

## Chapter 17

## ERGONOMICS PROGRAM

17-1. Purpose. This chapter provides information about the Tobyhanna Army Depot (TYAD) Ergonomics Program and is developed to meet the Department of Defense requirements. The Ergonomics Program will function as an integral part of the Occupational Safety and Health (OSH) Program at TYAD.

17-2. References:

a. DoD Instruction 6055.1, "DoD Occupational Safety and Health Program".

b. Office of the Under Secretary of Defense Memorandum of 4 Feb 97.

c. National Institute for Occupational Safety and Health (NIOSH) Publication 97-117, Elements of Ergonomics Programs, of March 1997.

17-3. Background.

a. Work-related Musculoskeletal Disorders (WMDs) are afflictions of the muscles, nerves, tendons, ligaments, joints, cartilage or spinal discs to which the performance and/or environment of work contribute to the disorder. They are not typically the result of any instantaneous or acute event, but reflect a more gradual or chronic development. These include disorders that have several distinct features (such as carpal tunnel) as well as ones that are defined primarily by the location of the pain (i.e., lower back pain).

b. Adverse work conditions are described in terms of occupational risk factors. Occupational risk factors for musculoskeletal disorders (such as carpal tunnel syndrome, tendonitis, epicondylitis and low back pain) include repetitive, forceful or prolonged exertions of the hands, frequent or heavy lifting, pushing, pulling or carrying of heavy objects, prolonged awkward work postures, contact stress, localized or whole body vibration, cold temperatures and poor lighting. These workplace risk factors can be intensified by work organization characteristics such as inadequate work-rest cycles, excessive work pace and/or duration, unaccustomed work, and lack of task variability.

c. Ergonomics is the science of fitting workplace conditions and job demands to the capabilities of the working population, using knowledge about human capacities and limitations. Effective and successful "fits" can prevent workplace injuries, reduce the medical and related costs of WMDs, reduce employee absenteeism, improve productivity and product quality and increase worker morale.

d. In the past, the Army has paid more than \$590,000 per workday in costs associated with civilian injuries and illnesses. The TYAD Workers' Compensation Office has reported that for FY 95, there were 215 claims costing \$411,535, while for FY 96 there were 187 claims costing \$369,552. Ergonomic hazards account for 35% of the \$600M per year DoD civilian workers' compensation costs and a significant portion of military injuries and illnesses.

17-4. Goals and Objectives. The goals and objectives of the Ergonomics Program are to:

a. Prevent injuries and illnesses by eliminating or reducing worker exposure to WMD risk factors.

b. Reduce the potential for fatigue, error and unsafe acts by adapting the job and workplace to the worker's capabilities and limitations.

c. Increase the overall readiness and productivity of the work force.

d. Reduce the frequency of workers' compensation claims and the associated costs.

17-5. Program Organization.

a. Ergonomic program activities at TYAD shall be planned, conducted and reported by the ergonomics contractor with oversight by the Contracting Officer Representative (COR), based in the Safety Office. Program implementation will require the administrative and technical support from various depot activities. Support may include:

(1) Technical support during worksite evaluations from leaders, supervisors, directors, and the Health Clinic or Industrial Hygiene personnel depending on the affected workers, worksite logistics, special needs, and occupational risk factors to be examined. The ergonomics contractor will provide on-site support.

(2) Administrative support may include tracking of WMD frequency and severity data and scheduling of worksite evaluations. This may include reviewing injury/illness data, accident investigation reports and other information necessary to achieve program goals.

(3) Ergonomics training needs will be based on the review of injury/illness data, worksite inspections, worksite evaluations and supervisor input. Training needs will be determined by the Safety Office with support from the contractor and depot OSH personnel (Health Clinic, Industrial Hygiene Office, etc.), as required.

b. In addition to support from TYAD activities (Safety, Industrial Hygiene, Health Clinic, etc.), the ergonomics contractor is also available, upon request through the COR, to TYAD organizational components. Some examples may include training, supporting accident investigations involving WMDs, providing assistance when workplace modifications are deemed necessary, providing product/vendor information, participating in bi-weekly safety meetings, and assisting in proper tool and equipment selection.

17-6. Program Elements.

a. Worksite Analysis.

(1) Systematic "passive" surveillance shall be used to identify WMDs. Systematic passive surveillance shall include analyzing data provided in existing reports and data sources such as routine injury and

illness reports, OSHA 200 Log, Federal Employee Compensation Act claims, medical and safety records, and hazard reports. Worker exposures to WMD risk factors that are observed during safety inspections, industrial hygiene surveys and accident investigations shall be reported to the ergonomics contractor, through the COR, for investigation.

(2) Systematic "active" surveillance shall be used where there is convincing evidence that employee exposure to WMD risk factors exist, or to identify, evaluate and manage workplace risks. Active surveillance procedures can include job observation of tasks or participation in bi-weekly (twice per month) safety meetings. Referrals by supervisors or leaders to determine occupational risk factors and identify workers potentially at risk are encouraged.

(3) Worksite evaluations and analysis shall be prioritized based on review of passive and active surveillance information. This may be based on incident rates, the number of workers affected, lost work time, or severity of cases. The following factors should be considered during evaluations and analyses.

(a) Identification and quantification of occupational risk factors for each work task selected using employee interviews, video analysis, ergonomics software analysis programs, dynamometers, goniometer, and linear scales, as applicable.

(b) Identification of problems and solutions based on task analysis results and recognized/established ergonomics guidelines, and published criteria.

(c) Assignment of Risk Assessment Codes (RAC) for all ergonomic hazards. Hazards will be entered into the installation hazard abatement plan and as outlined in section 1-9.h. (Table 1-1).

b. Hazard prevention and control shall focus on development of engineering and administrative controls for ergonomic hazards identified during worksite evaluations. Ergonomic hazards and suggestions for corrective actions shall be documented using AMSEL-LC-TY (formerly SIOTY) Form 169, Occupational Safety and Health Deficiency Notice, and attached to the worksite evaluation report. Examples of engineering and administrative controls include, but are not limited to workplace layout changes; tool and equipment modifications; process elimination; modification of work practices such as posture and body mechanics; job rotation; modification of work/rest cycles; worker conditioning; and effective scheduling of facility, equipment and tool maintenance adjustments and modifications.

c. Health care management shall include the development of written health care management protocols that address early recognition, evaluation, treatment, light or restricted duty, and follow-up for employees with WMDs.

d. Worker Conditioning Program. As a proactive effort to minimize the potential for WMD occurrence, a worker conditioning program shall be initiated and maintained as part of the Ergonomics Program. This program shall be staffed by a certified athletic trainer from the ergonomics contractor with employee participation coordinated through the COR.

(1) The goal of the worker conditioning program is to improve the physical capacities of workers who perform tasks that involve exposure to WMD risk factors. Once the at-risk-jobs are identified, employees performing these jobs will be referred for participation in the program based on injury/illness histories associated with these tasks.

(2) The contractor will perform a health risk assessment and review pertinent medical history for candidates referred for enrollment in the worker conditioning program. Participation for employees identified in a low risk category can begin afterwards.

(3) If a candidate is identified as a moderate-to-high risk category (such as those with cardiac problems), they will be referred to the Health Clinic for appropriate follow up and tests. Participation in the program will be deferred until the worker receives medical clearance from the Health Clinic.

(4) After proper clearance, a personalized program will be developed with specific goals, based on the past history and job description. Participation in the program is then included as part of the employee's duties.

(5) Employees will be discharged after reaching established goals. They will be provided with an independent plan to maintain the effects of the conditioning program. The estimated time frame for employee participation in the program is six weeks. Employees reaching established goals sooner may be released early. The time frame may be extended up to four weeks if this will help an employee meet their goals.

e. Emergency Responder Conditioning Program. To assist emergency responders in their requirements to participate in an established physical training program, emergency responders will be referred for enrollment in the work conditioning program. Emergency Responders include personnel assigned to Fire and Emergency Services Division, Security Division, and participants of emergency response teams.

f. Functional Capacity Evaluations (FCEs) are assessments that are performed to ascertain the physical capabilities of the worker with respect to positional tolerance, lift capabilities and the ability of the worker to perform his or her physical job requirements. The evaluation takes into consideration the injury sustained by the worker (if applicable), with a focus on how the individual functions as a whole with regard to strength, endurance and range of motion. The assessment includes objective measurements of symptom magnification, maximal voluntary effort, evaluation of muscle strength and joint range of motion, total body range of motion and the ability to work at various levels. The worker is also asked to perform a series of dynamic lift tasks at various levels to determine lifting ability.

(1) FCEs may be used to establish or eliminate work restrictions following an injury. An evaluation may be requested for the following reasons:

(a) The worker is planning to return to work following an injury that resulted in greater than two months of lost time.

(b) The worker has been on light duty status and may be able to have work restrictions lifted so that he/she may return to full duty status.

(c) The Health Clinic has determined that the worker who has experienced a lost time injury is not able to return to full duty status and a determination must be made regarding work limitations and capabilities.

(d) In support of a Fitness For Duty evaluation.

(2) Each FCE request shall be approved by the depot's Health Clinic as well as the employee's personal physician, if involved, before being requested from the contractor.

(3) Results of the FCE shall be completed by the ergonomics contractor and provided to the Health Clinic within two weeks from the date of request.

g. Ergonomic education and training programs shall be developed and implemented to allow individuals to take ownership in ergonomic initiatives and become active participants in the continuous job improvement cycle. Specific training modules shall be developed as deemed necessary based on injury/illness data, results of worksite evaluations, supervisor needs assessments and safety reviews. Training can consist of group classroom presentations, individual self-paced computer or video based training and team training and will be tailored to the TYAD characteristics of the participants. Examples of training topics include introduction to ergonomics, office ergonomics, back injury prevention, understanding cumulative trauma disorders, and guidelines for manual material handling. A list of currently available ergonomics training aids is provided as Appendix K.

h. Material Acquisition. The ergonomics contractor shall play an active role in ensuring that all new tool and equipment purchases are reviewed for ergonomic considerations. In addition, workplace layout plans shall be coordinated with the ergonomics contractor prior to finalizing designs to ensure that ergonomic issues have been identified and addressed for new work that is awarded to depot directorates.

i. Ergonomics Program Evaluation. Regular evaluations and reviews to assess effectiveness of interventions and level of participation may include progress reports and program updates; plans, goals and accomplishments; identification of trends, deficiencies and corrective actions needed based on follow-up evaluations of worksite improvements; control effectiveness; personnel surveys; and injury/illness data.

#### 17-7. Program Support.

a. The Safety Office will:

(1) Provide the OSHA 200 Log data to the ergonomics contractor on a monthly basis for passive surveillance of WMDs.

(2) Make available to the ergonomics contractor copies of all documentation pertaining to work related injuries and illnesses on a

monthly basis, to support passive surveillance of WMDs. They may include Accident/Incident Investigation Reports, AMSEL-LC-TY Form 175 (Civilian), DA Form 285-AB (Military), TYAD Dispensary Permit, AMSEL-LC-TY Form 112, copies of CA-1, Federal Employee Notice of Traumatic Injury and Claim for Continuation of Pay, and CA-2, Notice of Occupational Disease and Claim for Compensation, and Accident Investigation Reports.

(3) Initiate FCE requests, as deemed necessary. Coordinate written requests for FCEs initiated by parties outside of the Safety Office (e.g., Supervisors, Health Clinic, Workers' Compensation, etc...). Submit written requests for FCEs to the Health Clinic for review and approval/disapproval. Forward approved requests for FCEs to the ergonomics contractor.

(4) Coordinate accident investigations for WMD related accidents with the ergonomics contractor.

b. The Health Clinic will:

(1) Identify and refer candidates for participation in the worker conditioning program and provide support during the pre-screening process.

(2) Submit FCE requests to the ergonomics contractor COR, located in the Safety Office. Review written requests submitted by the COR and approve, if determined appropriate.

(3) Review results of all FCEs that are performed and make work capacity determinations.

c. The Industrial Hygiene Office will provide worksite evaluation/analysis support as needed by the ergonomics contractor, when industrial hygiene related WMD risk factor exposures are identified (e.g., temperature, lighting, noise, etc.).

d. The Workers' Compensation Office will:

(1) Provide claim data to the Safety Office for tracking of WMD injuries/illnesses.

(2) Submit requests for FCEs to the COR.

e. Personnel Directorate will address issues related to personnel light duty assignments.

f. Division Supervisors/Leaders will provide input to the ergonomics contractor regarding tasks with WMD risk factors. Develop an action plan, coordinate corrective actions and oversee plan execution to resolve deficiencies that are a result of an ergonomic worksite evaluation. Submit requests for FCEs to the COR.

g. Production Engineering Directorate, Industrial Modernization Division will provide workplace layout plans to the Safety Office for review prior to finalizing designs to ensure that ergonomic issues have been identified and addressed. The Safety Office may also assist procurement actions for tools and equipment to ensure adequacy of ergonomic features.

h. Personnel at all levels will ensure new purchases (equipment and furniture) are reviewed for ergonomic considerations. General guidelines for selection are provided as Appendix L.

17-8. Program Management and Reporting. Results of all ergonomic worksite evaluations shall be documented by the ergonomics contractor in an Ergonomics Job Site Analysis Report and provided to the COR for distribution/action. Results and schedules for planned weekly activities of worker conditioning program shall be provided to the COR for distribution. Results of each FCE performed shall be reported to the COR within two weeks of the conduct of the FCE. The ergonomics contractor shall report weekly activities and summarize monthly and quarterly progress of the Ergonomic Program activities to the COR. Topics addressed in these reports shall include the status of worksite evaluations, Work Conditioning Program and FCE activities. A milestone chart of Ergonomics Program activities shall be maintained by the ergonomics contractor and updated quarterly. Monthly meetings shall be held between the ergonomics contractor and the COR to discuss ergonomics program activities, plans, progress and issues. Supporting activities including Industrial Hygiene, Health Clinic, and Worker's Compensation may be invited to these meetings.