Executive Summary:

In the United Stated and most industrialized countries Repetitive Motion Injuries (RMI) are common due to the environment we work in. This environment is past pace and repetitive. Often the worker’s interface with the machine/work space is not adequately aligned thus causing stressors which eventually can and do results in RMI. Numerous research has been done in this area and it has been shown that those businesses which have performed detail analysis of the machine & man interaction / Ergonomics have profited from streamlining the work environment to better “fit” the individual, therefore, resulting in fewer absenteeism, medical cost, higher productivity and most of all healthier & happier employees.

This effort was undertaken, as part of a supervised class in the Department of Mechanical Engineering at the University of Utah, to summarize the Ergonomic Activity around the United States and perhaps around the world. Specifically to document the Ergonomic Standard(s) adopted by the governments both at the Federal and the State level. Each of the offices of the Occupational Safety and Health Administration at the Federal and the state level were contacted and the resident staff was interviewed pertaining to the State of affairs in the world of Ergonomics.

The outline below provides the current Ergonomic status both at the national and at the state level within the United States.

**Ergonomics at the National Level:**

The effort to establish a national Ergonomic standard began in 1990. For a decade this effort went through various steps in the OSHA administrative process and in year 2000 OSHA issued Ergonomics Program Standard only to be vacated the following year by a Congressional Review Act. Therefore at present in the United States, at a national level there is no Ergonomic standard which is being implemented or enforced.

However OSHA (at the national level) does provide several Industry specific Ergonomic Guidelines. It is noted that these guidelines are voluntary and are as follows:

* [Guidelines for Shipyards: Ergonomics for the Prevention of Musculoskeletal Disorders](http://www.osha.gov/dsg/guidance/shipyard-guidelines.html).
* [Guidelines for Poultry Processing: Ergonomics for the Prevention of Musculoskeletal Disorders](http://www.osha.gov/ergonomics/guidelines/poultryprocessing/poultryprocessing.html).
* [Guidelines for Retail Grocery Stores: Ergonomics for the Prevention of Musculoskeletal Disorders](http://www.osha.gov/ergonomics/guidelines/retailgrocery/retailgrocery.html).
* [Guidelines for Nursing Homes: Ergonomics for the Prevention of Musculoskeletal Disorders](http://www.osha.gov/ergonomics/guidelines/nursinghome/final_nh_guidelines.html).
* [Ergonomics Program Management Guidelines for Meatpacking Plants](http://www.osha.gov/Publications/OSHA3123/3123.html).

As the above guidelines are not all inclusive of the diverse industries, OSHA plans to develop additional voluntary guidelines with the use of a [standard protocol](http://www.osha.gov/SLTC/ergonomics/protocol.html) which is as follows:

Objective:

To establish a fair and transparent process for developing industry and task specific guidelines that will assist employers and employees in recognizing and controlling potential ergonomic hazards.

Description:

Each set of guidelines will address a particular industry or task. The industry and task specific guidelines will generally be presented in three major parts:

* Program management recommendations for management practices addressing ergonomic hazards in the industry or task;
* Worksite analysis recommendations for worksite/workstation analysis techniques geared to the specific operations that are present in the industry or task;
* Hazard control recommendations that contain descriptions of specific jobs and that detail the hazards associated with the operation, possible approaches to controlling the hazard, and the effectiveness of each control approach.

The scope, form, and content of the sets of guidelines will vary because the types of ergonomic hazards, injuries, and controls vary from industry to industry and task to task.

Information Gathering

Prior to developing an industry or task specific guideline, OSHA will review existing practices and programs, as well as available scientific information regarding ergonomic hazards and control methods, for the particular industry or task. The sources of this information will include trade associations, professional associations, labor organizations, the medical community, and individual firms. In addition, information will be obtained from the literature, OSHA's records, and settlement agreements.

Analysis:

In assessing the assembled practices and programs and developing the guidelines, OSHA will consider factors such as the following:

1. the extent to which the programs' provisions address the ergonomic hazards in the industry or task and are specific to the prevalent conditions in the industry or task;
2. the extent to which the programs' provisions address the specific control methods that are available for the ergonomic hazards present in the industry or task;
3. the extent to which the programs' provisions include a mechanism for reporting injuries, symptoms, and hazards which may be related to ergonomics in the workplace, and for responding to such reports;
4. the extent to which the programs' provisions reflect a process for evaluating the nature and causes of injuries which may be related to ergonomics in the workplace and a process for identifying, implementing, and evaluating measures to reduce injuries; and
5. the extent to which quantitative data or other information are available demonstrating the program's provisions are effective in reducing the number and severity of workplace injuries related to ergonomics or the number of ergonomic hazards.

Public Participation:

The public will be involved at several points in the guideline development process. During the initial drafting of a guideline, one-on-one meetings with representatives of major stakeholder groups will be conducted. The purpose of these meetings will be to gather the best available information on the hazards that are present in typical operations and on practices, programs, and processes that have been successfully used in the particular industry or for specific tasks. In addition, OSHA will ask for information and clarification regarding programs that these groups have developed.

OSHA will publish a Federal Register notice announcing the availability of each draft guideline on OSHA's website. The public will be invited in the Federal Register notice to submit written comments within 30 days and to participate in a stakeholder meeting. The stakeholder meeting will be conducted if the public expresses sufficient interest. OSHA will provide a facilitator for this meeting and will prepare meeting minutes to be posted on OSHA's website.

Comments from stakeholders will be reviewed and considered by the Agency. Once finalized, each set of guidelines will be posted on OSHA's website and issued in a paper format.

**Ergonomics at the State Level and the utilization of General Duty Clause:**

As the Ergonomic standard at the national level was being implemented, several states also pursued developing their own Ergonomic standards within their OSHA approved plans. Among these states were Michigan, Washington, California, Oregon, Minnesota, and Alaska. As the national standard was set aside, this also caused the efforts by the states to be halted except Washington and California.

These two states - California and Washington - have adopted [state ergonomics standards](http://www.osha.gov/dcsp/osp/index.html). The Washington ergonomics standard was subsequently repealed in 2003. Employers in California are required to comply with the specific provisions of California ergonomics standard. Other states utilize their “general duty” authority (discussed below) in appropriate enforcement situations. Below are some examples of state plan ergonomics efforts.

[**California**](http://www.osha.gov/dcsp/osp/stateprogs/california.html) adopted an ergonomics standard on November 14, 1996. The standard provides that when at least two employees performing identical tasks have been diagnosed by a physician with repetitive motion injuries (RMIs) within 12 consecutive months, the employer must establish a program which shall:

* Evaluate each job, process, or operation of identical activity for exposures which have caused RMIs at the affected worksite;
* Control or minimize to the extent feasible the exposures that have caused repetitive motion injuries, considering engineering controls and administrative controls; and

Provide training to affected employees.

Cal/OSHA is conducting inspections as well as outreach activities and has developed publications and training materials concerning ergonomics, which are available through the Cal/OSHA website at [Publications](http://www.osha.gov/pls/oshaweb/owaredirect.html?p_url=http://www.dir.ca.gov/dosh/puborder.asp" \o "Publications).

The California ergonomics standard is attached in Appendix A.

[**Washington**](http://www.osha.gov/dcsp/osp/stateprogs/washington.html) adopted an ergonomics standard on May 26, 2000, with a phased-in enforcement that was scheduled to begin on July 1, 2004. On July 12, 2002, the Thurston County Superior Court rejected a business coalition's contention that the state exceeded its authority under state law, acted arbitrarily, and did not follow its rule-making requirements. The case was appealed directly to the State Supreme Court, but not acted on before voters passed an initiative on November 4, 2003 to repeal the state's ergonomics standard. The vote was certified (and therefore effective) December 4, 2003. The standard had required employers with "caution zone jobs" to find and fix ergonomic hazards instead of waiting for an injury to occur before taking action. Initially, the rule had focused on large employers in 12 high-risk industries

In response to the repeal, Washington is concentrating on educating workers and employers on the importance of preventing these types of injuries and proper techniques they can use. Enforcement issues are currently being addressed on a case-by-case basis.

**Michigan** – Since this State has a significant manufacturing presence one would expect that Michigan would lead the nation in instituting an Ergonomics standard. To date all work done on an ergonomics standard in Michigan has been limited to an Advisory Committee appointed by the Occupational Health Standards and General Industry Safety Standards Commissions, and MIOSHA staff.  There has been no formal proposal for a standard submitted in accordance with the Administrative Rules process in Michigan.

[**Alaska**](http://www.osha.gov/dcsp/osp/stateprogs/alaska.html) held public meetings statewide in January 2002 on a draft standard for general safety and health programs, which included ergonomics, indoor air quality, and workplace violence. However, due to the number of comments received from stakeholders concerning ergonomics, the Commissioner of Labor decided to drop the ergonomics provisions, and later discontinued efforts to develop a safety and health programs rule.

[**Minnesota**](http://www.osha.gov/dcsp/osp/stateprogs/minnesota.html) has established an Ergonomics Task Force to recommend approaches the state can take to reduce work-related musculoskeletal disorders. This task force issued its final report in October 2002 that reviewed Minnesota's approach to ergonomic issues, reviewed ergonomic approaches used in other jurisdictions, and provided recommendations to the commissioner of the Minnesota Department of Labor and Industry, but no standard has been adopted.

[**Oregon**](http://www.osha.gov/dcsp/osp/stateprogs/oregon.html) OSHA's (OR-OSHA) strategic plan includes activities designed to reduce musculoskeletal injuries through outreach and the use of voluntary services. Oregon has created an Ergonomics Stakeholder Group to identify strategies to promote reduction of ergonomic injuries in targeted industries with high rates of musculoskeletal injuries. OR-OSHA offers a variety of ergonomics related services including conferences, on-site training, educational resources, and consultation services to help Oregon employers.

Section 5 of the Occupational Safety and Health Act of 1970 describes what has come to be known as the General Duty Clause (described below). As far as the implementation of ergonomics’ and safety recommendations, the remaining States (other than discussed above) have come to lean on this General Duty Clause and it has provided the basis for job process improvement to facilitate better interaction between man and machine. The General Duty clause is described below:

**The General Duty Clause:**

|  |
| --- |
| (a) Each employer -- |
|   | (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;(2) shall comply with occupational safety and health standards promulgated under this Act. |  |
| (b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.Since there are no Ergonomic standards which have been adopted by the individual states (other than California), the state and federal OSHA representatives leverage this general duty clause and make recommendations on possibly improving/redesigning a work station if evidenced by RMIs. This process is generally carried out either by a complaint filed by an employee or another opportunity which prompts the OSHA representative to inspect the OSHA 300-log. Each employer is required to keep an updated record (known as OSHA 300 log) if an employer has more than 10 employees. Another way through which States also derive their leverage from General Duty Clause to recommend corrective actions if the injury rate of a particular organization or industry exceeds national statistics. |

**How the Information was compiled:**

The information above was compiled by browsing through Federal and State OSHA websites and by calling each of the regional OSHA offices in the ten different regional OSHA offices. These regional offices cover several different states as described below. Please note that none of the States have established Ergonomic Standards but use Federal OSHA Ergonomic Guidelines for different specific industries as specified above. These States also derive their leverage from General Duty Clause to recommend corrective actions if the injury rate of an organization /industry exceeds national statistics. These corrective actions (if required) could be in terms of better interaction between man and machine i.e., ergonomics.

**Region 1** constitutes [Connecticut](http://www.osha.gov/oshdir/ct.html), [Massachusetts](http://www.osha.gov/oshdir/ma.html), [Maine](http://www.osha.gov/oshdir/me.html) , [New Hampshire](http://www.osha.gov/oshdir/nh.html), [Rhode Island](http://www.osha.gov/oshdir/ri.html), and [Vermont](http://www.osha.gov/oshdir/vt.html)

**Region 2** constitutes [New Jersey](http://www.osha.gov/oshdir/nj.html), [New York](http://www.osha.gov/oshdir/ny.html), [Puerto Rico](http://www.osha.gov/oshdir/pr.html), and [Virgin Islands](http://www.osha.gov/oshdir/vi.html)

**Region 3** constitutes [District of Columbia](http://www.osha.gov/oshdir/dc.html), [Delaware](http://www.osha.gov/oshdir/de.html), [Maryland](http://www.osha.gov/oshdir/md.html), [Pennsylvania](http://www.osha.gov/oshdir/pa.html), [Virginia](http://www.osha.gov/oshdir/va.html), and [West Virginia](http://www.osha.gov/oshdir/wv.html)

**Region 4** constitutes Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

**Region 5** constitutes Minnesota, Wisconsin, Michigan, Illinois, Indiana, and Ohio.

**Region 6** constitutes New Mexico, Texas, Oklahoma, Arizona, and Louisiana.

**Region 7** constitutes [Iowa](http://www.osha.gov/oshdir/ia.html), [Kansas](http://www.osha.gov/oshdir/ks.html), [Missouri](http://www.osha.gov/oshdir/mo.html), and [Nebraska](http://www.osha.gov/oshdir/ne.html)

**Region 8** constitutes Utah, Colorado, Wyoming, South Dakota, North Dakota, and Montana.

**Region 9** constitutes California, Nevada, Arizona, and Hawaii.

**Region 10** constitutes Alaska, Washington, Oregon , and Idaho.

**Appendix A**

CALIFORNIA ERGONOMICS STANDARD:

(a) Scope and application. This section shall apply to a job, process, operation where a repetitive motion injury (RMI) has occurred to more than one employee under the following conditions:

(1) Work related causation. The repetitive motion injuries (RMIs) were predominantly caused (i.e. 50% or more) by a repetitive job, process, or operation;

(2) Relationship between RMIs at the workplace. The employees incurring the RMIs were performing a job process, or operation of identical work activity. Identical work activity means that the employees were performing the same repetitive motion task, such as but not limited to word processing, assembly or, loading;

(3) Medical requirements. The RMIs were musculoskeletal injuries that a licensed physician objectively identified and diagnosed; and

(4)Time requirements. The RMIs were reported by the employees to the employer in the last 12 months but not before July 3, 1997.

(b) Program designed to minimize RMIs. Every employer subject to this section shall establish and implement a program designed to minimize RMIs. The program shall include a worksite evaluation, control of exposures which have caused RMIs and training of employees.

(1) Worksite evaluation. Each job, process, or operation of identical work activity covered by this section or a representative number of such jobs, processes, or operations of identical work activities shall be evaluated for exposures which have caused RMIs.

(2) Control of exposures which have caused RMIs. Any exposures that have caused RMIs shall, in a timely manner, be corrected or if not capable of being corrected have the exposures minimized to the extent feasible. The employer shall consider engineering controls, such as work station redesign, adjustable fixtures or tool redesign, and administrative controls, such as job rotation, work pacing or work breaks.

(3) Training. Employees shall be provided training that includes an explanation of:

(A) The employer's program;
(B) The exposures which have been associated with RMIs;
(C) The symptoms and consequences of injuries caused by repetitive motion;
(D) The importance of reporting symptoms and injuries to the employer; and
(E) Methods used by the employer to minimize RMIs.

(c) Satisfaction of an employer's obligation. Measures implemented by an employer under subsection (b)(1), (b)(2), or (b)(3) shall satisfy the employer's obligations under that respective subsection, unless it is shown that a measure known to but not taken by the employer is substantially certain to cause a greater reduction in such injuries and that this alternative measure would not impose additional unreasonable costs.