##

**ROUTER TABLE**

## Scope

This document is intended to estimate potential human health and environmental risks posed by current and potential future conditions at **State Library of Queensland (State Library) Fabrication Lab** Facility. The risk assessment describes the approach to the risk assessment and facilitates appropriate ways to evaluate current and future risks.

Refer to the **Safe Operating Procedures** (**SOP**) for information regarding the safe usage and check list for this equipment.

|  |
| --- |
| Plant/Equipment Description: **Router Table (fixed plant)** |
| Leaders:  **Daniel Flood** |
| Locations:  **Fabrication Lab** |
| Assessment Date:  **02/03/2020** | Review Date:  **02/03/2021** |

*N.B. This assessment can remain active for up to 5 years. However, an annual monitoring and review process should be undertaken and recorded – refer to the last page of this document.*

*Below are the details of the manufacturing or production processes attributed to this item of equipment categorised by their assessed inherent risk levels (refer to the Equipment/Process Risk Matrix). The actions required for approval for each level of inherent risk are mandatory.*

|  |  |  |
| --- | --- | --- |
| **Inherent Risk Level** | **Details of Processes** | **Action Required/Approval** |
| 🗹 | **Medium** | * When using a fixed-base router fitted to the router table.
* When light routing with larger, regularly shaped stock that is easily handled.
* Only when the stock width and thickness allows for a machine pass to be completed cleanly. Material may kick back if not properly secured.
 | * Document controls in planning documents and/or complete this *Plant Risk Assessment*.
 |
| 🗹 | **High** | * When routing across the grain or through knots in the material.
* When routing at greater depths thus requiring increased operational control and concentration to complete a machine pass.
* When routing dense hardwoods.
* When members are only permitted to participate is these processes under direct supervision.
 | * A *Plant Risk Assessment* is required to be completed.
 |
| 🗹 | **Extreme** | * When it may be necessary to temporarily alter a guard or fence to accommodate specific shapes and/or sizes of stock, resulting in possibly less accuracy or control.
* When routing smaller or irregularly shaped stock that may require ones hands to be in closer proximity to the router bit.
* When members are NOT always under the appropriate supervision.
 | * Consider alternatives to using the plant / equipment.
* A *JSA* is required to be completed.
* Supervisor approval prior to conducting this activity is required.
 |

Minimum standards

| Minimum qualifications and experience *Listed below are the general “minimum” recommendations for the management of this Plant/Equipment.*🗹 *Indicate the minimum management controls.*  |
| --- |
|  [ ]  State Library staff with experience, ability and competency in the safe use of this plant/equipment  *(indicate one or more of the following):*X Specific knowledge of the safe and correct use of this plant/equipmentX Experience (i.e. previous involvement and familiarity) in the safe use of this plant/equipmentX Demonstrated expertise, ability and competency with this plant/equipmentX Documented qualifications relating to the use of this plant/equipment (e.g. in a staff profile) **OR** [ ]  A Contractor, other than a State Library staff member, with:X Expertise in the safe and correct use of this plant/equipmentX Documented qualifications that demonstrate experience, ability and competency in the safe use of this plant/equipment. |
|  [ ]  Will any staff require initial and/or ongoing training for the safe use of this plant/equipment?If yes, give details:  |
|  X Will members be operating this plant/equipment?If yes, state how student use of this plant/equipment will be managed (e.g. Workshop Safety Induction)Give details:  **Under direct supervision**  |
|  Further information if required:  |
|  |
|  Minimum control requirements  |
|  Supporting documentation available in the school on this plant/equipment includes: X Operators ManualX Safe Operating Procedures (SOP)X Equipment Maintenance Records (EMR)X A process for recording student safety induction e.g. Student induction register X A process for recording staff training and experience, e.g. ITD Staff induction register |
|  X All guards are in place and in good working order for this plant/equipment  |
|  X Safe Working Zones are defined for this plant/equipment (e.g. yellow lines and/or appropriate signage)  |
|  X Suitable personal protective equipment (PPE) is available to be used by all operators |
|  X This plant/equipment complies with relevant safety standards |
|  Further information if required: **Router that is attached to the table must meet the manufacturers standard as per the operators manual.** |

Hazards and control measures

*Listed below are indicative hazards/risks and suggested control measures. These are by no means exhaustive lists. Add details of any other hazards/risks or additional controls you intend to implement.*

🗹 *Indicate the control measures adopted. Detail their implementation and any additional controls required.*

| **Hazards/Risks** | **Hierarchy of Recommended** **Control Measures** | **Yes** | **No** | **Details of how this will be implemented***(and any additional controls)* |
| --- | --- | --- | --- | --- |
| **Exposure to Rotating****or Moving Parts:*** **Entanglement and**

**Entrapment**Could hair, clothing, ties, jewellery or other materials become entangled with moving parts of plant or materials in motion?* **Striking**

Could anyone be struck by moving objects such as the work piece being ejected, or by the unexpected or uncontrolled movement of the plant or work piece? * **Crushing and Pinching**

Could anyone be crushed or pinched due to falling, uncontrolled movement of plant or its load tipping or rolling over, or contact with moving parts during testing, inspection or maintenance? * **Cutting, Stabbing and Puncturing**

Can anyone be cut, stabbed or punctured by coming into contact with moving plant or parts, or objects such as ejected work pieces or waste? | 1. Where possible, potentially hazardous router tables are substituted or replaced with a less hazardous alternative.
 | X | [ ]  | **Supervisor to consider the requirements and alternates**  |
| 1. All necessary router table guards and safety devices are in place protecting workers from all moving router parts.
 | X | [ ]  | **As per manufacturers standards and general pre-flight checks and procedures** |
| 1. “Lock Out” or warning “Danger” tags are affixed to the router table when under repair or maintenance preventing workers from using the equipment.
 | X | [ ]  | **Standard LOTO procedures** |
| 1. Staff and members training is provided to minimise exposure to these hazards.
 | X | [ ]  | **Safety induction** |
| 1. Safe operating procedures (SOPs) for the router table are available and clearly displayed.
 | X | [ ]  | **With equipment and in SOP folder** |
| 1. “Safe Working Zones” around all router tables are clearly defined.
 | X | [ ]  | **Fixed plant working zone** |
| 1. Emphasis is placed on the requirement for plant operators to remove all jewellery, tuck in loose clothing and tie back long hair.
 | X | [ ]  | **As per SOP requirements**  |
| 1. All approved personal protective equipment (PPE) is used where required.
 | X | [ ]  | **All PPE is provided, as per SOP requirements**  |
| **Slips, Trips, Falls** **and Abrasions:**Can anyone using the plant or in the vicinity of the plant, slip, trip or fall due to the working environment or other factors?e.g. Poor housekeeping, dust on floors, slippery or uneven work surfaces, power cables across work areas causing injuries and abrasions? | 1. Slip resistant flooring is encouraged in workspaces. Regular checks are made for unsafe wear and damage. Inspections are made for any power leads, etc.
 | X | [ ]  | **Anti-slip mats available if required** |
| 1. Procedures are in place for the disposal of all waste materials around all workspaces where any router table activities are to be performed.
 | X | [ ]  | **Storage & waste disposal procedures** |
| 1. Staff training is provided to minimise exposure to these hazards.
 | X | [ ]  | **Safety induction** |
| **Environmental:*** **Noise**

Is it likely that the normal operation of this plant will produce excessive noise levels?* **Dust, Fumes and**

**Vapours**Is it likely there will be airborne dust particles, toxic fumes or volatile vapours produced and therefore be present in the workspace?* **Lighting**

Is there insufficient lighting to operate this plant in a safe manner? Is there a possible strobe lighting effect caused by faulty fluorescent tubes in the workspace?* **Temperature**

Is the ambient room temperature too extreme and therefore likely to cause the operator discomfort or lack of concentration? | 1. The router table is regularly inspected and maintained to help minimise the risk of exposures to these hazards.
 | X | [ ]  | **Routine checks and maintenance** |
| 1. All router table maintenance is documented.
 | X | [ ]  | **Service records**  |
| 1. Exposure to noisy workshop environments is monitored and evaluated regularly for all workers.
 | X | [ ]  | **Monitoring of excess noise during operations by supervisor** |
| 1. Engineering controls (or physical changes) such as mandatory machinery guarding or any protective safety screens and enclosures are in place in all workspaces and all in good working condition.
 | X | [ ]  | **As per manufacturers standards** |
| 1. Staff and member training is provided to minimise exposure to these hazards.
 | X | [ ]  | **Safety induction** |
| 1. All ducted dust extraction systems are fully maintained, cleaned and emptied, connected and operational.
 | [ ]  | [ ]  | **As per general housekeeping procedures** |
| 1. Good lighting is provided to all workspaces and this is maintained on a regular basis. Fluorescent tubes are checked and replaced as required.
 | X | [ ]  | **As per workspace risk assessment**  |
| 1. All approved personal protective equipment (PPE) is used where required.
 | X | [ ]  | **All PPE is maintained and provided**  |
| **Electrical:**Can the operator be injured by electrical shock due to working near or contacting with damaged or poorly maintained live electrical conductors such as power outlets, extension leads, safety switches, starters and isolators or casual water on the floor near plant and machinery?  | 1. The router table has a machine mounted isolating switch that disconnects all motive power.
 | X | [ ]  |  |
| 1. The router table is fitted with a Direct on Line (DOL) Start/Stop switch (red and green buttons).
 | X | [ ]  |  |
| 1. Emergency stop buttons are mounted prominently where necessary.
 | X | [ ]  |  |
| 1. “Lock Out” or warning “Danger” tags are affixed to the router table when repair or maintenance preventing workers from using the equipment.
 | X | [ ]  | **Standard LOTO procedures** |
| 1. Visually checks are made of all electrical switches, plugs and power leads, etc.
 | X | [ ]  | **Routine checks and maintenance** |
| 1. Electrical safety inspections, testing and tagging, etc. are completed regularly.
 | [ ]  | [ ]  | **Annually. As per QLD WHS requirements** |
| 1. Electrical maintenance on all plant and equipment, including router tables, is documented.
 | [ ]  | [ ]  | **Service records** |
| **Exposure:*** **Friction**

Is the plant likely to generate heat by friction? Could the plant operator accidentally come into contact with moving materials or machinery components resulting in friction burns to the skin, particularly hands?* **Hazardous**

**Substances**Is it likely that the plant operator or others nearby in the workspace could be exposed to hazardous or toxic chemicals such as airborne toxic wood dust particulates? | 1. The router table is regularly inspected and maintained to help minimise the risk of exposures to these hazards.
 | X | [ ]  | **Routine checks and maintenance** |
| 1. Hazardous Substance Risk Assessments are completed for any hazardous waste materials or toxic dusts and vapours resulting from this machining process.
 | X | [ ]  | **Active supervision and general housekeeping procedures** |
| 1. Staff and member training is provided to minimise exposure to these hazards.
 | X | [ ]  | **Safety induction**  |
| 1. “Safe Working Zones” around all router tables are clearly defined.
 | X | [ ]  | **User zone clearly marked** |
| 1. All approved personal protective equipment (PPE) is used where required.
 | X | [ ]  | **All PPE is provided, as per SOP requirements** |
| **Ergonomics and****Manual Handling:**Can the plant be safely operated, in a suitable location, providing clear and unobstructed access? Poorly designed work stations often necessitate teachers and students performing manual tasks involving heavy lifting and lowering, pushing, pulling or carrying, etc. Such tasks then contribute to a range of musculoskeletal sprains and strains for workers.  | 1. Where possible, the router tables and any adjacent work benches are planned and adjusted to a comfortable work height thus minimising any unsafe or excessively strenuous manual tasks.
 | X | [ ]  | **Use of standard working heights and adjustable stands as required** |
| 1. Sufficient workspace is provided in all practical classrooms to help ensure unobstructed, safe operation.
 | X | [ ]  | **Supervisor to assess work space requirements** |
| 1. Safe Working Zones are clearly defined around all router tables. Floors are free of excessive wood dust, waste materials and other extraneous objects.
 | X | [ ]  | **As per standard housekeeping procedures** |
| 1. Staff training is provided with regard to manual handling techniques and procedures to minimise exposure to these hazards.
 | X | [ ]  | **Staff safety and manual handling training.** |
| **Explosion and Fire:**As a consequence of using this particular item of plant and equipment, could anyone be injured by the release of stored energy triggered by volatile, explosive substances such as stored gasses, vapours or liquids? Could fire and explosion also result from a build-up of wood dust under the table saw, in the dust extraction system or in confined ceiling spaces? | 1. All ducted dust, fumes and vapour extraction systems are regularly maintained and cleaned.
 | X | [ ]  | **Routine checks and maintenance**  |
| 1. Fire extinguishers of the correct type are readily available in all workspaces and positioned near exit doorways.
 | X | [ ]  | **As per Australian Standards** |
| 1. Staff training is provided regarding procedures for the correct and appropriate use of fire safety equipment.
 | X | [ ]  | **Staff Fire & Evac training.** |
| 1. Exits from buildings and other work areas are defined and access to them kept clear of obstructions.
 | X | [ ]  | **As per Australian building codes** |
| 1. Safety signage is posted clearly denoting the location of all fire safety items and emergency exits.
 | X | [ ]  | **As per Australian building codes** |

| **Other Hazards/Risks** | **Additional Control Measures***These would relate to the specific student needs, locations and conditions in which you are conducting your activity.* |
| --- | --- |
|  |  |

|  |
| --- |
| **Approval** |
| Submitted by: Simon McKellar | Date: 02/03/2020 |
| **[ ]**  | Approved as submitted. |
| **[ ]**  | Approved with the following condition(s):      |
| **[ ]**  | Not Approved for the following reason(s):      |
| By:       | Designation:       |
| Signed: | Date:        |

|  |
| --- |
| Staff members involved in the use of this risk assessment and the associated plant and equipment: |
| *
*
*
*
*
*
*
*
 | *Signature:*  ……………………………….. *Date:**Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:*  |

|  |
| --- |
| **Monitoring and Review***This Plant and Equipment Risk Assessment is to be monitored and reviewed annually for a further four (4) years.* |

|  |  |  |
| --- | --- | --- |
| **Review 1:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* Staffing details have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

|  |  |  |
| --- | --- | --- |
| **Review 2:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* Staffing details have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

|  |  |  |
| --- | --- | --- |
| **Review 3:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* Staffing details have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

|  |  |  |
| --- | --- | --- |
| **Review 4:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* Staffing details have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

© State of Queensland (State Library of Queensland) 2020

This policy is licensed under a Creative Commons Attribution 3.0 Australia licence. You are free to copy, communicate and adapt this work, so long as you attribute the State Library of Queensland.

  

For more information see <http://creativecommons.org/licenses/by/3.0/au>