class 1 ODS	CFC-217, also known as heptafluorochloropropane
EPA, 718/94 and 717/94 Class 1 ODS	Halon-1211, also known as bromochlorodifluoromethane
EPA, 718/94 and 717/94 Class 1 ODS	Halon-1301, also known as bromotrifluoromethane
EPA, 718/94 and 717/94 Class 1 ODS	Halon-2402, also known as dibromotetrafluoroethane
718/94 and 717/94 Class 1 ODS	carbon tetrachloride
718/94 and 717/94 Class 1 ODS	methyl chloroform, also known as 1,1,1 trichloroethane
718/94 and 717/94 Class 1 ODS	any hydrobromofluorocarbon
718/94 and 717/94 Class 1 ODS	any isomer of any 718/94 or 717/93 Class 1 ODS
718/94 Class 1 ODS	any hydrochlorofluorocarbon
717/94 Class 2 ODS	HCFC-21, also known as dichlorofluoromethane
717/94 Class 2 ODS	HCFC-22, also known as chlorodifluoromethane
717/94 Class 2 ODS	HCFC-31, also known as chlorofluoromethane
717/94 Class 2 ODS	HCFC-121, also known as tetrachlorofluoroethane
717/94 Class 2 ODS	HCFC-122, also known as trichlorodifluoroethane
717/94 Class 2 ODS	HCFC-123, also known as dichlorotrifluoroethane
717/94 Class 2 ODS	HCFC-124, also known as chlorotetrafluoroethane
717/94 Class 2 ODS	HCFC-131, also known as trichlorofluoroethane
717/94 Class 2 ODS	HCFC-132, also known as dichlorodifluoroethane
717/94 Class 2 ODS	HCFC-133, also known as chlorotrifluoroethane
717/94 Class 2 ODS	HCFC-141, also known as dichlorofluoroethane
717/94 Class 2 ODS	HCFC-142, also known as chlorodifluoroethane
717/94 Class 2 ODS	HCFC-151, also known as chlorofluoroethane
717/94 Class 2 ODS	HCFC-221, also known as hexachlorofluoropropane
717/94 Class 2 ODS	HCFC-222, also known as pentachlorodifluoropropane
717/94 Class 2 ODS	HCFC-223, also known as tetrachlorotrifluoropropane
717/94 Class 2 ODS	HCFC-224, also known as trichlorotetrafluoropropane
717/94 Class 2 ODS	HCFC-226, also known as chlorohexafluoropropane
717/94 Class 2 ODS	HCFC-231, also known as pentachlorofluoropropane
717/94 Class 2 ODS	HCFC-232, also known as tetrachlorodifluoropropane
717/94 Class 2 ODS	HCFC-233, also known as trichlorotrifluoropropane
717/94 Class 2 ODS	HCFC-234, also known as dichlorotetrafluoropropane
717/94 Class 2 ODS	HCFC-235, also known as chloropentafluoropropane

Environmental Protection Act Ozone Depleting Substances

717/94 Class 2 ODS	HCFC-241, also known as tetrachlorofluoropropane
717/94 Class 2 ODS	HCFC-242, also known as trichlorodifluoropropane
717/94 Class 2 ODS	HCFC-243, also known as dichlorotrifluoropropane
717/94 Class 2 ODS	HCFC-244, also known as chlorotetrafluoropropane
717/94 Class 2 ODS	HCFC-251, also known as trichlorofluoropropane
717/94 Class 2 ODS	HCFC-252, also known as dichlorodifluoropropane
717/94 Class 2 ODS	HCFC-253, also known as chlorotrifluoropropane
717/94 Class 2 ODS	HCFC-261, also known as dichlorofluoropropane
717/94 Class 2 ODS	HCFC-262, also known as chlorodifluoropropane
717/94 Class 2 ODS	HCFC-271, also known as chlorofluoropropane
717/94 Class 2 ODS	all other hydrochlorofluorocarbons not specifically named as 717/94 Class 2 ODS, other than HCFC-225, also known as dichloropentafluoropropane
717/94 Class 2 ODS	all mixtures containing any 717/94 Class 2 ODS
717/94 Class 3 ODS	HCFC-225, also known as dichloropentafluoropropane

Pre-Introduction Screening and Compliance Procedure Flow Diagram:



User Record Keeping Checklist

A checklist must be filled in to serve as a record of having completed all of the activities required by the screening and compliance process. The completed checklist must be provided to the responsible manager for verification and signature. The verified and signed checklist must be provided to the Office of Safety and Risk Management for final review and record keeping purposes.

User Record Keeping Checklist			
OCAD U Department / User:			
New Product / Substance:			
Proposed Use:			
Estimated Quantity to be Kept on Hand:			
Estimated Quantity Used per Month:			
Name of verifying Manager:			
Signature of verifying Manager:		Date:	
Step	Action	Completed On	Initials
1	Obtain a material safety data sheet or other information that discloses the ingredients, chemical and physical properties of the substance.		
2	Are any of the product ingredients on OCAD Restricted Substance List?		
3	Are any of the product ingredients listed as "Not Permitted on OCAD Property"?		
4	Are there any "designated substances" listed as ingredients in the product? If so, designated substance assessment must be carried out in conjunction with purchase.		
5	Do any ingredients require preparation of an Emergency Response Plan?		
6	Do any ingredients require preparation of a Substance-Specific Safety Plan?		
7	Will use of the product result in any chemical waste being generated?		
8	Can wastes be disposed of via the drain or in regular garbage, or are the wastes considered to be hazardous waste?		
9	If the waste is a hazardous waste, is that waste currently on the OCAD Generator Registration Record? If not, the Generator Registration Record must be updated.		
10	Is the chemical a liquid with a flash point under 93.3 Celsius, or a flammable compressed gas?		
11	Have provisions been made to ensure compliance with applicable OCAD procedures relating to the use of flammable and combustible liquids (as applicable)?		
12	Have provisions been made to ensure compliance with applicable OCAD procedures relating to flammable compressed gases?		
13	Is existing available spill response equipment at the site of storage and use adequate for the chemical type and volume?		
14	Are existing first aid supplies at the site of storage and use adequate for the chemical type and volume?		

Step	Action	Completed On	Initials
15	Do the locations of chemical storage and use require emergency eye wash and deluge shower? If so, are they present?		
16	Is the chemical a "controlled product" under the federal Hazardous Products Act?		
17	If the product is a "controlled product", have users received WHMIS training in the chemical?		
18	If the product is a "controlled product", ensure that a material safety data sheet published less than 3 years ago will be available at locations where the substance is stored, used or handled.		
19	If the product is a "controlled product", ensure that the original container(s) have WHMIS-compliant labels.		
20	If the product is a "controlled product", ensure that WHMIS-compliant workplace labels will be available if necessary to affix to temporary storage containers		
21	Where on-site will the chemical be stored by the user? Will it be stored beside other chemicals? Are the chemicals with which it will be stored compatible with the new chemical?		
22	Is the chemical one that can only be used inside a fume hood? Is one present? Has it been tested / certified to be functioning properly?		
24	If the chemical will emit gases, vapour, smoke, fume or mist during handling or use, how are these emissions being contained and vented outdoors?		
25	If any emitted gases, vapour, smoke, fume or mist is being released to the indoor atmosphere, is the current general ventilation system a suitable and adequate control measure?		
26	If the chemical will emit gases, vapour, smoke, fume or mist, does the existing OCAD Air Certificate of Approval cover these emissions?		
27	What personal protective equipment is required to be worn by users? Is it available and have users been trained in proper use?		
28	Who will be designated as having ultimate responsibility for compliance with safety requirements relating to the chemical?		

Screening Guidance Notes (corresponds with the table on the proceeding page)

The following table provides guidance on how to perform the various pre-introduction screening activities.

Screening Guidance Notes		
Step	Action	Guidance
1	Obtain a material safety data sheet or other information that discloses the ingredients, chemical and physical properties of the substance.	A material safety data sheet can be obtained from the proposed supplier / vendor. Many suppliers and vendors also make material safety data sheets available via their web sites.
2	Are any of the product ingredients on OCAD U Restricted Substance List?	Compare the ingredients listed on the material safety data sheet with the list of substances in Restricted Substances list.
3	Are any of the product ingredients listed as "Not Permitted on OCAD U Property"?	If "yes", then the product cannot be purchased.
4	Are there any "designated substances" listed as ingredients in the product? If so, designated substance assessment must be carried out in conjunction with purchase.	Restricted Substances list identifies the 11 "designated substances". It is necessary to perform a "designated substance assessment" if any of these substances are to be used.
5	Do any ingredients require preparation of an Emergency Response Plan?	Restricted Substances list identifies substances for which an Emergency Response Plan is required. Plans are required because of the potential for severe harm associated with spills or releases of these substances. Consult the procedure entitled "Preparation of Emergency Response Plans".
6	Do any ingredients require preparation of a Substance-Specific Safety Plan?	Restricted Substances list identifies substances for which a Substance-Specific Safety Plan is required. Plans are required because of the potential for severe harm associated with spills or releases of these substances.
7	Will use of the product result in any chemical waste being generated?	The product user is responsible for determining whether the use of the product will generate waste materials.
8	Can wastes be disposed of via the drain or in regular garbage, or are the wastes considered to be hazardous waste?	Consult the procedure entitled "Chemical Waste Disposal Procedures" to determine if the waste must be treated as hazardous waste, or whether it can be disposed via the drain or in regular garbage.
9	If the waste is a hazardous waste, is that waste currently on the OCAD U Generator Registration Record? If not, the Generator Registration Record must be updated.	Consult with Safety & Risk Management to determine whether the current Generator Registration Record permits OCAD to dispose of these substances. If not, the Generator Registration Record must be updated as a result of the introduction of the product.

Screening Guidance Notes		
Step	Action	Guidance
10	Is the chemical a liquid with a flash point under 93.3 Celcius, or a flammable compressed gas?	This information can be obtained from the material safety data sheet. If the chemical is a liquid and has a flash point between 37.8 C and 93.3 C, it is classed as a "combustible liquid" under the Ontario Fire Code. If the chemical is a liquid with a flash point less than 37.8 C, it is classed as a "flammable liquid" under the Ontario Fire Code. Substance-specific safety plans must be prepared for flammable or combustible liquids, and for flammable compressed gases, and these classes of substances are also subject to additional OCAD procedures that are intended to ensure compliance with Ontario Fire Code and Ontario Electrical Safety Code requirements.
11	Have provisions been made to ensure compliance with applicable OCAD procedures relating to the use of flammable and combustible liquids (as applicable)?	Determine occupancy classification for the proposed storage and usage locations, and ensure the occupancy complies with requirements of the Ontario Fire Code
12	Have provisions been made to ensure compliance with applicable OCAD procedures relating to flammable compressed gases?	Determine occupancy classification for the proposed storage and usage locations, and ensure the occupancy complies with requirements of the Ontario Fire Code
13	Is existing available spill response equipment at the site of storage and use adequate for the chemical type and volume?	Consult the procedure entitled "Chemical Emergency Response", and compare the requirements listed in Restricted Substances list of that procedure with the equipment that is present and available at or in the vicinity of the sites of planned storage and use.
14	Are existing first aid supplies at the site of storage and use adequate for the chemical type and volume?	Consult the procedure entitled " Chemical Emergency Response ", and compare the requirements listed in Restricted Substances list of that procedure with the equipment that is present and available at or in the vicinity of the sites of planned storage and use.
15	Do the locations of chemical storage and use require emergency eye wash and deluge shower? If so, are they present?	Consult the procedure entitled "Requirements for Chemical Emergency Response", and compare the requirements listed in Restricted Substances list of that procedure with the equipment that is present and available at or in the vicinity of the sites of planned storage and use.

Screening Guidance Notes		
Step	Action	Guidance
16	Is the chemical a "controlled product" under the federal Hazardous Products Act?	"Controlled product" is the term used for pure substances and products that possess chemical, physical, toxic, biohazardous or radioactive characteristics defined by the Controlled Products Regulations under the federal Hazardous Products Act. "Controlled products" are also often referred to as "WHMIS products", since those substances and products are subject to the Ontario Workplace Hazardous Materials Information System Regulation. If the material is a "controlled product", the material safety data sheet may specify the "WHMIS Class" or "Controlled Product Class" for the substance, which will be a number or number+letter combination, but it is not mandatory for this information to be on the material safety data sheet. It is also the case that many products that are not "controlled products" have material safety data sheets, despite the absence of a regulatory requirement for one. A sure way of determining if a substance is a "controlled product" is to examine the label. If it is a "controlled product", then the label will have one or more of the symbols shown in "Screening Procedures Prior to the Introduction of New Chemicals or Products to OCAD University" procedure.
17	If the product is a "controlled product", have users received WHMIS training in the chemical?	See the procedure entitled "Training of Personnel in Chemical Safety" for information on arranging this training.
18	If the product is a "controlled product", ensure that a material safety data sheet published less than 3 years ago will be available at locations where the substance is stored, used or handled.	The most practical way of doing so is to copy the material safety data sheet and place the copy into MSDS binders at the appropriate locations.
19	If the product is a "controlled product", ensure that the original container(s) have WHMIS-compliant labels.	It is a responsibility of the manufacturer and supplier to ensure compliant labelling.
20	If the product is a "controlled product", ensure that WHMIS-compliant workplace labels will be available if necessary to affix to temporary storage containers	See the procedure entitled "Requirements for Material Safety Data Sheet and Labels" for guidance on how to when workplace WHMIS labels are required for temporary containers, and how to prepare same.
21	Where on-site will the chemical be stored by the user? Will it be stored beside other chemicals? Are the chemicals with which it will be stored compatible with the new chemical?	Consult the procedure entitled "Chemical Storage Procedures" for advice on safe storage practices.

Screening Guidance Notes		
Step	Action	Guidance
22	Is the chemical one that can only be used inside a fume hood? Is one present? Has it been tested / certified to be functioning properly?	The determination of whether a chemical must be used in a fume hood is based on factors such as: (1) the potential for release of harmful airborne emissions; (2) potential for harmful spills; (3) potential for runaway reactions; (4) potential for explosions. If you are uncertain as to whether usage should be restricted to a fume hood, contact Studio Management or Studio Technician for assistance. If a fumehood is required and is available, it is necessary to verify that it has been tested and certified as functioning properly. If it has been certified, there will be a sticker affixed to the fume hood at a visible place indicating who performed the testing, when the certification occurred, and when it expires.
24	If the chemical will emit gases, vapour, smoke, fume or mist during handling or use, how are these emissions being contained and vented outdoors?	If the chemical is not being used in a fume hood or with other local exhaust ventilation, then any air emissions will be diluted in the general atmosphere inside the building, and will be partially exhausted and partially recirculated by the general ventilation system.
25	If any emitted gases, vapour, smoke, fume or mist is being released to the indoor atmosphere, is the current general ventilation system a suitable and adequate control measure?	Substances that can be emitted into the general atmosphere of the building without perceptible impacts include carbon dioxide, nitrogen, argon, helium, small quantities of low toxicity organic solvents, and residues from the evaporation of cleaning products. If you are uncertain as to the acceptability of emissions to the general atmosphere inside the building, or the adequacy of the general ventilation in the area where the emissions would occur, contact Facilities Planning & Management for assistance.
26	If the chemical will emit gases, vapour, smoke, fume or mist, does the existing OCAD Air Certificate of Approval cover these emissions?	The Office of Safety and Risk Management will make arrangements to add product on the CoA if required.
27	What personal protective equipment is required to be worn by users? Is it available and have users been trained in proper use?	The material safety data sheet for the product will specify the types of personal protective equipment recommended for use by the manufacturer. If you are concerned that additional or lesser protective measures are appropriate, contact Studio Management for assistance. Verify that proposed users have or will have the necessary protective equipment, and that they have been or will be trained in proper use. For guidance on training, see the procedure entitled "Training of Personnel in Chemical Safety" for information on arranging this training.
28	Who will be designated as having ultimate responsibility for compliance with safety requirements relating to the chemical?	This needs to be determined, and should be documented on the screening form. The person assigned should be competent to exercise the necessary responsibilities.

Verification of Implementation Compliance:

Following receipt of a "new product", the verifying manager shall examine the manner of product storage, handling, use and disposal, to verify the correctness of these practices.

2. Procedure for managing MSDS and labels

Purpose for this Procedure

1. To ensure that personnel have ready access to information for safe use of chemical products.
2. Comply with requirements of the *Workplace Hazardous Materials Information System ("WHMIS") Regulation*.
3. To specify the processes for obtaining and maintaining material safety data sheets ("MSDSs").
4. To provide instruction on when workplace labels are required, and their format and content.

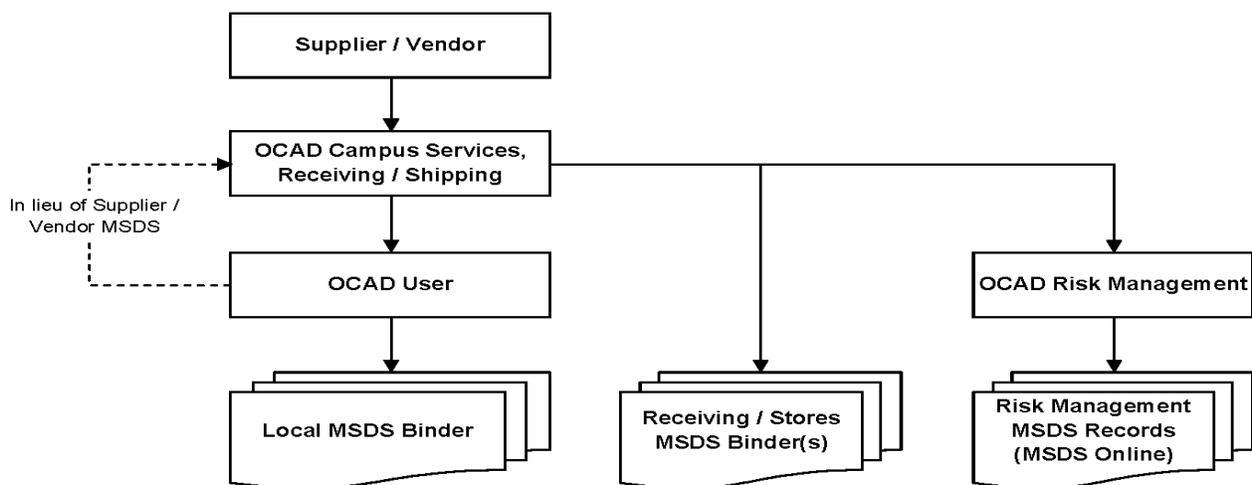
Regulatory Context

1. The *Workplace Hazardous Materials Information System Regulation – made under the Occupational Health and Safety Act*, requires employers to have and make readily available to employees material safety data sheets for all "controlled products".
2. It also requires employers to ensure that "workplace labels" are prepared and applied to any container into which a controlled product is decanted (i.e. a container other than the one in which the product was originally received from the supplier).

1. Material Safety Data Sheets (MSDS):

Obtaining Material Safety Data Sheets with Product Orders

1. OCAD University Purchase Order shall contain an instruction to vendors specifying that (a) a MSDS must accompany each shipment of a chemical substance or product, and (b) OCAD University reserves the right to decline to accept or reject any shipment or delivery of a chemical substance or product that is not accompanied by a MSDS.
2. OCAD University and the Campus Services Department will not release to any user any controlled chemical substance or product that has been received without being accompanied by a MSDS, unless the user provides the Office of Safety and Risk Management a current MSDS for the chemical substance or product prepared by the actual supplier.
3. In cases where a MSDS has not been received with a shipment or delivery, it is acceptable for an OCAD University user to download from the internet the supplier's MSDS for the chemical substance or product, and provide this to Studio Management.
4. The following diagram illustrates the flow of MSDSs:



Process for Maintaining Central Files of Material Safety Data Sheets

1. Studio Management will maintain a set of binders containing MSDSs for all products received or delivered.
2. Studio Management will provide the Office of Safety and Risk Management with an electronic copy of each MSDS received as described in 4. below.
3. The Office of Safety and Risk Management shall create a PDF file for every MSDS. PDF files shall be named as the name of the product, plus an abbreviation for the supplier, plus the MSDS creation date (in the format YYYYMMDD), each separated by a period (e.g. Acetone.JTBaker.090430).
4. The electronic directory of MSDS' shall be located on MSDS Online through the Office of Safety and Risk Management.

Process for Maintaining Binders of MSDSs at Work Locations

1. A white, 3-ring MSDS binder shall be kept in close proximity of locations where chemicals are stored.
2. The binder shall be labeled as follows:
 - a. Material Safety Data Sheets
 - b. Department Name
 - c. Location (Building, Floor, Room Number)
3. Each binder shall contain a set of "A" through "Z" alphabetic tab dividers. Products starting with numbers shall be filed before the "A" tab.
4. MSDSs shall be filed in the binder by product name, such that the MSDS is placed behind the tab corresponding to the first letter in the product name (e.g. acetone would be behind the "A" tab).
5. Where there are MSDSs for several products having names starting with the same letter, the MSDSs shall be filed in alphabetical order according to the subsequent letters in the product name (e.g. "acetone" would be filed behind "acetic acid").
6. A MSDS shall be added to the binder each time a new MSDS is received for a product.
7. When a MSDS is added to the binder,
 - a) the chemical inventory for the location must be updated (see "Chemical Inventory Record Keeping Requirements"),
 - b) any older version of the MSDS for the product shall be removed and disposed.
8. Should any alphanumeric tab divider be empty (due to there being no products having names beginning with that letter), a sheet shall be inserted that states "NO PRODUCTS IN THIS TAB".
9. At least once per year, at the time of reviewing and updating the location-specific inventory (see "Chemical Inventory Record Keeping Requirements"), the contents of the MSDS binder must be reconciled against the inventory, and any inconsistencies must be remedied, so that the contents of the MSDS binder match the up-to-date inventory.

2. Labels:

Supplier Container Labeling Obligations

It is a responsibility of the manufacturer and supplier to ensure WHMIS compliant labeling of every controlled product container.

Levels of compliance are typically high for Canadian and American suppliers. Should a user contemplate ordering a product from a supplier in another jurisdiction, verify that the containers will have WHMIS compliant labeling before placing the order.

Workplace Labeling Obligations for Decanted Products

1. If a controlled product is decanted or transferred from the original supplier container into a secondary or portable container, or mixed together with another controlled product or non-controlled product, the user must ensure that a WHMIS-compliant "workplace label" is affixed to the container, except in circumstances described in 3 below.
2. A workplace label can be hand-written, a pre-printed form, or downloaded from MSDS Online so long as the information described in 4. below is present.
3. A workplace label is not required to be affixed to a secondary or portable container if either of the following conditions apply:
 - a) the product will be used immediately in its entirety, or
 - b) the product is,
 - under the exclusive control of one person,
 - to be used exclusively use of one person,
 - to be used in its entirety during the course of the work shift, and
 - the product name is marked on the container.
4. Workplace labels for secondary containers must contain the following information:
 - a) The product / substance name (identical to that on the MSDS)
 - b) Safe handling information (a synopsis of key points from the supplier label)
 - c) A statement that an MSDS is available
5. Pre-printed workplace labels can be obtained online from MSDS Online as well as the Sharepoint link created for the Shops and Studio Technicians.

3. Procedures for transporting chemicals within OCAD U

Purpose for this Procedure

1. To ensure that chemical products are moved from place to place within the facility in a safe manner, and reduce the risk of spills or other incidents.

1. Compressed Gas Cylinders

a) Empty or Full Gas Cylinders – Nominal Height under 38 cm (Except Acetylene)

1. Gas cylinders having a nominal height (i.e. base to top of valve cap) under 38 cm are permitted to be manually carried from place to place by personnel, so long as the valve stem is protected by valve cap or other device that prevents leakage or release if the cylinder is dropped or damaged.
2. If it is impractical to manually carry cylinders of these sizes from place to place, you must use a small cylinder cart as shown here.
3. If necessary to transport between levels in the building, these cylinders may be taken onto elevators, but only outside of public access hours.



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b) Empty or Full Gas Cylinders – Nominal Height 38 cm or More (Except Acetylene)

1. Gas cylinders having a nominal height (i.e. base to top of valve cap) of 38 cm or more must be transported using a gas cylinder cart of the type shown in 2.1 above (for cylinders having diameters under 11 cm), or a dolly (for larger cylinders), as shown here.
2. When using the dolly for transporting large cylinders,
 - ensure that the cylinder is secured in position by the strap
 - ensure that the valve is fully closed and the valve cap is in place
 - never leave the dolly unattended
 - always keep the dolly in the upright or 4-wheel tilted position
 - never allow the dolly with a cylinder to rest with the cylinder “lying down” in horizontal position
3. If necessary to transport between levels in the building, large cylinders requiring dolly transport are not to be taken onto public usage elevators nor onto escalators, and can only be elevated using the service elevator(s)
4. Never transport large cylinders through public access areas during public access hours.



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c) Acetylene Cylinders

1. Acetylene cylinders must always be transported using a cart or dolly
2. When using the dolly for transporting large cylinders,
 - ensure that the cylinder is secured in position by the strap
 - ensure that the valve is fully closed and the valve cap is in place
 - never leave the dolly unattended
 - always keep the cylinder in the upright tilted position – this is particularly important for acetylene cylinders because they contain a liquid solvent
 - never allow the dolly with a cylinder to rest with the cylinder “lying down” in the horizontal position – this is particularly important for acetylene cylinders because they contain a liquid solvent
3. If necessary to transport between levels in the building, acetylene cylinders are not to be taken onto public usage elevators nor onto escalators, and can only be elevated using the service elevator(s).
4. Never transport acetylene cylinders through public access areas during public access hours.

2. Solids and Liquids in Supplier Containers or Secondary / Portable Containers **Supplier Boxed Shipments (Dock Area to User Storage Location)**

1. For hazardous chemicals delivered in boxes (e.g. plastic or glass container(s) inside of a packing box), or in bulk primary containers up to 20 liters, either of the following types of carrier should be used to transport the item(s) from the chemical storage room to the user’s storage location.
2. Chemical kits that are shipped by suppliers in a boxed or containerized format that is inherently protected and designed to contain spillage (may be transported by being manually carried, or in accordance with Section 3 (b)).
3. When using this type of carrier for transporting hazardous chemicals,
 - a) load the bottom shelf before loading the top shelf (be careful to avoid strains and sprains when lifting and bending)
 - b) make sure that the total weight of the load on the top shelf is not more than about half the weight of the load on the bottom shelf (this keeps the center of gravity low, making it easier to handle, and reducing risk of toppling over)
 - c) never pile objects on the top shelf at a height that obstructs your view when pushing the carrier
 - d) never stack boxes two high or higher on a shelf without securing the load using straps or heavy tape
 - e) never leave the carrier unattended while in transit
4. The carrier shown above must not be used for transporting any compressed gas.
5. If necessary to transport between levels in the building, these are not to be taken onto public usage elevators during public access hours, and can only be elevated using the service elevator(s) during public access hours. If it is not possible or practical to use service elevator(s) after public access hours, then public usage elevators or escalators may be used.
6. Never transport hazardous chemicals using these carriers through public access areas during public access hours.



3. Individual Bottles / Containers

1. Transporting individual containers of hazardous chemicals that are not held inside of a kit or other of secondary container should be avoided if possible.
2. If it is necessary to transport individual bottles or containers of hazardous chemicals, use either of types of carriers shown. If the cart for individual bottles and chemicals is used, ensure that the containers placed inside the drawers are secured against tipping over while in transit.



3. If using a carrier to transport two or more chemically incompatible or reactive materials that are not pre-packaged into kits, separate the incompatible items to reduce potential for mixing in the event of container leakage or breakage.

Hazardous Waste Materials

1. Containers with hazardous waste materials must be transported from their point of production to the chemical waste lock-up by Campus Services Staff using any of the carriers described above.
2. The choice of carrier must be made on the basis of the type of container holding the hazardous waste.

Markings on Carriers

1. Whenever a chemical container is transported inside of a tote or an enclosed carrier, the person responsible for transporting the material must ensure that a description of the non-visible contents is provided on the outside of the tote and or carrier.
2. Hand-written paper or cardboard temporary signs, affixed to the container with tape, are adequate, so long as they are legible and can be read at a distance of about 2 meters (e.g. write the contents in capital letters, using a dark magic marker on white paper or cardboard).

4. Procedure for storing chemicals

Principles and Rules Governing Storage Practices

1. Chemicals possess a variety of chemical and physical properties. Some of these properties are incompatible. If chemicals with incompatible properties are inadvertently or unexpectedly mixed together, dangerous reactions can occur, resulting in risks to health, safety, property or the environment.
2. For the reasons described above, it is important to store chemicals at locations, and in ways that reduce the potential for incompatible chemicals mixing together as a result of spills, leakage, container rupture, or fires.
3. Chemicals at OCAD University must be stored in accordance with rules contained in this procedure.

Determining Storage Requirements for a Substance

1. To determine the storage requirements for a chemical, consult the relevant sections of this procedure, and the Material Safety Data Sheet for the chemical.
2. In the event of any contradiction between this Procedure and Material Safety Data Sheets, contact the Office of Safety and Risk Management for instructions on proper storage procedures.

Standardized Signage and Markings for Storage Locations and Cabinets

1. Storage locations and cabinets for chemical products shall have signage and / or markings as described herein.

1. Flammable or Combustible Liquids

1. A "Flammable Liquid" is one having a flash point less than 37.8 C.
2. A "Combustible Liquid" is one having a flash point between 37.8 C and 93.3 C.

Approval Required to Increase Quantities of Flammable or Combustible Liquids Typically On-Hand

1. The list below presents a listing of flammable and combustible liquids contained in the most recent OCAD University inventory of hazardous materials.
2. Approval from the Office of Safety and Risk Management is required before any OCAD University user is allowed to increase the quantity of flammable or combustible liquids typically on-hand and under the control of the user.
3. The total quantity of all flammable and combustible liquids at OCAD University shall be kept at less than 500 L at all times. It is the responsibility of Studio Management to monitor quantities present on site and to take action to prevent accumulation of amounts in excess of 500 L.

Flammable and Combustible Liquids at OCAD University (as of February 2012)

Substance/Product Name	Phase	Site within OCAD U	Flammable / Explosive	Combustible	Flash Point	Typical Quantity on Hand	
						Q	Units
07730 MSA Varnish w/ UVLS (Gloss) A,B,C,H; 07735 MSA Varnish w/ UVLS (Satin) A,B,C,H,5; 07740 MSA Varnish w/ UVLS (Matte) A,B,C,H,5; 93300 MSA Gel A,B,C; 07742 Hard MSA Varnish w/ UVLS (Gloss) A,H; 07743 Hard MSA Varnish w/ UVLS (Satin) A,H,5; 07744 Hard	Liquid	Draw/Print	X		41		
3M SPRAY MOUNT ARTIST'S ADHESIVE (CANADA)	Liquid	Ind Design	X		-50		
Acetic Acid, Glacial	Liquid	Lithography	X		104		
Acetone	Liquid	Ceramics	X		-4		
Acetone	Liquid	Foundry	X		-4		
Acetone	Liquid	Ind Design	X		-4		
Acetone	Liquid	Jewellery	X		-4		
Acetone	Liquid	Lithography	X		-4		
Acetone	Liquid	Mouldmaking	X		-4		
Acetone	Liquid	Plastics	X		-4		
Acetone	Liquid	Sculpture	X		-4		
Acetylene	Gas	Jewellery	X				
Acetylene	Gas	Metals	X				
Air Tool Oil	Liquid	Foundry		X	128		
Air Tool Oil	Liquid	Sculpture		X	128		
Ball Paint Marker	Liquid in pen	Metals	X		88		
Blue Marking Ink Kleenscribe Layout Dye	Liquid	Metals	X		-4		
Boeshield T-9 Liquid	Aerosol	Ind Design		X	120		
Boeshield T-9 Liquid	Aerosol	Photography		X	120		
Boeshield T-9 Liquid	Aerosol	Woodworking		X	120		
Brasso	Liquid	Etching	X		105		
CASTALDO Jewelry Mold Release Spray	Aerosol	Jewellery	X				
Chalkboard paint	Liquid	Ceramics	X		205		
Chalkboard paint	Liquid	Plastics	X		205		
Champion Spraypaint	Aerosol	Woodworking	X		-5		
Charcoal powder / granular	Powder	Jewellery	X	X			
Citric Acid	Powder	Photography	X	X			
Clear Laqueur Thinner	Liquid	Lithography	X		3		
Clear Paste Wax	Paste	Sculpture		X			
Contact 2000	Liquid	Photography	X		45		
CORNSTARCH	Powder	Jewellery	X	X			
Crown Reliable Release Mold Releases - Aerosol, 3423 Reliable Release General Purpose Silicone Mold Release, 3445 Reliable Release Heavy Duty Silicone Mold Release, 3452 Reliable Release Lecithin Mold Release, 3460 Reliable Release Paintable Mold Release	Aerosol	Jewellery	X				
Danish oil	Liquid	Sculpture	X		41		
Danish Oil - Natural	Liquid	Woodworking	X		41		
Danish Oil - Walnut	Liquid	Woodworking	X		41		
DOW CORNING HS II THIXOTROPIC ADDITIVE	Liquid	Mouldmaking		X	153		

Substance/Product Name	Phase	Site within OCAD U	Flammable / Explosive	Combustible	Flash Point	Typical Quantity on Hand	
						Q	Units
Elmer's spray adhesive	Aerosol	Photography	X				
Ethyl Alcohol, 95% Denatured	Liquid	Photography	X		-173		
FLUORESCENT PAINT; Fluorescent - White (No. 5779), Fluorescent - Red (No. 5780), Fluorescent - Yellow (No. 5782), Fluorescent - Green (No. 5783), Fluorescent - Blue (No. 5784), Fluorescent - Invisible Blue (No. 5785), Fluorescent - Pink (No. 5786)	Aerosol	Ind Design	X		0		
GAMSOL	Liquid	Draw/Print	X		145		
HB PVC 40 GREY CEMENT	Liquid	Photography	X		-5		
Isopropyl Alcohol – 99%	Liquid	Lithography	X		535		
Isopropyl Alcohol	Liquid	Draw/Print	X		53		
Kerosene	Liquid	Sculpture	X		100		
Kerosene	Liquid	Foundry	X		100		
KODAK Farmer's Reducer, Part A	Powder	Photography	X				
KODAK Farmer's Reducer, Part B	Powder	Photography	X				
Krylon all purpose spray adhesive (No MSDS)	Aerosol	Ind Design	X		<0		
Krylon Clear Glaze	Aerosol	Woodworking	X		<0		
Krylon Grey Glaze	Aerosol	Woodworking	X		<0		
Krylon H2O Latex Aerosol Paint, White Primer	Aerosol	Photography	X		<0		
KRYLON Interior/Exterior Paint, Glossy White	Aerosol	Photography	X		<0		
Lepage - Thinner Rubber Cement	Liquid	Sculpture	X		-12		
LEPAGE CONTACT CEMENT THINNER/CLEANER	Liquid	Ind Design	X		-12		
LEPAGE CONTACT CEMENT THINNER/CLEANER	Liquid	Jewellery	X		-12		
Liberon Wax	Solid	Woodworking	X		100		
LIGHTER FLUID/CHARCOAL STARTER	Liquid	Metals	X		42		
LIQUID WRENCH PENETRATION OIL (Liquid)	Liquid	Metals		X	137		
Methanol (Methyl hydrate)	Liquid	Foundry	X		54		
Methanol (Methyl hydrate)	Liquid	Jewellery	X		54		
Methanol (Methyl hydrate)	Liquid	Mouldmaking	X		54		
Methanol (Methyl hydrate)	Liquid	Photography	X		54		
Methanol (Methyl hydrate)	Liquid	Sculpture	X		54		
Methanol (Methyl hydrate)	Liquid	Woodworking	X		54		
Methyl Hydrate	Liquid		X		51.8		
Mineral Spirits	Liquid	Draw/Print	X		100		
Minwax Wood Finish	Liquid	Sculpture	X		100		
Minwax Wood Finish	Liquid	Woodworking	X		100		
NGR Stain Reducer	Liquid	Woodworking	X		1		
NGR Stains - various colours	Liquid	Woodworking	X		0		
NGR Stains	Liquid	Mouldmaking	X		0		
OATEY CANADIAN PURPLE PRIMER/CLEANER	Liquid	Photography	X		14		
Odourless Mineral Spirits	Liquid	Lithography		X	104		
ORANGE GLO	Liquid	Ind Design		X	149		
Original Wood Finish (linseed oil)	Liquid	Woodworking	X		95		
Poly Super Strippa Paint Stripper	Liquid	Woodworking	X		100		

Substance/Product Name	Phase	Site within OCAD U	Flammable / Explosive	Combustible	Flash Point	Typical Quantity on Hand	
						Q	Units
Propane	Gas	Woodworking	X				
Propane	Gas	Foundry	X				
Renaissance Wax Polish	Solid	Foundry	X		100		
RICE FLOUR	Powder	Fibre	X	X			
SODIUM HYDROSULPHITE	Powder	Fibre	X				
Spray Paint – latex	Compressed Gas	Etching	X		< 0		
Spray Shellac	Aerosol	Ind Design	X		<0		
Spray Shellac	Aerosol	Mouldmaking	X		<0		
Starrett M-1 All Purpose Lubricant	Liquid	Woodworking		X	162		
STOP-OFF LACQUER	Liquid	Jewellery	X		0		
Stop-out Varnish	Liquid	Etching	X		54		
Strontium	Powder	Ceramics	X				
Strontium	Powder	Plastics	X				
Sucrose	Powder	Fibre	X	X			
Super Lube Spray	Aerosol	Woodworking	X		25		
Top-Cote Aerosol Series	Aerosol	Ind Design	X		<0		
Top-Cote Aerosol Series	Aerosol	Jewellery	X		<0		
Tremclad Gloss Black	Aerosol	Woodworking	X		<0		
Tremclad Real Orange	Aerosol	Woodworking	X		<0		
Tremclad Red Oxide Primer	Aerosol	Woodworking	X		<0		
Tremclad Rust Paint	Aerosol	Sculpture	X		<0		
Tremclad Rust paint	Aerosol	Woodworking	X		<0		
Turpentine	Liquid	Woodworking	X		95		
Turpentine	Liquid	Jewellery	X		95		
Universal Release (Liquid)	Liquid	Mouldmaking	X		-7		
Various spray paints	Aerosol	Sculpture	X		<0		
Varsol	Liquid	Foundry		X	140		
Varsol	Liquid	Photography		X	140		
VELVALITE CG35 COATING 32744	Liquid	Foundry	X		53		
VELVALITE SOLVENT 100	Liquid	Foundry		X	109		
WD40	Liquid	Metals		X	122		
WD40	Liquid	Sculpture		X	122		
WD40	Liquid	Woodworking		X	122		
WD-40 Aerosol	Aerosol	Metals		X	122		
WD-40 Aerosol	Aerosol	Photography		X	122		
Weld - on 16	Liquid	Ind Design	X		0		
White shellac	Liquid	Ceramics	X		54		
White shellac	Liquid	Plastics	X		54		
White shellac	Liquid	Woodworking	X		54		
Witch Hazel	Liquid	Jewellery		X	110		
Zinsser - Shellac	Liquid	Sculpture	X		60		

Restriction on Locations Where Flammable or Combustible Liquids Can be Stored and Used

1. Flammable or combustible liquids can only be stored at OCAD University at the locations shown below.

Permitted Storage Locations for Flammable or Combustible Liquids	
Site within OCAD	Permissible Storage Location
Printing Making	Flammable Storage Cabinet
Photography	Flammable Storage Cabinet
Metals	Flammable Storage Cabinet
Foundry	Flammable Storage Cabinet
Sculpture	Flammable Storage Cabinet
Jewellery	Flammable Storage Cabinet
Plastics	Flammable Storage Cabinet
Industrial Design	Flammable Storage Cabinet

2. Flammable or combustible liquids can only be used at OCAD University at the locations shown below.

Permitted Usage Locations for Flammable or Combustible Liquids
Printing Making
Photography
Metals
Foundry
Sculpture
Jewellery
Plastics
Industrial Design

Equipment Required for Flammable or Combustible Liquid Storage

1. Flammable or combustible liquids must be kept in flammable storage cabinets that,
 - a) conform to ULC-C1275, "Storage Cabinets for Flammable Liquid Containers", or
 - b) conform to ULI 1275, "Flammable Liquid Storage Cabinets", or
 - c) are Factory Mutual Research Approved, or
 - d) are listed as meeting NFPA 30.
2. The maximum quantity of flammable and combustible liquids stored in a cabinet shall be 500 L, of which not more than 250 L shall be "flammable liquids".
3. Flammable and combustible liquids stored in cabinets shall be in closed containers.
4. Cabinets for container storage shall be labeled in conspicuous lettering to indicate that the cabinet contains flammable materials and that open flames must be kept away.

5. If a flammable or combustible storage cabinets has ventilation openings,
 - a) the ventilation openings shall be sealed with materials providing fire protection at least equivalent to that required for the construction of the cabinet, or
 - b) the cabinet shall be vented outdoors using vent piping providing fire protection at least equivalent to that required in Clause a. for seals.
 - c) Containers for flammable or combustible liquids shall be kept closed when not in use.
6. Flammable or combustible liquids and storage cabinets must not be in or adjacent to exits, including exits to outdoors, elevators or principal routes that provide access to exits.
7. No other type of dangerous good shall be stored in the same cabinet as a flammable or combustible liquid.

Dispensing Practices

1. When any flammable liquid is dispensed from one a container into another,
 - a) if the container is made of metallic or electrically conducting material, the container must be electrically connected to the fill stem, or rest on a conductive floor that is electrically connected to the fill stem, or
 - b) if the container or storage tank is made of non-electrically conducting material, static can be controlled by making an electrical connection between the fluids in the source container and secondary container simply by dipping a thin copper or other metal wire into both liquids inside their containers (ensure that the liquid is compatible with the metal of the wire).

2. Compressed Gases

Restriction on Locations Where Compressed Gases Can be Stored

1. Cylinders containing compressed gas (i.e. not empty) may only be stored indoors at room locations shown below.

Permitted Locations for Storage of Cylinders Containing Compressed Gas		
Site within OSC	Permitted	Current Storage Location
Jewellery	Oxygen	
Wood Working	Propane	Workbench at location protected from damage and heat / ignition sources.
Ceramic	Propane	
Foundry	Argon	
Metal	Argon, Buleshield AL, Acetylene	

2. To the extent practicable, any location where flammable gas cylinders exceeding 100 L in expanded capacity should only be stored at rooms that are separated from the rest of the building by a 2 hour fire rating.
3. Compressed gas cylinders (whether full or empty) are not permitted to be stored outdoors on OCAD University property.

Facilities Required for Storage of Non-Flammable and Flammable Compressed Gas Cylinders

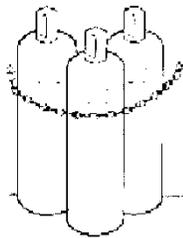
Indoor storage areas for compressed gas cylinders must be kept dry and ventilated.

a) Requirements for All Compressed Gas Cylinders Over 38 cm in Height (Measured from Base to Top of Valve Cap)

1. Cylinders containing compressed gas must be stored to hold them securely in place on racks, or by nesting, or in cages, as shown below.



Cylinder Rack



Nested and Chained Cylinders



Small Cylinder Cage



Tall Cylinder Cage

2. The valve connection on a cylinder must be unique for the type of gas in order to prevent creation of a hazard by inadvertent connection with a line containing another gas.
3. Gas cylinders must have a valve protection cap in position at all times when the cylinder is not in use.
4. Gas cylinders and valves must be located and /or physically guarded in order to prevent accidental physical damage by impact with other objects.

b) Requirements for Acetylene Compressed Gas Cylinders

Acetylene cylinders must always be stored in an upright position.

c) Requirements for Propane Compressed Gas Cylinders and Other Flammable Compressed Gases that are Heavier than Air

Cylinders of propane and other flammable compressed gas which are heavier than air must be stored in a flammable storage cabinet used solely for flammable compressed gases that:

- has a fire-resistance rating of at least $\frac{3}{4}$ hr,
- has an aggregate capacity that does not exceed 100 kg,
- contains no more than 3 cylinders, and
- is located in a room that has mechanical ventilation providing at least 1 air change per hour.

3. Corrosives and Oxidizers

1. Containers of acids, bases and oxidizers must be stored in safety cabinets designated for storage of these substances and none other.
2. Containers of acids and bases are to be stored apart on separate shelves, or if this is not possible separated by distance on the same shelf, in order to minimize potential for mixing in the event of leakage or spillage.
3. Containers shall be kept closed when not in use.

4. Other Hazardous Substances

1. Hazardous substances that are not flammable, combustible, corrosive or oxidizing do not require storage in designated safety cabinets, and can be stored in ordinary cupboards or other suitable storage cabinets.
2. Cupboards and storage cabinets used for these hazardous substances must have signage or other appropriate markings to indicate the contents therein.

Hazardous Chemical Wastes and Containers

1. Pending removal from site, hazardous chemical wastes shall be,
 - a) stored in containers suitable for the type of waste,
 - b) labeled as to the type of waste,
 - c) stored in accordance with rules described above for specific classes and properties of chemicals.
2. See the procedure entitled "Chemical Waste Disposal Procedures" for details on hazardous waste storage, labeling, handling and movement.

Hazardous Waste Storage Lock-Up Area by Campus Services

1. Hazardous wastes stored at the lock-up area by Campus Services must be kept segregated by placing incoming wastes into the appropriate storage cabinet or shelf, as follows:
 - a) flammable or combustible wastes must be stored in the flammable storage cabinet
 - b) corrosive wastes must be stored in the corrosives storage cabinet, placed on the appropriate shelf for acids, bases or oxidizers
 - c) toxic wastes that are not flammable, combustible or corrosive must be stored in the toxics storage cabinet
 - d) waste batteries in the battery tote
 - e) bags of fluorescent tube breakage waste in the fluorescent tube waste tote

5. Procedure for responding to chemical emergencies

Requisite Equipment and Supplies

The list identifies locations where the following equipment and supplies must be present and maintained:

- spill clean-up kits
- deluge showers
- eye wash stations
- first aid kits

Locations of Emergency Response Equipment

Location	Spill Kit	Fixed Eyewash Station	Portable Eyewash Station	Emergency Shower	First Aid Kit
Ceramics	✓	✓			<input checked="" type="checkbox"/>
Wood		<input checked="" type="checkbox"/>			✓
Sculpture		<input checked="" type="checkbox"/>			✓
Print Making				✓	✓
Photography					✓
Foundry					✓
Metal	✓				✓
Mold Making		<input checked="" type="checkbox"/>	✓		✓
Drawing and Painting	✓				<input checked="" type="checkbox"/>
Industrial Design	✓	✓			✓
Jewellery	✓	✓			✓
Plastics	<input checked="" type="checkbox"/>	✓			✓
Fibre			✓		<input checked="" type="checkbox"/>

✓ Indicates item is located in the location

Indicates item present nearby

- The locations of fire extinguishers in the building are shown in the fire safety plan, which is posted at various locations in the facility.
- Spill clean-up kits and first aid kits shall be inspected at least once every month to verify that contents are complete and in good condition. The Office of Safety and Risk Management is responsible for performing these inspections, recording findings on the inspection checklists contained with the kits, and advising Studio Management of any deficiencies. The Office of Safety and Risk Management is responsible for replenishing any supplies as necessary.
- Deluge showers and eye wash stations must be tested to verify functionality at least once every year. The Office of Safety and Risk Management is responsible for performing these inspections, and advising Studio Management of any deficiencies. Studio Management is responsible for remedying any deficiencies.

Be Prepared in Advance

1. The chances for successfully dealing with a spill, accident or emergency involving a chemical are significantly increased by,
 - a) thinking before using the chemical about the types of things that could go wrong or cause a spill, accident, or other emergency,
 - b) planning the work in a manner that minimizes the risk of these scenarios,
 - c) ensuring that you understand the magnitude of the potential hazard that could result from a spill, accident or other emergency, should it occur,
 - d) ensuring that you or others know what to do in the event of a spill, accident or other emergency, and have the ability to rapidly and effectively respond to the emergency, in order to protect yourself and others, and
 - e) ensuring that any necessary emergency equipment and supplies are readily accessible for use if needed, and that the quantities available are sufficient for the potential magnitude of spill or emergency,
 - f) knowing the locations of the nearest eye wash, emergency shower, and washrooms, for use in case of a need to flush skin or eyes.
2. All chemical users and their supervisors are responsible for “knowing what to do” in case of an emergency involving a chemical under their control.

Actions to Take in Case of a Spill of any Hazardous Material

1. Have unnecessary personnel (employees and students) leave the area of potential danger.
2. If a corrosive chemical has been splashed onto a person’s skin or in their eyes, assist them in getting immediately to the nearest eye wash station, or emergency shower, or washroom, as appropriate, to flush their skin or eyes. Have another person call for first aid or emergency medical assistance, as appropriate, and continue flushing for at least 10 minutes in the case of minor contact or until emergency medical assistance arrives in the case of major contact.
3. If the substance that has spilled is flammable or combustible, eliminate any nearby sources of ignition, if possible. If the amount spilled is large enough to present a potential fire risk, smother the spilled material with the foam from an ABC fire extinguisher.
4. If the substance is not flammable, have one person obtain a spill control kit and any necessary additional personal protective equipment, while another person remains near the spill to keep persons out of harm’s way.
5. Once the spill kit arrives, use the appropriate materials to stop the spread of the spill, absorb it, and clean it up. Use the appropriate personal protective equipment while cleaning up the spill.
6. If the spilled material is flammable or combustible, have a person stand-by with a fire extinguisher while the spill is being cleaned up, ready to respond if the material catches fire.
7. Used spill clean-up materials must be handled in accordance with applicable procedures for on-site chemical waste transport, and waste storage and handling.

Internal Notifications

The Office of Safety and Risk Management and Campus Services shall be promptly advised of the occurrence of any chemical spill or inadvertent release.

External Notifications

Specific government agencies must be notified of certain kinds of incidents or emergencies involving chemicals, as described below.

a) Reporting Explosions

Explosions must be reported to the Technical Standards and Safety Authority (Telephone: 416-734-3327) where they have caused injury, damage to the equipment, or a fire by Facilities Management. Minor 'delayed ignitions' would not normally be considered to be reportable.

b) Reporting Liquid Petroleum Spills

1. Any spill of a petroleum product must be reported to the Ministry of Environment Spills Action Centre (Telephone: 1 (800) 268-6060, or (416) 325-3000) if the spill is in excess of:
 - 100 liters at sites restricted from public access
 - 25 liters at sites with public access
2. It is not mandatory to report spills of lesser quantities unless the spill would:
 - create a hazard to public health or safety
 - contaminate any fresh water source or waterway
 - interfere with the rights of any person, or
 - allow entry of product into a sewer system or underground stream or drainage system.

c) Discovery of a Petroleum Product that has escaped to the Environment or Inside a Building

The discovery of a petroleum product that has escaped to the environment or inside a building must be reported to the Ministry of Environment Spills Action Centre (Telephone: 1 (800) 268-6060, or (416) 325-3000) by the Office of Safety and Risk Management.

d) Reporting Spills to the Environment

1. Spills are defined as releases of pollutants into the natural environment originating from a structure, vehicle, or other container, and that are abnormal in light of all circumstances.
2. Spills must be reported immediately to the Ministry of Environment and to the municipality when they cause or are likely to cause any of the following:
 - impairment to the quality of the natural environment - air, water, or land;
 - injury or damage to property or animal life;
 - adverse health effects;
 - safety risk;
 - making property, plant, or animal life unfit for use;
 - loss of enjoyment of normal use of property; or
 - interference with the normal conduct of business.
3. Spills must be reported to the Ministry of Environment Spills Action Centre (Telephone 1-800-268-6060, or (416) 325-3000, Fax: (416) 325-3011) by the Office of Safety and Risk Management.

Posting this Procedure

This procedure must be posted in close proximity to locations where personnel store and use hazardous chemicals in a manner that presents risk of a hazardous spill, leak or release.

6. Safety Procedures for Chemical Users

Preparation for Use

1. Consult the current material safety data sheet and container label prior to using any chemical substance for the first time.
2. If the chemical is one for which a substance-specific emergency plan, safety plan, or designated substance assessment is required, consult the appropriate documents prior to use.
3. Ensure that you know the basic minimum personal protective equipment that must be used that it is available, and that you know how to use it.
4. Ensure that you know the types of harm that can result from overexposure to the chemical, leakage, or spills.
5. Ensure that you know the locations of emergency equipment and supplies (safety showers, emergency eye wash stations, first aid kits, spill kits, fire extinguishers), and that you know how to use and operate same.
6. Don't work alone or in isolation with chemicals that are flammable, combustible, or can cause serious injury from skin contact or inhalation. The idea is to ensure that someone is close enough to render help if necessary.
7. If you don't fully understand the hazards and safety requirements for a chemical, don't use it.
8. If you need further information on hazards and safety practices contact your Studio Managers.

Mandatory Personal Protective and Safety Equipment for Employees

The following table identifies the minimum personal protective and safety equipment requirements for employees when using hazardous chemicals.

Mandatory Minimum Personal Protective and Safety Equipment Use Requirements																
Hazard / Activity	Face			Body						Hands		Feet		Kit For Student Demonstrations		
	Chemical Safety Glasses	Face Shield	Welding Helmet and Lens	Flame Resistant Lab Coat	Chemical Splash Apron	Cryo- Apron	Long Pants, Worn Over Footwear	Painter's Shirt and Pants or Coveralls	Flame Resistant Shop Coat	Chemical Protective Gloves per MSDS	Cryo- Gloves	Closed Footwear	Safety Footwear	Fire Extinguisher within 5 m	First Aid Kit within 5 m	Spill kit within 5 m
Acids	√	√		√	√		√			√		√		√	√	√
Bases	√	√		√	√		√			√		√		√	√	√
Oxidizers	√	√		√	√		√			√		√		√	√	√
Flammable liquids	√			√			√			√		√		√	√	√
Combustible liquids	√			√			√			√		√		√	√	√
Flammable or ignitable solids	√			√			√			√		√		√	√	√
Toxics with none of the above properties	√			√			√			√		√		√	√	√
Cryogenic liquids, containers, piping	√	√		√		√	√			√		√		√	√	√
Using open flame				√							√			√	√	√
Welding			√					√				√				
Painting							√					√				

7. Chemical Waste Disposal Procedures

Substances that Can and Cannot be Disposed of via Sink Drains or in Regular Solid Refuse Containers

1. It is prohibited to pour down a sink or floor drain, or place into any regular solid refuse container, any of the following substances:
 - a) a solution with a pH less than 6.0 or greater than 11.5
 - b) a solution consisting of two or more separate liquid layers
 - c) any liquid with a temperature greater than 60 degrees Celsius
 - d) acute hazardous waste chemicals
 - e) flammable or combustible liquids (i.e. those having a flash point under 93.3 Celsius)
 - f) biomedical waste
 - g) fuels
 - h) ignitable wastes
 - i) hazardous waste chemicals
 - j) pathological waste
 - k) pesticides
 - l) reactive waste
 - m) severely toxic waste
 - n) waste radioactive substances
2. Wastes must not be intentionally mixed with any solid or liquid so that the waste's hazardous characteristics would be diluted below a regulatory level.
3. If you uncertain as to the proper manner for disposal of any particular substance, contact the Office of Safety and Risk Management for guidance.

Empty Containers of Hazardous Substances

1. Containers which formerly contained regulated (hazardous) substances must be empty to be classified as a non-hazardous waste. An empty container is defined as having < 2.5 cm of residue remaining at the bottom of the container or less than 3% of the original contents, whichever is the lesser amount.
2. Former hazardous substances containers that meet the condition described above must be labeled as shown prior to disposal:
3. Labels may be obtained from the Studio Management Office who is also responsible for maintaining stock of these labels.



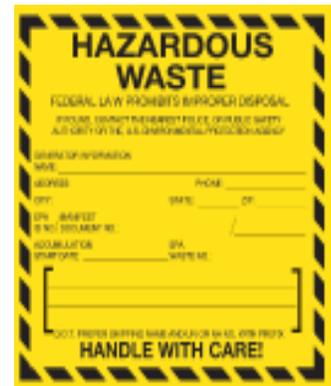
Locations Where Hazardous Waste Storage is Permitted and Prohibited

1. Hazardous wastes generated at a user's location are to be stored (pending removal to the hazardous waste storage area by Campus Service) in accordance with the procedure entitled "Chemical Storage Procedures".
2. Hazardous wastes shall not be stored at any location other than the chemical storage room.
3. As soon as practicable after generation, hazardous wastes must be taken to the hazardous waste storage lock-up area located near the Ceramics Studio. Hazardous wastes must be transported within the facility in accordance with the procedure entitled "Procedures for Transporting Hazardous Chemicals within OCAD University".

4. Once taken to the hazardous waste storage area located near the Ceramics Studio, the hazardous waste must be placed in the appropriate storage cabinet or container, as follows:
 - a) flammable or combustible wastes must be stored in the flammable storage cabinet
 - b) corrosive wastes must be stored in the corrosives storage cabinet, placed on the appropriate shelf for acids, bases or oxidizers
 - c) toxic wastes that are not flammable, combustible or corrosive must be stored in the toxics storage cabinet
 - d) waste batteries in the battery tote
 - e) bags of fluorescent tube breakage waste in the fluorescent tube waste tote

Segregation, Labeling and Interim Containment Requirements at User Locations

1. Hazardous wastes kept at a user location must be physically segregated from other hazardous materials according to their physical and chemical properties, in the manner described in the procedure entitled “Chemical Storage Procedures”.
2. Hazardous wastes must be held in containers that are suitable for the chemical and physical properties of the waste (e.g. corrosion resistant). If the hazardous waste has the same properties as the original substance, use a container comparable to the container in which the original substance was held.
3. If you are uncertain as to the proper type of container to use, contact the Office of Safety and Risk Management.
4. All hazardous waste containers must be labeled with the following information.
 - a) Location or activity that produced the waste.
 - b) Major chemical components or trade name of the waste.
 - c) Date the waste was produced.
 - d) Name of the OCAD University contact person.
 - e) When waste is being added to the container over a period of time, the initial START date as well as the FILLED date, should be written on the container. (This provides a mechanism to determine the storage time and potential need for a change in waste management practices.)
5. If you do not know some or all of the information in 4.a. through 4.e., contact Studio Management for assistance.
6. The following is an example of a commercially printed label that can be used for waste containers



Hazardous Waste Label

Users can obtain hazardous waste labels and packing supplies from Studio Management and Campus Services. Studio Management is responsible for maintaining these items in stock.

Time Limits for On-site Storage of Hazardous Wastes

1. Full hazardous wastes must be transported to the hazardous waste storage area located near the Ceramics Studio as soon as practicable after being filled.
2. Ontario regulations limit on-site storage of hazardous wastes to 90 days. To comply with this requirement, OCAD University has hazardous waste pick-ups from RPR Environmental occur every 90 days.

Reporting On-Site Storage In Excess of 90 Days

1. In the event that a hazardous waste has been stored on-site for more than 90 days, the following applies, the user responsible for producing the waste must advise the Office of Safety and Risk Management.
2. The Office of Safety and Risk Management must file a notice with the Ministry of Environmental Regional Director using the form below (form available from the Ministry of Environment web site).
3. The completed notice form must be retained on-file by the Office of Safety and Risk Management for a period of at least two years from the date that the waste is removed from the site.

		Notice of the Storage of Subject Waste Avis de stockage de déchets visés Revised Regulations of Ontario 1990, Regulation 347, Paragraph 3 of section 17.2 Paragraphe 3 de l'article 17.2 du Règlement 347, R.R.O. 1990								
Paragraph 3 of Section 17.2 of Regulation 347 states: The first time that subject waste is stored at the waste generation facility for more than 90 days, a notice must be given to the Regional Director, within five (5) business days after the 90th day of storage, that it describes, as accurately as possible, the nature, amount and location of the subject waste stored, or expected to be stored in the future, at the waste generation facility for more than 90 days, and it indicates how frequently subject wastes is expected to be stored in the future at the waste generation facility for more than 90 days. Note: One form for each subject waste.		Voici ce qui est stipulé au paragraphe 3 de l'article 17.2 du Règlement 347 (traduction non officielle): La première fois qu'un déchet visé est stocké durant plus de 90 jours aux installations ou producteurs de déchets, un avis doit être remis au directeur de la Direction régionale au plus tard cinq jours ouvrables après le 90 ^e jour de stockage. Il doit y être décrit, aussi précisément que possible: i) la nature, la quantité et le lieu du déchet visé qui est stocké ou dont le stockage est prévu plus tard durant plus de 90 jours aux installations du producteur de déchets; ii) la fréquence à laquelle il est prévu que le déchet visé sera stocké durant plus de 90 jours aux installations du producteur de déchets. Note: Il faut remettre un questionnaire pour chaque déchet visé.								
1. Name of generator/ Nom du producteur		2. Generator No./N° du producteur								
3. Address / Adresse		4. Postal code / Code postal								
5. Name of contact person / Nom de la personne-ressource		6. Telephone / Téléphone								
7. Waste description / Description des déchets		8. Primary characteristic / Caractéristique principale								
		9. Waste Class / Catégorie de déchet								
Description of storage procedures and area / Description de mode et de lieu d'entreposage										
10. Indicate container used / Conteneur	Tank/ Réservoirs	Drum/ Barils	Other/ Autre	<table border="1"> <thead> <tr> <th>Site / Bureau</th> <th>No. / Nombre</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Site / Bureau	No. / Nombre	Type			
Site / Bureau	No. / Nombre	Type								
11. Is waste stored in secure area? / Les déchets sont-ils entreposés en lieu sûr?		No / Non	Yes / Oui							
12. Is the waste storage drum(s) / tank(s) labelled? / Les conteneurs (réservoirs ou barils) sont-ils étiquetés?		No / Non	Yes / Oui							
13. Will a leak or spill be contained? / Une fuite ou un déversement pourrait-elle être contenue?		No / Non	Yes / Oui							
14. Is the storage area/facility routinely inspected? / Procède-t-on à des inspections régulières de lieu ou des installations d'entreposage?		No / Non	Yes / Oui							
15. Reason for retention of the waste / Raison de l'entreposage des déchets										
16. Will the amount of waste stored change over time? / La quantité stockée changera-t-elle?		No/Non	Amount of waste stored / Quantité stockée: _____ (kg)							
		Yes/Oui	Anticipated accumulation rate / Taux d'accumulation prévu _____ (kg/month / lg/mois) Maximum amount to be stored / Quantité maximale à être stockée: _____ (kg)							
17. Anticipated manner of disposal of the waste? / Comment ont-ils prévu d'éliminer le déchet?										
18. Anticipated time waste will be stored _____ (months)/(mois)		Date prévue de stockage _____								
If the subject waste remains in storage for more than 24 months an application must be made to the ministry for a Certificate of Approval. / Si le déchet visé est stocké durant plus de 24 mois, une demande doit être présentée au ministère dans le but d'obtenir un certificat d'autorisation.										
19. Do you have a contingency plan in the event of a spill? / Existe-t-il un plan d'urgence en cas de déversement?		No/ Non	Yes / Oui							
20. Signature of Company Official / Signature du représentant de la compagnie		Print name / Imprimer nom	21. Date/ Date							

Packing and Manifesting Hazardous Wastes for Pick-up

1. Prior to pick-up, it is necessary for (1) hazardous wastes in the lock-up area near the Ceramics Studio to be packed into labeled shipping containers, and (2) a manifest to be prepared.

2. Campus Services is responsible for removing containers of hazardous waste from the lock-up storage cabinets, placing the same classes of wastes into suitable designated shipping containers for the waste, and labeling the container with the shipping class information. The following provides information for this purpose.

Waste Information			Transportation (TDG Information)			
Common Waste Name	Manifest Required	Hazardous or Non-Hazardous?	Shipping Name	PIN	Class	Packing Group
Absorbents (Spent Socks, Pads)	YES	HAZ,	Waste Solids Containing Flammable Liquids, nos, (Technical Name)	UN 3175	4.1	II
Absorbents (Spent Socks, Pads) ~ Lube Oil	YES	HAZ	Waste Environmentally Hazardous Substances, Solid, nos, (Used Oil with Lead)	UN 3077	9	III
Acid Solutions	YES	HAZ	Waste Corrosive Liquids, nos, (Technical Name)	UN 1760	8	II
Activated Carbon ~ Spent	YES	Testing Required or assume HAZ	Waste Carbon, Activated	UN 1362	4.2	I
Aerosol Cans	YES	HAZ	Waste Aerosols, Flammable	UN 1950	2.1	
Batteries: Alkaline	YES	HAZ	Waste Batteries, Wet, Filled with Alkali, Electric Storage	UN 2795	8	III
Batteries: Lead Acid	YES	HAZ	Waste Batteries, Wet, Filled with Acid, Electric Storage	UN 2794	8	III
Batteries: NiCd	YES	HAZ	Waste Environmentally Hazardous Substances, Solid, nos, (NiCd Batteries)	UN 3077	9	III
Caustic Solutions	YES	HAZ	Waste Corrosive Liquids, nos, (Technical Name)	UN 1760	8	II
Compressed Gas Cylinders ~ Empty	NO	NHAZ	Not TDG Regulated	n/a	n/a	n/a
Construction and Demolition Material ~ Uncontaminated	NO	NHAZ	Not TDG Regulated	n/a	n/a	n/a
Contaminated Debris & Soil	YES	Testing Required	To be determined	-	-	-
Desiccants ~ Spent (All Types)	YES	Testing Required or assume HAZ	NHAZ ~ Not TDG Regulated (instrument air) HAZ~ Waste Water Reactive, Solid, nos, (Technical Name)	UN 2813	4.3	I
Empty Containers (Metal and Plastic Including Drums, Pails, Jugs, etc.) ~ (Refundable)	NO	NHAZ	Not TDG Regulated	n/a	n/a	n/a
Empty Containers (Metal and Plastic Including Drums, Pails, Jugs, etc.) ~ (Non Refundable)	NO	NHAZ	Not TDG Regulated	n/a	n/a	n/a
Filters ~ Glycols (EG/TEG)	YES	HAZ	Waste Environmentally Hazardous Substances, Solid, nos, (Technical Name)	UN 3077	9	III
Filters ~ Instrument Air	NO	NHAZ	Not TDG Regulated	n/a	n/a	n/a
Filters ~ Lube Oil (Drained)	YES	NHAZ	Not TDG Regulated	n/a	n/a	n/a
Filters ~ Lube Oil	YES	HAZ	Waste Environmentally Hazardous Substances, Solid, nos, (Technical Name)	UN 3077	9	III
Filters ~ (Raw/Fuel Gas, NGL's, etc.)	YES	HAZ	Waste Solids Containing Flammable Liquids, nos, (Technical Name)	UN 3175	4.1	II
Fluorescent Tubes ~ Spent	NO	NHAZ	Not TDG Regulated	n/a	n/a	n/a
Garbage ~ Domestic Waste	NO	NHAZ	Not TDG Regulated	n/a	n/a	n/a
Gaskets (non-asbestos)	NO	NHAZ	Not TDG Regulated	n/a	n/a	n/a
Glycol Solutions (MEG/DEG/TEG) ~ Metals	YES	HAZ	Waste Environmentally Hazardous Substances, Liquid, nos, (Technical Name)	UN 3082	9	III
Glycol Solutions (MEG/DEG/TEG)	NO	HAZ	Not TDG Regulated	n/a	n/a	n/a
Grease Cartridges ~ Empty	NO	NHAZ	Not TDG Regulated	n/a	n/a	n/a

Waste Information			Transportation (TDG Information)			
Common Waste Name	Manifest Required	Hazardous or Non-Hazardous?	Shipping Name	PIN	Class	Packin g Group
Hydraulic and Transmission Oil (Vehicle and Equipment)	YES	HAZ	Waste Environmentally Hazardous Substances, Liquid, nos, (Technical Name)	UN 3082	9	III
Insulation/Refractory ~ Non Asbestos	NO	NHAZ	Not TDG regulated	n/a	n/a	n/a
Ion Exchange Resin ~ Water Treatment	NO	NHAZ	Not TDG regulated	n/a	n/a	n/a
Lab Chemicals	YES	HAZ	Waste Environmentally Hazardous Substances, Liquid, nos, (Technical Name)		-	-
Lubricating Oil	YES	HAZ	Waste Environmentally Hazardous Substances, Liquid, nos, (Technical Name)	UN 3082	9	III
Methanol	YES	HAZ	Waste Methanol	UN 1230	3(6.1)	II
Office Material (Paper)	NO	NHAZ	Not TDG regulated	n/a	n/a	n/a
Paints (Cans, Drums and Pails)	YES	HAZ	Waste Paint Related Material	UN 1263	3	III
Paint Cans (Empty) and Brushes	NO	NHAZ	Not TDG regulated	n/a	n/a	n/a
Pesticides/Herbicides Spent	YES	HAZ	Waste Pesticides, Liquid, Toxic, nos, (Technical Name)	UN 2902	6.1	II
Photo Copier / Laser Printer Toner	NO	NHAZ	Not TDG regulated	n/a	n/a	n/a
Pipe Dope Containers and Brushes ~ Empty	NO	NHAZ	Not TDG regulated	n/a	n/a	n/a
Pipe Dope/Grease ~ Lead Based	YES	HAS	Waste Environmentally Hazardous Substance, Solid, nos, (Technical Name)	UN 3077	9	III
Pipe Dope/Grease ~ Non Lead Based	NO	NHAZ	Not TDG regulated	n/a	n/a	n/a
Rags ~ Oily	YES	HAZ	Waste Environmentally Hazardous Substance, Solid, nos, (Technical Name)	Un 3077	9	III
Sand Blasting Sand ~ Contaminated	YES	HAZ	Waste Environmentally Hazardous Substance, Solid, nos, (Technical Name)	Un 3077	9	III
Sand Blasting Sand ~ Uncontaminated	NO	NHAZ	Not TDG regulated	n/a	n/a	n/a
Scale (Non-Radioactive)	NO	NHAZ	Not TDG regulated	n/a	n/a	n/a
Scrap Metal (Galvanized, Aluminum, Stainless Steel, etc.)	NO	NHAZ	Not TDG regulated	n/a	n/a	n/a
Solvents (Non-Halogenated) ~ Spent	YES	HAZ	Waste Flammable Liquid, nos, (Technical Name)	UN 1993	3	II
Varsol	YES	NHAZ	Waste Flammable Liquid, nos, (Varsol)	UN 1993	3	II
Wash Fluids ~ Equipment Cleaning Operations	**SPECIFY PARTY	**SPECIFY PARTY	To be determined	-	-	-
Wash Fluids ~ Solvents	YES	HAZ	Waste Flammable Liquid, nos, (Technical Name)	UN 1993	3	II

Waste Manifesting, Disposal and Transportation Information

1. Campus Services is responsible for completing the shipping manifest for each outbound hazardous waste shipment. Manifests can be prepared on-line using the Ministry of Environment HWIN web site: <http://www.hwin.ca/hwin/index.jsp>.
2. When using an electronic manifest, OCAD University must provide the hazardous waste hauler with electronic access to the manifest to complete section B (Carrier) of the manifest.
3. When using the electronic manifest, a paper copy does not have to be returned to Ministry of Environment, nor is the generator required to retain a record.
4. Units to be utilized on the manifest are either L (liters) for liquid wastes or Kg (kilogram) for solid wastes. If waste density is unknown assume 1 L = 1 Kg

Pick-up of Hazardous Wastes by Licensed Hauler for Disposal

1. Campus Services is responsible for arranging pick-up and disposal of hazardous wastes by a licensed hazardous waste disposal company.
2. In order to ship hazardous wastes off-site via a Ministry of Environment licensed hazardous waste hauler, OCAD University must have a valid Generator Registration Number, covering the classes of waste.
3. The Generator Registration Numbers for OCAD University are:
 - a) 100 McCaul – ON0265000
 - b) 205 Richmond – ON3600802
 - c) 230/240 Richmond – ON6138736
 - d) 51 McCaul – ON 8963623
4. Below are the Active Waste Classes listed on OCAD University's Generator Registration profile. As of December, 2011, all hazardous wastes known to be generated at OCAD University were on this Profile. If any activities generate a class of hazardous waste not listed in the Generator Registration Record, it is necessary to advise the Office of Safety and Risk Management to initiate an updating of the Generator Registration Profile.

OCAD University Registered Waste Classes

114-T	Liquid	OTHER INORGANIC ACID WASTES
145-I	Liquid	PAINT/PIGMENT/COATING RESIDUES
145-L	Liquid	PAINT/PIGMENT/COATING RESIDUES
146-T	Solid	OTHER SPECIFIED INORGANICS
148-I	Liquid	INORGANIC LABORATORY CHEMICALS
148-I	Solid	INORGANIC LABORATORY CHEMICALS
148-B	Liquid	INORGANIC LABORATORY CHEMICALS
148-C	Liquid	INORGANIC LABORATORY CHEMICALS
148-C	Solid	INORGANIC LABORATORY CHEMICALS
213-I	Liquid	PETROLEUM DISTILLATES
252-L	Liquid	WASTE OILS & LUBRICANTS
263-I	Liquid	ORGANIC LABORATORY CHEMICALS
263-B	Liquid	ORGANIC LABORATORY CHEMICALS
264-I	Liquid	PHOTOPROCESSING WASTES
264-C	Liquid	PHOTOPROCESSING WASTES
312-P	Solid	PATHOLOGICAL WASTES
331-I	Gas	Compressed

Disposition of Empty Compressed Gas Cylinders

1. Empty compressed gas cylinders must be labeled, capped and marked "EMPTY".
2. Empty compressed gas cylinders are to be returned to the supplier – not disposed of.

Disposal of Compact Fluorescent Light Bulbs

1. Compact fluorescent light bulbs and tubes are a hazardous waste as they contain mercury (approximately 5 mg per 25W bulb).
2. Old fluorescent tubes should be stored in used tube boxes at a location protected from damage.
3. Contact Campus Services to arrange disposal.
4. If a compact fluorescent light bulb or tube breaks, sweep up all of the glass fragments and phosphor powder. DO NOT vacuum. Place in a plastic bag; wipe the area with a damp paper towel to pick up stray shards of glass or fine particles, and place the used towel in the plastic bag.

Disposal of Batteries

1. Spent or still usable batteries should be stored in a secure, dry place.
2. Waste batteries are classes as hazardous waste and must not be discarded or disposed of in regular garbage
3. All waste battery types will be collected for recycling or proper disposal