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| <b>NC Sturgeon</b><br>Safety Management System |                      |                      | Doc No:             | MANLFTG         |
|  |                      |                      | Initial Issue Date: | 02/2016         |
| <b>MANUAL LIFTING</b>                          |                      |                      | Revision Date:      | Initial Version |
|  |                      |                      | Revision No.:       | 0               |
|  |                      |                      | Next Revision Date: | TBD             |
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## Purpose

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NC Sturgeon is committed to providing a safe and healthy working environment for all employees. Musculoskeletal disorders (MSD) account for a majority of reported injuries and we must minimize the risk and incidence of MSDs. To achieve this goal, NC Sturgeon requires each worksite to establish and maintain a MSD, Lifting and Handling Loads Program with the following elements:

- Ongoing training of management, supervisors, and employees (including new hires) on MSD awareness hazards and control measures
- Training of specialized staff (designated NC Sturgeon Representative) on MSD hazard assessment and control measures
- Tracking of MSD statistics
- MSD hazard identification and assessment (see MSD Hazard Identification form)
- Control of MSD hazards through the application of engineering and/or administrative controls
- Proactively integrating ergonomics principles into workplace design and work techniques
- A realization that personal protective equipment may only be used as a substitute for engineering or administrative controls if it is used in circumstances in which those controls are not practicable.

## Key Responsibilities

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### NC Sturgeon Safety Manager

- Communicate, promote and support the MSD, Lifting and Handling Loads Program.
- Conduct MSD training sessions and/or provide MSD training materials.
- Maintain records of MSD training that they provide in a manner that supports accuracy and ease of access for monitoring purposes.
- Monitor corrective actions taken as identified on incident reports.
- Support supervisors and the worksite JHSC in the Lifting and Handling Loads Program process.
- Assist in the investigation of MSD incidents to address injury hazards.
- Bring to the attention of NC Sturgeon management any MSD hazards identified during their investigations, audits or inspections.
- Ensure distribution and awareness of MSD Hazard Identification Forms.
- Provide input into the development of safe work procedures to reduce MSD hazards.

### Worksite Manager

Responsible for the implementation and maintenance of the Lifting and Handling Loads Program for their facility and ensuring all assets are made available for compliance with the procedure. He will also:



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- Ensure that all worksite departments implement and maintain the provisions of the Lifting and Handling Loads Program.
- Seek regular reports to ensure that their worksite is in compliance with the Lifting and Handling Loads Program.
- Manual lifting equipment such as dollies, hand trucks, lift-assist devices, jacks, carts, hoists must be provided for employees. Use of provided manual lifting equipment by employees must be enforced.

### Employees

- Shall attend all MSD related training for the task they are performing.
- Practice MSD prevention strategies as per MSD training.
- Comply with safe work procedures.
- Correctly use the equipment provided by NC Sturgeon, according to manufacturers' recommendations.
- Report to the supervisor any unsafe acts, unsafe tasks, unsafe conditions or equipment problems that create MSD hazards.
- Report any MSD incidents to the supervisor and cooperate in the investigation process.

### Procedure

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#### Worksite Assessment

Before manual lifting is performed, a hazard assessment must be completed. The assessment must consider size, bulk, and weight of the object(s), if mechanical lifting equipment is required, if two-man lift is required, whether vision is obscured while carrying and the walking surface and path where the object is to be carried. The assessment shall also include:

- Use of the MSD Hazard Identification form contained within this procedure
- Physical Demands
  - Neck Back Shoulder Wrist
  - Hand
  - Knee Ankle/
  - Feet
- Force Required and Working Distance
  - Do employees push, pull, lift, lower, or carry objects that are too heavy or require too much force; away from the center of the body or in a jerky or twisting manner?
- Work Postures
  - Is the back is curved too much or in a stooped position?
  - Is the back is twisted during movements?
  - Is the neck bent or twisted?



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- Are the arms away from the body?
- Are the wrists flexed, extended or pinched positions?
- Repetitive Use of Similar Muscles
  - Do employees perform movements over and over in the same way
- Static Muscle Use and Duration
  - Do employees hold any of the above work postures for > 20 sec.?
  - Stand for long periods with their knees locked?
  - Stand in one position without moving or stretching?
- Contact Stress
  - Do employees put localized pressure on any part of their body?
- Environmental Conditions
  - Are employees exposed to poor lighting, vibration, cold or hot air/wind/water?

### **Work Controls**

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NC Sturgeon must ensure based on the assessment, implement control measures to eliminate, minimize or reduce, so far as is reasonably practicable, the risk of musculoskeletal injury to the worker.

### **Handling Heavy or Awkward Loads**

NC Sturgeon will take all practicable means to adapt the heavy or awkward loads to facilitate lifting, holding or transporting by workers or to otherwise minimize the manual handling required. Those include:

- Where use of lifting equipment is impractical or not possible, two man lifts must be used.
- All loads carried on handcarts shall be secured.
- All awkward type loads shall be secured to prevent tippage.
- Additional methods include:
  - reducing the weight of the load by dividing it into two or more manageable loads
  - increasing the weight of the load so that no worker can handle it and therefore mechanical assistance is required
  - reducing the capacity of the container
  - reducing the distance the load must be held away from the body by reducing the size of the packaging
  - providing hand holds
  - team lift the object with two or more workers
  - improve the layout of the work process to minimize the need to move materials
  - reorganize the work method(s) to eliminate or reduce repeated handling of the same object
  - rotate workers to jobs with light or no manual handling



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- use mobile storage racks to avoid unnecessary loading and unloading.

### Incidents and Injuries

If an employee reports symptoms of a MSI NC Sturgeon will:

- Musculoskeletal injuries caused by improper lifting must be investigated and documented. Incorporation of investigation findings into work procedures must be accomplished to prevent future injuries.
- Injuries must be recorded and reported as required by 29 CFR Part 1904.

### Review & Updating Lifting and Handling Loads Program

- Supervision must periodically evaluate work areas and employees' work techniques to assess the potential for and prevention of injuries. New operations should be evaluated to engineer out hazards before work processes are implemented.

### Training

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NC Sturgeon shall ensure that a worker who may be exposed to the possibility of musculoskeletal injury is trained in specific measures to eliminate or reduce that possibility. Our training shall include:

- General principles of ergonomics,
- Recognition of hazards and injuries,
- Procedures for reporting hazardous conditions, and
- Methods and procedures for early reporting of injuries.

Additionally, job specific training will be given on safe lifting and work practices, hazards, and controls.




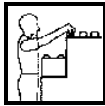


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### MSD Hazard Identification Form






Job Title: \_\_\_\_\_ Location of Assessment: \_\_\_\_\_  
 Task Assignment: \_\_\_\_\_ Hazard Identification applies to the following locations: \_\_\_\_\_  
 Job Code (if used): \_\_\_\_\_ Date: \_\_\_\_\_  
 Location: \_\_\_\_\_ Completed by (Name/Title): \_\_\_\_\_  
 In Consultation with: \_\_\_\_\_

Status: Draft  Final

| 1. Awkward Postures |  |   | Mark if required         | <ul style="list-style-type: none"> <li>List task(s) requiring this posture</li> <li>What is the possible cause of the posture?</li> </ul> | List possible control measure(s) and state if control measures have been implemented | Hazard Resolved                         |
|---------------------|--|---|--------------------------|---|--|---|
| Neck                | Working with the neck bent forward or to the side more than 30° for more than 2 hours total per day.   | <br>Side<br><input type="checkbox"/><br><br>Forward<br><input type="checkbox"/> | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
| Neck                | Working with the neck rotated more than 45° in either direction for more than 4 hours total per day or working with the neck bent back /up more than 10° for more than 2 hours total per day |    | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
| Neck                | Working with the elbow(s) at or above the shoulder for more than 2 hours total per day   |    | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |



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| 1. Awkward Postures |  |   | Mark if required         | <ul style="list-style-type: none"> <li>List task(s) requiring this posture</li> <li>What is the possible cause of the posture?</li> </ul> | List possible control measure(s) and state if control measures have been implemented | Hazard Resolved                         |
|---------------------|--|---|--------------------------|---|--|---|
| Shoulder            | Working while sitting or standing with the back bent forward, sideways, or twisted more than 30° for more than 2 hours total per day           | <br>Side<br><input type="checkbox"/><br><br>Twisted<br><input type="checkbox"/><br><br>Forward<br><input type="checkbox"/> | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
| Back                | Working while sitting or standing with the back bent back more than 10°, and with no support for the back, for more than 2 hours total per day | <br>Backward  | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
| Knees               | Employee squats/ kneels for more than 2 hours total per day  | <br>Kneel  | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |

| 2. Static Whole Body Postures |  | Mark if required         | <ul style="list-style-type: none"> <li>List task(s) requiring this posture</li> <li>What is the possible cause of the posture?</li> </ul> | List possible control measure(s) and state if control measures have been implemented | Hazard Resolved                         |
|-------------------------------|--|--------------------------|---|--|---|
| Prolonged Sitting             | Employee sits for more than 6 hours total per day  | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
| Prolonged Standing            | Employee stands on hard surface more than 4 hours total per day (standing in one location without taking > 2 steps in any direction) | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |



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| <b>3a. Lift/Lower Forces (manual labor)</b> |  | Mark if required         | <ul style="list-style-type: none"> <li>List task(s) requiring this posture</li> <li>What is the possible cause of the posture?</li> </ul> | List possible control measure(s) and state if control measures have been implemented | Hazard Resolved                         |
|---|--|--------------------------|---|--|---|
| Back/<br>Shoulder                           | Lift/lower objects up to 2 times <b>an hour</b><br>Object close to the body: 35 lb or more<br>Object away from the body: 17 lb or more   | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
|   | Lift/lower objects 3 to 60 times <b>an hour</b><br>Object close to the body: 30 lb or more<br>Object away from the body: 15 lb or more   | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
|   | Lift/lower objects 61 to 240 times <b>an hour</b><br>Object close to the body: 25 lb or more<br>Object away from the body: 15 lb or more | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
|   | Lift/lower objects >5 lb more than 240 times <b>an hour</b> (more than 4 times a minute)   | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |

| <b>3b. Lift/Lower Forces (office work)</b> |  | Mark if required         | <ul style="list-style-type: none"> <li>List task(s) requiring this posture</li> <li>What is the possible cause of the posture?</li> </ul> | List possible control measure(s) and state if control measures have been implemented | Hazard Resolved                         |
|--|--|--------------------------|---|--|---|
| Back/<br>Shoulder                          | Lift/lower objects up to 2 times <b>an hour</b><br>- Object close to the body: 30 lb or more<br>- Object away from the body: 15 lb or more   | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
|  | Lift/lower objects 3 to 60 times <b>an hour</b><br>- Object close to the body: 25 lb or more<br>- Object away from the body: 15 lb or more   | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
|  | Lift/lower objects 61 to 240 times <b>an hour</b><br>- Object close to the body: 25 lb or more<br>- Object away from the body: 10 lb or more | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
|  | Lift/lower objects >5 lb more than 240 times <b>an hour</b> (more than 4 times a minute)   | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |



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| <b>4a. Push/Pull Forces (manual labor)</b><br>(Carts, trolleys, rolls, cables, etc.)<br><br><i>NOTE: Push/Pull force is the force required to move the object, not the weight of the object itself.</i> |  | Mark if required         | <ul style="list-style-type: none"> <li>List task(s) requiring this posture</li> <li>What is the possible cause of the posture?</li> </ul> | List possible control measure(s) and state if control measures have been implemented | Hazard Resolved                         |
|---|--|--------------------------|---|--|---|
| Back/<br>Shoulder   | Pushing/pulling up to 2 times an hour with initial push/pull force of more than 50 lb  | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
|   | Pushing/pulling 3 to 120 times an hour, with initial push/pull force of more than 25 lb  | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
|   | Pushing/pulling forces >5 lb more than 120 times an hour (more than twice a minute)  | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
| <b>4b. Push/Pull Forces (office work)</b><br>(Carts, trolleys, rolls, cables, etc.)<br><br><i>NOTE: Push/Pull force is the force required to move the object, not the weight of the object itself.</i>  |  | Mark if required         | <ul style="list-style-type: none"> <li>List task(s) requiring this posture</li> <li>What is the possible cause of the posture?</li> </ul> | List possible control measure(s) and state if control measures have been implemented | Hazard Resolved                         |
| Back/<br>Shoulder   | Pushing/pulling up to 2 times an hour with initial push/pull force of more than 50 lb  | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
|   | Pushing/pulling 3 to 120 times an hour, with initial push/pull force of more than 25 lb  | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
|   | Pushing/pulling forces >5 lb more than 120 times an hour (more than twice a minute)  | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
| <b>5. Repetition</b>  |  | Mark if required         | <ul style="list-style-type: none"> <li>List task(s) requiring this posture</li> <li>What is the possible cause of the posture?</li> </ul> | List possible control measure(s) and state if control measures have been implemented | Hazard Resolved                         |
| Neck,<br>shoulders,<br>elbows,<br>wrists or<br>hands  | employee repeats the same motion with the neck, shoulders, elbows, wrists, or hands every few seconds with little or no variation for more than 2 hours total per day excluding computer use.<br>Check body part(s) that apply:<br><input type="checkbox"/> Neck <input type="checkbox"/> Shoulder(s)<br><input type="checkbox"/> Elbow(s)<br><input type="checkbox"/> Wrist(s) <input type="checkbox"/> Hand(s) | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
| Computer Use  | Employee uses computer more than 3 hours total per day   | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |





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| 6. Hand/Arm Vibration |   | Mark if required         | <ul style="list-style-type: none"> <li>List task(s) requiring this posture</li> <li>What is the possible cause of the posture?</li> </ul> | List possible control measure(s) and state if control measures have been implemented | Hazard Resolved                         |
|-----------------------|---|--------------------------|---|--|---|
| Hands<br>Arms         | Use high vibration tools (impact wrenches, chain saws, jack hammers, riving hammers) for more than 30 minutes total per day                   | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |
|                       | Use moderate vibration hand tools (grinders, sanders, jig saws) that typically have moderate vibration levels more than 2 hours total per day | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |

| 7. Repeated Impacts |   | Mark if required         | <ul style="list-style-type: none"> <li>List task(s) requiring this posture</li> <li>What is the possible cause of the posture?</li> </ul> | List possible control measure(s) and state if control measures have been implemented | Hazard Resolved                         |
|---------------------|---|--------------------------|---|--|---|
| Hands<br>Knees      | Employee uses one of the following as a hammer more than 10 times per hour and for more than 2 hours total per day.<br>(Check the body part(s) that apply)<br><br><input type="checkbox"/> Hand (heel/base of palm), or <input type="checkbox"/> Knee | <input type="checkbox"/> |   |  | <input type="checkbox"/><br>Date: _____ |



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Complete this section only if potential hazards have been identified in the “Mark if required” column:

- How many employees are exposed to the hazards identified above and how often?

|                            | # of employees Exposed | How often? (describe in hours per day or week, as appropriate) |
|----------------------------|------------------------|--|
| Awkward postures           |                        |  |
| Static whole body postures |                        |  |
| Lift/lower forces          |                        |  |
| Push/pull forces           |                        |  |
| Repetition                 |                        |  |
| Hand/arm vibration         |                        |  |
| Repeated impacts           |                        |  |

- In the past two years, how many MSD incidents been reported among employees who are exposed to the identified hazards? State the number of incidents and their nature (e.g., Lost Time, Medical Aid, First Aid, Incident only)

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