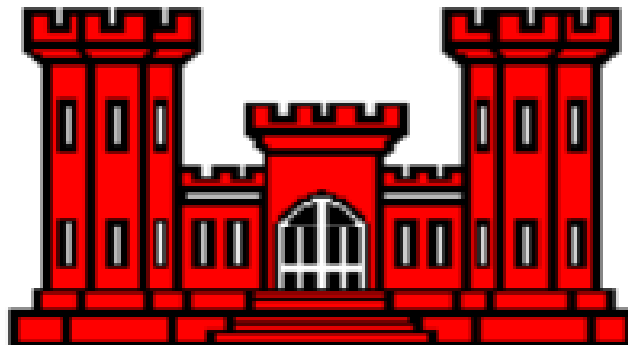


SAFETY SOP



DIRECTORATE OF PUBLIC WORKS (DPW)





DEPARTMENT OF THE ARMY
INSTALLATION MANAGEMENT COMMAND PACIFIC
HEADQUARTERS, UNITED STATES ARMY GARRISON DAEGU
UNIT #15746
APO AP 96218-5746

AMIM-DAP

10 February 2023

MEMORANDUM FOR RECORD

SUBJECT: DPW Director Safety Message

1. DPW must be prepared, equipped and trained to respond to the needs of our supported units during peace time, contingency operations, or national emergency. Through planning and training we will achieve and maintain our ability to safely execute our assigned missions. Our people are our most valuable resource. DPW must be committed to promoting a positive safety culture. This culture will ensure a safe working and living environment for Soldiers, civilians and employees.
2. As a team we must strive to identify standards that will eliminate or control the severity of accidents. Where standards are not available, we must utilize the risk management process to develop safe standards.
3. Every employee of DPW, is responsible for ensuring a safe operating environment. We must, as a team, make safety our primary goal in accomplishing our mission.
4. It is our intention here at DPW Area IV to initiate and maintain complete accident prevention and safety training programs. Each individual from top management to the working person is responsible for the safety and health of those people in their charge and coworkers around them. By accepting mutual responsibility to operate safety, we will all contribute to the well-being of our employees.
5. This SOP contains the major elements of our Safety Program. Notice that it is our program, not my program. If it doesn't work, or doesn't make sense please question it and provide feedback through your chain-of-command. I have an open door policy and any DPW team member can approach me at any time to discuss safety concerns.

CHON Y. KIM
Director of Public Works
USAG Daegu

Directorate of Public Works (DPW) USAG Daegu

February 10, 2023

Summary: This document provides policy, defines responsibility, prescribes criteria, and outlines guidance for the development, implementation, and evaluation of DPW Safety program.

Applicability: This document applies to all DPW assigned/attached personnel.

Supplementation: Supplementation of this document is prohibited without prior approval from DPW Additional Duty Safety Officer (ADSO) / Collateral Duty Safety Officer (CDSO).

Records Management: Records created as a result of processes prescribed by this SOP must be identified, maintained, and disposed of, in accordance with AR 25-400-2.

Restrictions: Approved for DPW USAG Daegu release; distribution unlimited. Local reproduction is authorized.

Chronology of Changes

- DPW Safety SOP first approved October 16, 2014
- Removed Garrison-wide driver's licensing SOP from scope of directorate specific SOP, separated Korean and English versions, and updated HAZCOM program September 20, 2018
- Revised Driver's Responsibilities for ground guides and cell phone prohibition, page 18. March 24, 2021
- Revised References and clarified dust mask fitting, page 22. March 24, 2021
- Add emphasis and clarified employee responsibility to intervene/report un-safe acts by fellow employees, page 7 and page 9. March 24, 2021
- Revised JHA, page 28. Feb 01, 2023
- Updated APPENDIX B Accident Mishap Notification Roster, Page36. Feb 01, 2023

Table of Contents

PURPOSE	7
SCOPE	7
AUTHORITY	7
POLICY	7
RESPONSIBILITIES	7
Director of DPW	7
Division Chief.....	7
ADSO/CDSO responsibilities.....	8
Supervisor responsibilities	8
Employee Responsibilities.....	9
DPW Safety Monitor	9
TRAINING	10
PRE-ACCIDENT/INCIDENT PLAN	11
Purpose.....	11
General.....	11
Responsibility	12
SAFETY INSPECTION PROCEDURES	13
SAFETY AWARDS	13
Purpose.....	13
References.....	14
Scope.....	14
Individual Award	14
Processing Safety Award	14
HAZARD PREVENTION AND CONTROL	14
Eliminating Workplace Hazards	14
Basic Safety Rules	15
Office Safety	15
VEHICLE/EQUIPMENT OPERATIONS	17
General.....	17
Policy	17
Responsibilities.....	18
HAZARD COMMUNICATION PROGRAM	19

Purpose.....	19
Goal:.....	19
Applicability	19
PERSONAL PROTECTIVE EQUIPMENT (PPE).....	20
CONFINED SPACE ENTRY PROGRAM.....	21
RESPIRATORY PROTECTION	21
VOLUNTARY RESPIRATOR PROGRAM.....	22
RISK MANAGEMENT PROGRAM.....	22
Purpose.....	22
References.....	22
Scope.....	22
Responsibilities.....	22
Risk Nuisance Disposable Assessment.....	23
Risk Control Options and Decisions.....	23
Implement Controls	24
Supervision	24
ENERGY CONTROL (LOCKOUT/TAGOUT)	28
FALL PROTECTION.....	28
Purpose.....	28
Roles	28
Risk Management	29
MATERIAL HANDLING.....	29
HEARING CONSERVATION PROGRAM.....	30
MACHINE GUARDING.....	30
FIRE PREVENTION PLAN	30
DPW ADDITIONAL SOP	32
APPENDIX A Ergonomics Considerations.....	33
APPENDIX B Accident Mishap Notification Roster	36
APPENDIX C Hazard Communication Training Program	37
APPENDIX D Confined Space Entry Program.....	40
APPENDIX E Respirator Protection Program.....	46
APPENDIX F Energy Control (lockout/Tagout).....	50
APPENDIX G Elevated Work Surfaces & Fall Protection	52

APPENDIX H Hearing Conservation Procedures	54
APPENDIX I Fire Prevention Plan.....	57
APPENDIX J General Material Handling / Safe Lifting	60
APPENDIX K Ergonomics and Back Safety For Custodial Workers	62
APPENDIX L Ladder Safety.....	65
APPENDIX M Electrical Safety.....	68

Directorate of Public Works

PURPOSE: To develop a high standard of safety throughout all operations of DPW and to establish a comprehensive safety management program for USAG Daegu DPW. This SOP establishes policy and procedures to protect personnel and property against accidental injury or loss and outlines the DPW safety program.

SCOPE: This SOP applies to all assigned/attached employees of DPW.

AUTHORITY

- a. Title 29, Code of Federal Regulations, Parts 1910 & 1960
- b. AR 385-10, The Army Safety Program, 24 Feb 2017
- c. DA PAM 385-40, Army Accident Investigation and Reporting, 18 Mar 2015
- d. US Army Corps of Engineers Safety and Health Requirements Manual, 30 Nov 2014

POLICY

a. The DPW places a high value on the safety of its employees. The DPW is committed to providing a safe workplace for all employees and has developed this SOP to involve management, supervisors, and employees in identifying and eliminating hazards that may develop during our work process.

b. It is the basic safety policy of the DPW that no task is so important that an employee must violate a safety rule or take a risk of injury or illness to get the job done.

c. Employees are required to comply with all DPW safety rules and are encouraged to actively participate in identifying ways to make our organization a safer place of work. Make suggestions to your supervisor, safety monitor representative or management about changes you believe will improve employee safety. Employees must intervene in, and report situations where un-safe acts occur.

d. Supervisors are responsible for the safety of their employees and as a part of their daily duties must check the workplace for unsafe conditions, watch employees for unsafe actions, and take prompt action to eliminate any hazards.

Safety is a team effort – Let us all work together to keep this a safe and healthy workplace.

RESPONSIBILITIES

Director of DPW

- (1) DPW Director has overall responsibility for health and safety of DPW USAG Daegu
- (2) Appoint safety monitors for each division to carry out organizational safety requirements and safety activities.

Division Chief

- (1) Annually identify training programs that are needed within the Division.
- (2) Division Chiefs must monitor safety daily in their division

(3) Evaluate safety monitors to ensure they are carrying out their responsibilities as described in this program.

(4) Ensure that incidents are fully investigated, and corrective action is taken to prevent the hazardous conditions or behaviors from happening again. Refer to Pre-Accident/Incident Plan for required document.

(5) Set a good example by following established safety rules and attending required training.

(6) Make safety a priority and promote a positive climate of reporting unsafe conditions.

Additional duty safety officer / Collateral Duty Safety Officer

(1) Ensuring DPW safety reference book and other safety records are maintained.

(2) Assist in accident investigation within DPW.

(3) Creating safety program awareness throughout DPW.

(4) Assist the DPW Director in implementing safety program.

(5) Prepare safety program correspondence and maintain a file of all safety related incoming and outgoing correspondence.

Supervisor responsibilities

(1) Ensure that each employee you supervise has received a daily safety brief before beginning work.

(2) Do random spot checks of work areas. Promptly correct any hazards you find.

(3) Observe the employees you supervise working. Promptly correct any unsafe behavior. Provide training and take corrective action as necessary. Document employee's evaluations.

(4) Set a good example for employees by following safety rules and attending required training.

(5) Report any safety concern or findings to Division Chief.

(6) Talk to chain of command about changes to work practices or equipment that will improve employee safety.

(7) Update Workplace Hazard Assessment (WHA) and Job Hazard Assessment (JHA) annually or when equipment or procedures change. All WHAs and JHAs must be bilingual to improve safety awareness and posted on the DPW share drive for future reference//review. JHA must also be maintained in the Division safety binder. Shop safety officers should receive periodic formal safety training to assist them in performing their duties. This training will be in addition to the mandatory Collateral Duty Safety Officer Course. Additional training is subject to approval of the shop supervisor and the course content will be reviewed by the USAG Daegu Safety Office to ensure applicability.

(8) Brief and document new employees on shop safety policies and procedures during in-processing.

Employee Responsibilities

- (1) Follow safety rules described in this program and safety standards and training you receive in your branch. Intervene in situations where you see fellow employees violating safety standards.
- (2) Report unsafe conditions or actions to your team leader, supervisor, safety monitor, or safety officer.
- (3) Report all injuries to your supervisor promptly regardless of how serious.
- (4) Promptly report all near-miss incidents to your supervisor.
- (5) Always use personal protective equipment (PPE) in good working condition where it is required. Promptly report through chain of command if additional PPE is required.
- (6) Do not remove or defeat any safety device or safeguard provided for employee protection.
- (7) Encourage co-workers by your words and example to use safe work practices on the job.
- (8) Make suggestions to your supervisor, safety committee representative or management about changes you believe will improve employee safety.
- (9) Failure to follow safety rules, failure to intervene to protect other's safety, or failure to report safety violations is unacceptable and will be considered as basis for possible disciplinary action.

DPW Safety Monitor

- (1) Successfully complete the Collateral Duty Safety Officer Course.
- (2) Implement the Shop safety program IAW AR 385-10, paragraph 2-2 and USAG Daegu Pam 385-1.
- (3) Conduct and document monthly inspections. All violations of standards detected during inspection will be documented and corrected as soon as possible.
- (4) Maintain the Safety Reference Handbook.
- (5) Provide employees required safety/health training and medical screenings.
- (6) Periodically review SOP against current operations and practices; Recommend changes as necessary.
- (7) Ensure DD Form 2272 (Appendix C) is accurate and posted on shop safety bulletin board.
- (8) Conduct and document monthly safety briefings.
- (9) Develop Division SOP

TRAINING

a. Safety Monitors shall promptly identify additional training needed to receive periodic formal safety training to assist them in performing their duties. This training will be in addition to the mandatory Collateral Duty Safety Officer Course. Additional training is subject to approval of the shop supervisor and the course content will be reviewed by the USAG Daegu Safety Office to ensure applicability.

b. The Supervisor will ensure employees receive specialized safety training required by the Occupational Safety and Health Act (OSHA) and Army Regulations. The supervisor will verify that each affected employee has received and understood this required training through written certification that contains the name of each employee, the date(s) of training, and the subject of certification. The following identifies some of the required training to be performed.

(1) Each employee required to wear PPE will be trained and must demonstrate the understanding for when PPE is necessary; what PPE is necessary; how to properly don, off, adjust, and wear PPE; the limitations of PPE; and the proper care, maintenance, useful life, and disposal of PPE.

(2) Each test operator of lifting devices will be carefully selected, and thoroughly trained before they are permitted to test-operate powered material handling equipment

(3) Each employee will receive familiarization training on the general principles of fire extinguisher use and the hazards involved with incipient stage firefighting where fire extinguishers have been provided for employee use in the workplace.

(4) Each employee will receive education and familiarization training on the shop Pre-Accident Plan.

(5) Employees whose position requires them to operate a government owned vehicles or equipment will be trained, tested, and issued an OF 346 in accordance with AR 600-55. Additionally, each employee required to operate an Army Motor Vehicle (AMV) must complete Army Accident Avoidance Course training.

(6) Employees provided a respirator by the Government to protect their health will be trained in the proper use of respirators and their limitations. Fit testing is required for all respirators and N-95 masks.

(7) Employees exposed to noise at or above an 8-hour time-weighted average of 85 decibels will receive annual training on the effects of noise on hearing; the purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use and care; and the purpose of audiometric testing.

(8) Welders, cutters, and supervisors will be suitably trained in the safe operation of their welding equipment and the safe use of the process.

(9) Ensure training that provides the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees. The training will follow the criteria in 29 CFR 1910.147 (c) (7).

(10) Ensure training is provided to all employees whose work is regulated by 29 CFR 1910.146 and/or 29 CFR 1915 (Permit Required Confined Spaces) and USAG Daegu Pam 385-1. Essentially, personnel must acquire the understanding, knowledge, and skills necessary for the safe performance of the

duties assigned under the applicable section of the CFR.

(11) The shop supervisor will designate and train a sufficient number of employees to assist in the safe and orderly emergency evacuation of employees prior to implementing the Emergency Action Plan published in Appendix E. Appendix E is Respirators

c. Safety training will be conducted when new personnel are assigned, new equipment/products are received, or new procedures are implemented.

d. All safety training will be documented and maintained for review by internal/external safety inspections.

PRE-ACCIDENT/INCIDENT PLAN

Purpose

a. The purpose of this plan is to establish policy and procedures that need to be taken in case of an accident/incident within DPW.

General

(1) All accidents are reportable through the first line supervisor, DPW Safety Officer or DPW safety monitor and forwarded up the DPW Chain Of Command.

(2) All DPW personnel in USAG Daegu are responsible for reporting unsafe or unhealthy working conditions. Complete a DA Form 4755, employee Report of Alleged Unsafe or Unhealthful Working Conditions, to report known or suspect hazards.

(3) Promptly report all recordable accidents/incidents, regardless of their nature to DPW Safety Office.

(4) Immediately notify the Garrison Safety Management Office (SMO) of all Army Class A, B, C, D and E accidents. (Accident Classifications are defined in AR 385-10, paragraph 3-4)

(5) Any accident in which damage to government property or damage to non-government property because of an operation will be reported to DPW safety monitor. Property Damage accidents with an Estimated Cost of Damage (ECOD) equal to or greater to \$2,000 will be recorded on DA Form 285 AB.

(6) Work related injuries sustained by DoD Civilians in the performance of their job will be recorded on the appropriate U.S. Department of Labor Form, e.g., CA-1, CA-2, CA-2A, etc.

The original copy of DA Form 285-AB will be forwarded to the USAG Daegu SMO, DPW Safety Office and DPW safety monitor. Original Department of Labor Forms will be submitted to the CPAC with a courtesy copy provided to the USAG Daegu CPAC. All forms must be received within 7 workdays.

Responsibility

The following guidelines apply to all DPW personnel (assigned or attached):

a. Senior person at accident site will report the required information listed below, as soon as

situation or circumstances allow;

- (1) Report by:
- (2) Date:
- (3) Equipment Number:
- (4) Unit of Assignment:
- (5) Grid Map Location or Road name / intersection:
- (6) Direction and Distance:
- (7) Accessibility to site:
- (8) Type of Equipment involved:
- (9) Is fire involved:
- (10) Estimated number and severity of injuries:
- (11) Other Agencies called/ Notified:
- (12) Secure the accident site and government property until relieved.
- (13) Maintain a roster of all personnel on site and bar access to unauthorized personnel.

b. The DPW Supervisor or Senior Employee will:

- (1) Inform Higher Headquarters of the accident.
- (2) Prepare, and distribute copies of accident reports.
- (3) Control, direct, coordinate personnel and recovery equipment at accident site.
- (4) Report accurate information to injured persons family as soon as possible.
- (5) Perform an on-site assessment of the accident site, conditions, and equipment.
- (6) Ensure the personnel involved in the accident receive medical care.
- (7) Ensure preliminary reports are passed to higher headquarters and other agencies.
- (8) Designate personnel to assist in security of the accident site if needed.
- (9) Determine the accident classification subject to review by USAG Daegu Safety Officer.
- (10) Advise USAG Daegu Safety Office of developments for class A, B, and accidents.
- (11) Provide personnel at the accident site for assistance and recovery of property.

c. USAG Daegu guidelines for Notification of Accident Reporting Procedures can be found in USAD-D Pam 385-1.

d. Mishap Notification Roster (Appendix B).

SAFETY INSPECTION PROCEDURES

a. DPW is committed to aggressively identifying hazardous conditions and practices which are likely to result in injury or illness to employees. We will take prompt action to eliminate any hazards we find. In addition to reviewing injury records and investigating incidents for their causes, Division Chiefs and supervisors will regularly check the workplace for hazards as described below.

(1) Safety Monitors will conduct monthly safety inspections of their facilities and equipment. They are responsible for initiating service order/work order identified in their work area. Work orders or services orders for hazards that cannot be corrected on the spot are submitted to the Installation Safety Office for a review and assignment of a Risk Assessment Code (RAC).

(2) All deficiencies identified during internal and external safety inspections will be maintained on the Unit Safety Reference Handbook IAW USAG Daegu Pam 385-1. Deficiencies will be posted on the shop's hazard inventory log and a RAC assigned IAW DA Pam 385-30.

(3) For RAC 1 and 2 violations not abated within 30 days, DA Form 4756 will be completed reflecting revised corrective actions schedule and forwarded to the USAG Daegu Safety Office for inclusion in the DPW Hazard Abatement Plan.

(4) Random Inspection – DPW Safety Officer will conduct spot check to identify safety issues and promote good safety habits.

(5) Monthly Safety Inspection – Each month Safety Monitors will inspect shop's safety folders.

(6) Job Hazard Analysis – As a part of our ongoing safety program, we will use a Job Hazard Analysis form to look at each type of job task our employees do. This analysis will be done by the supervisor of that job task or the Shop Foreman. We will change how the job is done as needed to eliminate or control any hazards. We will also check to see if the employee needs to use personal protective equipment (PPE) while doing the job. Employees will be trained in the revised operation and to use any required PPE.

SAFETY AWARDS

Purpose

To standardize procedures as required by the appropriate regulation guidance for establishing and promoting of safety awards program for DPW USAG Daegu. This program will recognize the achievements of Soldiers and Civilians in accident prevention.

References

- a. AR 285-10, Army Safety Program.
- b. DA PAM 385-10, Army Safety Program.

Scope

a. The following procedures are applicable to all units and individuals assigned or attached to DPW USAG Daegu.

Individual Award

DPW will recognize the following individuals with a certificate of Achievement in Safety:

- a. Leaders or supervisors of activity who have gone 12 consecutive months without an on-duty lost-time injury.
- b. Employees working at industrial/warehouse area who have performed their assigned duties for 12 consecutive months without an accident/injury.
- c. Civilian's employees who have maintained an accident/injury free work record for a 5-year period.
- d. Any employee who has made a significant contribution to the DPW safety program.

Processing Safety Award

- a. All Safety Award justifications will be processed through ADSO/CDSO DPW Officer.
- b. DPW ADSO/CDSO will review each package for completeness. DPW Safety Officer will submit packet to USAG Daegu Safety Officer to certify the activity and forward each nomination packet through the Command Group for approval by the Garrison Commander.

HAZARD PREVENTION AND CONTROL

Eliminating Workplace Hazards

a. DPW is committed to eliminating or controlling workplace hazards that could cause injury or illness to our employees. We will meet the Army safety standards where there are specific rules about a hazard or potential hazard in our workplace. Whenever possible we will design our facilities and equipment to eliminate employee exposure to hazards. Where these engineering controls are not possible, we will write work rules that effectively prevent employee exposure to the hazard. When methods of control are not possible or are not fully effective, we will require employees to use PPE such as safety glasses, hearing protection, foot protection etc.

Safety and occupational health responsibility and accountability will be built into all activities to eliminate or minimize personnel, equipment, and resource losses. The safety of all our personnel and equipment is best assured through well-planned operations and adherence to standards and discipline. Accidents most likely result from problems or deficiencies in performance, leadership, training standards, or support. The Army's risk management process is designed to help leaders incorporate safety into every aspect of our mission and it will be incorporated in all aspects of training and operations.

Basic Safety Rules

The following basic safety rules have been established to help make DPW a safe and efficient place to work.

(1) Never do anything that is unsafe to get the job done. If a job is unsafe, report it to your supervisor or safety committee representative. We will find a safer way to do that job.

(2) Do not remove or disable any safety device! Keep guards in place at all times on operating machinery.

(3) Never operate a piece of equipment unless you have been trained and are authorized.

(4) Use your PPE whenever it is required.

(5) Obey all safety warning signs.

(6) Working under the influence of alcohol or illegal drugs or using them at work is prohibited.

(7) Smoking is only in designated areas (50 feet away from any building).

(8) Horseplay, running and fighting are prohibited.

(9) Clean up spills immediately. Replace all tools and supplies after use. Do not allow scraps to accumulate where they will become a hazard. Good housekeeping helps prevent injuries. Spill kits must be refilled after use

Office Safety

DPW is promulgating this basic rule related to the potential hazards associated with working in a facility/office. These rules apply to all DPW employees Soldiers and Civilians.

Walking and Working Surfaces

(1) Avoid carrying objects that might obstruct view.

(2) Walk with special care over wet floors or with wet shoes.

(3) Wipe shoe soles on rainy or snowy days upon entering the workplace.

(4) Implement use of “hazard warning signs” to avoid potential slips and falls.

(5) Securely fasten floor coverings to prevent possible falls.

(6) Utilize handrails when going up and down stairways to lower the risk of possible falls.

(7) Walk with caution over icy, oily or snow-covered surfaces outside the buildings.

Housekeeping.

Poor housekeeping may lead to fires, injuries to personnel, or unhealthy working conditions. The following good housekeeping practices shall be employed at all DPW offices:

(1) All aisle and passageways shall be free and clear of obstructions. Proper layout, spacing, and arrangement of equipment, furniture, and machinery are essential.

(2) Chairs, files, bookcases, and desk shall be replaced or repaired when they pose a hazard to personnel safety.

(3) Materials stored within supply rooms shall be neatly stacked and easily accessed by adequate aisles.

(4) Materials shall not be stored so that they project into aisles and passageways.

Storage Procedures.

Guidelines to follow for safe storage include:

(1) Stack boxes in straight columns, with the largest on the bottom. When stocking shelves, keep the heaviest items at waist level to minimize lifting effort.

(2) Keep all aisles clear.

(3) Place wastebaskets and boxes where they do not present a tripping hazard.

Filing Cabinets and Bookcases.

Filing cabinets and bookcases can be dangerous if arranged or used incorrectly. Guidelines to follow for their safe use are:

(1) Return drawers and doors to the closed position when not in use so as to prevent bumping and tripping. Do not open more than one drawer or door at the same time.

(2) Place file cabinets and/or bookcases where their use will not interfere with office traffic patterns.

(3) Secure or anchor file cabinets or bookcases taller than 64 inches to the wall to prevent toppling over.

(4) In the case of four-drawer filing cabinets fill the second drawer from the bottom before the others to weight the bottom and to prevent it from tilting or tipping.

Falls.

Falling while attempting to retrieve items from high shelves is a common occurrence. When removing items from shelves, the following guidelines are recommended:

(1) Use a ladder or step stool to retrieve an object located above shoulder level if it is too heavy to retrieve. If required have a person hold the ladder or secure the ladder when retrieving the object.

(2) Desks, chairs, boxes, and upturned trash cans are not acceptable substitutes for ladders or step stools.

Layout and Furniture Placement.

The physical layout of a workplace and the furniture is another factor that should be considered when maximizing office safety. This includes the following:

- (1) Position office computers and equipment near electrical outlets to minimize the use of extension cords and to avoid stretching cords across aisles.
- (2) Maintain enough room in front of drawers to open fully without obstructing aisles and passageways.
- (3) Place desks and counter tops near primary light sources to avoid eyestrain caused by poor lighting.
- (4) Position desks and file cabinets so their drawers do not open into a doorway.

Electrical Safety.

Electrical equipment used in the office (e.g., electric cords, extension cords) may present an electric-shock hazard.

- (1) Electric cords shall be routinely examined for fraying and exposed wiring. Particular attention shall be given to connections behind furniture, since files and bookcases may be pushed tightly against electric outlets, severely bending the cord at the plug.
- (2) Extension Cords:
 - a. Shall only be used in situations where fixed wiring is not feasible.
 - b. Shall be placed so that it does not present a tripping or slipping hazard.
 - c. Shall not be placed through doorways to prevent the damage of the cord when doors must be closed.
 - d. Shall be used only when properly sized for the job.
- (3) The operation of portable appliances such as heaters, fans, microwave ovens and other small appliances within personnel workstations is prohibited unless an exception to policy is granted through the DPW Energy Office.
- (4) For more guidelines for controlling risk associated with ergonomics refer to DA Pam 40-21 Ergonomics program and Appendix A, DPW SOP Ergonomics Consideration.

VEHICLE/EQUIPMENT OPERATIONS

General: This SOP covers safe operation and maintenance of all Government vehicles. The objective of this SOP is to complete all assigned mission and tasks in a professional and safe manner; safeguard all military and civilian employees and property from accidents; prevent accidental damage or destruction to all equipment, facilities, and properties; and provide a continuing and aggressive accident prevention program compatible with the assigned mission.

Policy: All DPW vehicles will be operated only by personnel that have received proper training and acquired a license.

- a. Vehicles will be always maintained in a safe condition. In the event of an unsafe mechanical condition, the vehicle will be immediately placed out of service and the appropriate manager notified.

- b. All authorized employees must possess a valid license for the class vehicle authorized.
- c. A certifying official will indicate to the person issuing the OF 346 (US Government Motor Vehicle Operator's Identification Card) that the driver has met the requirements and fully understand operation peculiarities of the vehicle. Document the training on the operator's DA Form 348 (Equipment Operator's qualification Record).
- d. All personnel will use available restraint systems while driving or riding in a GOV/POV/AMV, on and off military installations, IAW USFK Reg. 190-1 and AR 385-10.
- e. Army guidance for managing risks associated with vehicle and equipment operation is found in AR 600-55, TB 600-1, TB 600-2, TC 21-305 and appropriate TMs for individual equipment.
- f. Ground guides will be used whenever a second person is available. If a second person is not available, the driver will stop, walk around the vehicle to identify hazards, sound the horn, and proceed with extreme caution.
- g. All personnel operating or riding as a passenger in a DOD motor vehicle will wear safety belts, whether on or off installation. Vehicle loads will be checked to ensure loose items are secured.
- h. All personnel operating a government vehicle are restricted from using cellular phones or other similar devices unless the vehicle is safely parked, or they are using a "hands free" device.

Responsibilities

- a. Supervisor
 - (1) Allow only authorized employees to operate DPW vehicles.
 - (2) Request training to train new employees.
 - (3) Maintain a list of authorized employees in their branch/shop to operate vehicles.
 - (4) Arrange for required periodic maintenance checks on assigned vehicles.
 - (5) Immediately remove from service any vehicle with any safety defect.
 - (6) Not allow operation by an employee taking medication that warns of drowsiness.
 - (7) Establish a key control program for all assigned vehicles.
 - (8) Ensure proper preventative maintenance checks and services (PMCS) are conducted.
- b. Employees
 - (1) Operate company vehicles in a safe, responsible manner and obey all traffic laws.
 - (2) Conduct proper before and after use PMCS and document on DA Form 5988.
 - (3) Participate in driver-training.
 - (4) Ensure all vehicle occupants use seatbelts before moving the vehicle.

- (5) Immediately report any safety defects or vehicle problems.
- (6) Report use of all prescription medication.
- c. Driving Safely
 - (1) Starting:
 - a. Conduct before PMCS.
 - b. Conduct pre-use inspection.
 - c. Adjust seat & mirrors before starting vehicle.
 - d. Allow a 15 second warm up time.
 - e. Check for warning lights.
 - f. Always use seatbelts.
 - (2) Driving:
 - a. Do not drive if drowsy.
 - b. Think ahead - anticipate hazards.
 - c. Don't trust the other driver to drive properly.
 - d. Don't speed or tailgate.
 - e. Drive slower in hazardous conditions or hazardous areas.
 - f. Pass only in safe areas and when excessive speed is not required.
 - g. No loose articles on floor.
 - h. Do not read, write, apply make-up, drink, eat or use a phone while driving.
 - i. Stay at least four seconds behind the vehicle ahead.
 - (3) Additional guideline for vehicle/equipment operation can be found in USAG Daegu Pam 385-1.

HAZARD COMMUNICATION PROGRAM

Purpose: To establish a uniform Hazard Communication Program IAW OSHA 29CFR 1910.1200, current Department of the Army, and USFK directives.

Goal: To establish a chemically hazard free working environment.

Applicability: This program is applicable to all DPW divisions.

a. Personnel must be informed of all chemicals used in the work area that may create hazardous waste or conditions. They shall be fully aware of all protective measures which are required to prevent exposure and risks associated with being improperly exposed to chemicals. Personnel that may be exposed to hazardous chemicals/materials will be trained. Training rosters must be filed in official records and must cover the following.

- (1) What hazards are involved?
- (2) Required Personal Protective Equipment (PPE).
- (3) Use of PPE is a condition of employment.
- (4) Refer to Appendix C for full DPW Hazard Communication Program.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

a. Shop guidance for providing PPE is found in 29 CFR 1910.132-.138 Subpart I, AR 40-5, AR 385-10, DA Pam 385-10, TB Med 502 and individual product's Safety Data Sheet (SDS).

b. Proper PPE requirements will be determined by the Shop Safety monitors who will conduct a Job Hazard Analysis (Appendix B) of the workplace and PPE to be used for each task.

c. It is mandatory that all employees wear personal protective equipment when performing hazardous duties.

d. PPE will be furnished at no cost to the employee. The equipment will be maintained by the user and replaced as necessary.

e. The Shop Safety Officer will train employees in the proper selection, use and care of PPE. Training will include type of PPE assigned, name of employee trained, and dates of training. Documentation of training will be maintained in employee's individual training file.

f. Each employee must demonstrate:

- (1) Knowledge and understanding of when PPE is necessary.
- (2) What PPE is necessary.
- (3) What the limitations of PPE are.
- (4) How to put on, take off, adjust, and wear their PPE.
- (5) How to care for, maintain, replace, dispose of and what is the useful life of their PPE.

g. Maintenance personnel will always wear safety footwear when in the shop.

h. Prescription safety glasses are authorized for maintenance personnel. The employee will furnish the supervisor a current prescription, and glasses will be procured in accordance with USAG Daegu, DPW instructions.

CONFINED SPACE ENTRY PROGRAM

Guidance for managing risks associated with Confined Space Entries is found in 29 CFR 1910.146, USAG Daegu Pam 385-1 and Appendix D of this SOP.

RESPIRATORY PROTECTION

a. Guidance for managing risks associated with the requirements for the wear of respiratory equipment are found in 29 CFR 1910.134, AR 11-34, USAG Daegu 385-1, and DPW SOP in Appendix E.

b. All Shops personnel that utilize respirators must have a “Fit Test.” When using non-respirator dust masks, a fit test is not required, and employees must ensure the dust mask fits properly.

c. A qualified Industrial Hygienist will determine if the wear of respirators is necessary to protect the health of employees. Based on documented health hazard survey results identifying any air contaminants above OSHA’s Permissible Exposure Limit (PEL), this shop will establish and implement the following:

(1) General requirements.

a. Appropriate respirator selection and provision will be based on the respiratory hazards to which the worker is exposed and workplace and user factors that affect respirator performance and reliability.

b. A NIOSH – certified respirator will be selected and used in compliance with the conditions of its certification.

c. A qualified Industrial Hygienist will identify and evaluate the respiratory hazards in the workplace; this evaluation will include a reasonable estimate of employee exposures to respiratory hazards and an identification of the contaminant’s chemical state and physical form. Where the identity of or reasonable estimate of employee exposure cannot be determined, the atmosphere will be considered immediately dangerous to life or health (IDLH) and appropriate respirator selection will be made in accordance with 29 CFR 1910.134 (d) (1) (iv).

(2) A written respiratory protection program with work-site specific procedures that include:

a. Procedures for selecting respirators for use in the workplace.

b. Medical evaluations of employees required to use respirators.

c. Fit testing procedures for tight-fitting respirators.

d. Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations.

e. Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators.

f. Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators.

g. Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations.

h. Procedures for regularly evaluating the effectiveness of the program.

VOLUNTARY RESPIRATOR PROGRAM

a. Supervisors may provide respirators at the request of employees or permit employees to use their own respirators if the supervisor determines that respirator use will not in itself create a hazard. If the supervisor determines that any voluntary respirator use is permissible, the supervisor will provide the respirator users with the information contained in Appendix D of this SOP (“Information for Employees Using Respirators When Not Required under the Standard”).

b. In addition, the supervisor must establish and implement the elements of a written respiratory protection program necessary to ensure that any employee using a respirator voluntarily is medically able to use that respirator, and that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user. Exception: Supervisors are not required to include in a written respiratory protection program those employees whose only use of respirators involves the voluntary use of filtering face-pieces (dust masks).

c. The supervisor will designate a program administrator who is qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness.

d. The Army will provide respirators, training, and medical evaluations at no cost to the employee.

RISK MANAGEMENT PROGRAM

Purpose: To standardize procedures as required by the appropriate regulatory guidance for Development and Implementation of the Army Safety Risk Management Program within the DPW.

References:

- a. AR 385-10, Army Safety Program
- b. DA PAM 385-30 Mishap Risk Management
- c. ATP 5-19, Risk Management
- d. USAG Daegu 385-10 Safety Program

Scope: The following procedures are applicable to all individuals assigned, attached to the DPW. Risk management offers a practical means of optimizing safety and mission accomplishment. The process of applying risk management allows hazards to be identified and controlled. Risk management allows decision-makers to make informed decisions.

Responsibilities

a. DPW Management.

(1) Ensure risk management procedures are published in SOP and all other directives before an operation begins.

(2) Ensure that newly assigned leaders are trained upon arrival and at least annually on risk management processes.

b. DPW ADSO/CDSO Personnel will:

(1) Review the Risk Management Worksheets (DA Form 2977) WHA and JHA developed within their organization to ensure that all identified hazards have control measures established to reduce or eliminate the hazards

(2) Submit Risk Assessments to the USAG Daegu SMO for review and/or submission to higher headquarters as required by this chapter

c. Employees will:

(1) Familiarize themselves and comply with all requirements of this regulation.

(2) Recognize hazards and accident risks associated with their duties and work environment and know the procedures to control these risks.

(3) Risk Identification.

a. Identifying the risk is a systematic look at each phase of the operation or mission and determining possible adverse events that could occur during the operation. This process should be completed in two steps preparing operations analysis and preliminary hazard analysis.

b. An operations analysis is a list in time sequence of descriptions of events that are expected to occur during the operation.

c. A preliminary hazard analysis is a list of various hazards that could occur and result in accidents. Hazards should be listed for each event listed in the operations analysis. Hazards are identified using accident experience databases, scenario thinking, and similar techniques.

Risk Nuisance Disposable Assessment

The hazard probability and hazard severity must be determined for each hazard identified in the preliminary hazard analysis.

Risk Control Options and Decisions

a. For each hazard identified, risk control options must be proposed. This process must begin with the most serious risk. Potential risk controls must be analyzed to determine suitability based on the impact of the mission.

b. Risk must be controlled without sacrificing essential mission requirements when risk elimination is not possible. Risk control alternatives may include:

(1) New task standards.

(2) Revised operational procedures / parameter.

(3) Additional training.

(4) Special maintenance requirements.

- (5) Establishing new or modified controls.
- (6) Trading off mission elements for risk controls.
- c. A new risk assessment must be performed for each hazard with proposed hazard control.
- d. Unnecessary risk will never be accepted. Leaders who have the authority to accept the risk also have the responsibility to protect employees from unnecessary risk.
- e. Risk is unacceptable when risk costs outweigh the risk benefits. Leaders must understand that there is difference between *a risk and a gamble*.

Implement Controls

- a. The controls selected by the supervisor or leader must be implemented.
- b. The controls must be integrated as standards in Unit/Directorate SOPs, OPODs, FRAGOs, etc to ensure procedures are used during operations.
- c. The chain of command must be involved. Examples of Controls:
 - (1) Engineering or designing to eliminate or control hazards.
 - (2) Selecting a Course of Action (COA) that avoids identified hazards.
 - (3) Limiting the number of people and the amount of time they are exposed to hazards, consistent with mission requirements.
 - (4) Selecting personnel with appropriate mental, emotional, and physical capabilities.
 - (5) Providing protective clothing, equipment, safety, and security devices.
 - (6) Providing services such as adequate sanitation facilities and water purification capabilities.
 - (7) Providing warning signs and signals.

Supervision

- a. Leaders must maintain the effectiveness of the risk controls and ensure risk control standards are performed as expected and are maintained at a high standard.
- b. Risk management can be summarized in the following five principles.
 - (1) Accept no unnecessary risk.
 - (2) Make risk decisions at the appropriate level.
 - (3) Accept risk when benefits outweigh costs.
 - (4) Manage risks in the planning phase before execution.
 - (5) Reconsider risk management approach when changes occur in the plan.

c. Application of risk management techniques allows the decision maker to make an informed decision. Although the appropriate decision may involve some amount of risk, the risk can be reduced to a level consistent with the benefits. Basic Risk Management Process:

- a. Identify: List the hazards.
- b. Assess: Determine the risk of each hazard.
- c. Reduce risk to the appropriate level for the mission.
- d. Control: Develop and implement control measures.
- e. Supervise: Ensure controls are followed and get feedback.

d. Hazard Severity Definitions.

(1) *I Catastrophic* - Loss of ability to accomplish the mission or mission failure. Death or permanent total disability (accident risk). Loss of major or mission-critical system or equipment. Major property (facility) damage. Severe environmental damage. Mission-critical security failure. Unacceptable collateral damage.

(2) *II Critical* - Significantly (severely) degraded mission capability or unit readiness. Permanent partial disability, temporary total disability exceeding 3 months' time (accident risk). Extensive (major) damage to equipment or systems. Significant damage to property or the environment. (Security failure). Significant collateral damage.

(3) *III Marginal* - Degraded mission capability or unit readiness. Minor damage to equipment or systems, property, or the environment. Lost days due to injury or illness not exceeding 3 months (accident risk). Minor damage to property or the environment.

(4) *IV Negligible* - Little or no adverse impact on mission capability. First aid or minor medical treatment (accident risk). Slight equipment or system damage, but fully functional and serviceable. Little or no property or environmental damage.

e. Hazard Probability

(1) *FREQUENT* - (A) Occurs very often, continuously experienced. Single item: occurs very often in service life. Expected to occur several times over duration of a specific mission or operation. Always occurs. Fleet or inventory of items occur continuously during a specific mission or operation, or over a service life. Individual Soldier: occurs very often in career. Expected to occur several times during mission or operation. Always occurs. All Soldiers exposed: occurs continuously during a specific mission or operation.

(2) *LIKELY* - (B) Occurs several times. Single item: occurs several times in service life. Expected to occur during a specific mission or operation. Fleet or inventory of items occur at a high rate but experienced intermittently or regular intervals, generally often. Individual Soldier: occurs several times in career. Expected to occur during a specific mission or operation. All Soldiers exposed: occurs at a high rate but experienced intermittently.

(3) *OCCASIONAL* - (C) Occurs sporadically. Single item: occurs some time in service life. May occur about as often as not during a specific mission or operation. Fleet or inventory of items:

Occurs several times in service life. Individual Soldier: occurs some time in career. May occur during a specific mission or operation, but not often. All Soldiers exposed: occurs sporadically (irregularly, sparsely, or sometimes).

(4) *SELDOM* - (D) Remotely possible; could occur at some time. Single item: occurs in service life, but only remotely possible. Not expected to occur during a specific mission or operation. Fleet or inventory of items occur as isolated incidents. Possible to occur sometime in service life, but rarely. Usually does not occur. Individual Soldier: occurs as isolated incident during a career. Remotely possible, but not expected to occur during a specific mission or operation. All Soldiers exposed: occurs rarely within exposed population as isolated incidents.

(5) *UNLIKELY* - (E) Can assume will not occur, but not impossible. Single item: occurrence not impossible but can assume will almost never occur in service life. Can assume will not occur during a specific mission or operation. Fleet or inventory of items occur very rarely (almost never or improbable). Incidents may occur over service life. Individual Soldier: occurrence not impossible but may assume will not occur in career or during a specific mission or operation. All Soldiers exposed: occurs very rarely, but not impossible.

f. Risk Levels

(1) *E - Extremely High*: Loss of ability to accomplish the mission if hazards occur during mission. A frequent or likely probability of catastrophic loss (IA or IB) or frequent probability of critical loss (IIA) exists.

(2) *H - High*: Significant degradation of mission capabilities in terms of the required mission standard, inability to accomplish all parts of the mission, or inability to complete the mission to standard if hazards occur during the mission. Occasional to seldom probability of catastrophic loss (IC or ID) exists. A likely to occasional probability exists of a critical loss (IIB or IIC) occurring. Frequent probability of marginal losses (IIIA) exists.

(3) *M - Moderate*: Expected degraded mission capabilities in terms of the required mission standard will have a reduced mission capability if hazards occur during mission. An unlikely probability of catastrophic loss (IE) exists. The probability of a critical loss is seldom (IID). Marginal losses occur with a likely or occasional probability (IIIB or IIIC). A frequent probability of negligible (IVA) losses exists.

(4) *L - Low*: Expected losses have little or no impact on accomplishing the mission. The probability of critical loss is unlikely (IIE), while that of marginal loss is seldom (IIID) or unlikely (IIIE). The probability of a negligible loss is likely or less (IVB through (IVE)).

g. Decision Level. The following commanders will decide if operations will continue. On Extremely High (E) situations the Garrison will keep the local Senior Responsible Officer (SRO) informed.

- | | |
|----------------------------|----------------------------------|
| f. Extremely High (E)..... | IMCOM-P Regional Director (RD) |
| g. High (H)..... | US Army Garrison Daegu Commander |
| h. Moderate (M)..... | Director of Organization |
| i. Low (L)..... | Section Supervisor |

h. Summary

(1) Pitfalls arise when risk management tools are used without adaptation to the factors of mission, enemy, terrain, troops available, time, and civilian considerations (METT-TC). Using a standardized risk assessment card or checklist may be of some value initially in the mission analysis and course of action development or in cases where a routine task is performed in an unchanging environment or static situation. However, such a tool used alone will not likely identify all hazards for every mission in a changing operational environment. Completing the risk assessment alone, but failing to identify effective controls, usually results in a GO or NO-GO decision based on the initial risk. If the risk assessment does not accurately identify the hazards and determine the level of residual risk, the leader is likely to make their risk decision based upon incomplete or inaccurate information. If the risk assessment places missions in a routine, low-risk category, the commander may not be informed of a risk decision resulting in an accepted risk level that could imperil their higher commander's intent or other affected organizations. The risk management process is intended to provide reasonable controls to support mission accomplishment without exposing the force to unnecessary residual risk.

(2) Risk management can be summarized in the following five principles.

- a. Take a holistic approach and consider all risk, 24 hours a day 7 days a week, on and off duty.
- b. Accept no unnecessary risk.
- c. Make risk decisions at the appropriate level.
- d. Accept risk when benefits outweigh costs.
- e. Manage risks in the planning phase before execution.

Standardized Army Risk Matrix						
		Probability				
Severity		Frequent A	Likely B	Occasional C	Seldom D	Unlikely E
Catastrophic	I	E(1)	E(1)	H(2)	H(2)	M(3)
Critical	II	E(1)	H(2)	H(2)	M(3)	L(4)
Marginal	III	H(2)	M(3)	M(3)	L(4)	L(5)
Negligible	IV	M(3)	L(4)	L(4)	L(5)	L(5)

E – Extremely High Risk

H – High Risk

M – Moderate Risk

L – Low Risk

- i. Workplace Hazard Assessment (WHA), Job Hazard Analysis (JHA), and Deliberate Risk Assessment Worksheet (DRAW).

(1) WHA's identify hazards and control measures in the workplace, and are required for medium and high, risk facilities or areas where hazards are present or likely to be present. Example: Facilities where industrial or construction type work is conducted, areas that have significant risk of injury or property damage accidents, areas that currently require employees to use some form of PPE, warehouses, loading docks, etc.

(2) JHA's identify hazards, control measures and personal protective equipment (PPE) for the individual employee and are required when an employee performs job tasks that have a risk of injury or occupational illness. Examples: Occupations in the industrial or construction fields, material – handling tasks, job tasks requiring use of PPE, job task that indicate a history of injuries, etc. JHA's shall be reviewed and updated at least annually by the shop Foreman/Senior Leader. Documented training on JHA shall occur annually and maintained in the shop Foreman/Senior Leader's safety training folder. A JHA is required each time or occurrence an employee performs job tasks that have a greater risk of injury or occupational illness. Examples: excavation work requiring heavy equipment, working inside an excavation or ditch deeper than 0.90 meters, working in confined spaces, working in an area that requires fall protection. The shop employee at the job site responsible for performing the task shall evaluate the task and complete the JHA at the work site before starting the work task.

(3) Supervisors are responsible for completing Risk Management (RM) worksheet DA Form 2977. WHAs and JHAs copies shall be provided to the Garrison SMO upon request..

ENERGY CONTROL (LOCKOUT/TAGOUT)

Guidance for managing risks associated with the control hazardous energy is found in 29 CFR 1910.147& USAG Daegu Pam 385-1 and is supplemented by Appendix F.

FALL PROTECTION

Purpose: To prescribe policies, procedures, and responsibilities for protecting personnel working in operations that involve the risk of an accidental fall of four (4) feet or more. Refer to Appendix G for more guidance for Fall protection

Roles

- a. Management:

(1) Will develop and implement a Fall Protection Plan for all operations that require fall protection.

- (2) Will ensure supervisors are trained in fall protection procedures and requirements.
- (3) Will ensure supervisors train personnel in fall protection procedures and requirements.
- (4) Will provide adequate fall protection in accordance with this regulation and Army and Federal safety standards.

b. Supervisors:

- (1) Will train personnel on proper fall protection procedures and requirements in accordance with the activity Fall Protection Plan.
- (2) Will ensure adequate fall protection is provided in accordance with this regulation, Army, and Federal safety standards.
- (3) Will evaluate areas of responsibilities and ensure personnel comply with proper fall protection procedures and requirements as required.
- (4) All individuals. All individuals working in operations which require fall protection will comply with the fall protection procedures and requirements as required.

Risk Management

- (1) Risk Management will be conducted on all operations prior to start of work to assess risk.
- (2) Risk Management will be included in Fall Protection Planning and training.

MATERIAL HANDLING

a. Due to the repetitive nature of lifting and the cumulative nature of minor injuries, especially to the back, it is imperative that proper lifting techniques be used on every lift, regardless of weight or bulk. Supplementary Guidance for Material Handling is found in USAG Daegu 385-1 and EM 385-1 Safety and health Requirements Manual.

- (1) Set up the lift:
 - a. Check the surface for hazards that might cause trips or slips.
 - b. Push or drag the load to a level area.
 - c. Face the direction you will carry the load.
- (2) Lift using a good technique:
 - a. Place feet about shoulder width apart, with one slightly ahead of the other for balance.
 - b. Bend at the knees, keeping the back straight.
 - c. Tuck in chin to keep upper spine in line.
 - d. Grip the load firmly with both hands.

- e. Lift, using the legs, in one continuous move.
- f. Keep load close to the body, with arms extended downward.
- g. Turn using your feet.
- h. Keep your back straight and do not twist.

(3) Move heavy or bulky loads in stages with rest in between. When lifting objects of 50 lbs. or more, use mechanical lifting equipment or get someone to help.

(4) If you lose your balance or cannot maintain the load, drop it, pushing load away from you. To lower a load safely:

- a. Set the load down using good technique.
- b. Stop and place feet apart.
- c. Lower in one motion, bending at the knees.
- d. Keep back straight throughout.
- e. When items in contact with surface (farthest edge first), release lower hand then, when hands and feet are clear, release the item.
- f. Stand slowly, using your legs.

(5) When using several people to lift:

- a. Choose a leader who will give verbal signals.
- b. Be sure everyone understands the lift, movements, and meaning of orders.
- c. Confirm that everyone has a firm grip and is ready to lift.
- d. Lift together and check that everyone is OK.
- e. The leader shall direct movement.
- f. Lower or empty together, being careful not to overload any one person.

HEARING CONSERVATION PROGRAM

Guidance for managing risks associated with work related hearing loss are found in 29 CFR 1910.95, USAG Daegu 385-1 & Appendix H.

MACHINE GUARDING

Guidance for managing risks associated with work Machine guarding can be found in USAG Daegu Pam 385-1.

FIRE PREVENTION PLAN

General: This SOP provides general information on fire prevention. Refer to Appendix I for detail DPW Fire Prevention Plan.

Fire Prevention:

- a. Keep hallways, corridors, and exit areas clear of items that impede egress in an emergency (i.e., chairs, tables, boxes, equipment, etc.).
- b. Properly store combustible items. Do not accumulate unnecessary cardboard boxes, chemicals, and paper products.
- c. When stacking or storing items on shelves, the top of the items must be a minimum of 18" below sprinkler head deflectors.
- d. Avoid storage of flammable liquids outside of a flammable storage cabinet.
- e. Properly store compressed gas cylinders.
- f. Segregate chemicals by hazard class.
- g. Purchase equipment that is approved by a testing organization, such as Underwriters Laboratories (UL).
- h. Keep electrical equipment, cords, and plugs in good condition. Arrange for an authorized factory representative or electrician to replace electrical cords or plugs that are in poor condition (i.e., frayed, cracked insulation, loose prongs, etc.).
- i. Do not overload electrical outlets.
- j. Report loose electrical wall receptacles, missing outlet faceplates, and exposed wires to the Facility Manager.
- k. Disconnect electrical equipment that could possibly overheat when unattended.
- l. Keep fire extinguishers charged, stored in their designated location, and ensure periodic inspection.
- m. When using a space heater, allow a minimum of three (3) feet between the heater and combustible materials. (Exception to policy from Energy Office is required for space heater use)
- n. Turn off the electrical and heat-producing appliances at the end of the day.
- o. Immediately report a suspected natural gas leak. For emergencies call DSN 911.
- p. Refrain from open flames (i.e., candles, sterno burner, incense burner, etc.) unless they are an integral part of the work activity (i.e., Bunsen burners in laboratories, torches in welding shops, etc.). Do not leave open flames unattended. Do not store or use ordinary combustibles (i.e., papers, napkins, cloths, etc.) or flammable/combustible solvents (e.g., aerosols, paints, etc.) in the vicinity of open flames

or hot surfaces.

q. Do not let cooking oil or grease overheat. Use cooking aids that limit grease splattering. In commercial type kitchens, ensure regular inspection and servicing of the grease exhaust/fire extinguishing system. For small grease fires, attempt to extinguish by smothering with a pot lid. Do not use water on grease fires.

r. Know how to safely exit the work area if a fire should occur. Have at least two (2) exit routes in mind and walk through them to assure your safe response. Always observe a fire alarm. Gather in the predetermined safe gathering location.

s. Use appropriately designed tools for handling hot equipment or surfaces (don't improvise with dish towels, rags, etc.).

DPW ADDITIONAL SOP

The following appendices contain additional topic specific SOPs within DPW.

APPENDIX A

Ergonomics Consideration

PURPOSE. This SOP provides guidance on avoiding musculoskeletal disorders that can result from prolonged and frequent use of various types of office equipment.

APPLICABILITY. Applies to all DPW personnel assigned/attached.

a. Desktop Computers

(1) Posture

- a. Adjust seating height so that there is a 90–100-degree angle at the knee with the feet resting flat on the floor. If necessary, footrests can be used.
- b. Use cushioned chairs with an adjustable seating and arm rest height.
- c. Ensure back is fully supported and the chair provides adequate lumbar support.
- d. Alternate desk work with other tasks that require moving around the office. This will ease the workload on stressed muscles. Changing posture when typing can also help reduce muscle fatigue.
- e. Arms should rest naturally at sides. If using armrests, adjust them so the arms are in a relaxed neutral position.
- f. Stretching is another way to reduce muscle strain related to typing. For wrists and fingers, gently pulling back on the fingers with the arms outstretched will stretch the forearm muscles. Leaning into a corner and performing a standing pushup will stretch the arms, shoulders, and chest muscles.

(2) Keyboard and Mouse

- a. Adjust the keyboard height so that a 90 degree or greater angle is at the elbow. Consider using an adjustable keyboard tray.
- b. The keyboard itself should also be placed at an angle that allows the back of the hand to be approximately parallel with the forearm. It may be necessary to flatten or even reverse angle the keyboard to attain this posture. These guidelines also apply to the mouse.
- c. For those individuals who use the mouse often, one additional recommendation is use of the mouse by either hand. This will reduce the repetition and strain on one wrist.
- d. Use wrist-rests at both the keyboard and the mouse. This will reduce the pressure placed on the wrists where they rest on the counter and enhance circulation in those areas.
- e. Most keyboard keys are positioned in straight rows. Natural or “split” keyboards, available from local vendors, are angled toward each hand to provide a more comfortable keyboard operation.

(3) Monitor

a. Raise the monitor so that the top of the screen is level with the eye. This will allow for the most ergonomically correct posture for the neck.

b. For individuals who have bifocals or trifocals, consider purchasing glasses made for computer use. This will allow you to look straight ahead at the monitor instead of tilting your head up to bring the reading lens into use. Otherwise, lower the monitor until the screen can be viewed without tilting the head back.

c. For referencing information from other documents, obtain a vertical document holder and place it next to the monitor or a horizontal document holder and place it between the monitor and keyboard tray. This will help prevent neck strain.

d. Anti-glare screens for monitors can reduce eyestrain associated with reflected light. It can also help posture if poor positions are assumed to see the screen.

(4) Positioning

a. Position the laptop 90 degrees from windows or bright light sources to reduce glare.

b. Position the keyboard so elbows are in a neutral position (at a 90 to 100 degree angle) and wrists are straight (not bent).

c. Adjust the screen so that the top is even with or slightly below your eye level (the laptop might need to be raised by positioning it on a pedestal or phone book). A laptop holder which is portable and lightweight may also be used.

d. Make sure the screen is positioned at least 18 inches away.

e. If a solid work surface is not available, place the laptop in your lap.

f. Sit with knees and hips level to make a flat surface for the computer.

g. Angle the screen to view it comfortable.

h. Use a chair that doesn't have armrests to allow more room for elbows.

i. Protect your lap from any possible contact burns from the laptop. Place a buffer of material between you and the computer.

(5) Reducing strain

a. Change positions occasionally to avoid sitting in one position (static posture) for an extended period. This can interfere with circulation.

b. Take frequent short breaks.

c. Do not use excessive force on the keys when typing on an external keyboard or a laptop keyboard.

d. Frequently clean the screen, as dust can make it difficult to read and may increase eye strain. Be sure to use an appropriate anti-static cleaning material that is safe for laptop computers.

e. Transport in a bag with a padded shoulder strap and remove unnecessary accessories to lighten the load. Switch the bag from shoulder to shoulder to relieve the weight. Other options include using a backpack, which allows distribution of the laptop weight, or a laptop bag with wheels or a wheeled luggage cart.

(6) Telephones

Some individuals using telephones, especially while working at a computer, often cradle the phone between their shoulder and ear. This often results in poor posture and strain. Telephone cradles can help reduce the strain. For individuals that frequently multitask, consider a cordless, hands-free headset.

(7) Other Ergonomic Considerations

a. Carpal tunnel syndrome (CTS) is often associated with extensive typing. Any repetitive action involving the hands or fingers, however, can lead to CTS. Work requiring wide grips (such as lifting thick files from cabinets) or hard grips (such as hand-held staplers) or pushing on small surfaces (such as desktop staplers) can all contribute to CTS. Electric staplers can reduce the potential for problems.

b. Standing in place for long periods is also fatiguing and may lead to feet, leg, or back problems. Anti-fatigue mats cushion the feet and help to reduce these stresses.

APPENDIX B

ACCIDENT MISHAP NOTIFICATION ROSTER

DPW USAG DAEGU

SAFETY OFFICER:	Casey, Jim E	DSN: 763-5321 CELL: 010-8582-0265
SAFETY OFFICER (ALTERNATE):	Kim, Tong Kuk	DSN: 763-5324 CELL: 010-4136-3780
ENVIRONMENTAL OFFICER:	Santos, Richard E	DSN: 763-5361 CELL: 010-9520-9288
SAFETY MONITOR (BO&I)	Kim, Pong Chun	DSN: 763-4823, CELL: 010-3127-0029
SAFETY MONITOR (O&M Elec)	Yi, Chang Pom	DSN: 763-5325, CELL: 010-9187-7607
SAFETY MONITOR (O&M M/Water)	Chang, U Sok	DSN: 763-2179, CELL: 010-6220-9267
SAFETY MONITOR (O&M Civil)	Cho, Chae Hwan	DSN: 763-5326, CELL: 010-6231-5315
SAFETY MONITOR (O&M Civil)	Kim, Tae Hui	DSN: 763-2180, CELL: 010-9205-6007
SAFETY MONITOR (O&M Busan)	Yun, Chang Pin	DSN: 763-3065, CELL: 010-4503-9045
SAFETY MONITOR (ENGR)	Pak, Se Tok	DSN: 763-4862, CELL: 010-3827-5958
SAFETY MONITOR (MPD)	Kim, Jae Young	DSN: 763-4845, CELL: 010-2949-5479
SAFETY MONITOR (S&S)	No, Chin Suk	DSN: 763-5522, CELL: 010-9211-8543
SAFETY MONITOR (S&S)	Chong, Ki Hwa	DSN: 763-5524, CELL: 010-4502-7950
SAFETY MONITOR (HSG)	Kim, Po Yong	DSN: 763-4587, CELL: 010-3805-2464
SAFETY MONITOR (HSG)	Chon, Kum Yong	DSN: 763-4575, CELL: 010-9578-7326
SAFETY MONITOR (ENV)	Kim, Myong Han	DSN: 763-5366, CELL: 010-9283-0094
SAFETY MONITOR (ENV)	Hong, Seo Jin	DSN: 763-5387, CELL: 010-6857-8084

1. PROVIDING EMERGENCY CARE MUST COME FIRST BEFORE OTHER REPORTING.
CALL THE 911 LINE AT 0503-364-5911 OR 911 FROM A DSN PHONE FOR ASSISTANCE.
2. IF THE ACCIDENT IS A CLASS A OR B, SUPERVISOR OR SENIOR DPW EMPLOYEE WILL CONTACT THE USAG DAEGU SAFETY OFFICE WHEN THE SITUATION ALLOWS

APPENDIX C

Hazard Communication Training Program

1. PURPOSE

To ensure that DPW maintains a safe working environment that follows the OSHA Hazard Communication Standard, Title 29 Code of Federal Regulations 1910.1200 for its employee's and the general public. This will be accomplished by maintaining an up-to date listing of hazardous chemicals used and stored at this activity; providing the employee's a reference library with the SDS for each hazardous chemical used and stored at this activity; by ensuring that all containers are properly labeled; and by providing employees training. The Globally Harmonized System (GHS) is the classification and labeling of chemicals. GHS defines and classifies the hazards of chemical products and communicates health and safety information on labels and safety data sheets.

2. SCOPE

This program applies to all personnel assigned or attached to DPW and all operations performed by this activity whether the activity is performed on or off site, where employee's or the public may be exposed to hazardous substances under normal working conditions or during an emergency situation.

3. AUTHORITY

- a. 29 CFR 1910.1200, Hazard Communication Standard.
- b. DoD Instruction 6050.5, DoD Hazard Communication Program.

4. RESPONSIBILITIES

The DPW Supervisor is the HAZCOM program manager and coordinator and has overall responsibility for the program. The DPW Supervisor is responsible for development, review, and updating the program, as necessary.

5. POLICY

Under this program, employees will be informed of the contents of the Hazard Communication Standard, the hazardous properties of chemicals with which they work, safe handling procedures, and measures to take to protect themselves from these chemicals using prescribed personal protective equipment (PPE).

6. HAZARDOUS MATERIAL INVENTORY

The shop will maintain an inventory of all hazardous chemicals and materials used and/or stored on-site, and will update the list as necessary, at least semi-annually. The list of chemicals will identify all of the chemicals used in each of the shop's work processes. A separate list will be available for each work area and is posted there. Each list will also identify the corresponding Manufacturer SDS and required PPE for each chemical.

7. NON-ROUTINE TASKS

When employees are required to perform hazardous non-routine tasks (e.g., cleaning tanks, entering confined spaces, etc.), a special training session will be conducted to inform employees regarding the hazardous chemicals to which they might be exposed and the proper precautions to take to reduce or avoid exposure.

8. SAFETY DATA SHEETS (SDS)

a. SDS provide employees with specific information on the chemicals they use, and how to use them safely. The USAG Daegu DPW Supervisor will maintain a binder with an SDS for every item on the Hazardous Material Inventory. The USAG Daegu DPW Supervisor will ensure that each work site maintains an SDS for hazardous materials in that area. SDS will be made readily available to employees at their workstations during each shift.

b. The DPW Supervisor is responsible for acquiring and updating SDS. He will contact the chemical manufacturer or vendor if additional research is necessary or if an SDS has not been supplied with an initial shipment. All new acquisitions of any type of hazardous material must be approved by the DPW Supervisor prior to ordering.

9. LABELS AND OTHER FORMS OF WARNING

a. The DPW Supervisor will ensure that all hazardous chemicals in the shop are properly labeled and updated, as necessary. Labels should list at least the chemical identity, appropriate hazard warnings, and the name and address of the manufacturer, importer, or other responsible party. The DPW Supervisor will refer to the corresponding SDS to assist employees in verifying label information. Containers that are shipped from the shop will be checked by the Supervisor to ensure all containers are properly labeled.

b. If there are several stationary containers within a work area that have similar contents and hazards, signs will be posted on them to convey the hazard information.

c. If employees transfer chemicals from a labeled container to a portable container that is intended only for immediate use, no labels are required on the portable container. Pipes or piping systems will not be labeled but their contents will be described during employee training sessions.

10. TRAINING

a. Everyone who works with or is potentially exposed to hazardous chemicals will receive initial training on the DoD Federal Hazard Communication Standard or Hazardous Material/Hazardous Waste handlers training performed by the USAG Daegu DPW Environmental Division. That training will be supplemented with in house periodic refresher training. Whenever, a new hazard is introduced into the shop, additional specific training will be provided. Regular safety meetings will also be used to review the information presented in the initial training. Supervisors will be extensively trained regarding hazards and appropriate protective measure so they will be available to answer questions from employees and provide daily monitoring of safe work practices. Additional emphasis will be placed on:

- (1) A summary of the standard and this written program.

- (2) Best practices to ensure protection when responding to spills and leaks.
- (3) SDS location and understanding the information on both labels and the SDS.

b. The USAG Daegu, DPW Supervisor will review employee training programs against current regulatory guidance and make modifications to the training program as required. Retraining is required when the hazard changes or when a new hazard is introduced into the workplace, but it will be shop policy to provide training regularly in safety meetings to ensure the effectiveness of the program. As part of the assessment of the training program, the USAG Daegu, DPW Supervisor will obtain input from employees regarding the training they have received, and their suggestions for improving it.

c. The USAG Daegu, DPW Supervisor will monitor and maintain records of employee training and coordinate training requirements. Hazard Communication (HAZCOM) training will be documented on DD Form 1556 and filed in the individual's official personnel folder. Records will be maintained for the duration of employment/enlistment plus 30 years.

11. CONTRACTOR EMPLOYERS

The DPW Supervisor will advise contractor personnel of any chemical hazards that may be encountered in the normal course of their work on the premises, the labeling system in use, the protective measures to be taken, and the safe handling procedures to be used. Additionally, they will be notified of the location of the SDS's. Each contractor bringing chemicals on-site must provide the DPW Supervisor with the appropriate hazard information on these substances, including the labels used and the precautionary measures to be taken in working with these chemicals.

12. ADDITIONAL INFORMATION

All employees can obtain further information concerning this written program, the hazard communication standard, applicable SDS, and chemical information lists from the DPW Supervisor and USAG Daegu Pam 385-1.

APPENDIX D

Confined Space Entry Program

Purpose. Establish a uniform Confined Space Entry Program IAW OSHA 29 CFR 1910.146. Provide information to all military, civilian, and contract employees who are required to enter and perform work in confined spaces in USAG Daegu.

Goal. Establish a safe working environment for all personnel entering or performing work in confined spaces.

Applicability. This program is applicable to all military, civilians, and contractors, which may be entering or performing work in confined spaces in USAG Daegu.

Definitions.

a. Confined Space – An area which (1) has adequate size and configuration for employee entry, (2) has limited means of access or egress, and (3) is not designed for continuous employee occupancy.

b. Permit-Required Confined Space – is defined as a confined space that contains or has the potential to contain a hazardous atmosphere, contains a material that has the potential for engulfing an employee, has an internal configuration that could trap an employee or asphyxiate the employee by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section, or contains any other recognized serious safety or health hazard.

c. Confined Space Entry: The action by which a person passes through an opening into a limited access/egress area. Entry includes ensuring work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

d. Confined Space Rescue: The action of removing a person from a limited access/egress area due to injury or possible death by personnel trained to the OSHA standard.

Responsibilities.

a. Installation safety offices shall develop a confined space entry training program, and with the support of MEDDAC-K Industrial Hygiene evaluate confined space work sites to ensure proper protective equipment is used when mechanical ventilation sufficient to maintain nonhazardous atmosphere is not provided. This evaluation should include:

- (1) Respiratory equipment.
- (2) Protective clothing.
- (3) Safety line.
- (4) Body harness.
- (5) Communication equipment.
- (6) Air monitoring, testing equipment.

b. Confined space firefighter rescue team:

- (1) Appoint a confined space firefighter rescue team.
- (2) Ensure personnel assigned to the confined space rescue team is provided and properly trained in the use personal protective equipment, including respirators and rescue equipment necessary for conducting rescues within the installation's permit spaces.
- (3) Ensure rescue teams receive training required for authorized entrants and are trained to perform the assigned rescue function.
- (4) Ensure rescue teams practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, mannequins, or personnel through representative openings and portals whose size, configuration, and accessibility closely approximate those of the permit spaces from which rescues may be required.

c. Supervisors of employees working in confined spaces will:

- (1) Ensure that a list of confined spaces under the control of the organization or function is maintained and provide a copy of all confined spaces listed to the installation safety office and fire department.
- (2) Initiate and post confined space entry permit at each confined space that poses a hazardous condition where all personnel can read it.
- (3) Know the hazards that may exist during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- (4) Verify, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.
- (5) Terminate the entry and cancel the permit upon completion of job.
- (6) Verify that rescue services are available and that the means for summoning them are operable.
- (7) Remove unauthorized individuals who enter or who attempt to enter the permit space during entry operations.
- (8) Contact the local environmental office and fire department if the entry supervisor suspects that a spill has occurred and is causing a hazard in the confined space.
- (9) Ensure safety precautions (proper respiratory equipment, protective equipment, safety line, safety harness) are taken in accordance with the preventive medicine service and installation safety office's evaluation.
- (10) Establish confined space entry procedures and train employees on procedures.
- (11) Provide emergency procedures and training for personnel assigned to a confined space entry job.

(12) Ensure confined space is monitored continuously in areas where authorized entrants are working to determine if acceptable entry conditions are being maintained during the course of the entry operations.

(13) Notify the fire department prior to beginning confined space work.

(14) Serve as an attendant, as long as the person is trained and equipped appropriately for that role.

d. Attendants are individuals who remain outside the permit space and monitor employees performing work inside the permit space. The attendants will:

(1) Know the hazards that may be faced during entry, including information on the mode, signs, or symptoms, and consequences of the exposure.

(2) Communicate with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space.

(3) Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space, and order the authorized entrants to evacuate the permit space immediately under any of the following conditions:

(a) The attendant detects a prohibited condition.

(b) The attendant detects the behavioral effects of hazard exposure in an authorized entrant.

(c) The attendant detects a situation outside the space that could endanger the authorized entrants.

(d) The attendant cannot effectively and safely perform all the duties.

(4) Summon rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards.

e. Authorized entrants will:

(1) Know the hazards that may be faced during entry, recognize the signs and symptoms of exposure to the hazards, and understand the consequences of exposure to a hazard.

(2) Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space.

(3) Properly use the following equipment:

(a) Testing and monitoring equipment.

(b) Ventilating equipment needed to obtain acceptable entry conditions.

(c) Communications equipment.

(d) Personal protective equipment (insofar as feasible engineering and work practice controls do not adequately protect employees).

(e) Lighting equipment needed to enable employees to see well enough to work safely and to exit the space quickly in an emergency.

(f) Barriers and shields as required.

(g) Equipment, such as ladders, needed for safe ingress and egress by authorized entrants.

(h) Exit the permit space, unless it is physically impossible to do so, when either the attendant orders evacuation, the automatic alarm is activated, or the entrants perceive that they are in danger.

f. When a contractor performs work that involves permit space entry, the Contracting Officer shall:

(1) Advise the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with USAG Daegu Confined Space Entry Program.

(2) Apprise the contractor of all previous hazards and host employer's experiences associated with the permit space through installation safety office.

(3) Apprise the contractor of requirements to notify the fire department when entry and exit to permit spaces are made.

(4) Debrief the contractor and notify installation safety office at the conclusion of the entry operations regarding any hazards confronted or created in permit spaces during entry operations.

g. Training will be provided to each affected employee:

(1) Before the employee is first assigned duties under this regulation.

(2) Before there is a change in assigned duties.

(3) Whenever there is a change in permit space operations that present a hazard for which an employee has not previously been trained.

(4) Whenever the employer has reason to believe that there are either deviations from the permit space entry procedures or that there are inadequacies in the employee's knowledge or use of these procedures.

Special Requirements.

a. Before an employee enters the space, test the internal atmosphere with a calibrated direct-reading instrument for the following conditions in the order given:

(1) Oxygen content.

(2) Flammable gases and vapors.

- (3) Potential toxic air contaminants.

Note: Request assistance from the Installation Safety Office at 768-8650 or 763-5990.

b. The acceptable limits of above requirements are on the confined space entry permit form (Appendix I). If the test shows exceeding limit or any other hazard detected, contact the Installation Safety Office immediately.

c. It is necessary to test all areas (top, middle, and bottom) of a confined space with properly calibrated testing instruments to determine what gases are present.

Note: If testing reveals oxygen-deficiency, or the presence of toxic gases or vapors, the space must be ventilated and re-tested before workers can enter.

d. Safety equipment and clothing taken into consideration, in accordance with the appropriate required regulations:

- (1) Eye and face protection.

- (2) Head protection.

- (3) Foot protection.

- (4) Body protection—gloves, aprons, and over-suits.

- (5) Hearing protection.

- (6) Respiratory protection—the use of respiratory protection will be determined by the supervisor.

- (7) Hand protection.

- (8) A body harness with "D" rings for attaching a lifeline will be worn at all times.

e. The combination of a body harness with lifeline will be used when:

- (1) An employee is required to enter to complete the gas analysis.

- (2) An employee is working in an area where entry for the purpose of rescue would be contradicted.

- (3) Any failure to ventilation would allow the build-up of toxic or explosive gases within the time necessary to evacuate the area.

- (4) The atmosphere is immediately dangerous to life and health.

f. Use continuous forced air ventilation as follows:

(1) An employee may not enter the space until the forced air ventilation eliminates any hazardous atmosphere.

(2) Direct the forced air ventilation to ventilate the immediate areas where the employees are or will be present within the space and continue until all employees leave the space.

(3) Ensure that the air supply for the forced air ventilation is from a clean source and does not increase the hazards in the space.

g. Periodically test the atmosphere within the space to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.

h. If a hazardous atmosphere is detected during entry, evacuate each employee from the space immediately; evaluate the space to determine how the hazardous atmosphere developed, and implement measures to protect employees from the hazardous atmosphere before any subsequent entry takes place.

i. There may be no hazardous atmosphere within the space whenever any employee is inside the space.

j. If an entry supervisor can demonstrate with monitoring and inspection data that the only hazard is an actual or potential hazardous atmosphere that can be made safe for entry using continued forced air ventilation, entries into confined spaces are allowed without an entry permit and require no attendants. However, even in these circumstances, the internal atmosphere of the space must be tested for oxygen content, flammable gases and vapors, and the potential for toxic air contaminants before any worker enters it.

k. All testing results and monitoring data are documented, retained, and made available to employees for a minimum of three years.

APPENDIX E

Respiratory Protection Program

1. Scope:

This SOP applies to approved respiratory protection that would be utilized in completing routine maintenance in USAG Daegu shop facilities.

2. Purpose:

To develop a viable respiratory protection program, in compliance with 29 CFR 1910.134, and to ensure that the life and health of employees are safeguarded when they are required to work in areas requiring respiratory protection. This program provides for proper training in the selection, fitting, use, care and limitations of respirators for all employees whose work assignment requires the wearing of respirators and to all supervisors responsible for accomplishing these work assignments.

3. Responsibilities:

a. The DPW Supervisor is responsible for overall management of the organization respiratory protection program.

b. The Occupational Health Clinic is responsible for providing fit-testing and training to personnel who are required to utilize respiratory protection in their assignments.

c. The Occupational Health Clinic is responsible for conducting medical surveillance, i.e., pulmonary function testing and medical clearance for respirator users.

d. DPW Supervisor will:

1) Ensure all employees who may be exposed to (or required to work in) potentially hazardous environments are properly trained in the recognition of such conditions, and in the selection, proper use and care of the required protective devices.

2) Ensure employees whose work may potentially expose them to hazardous airborne contaminants and/or oxygen deficient atmospheres are provided with the correct respirator suitable for protection against the hazard involved.

3) Ensure respirators are not worn by individuals with beards, long sideburns, missing dentures, or other obstacles that may prevent a good face seal and thereby endanger life or health.

4) Ensure only National Institute of Occupational Safety and Health (NIOSH) approved respirators are procured and issued to employees.

5) Ensure employee is medically qualified to perform the assigned work while using a respirator.

6) Ensure the person responsible for issuing respirators and/or cartridges has been properly trained as well.

7) Ensure respirators are properly stored outside of the contaminated work area that requires the wearing of respiratory protection.

8) Ensure when employees are working in areas immediately hazardous to life or health, that appropriate standby personnel and equipment are provided.

e. DPW Safety Manager will:

1) Monitor and review the efforts of supervisors in the execution of their responsibilities under this program and cause corrective action to be taken when required.

2) Provide workplace surveillance to determine the conditions and degree to employee exposure. (May need to request the services/assistance of an industrial hygienist for random air monitoring along with technical assistance involving a respiratory protection program.)

f. Employee will:

1) Know hazards that may be faced while engaged in work requiring the use of respiratory protection.

2) Use and maintain respiratory protection properly.

4. Respirator Cleaning, Inspection and Storage:

a. Cleaning:

1) Remove filters, cartridges, canisters, and straps.

2) Wash the face-piece, including inhalation and exhalation valves with warm soapy water.

3) Then disinfect by completely immersing the face-piece in a bleach water solution of (2) ounces of bleach per gallon of water for two minutes.

4) Air dry. (Do not use compressed air to dry.)

b. Inspection:

1) Reassemble respirator in area separate from disassembly area to avoid contamination.

2) Visually inspect respirator for:

a. Cleanliness, detergent residue.

b. Cracks, tears, holes.

c. Distortion of respirator face piece.

- d. Cracked, scratched, loose-fitting lenses (if using full-face respirator).
 - e. Head straps/bands broken or torn.
 - f. Loss of elasticity in head straps/bands.
 - g. Broken or malfunctioning buckles.
 - h. Missing or defective valve cover or seat.
 - i. Condition of cartridge (threading, cracks, dents, service life).
 - j. Cracks or holes in airline hose.
 - k. Missing or broken clamps.
 - l. Broken or missing end connection.
- c. Storage:
- 1) Place respirator in re-sealable plastic bag.
 - 2) Store in rigid container (i.e., wall locker), not in toolbox or maintenance cabinet.
 - 3) Protect respirator from dust, sunlight, heat, extreme heat, or cold, excessive moisture, damaging chemicals, and/or mechanical damage.

5. Types and Characteristics of Respirators and Gas Masks:

a. Particulate-removing respirators (mechanical filter respirators): Protection against non-volatile airborne particles in the form of dust, fumes, spray, and mist. They do not provide protection against vapors, gases, or an oxygen deficient atmosphere and they should not be used against particulates that hydrolyze or decompose to release a noxious vapor or gas. They should not be used for protection during shot or blasting operations which involve exposure to very high concentrations of particulates. The respirator filter may be designed for protection against numerous types of airborne dust, fume or mist particulate. The filters are normally replaceable, but, in some instances, are permanent parts of the respirator. When breathing becomes difficult or reduced through the respirator face-piece, this is an indicator that the cartridge has to be replaced. Extreme care must be taken in selecting the proper type of filter for the intended operation.

b. Chemical cartridge respirators: Consist of one or two small cartridge-shaped containers of granular adsorbents or catalysts attached to a half-mask or full-face mask face-piece. They protect against low concentrations of vapors or gases that are not immediately dangerous to life or health. They do not protect against airborne particulates or an oxygen deficient atmosphere. When odor breakthrough of a contaminant is noticeable, cartridge must be replaced. Cartridges for this respirator must be carefully selected.

c. Combination particulate removing and chemical cartridge respirators: Offer respiratory protection against both airborne particulates and low concentrations of vapors and gas.

d. Airline Respirators: A motor operated blower supplies respirable air through an airline to the user. If this apparatus is used in atmospheres immediately dangerous to life and health, standby men must be present with suitable rescue equipment. The full-face piece will routinely be inspected, including straps, valves, and airline hose and connections for effectiveness. Pure oxygen must never be used with airline respirators.

e. Self-Contained Breathing Apparatus: A respirator which employs a self-contained supply of air, oxygen or oxygen-generating material carried by the wearer to provide a respirable atmosphere. All offer protection against vapors, gases, particulates, or combinations of these in any concentration and against any degree of oxygen deficiency.

f. Disposable Respirators: These respirators are generally used as protection against nuisance dusts in small concentrations. They are designed to be discarded at the completion of the workday or task. Disposable respirator wearers must also be medically qualified and trained in their use. Disposable respirators shall not be used for protection against asbestos or fiberglass, regardless of the concentration.

6. Fit Checks:

a. To assure proper protection, the face-piece fit shall be checked by the wearer each time he puts on the respirator. By placing the palms of the hands over the cartridges, inhale. The face-piece should collapse, ensuring a tight face-piece to skin seal.

b. After this check, place palm of hand over the exhalation valve and gently exhale. The face-piece should allow leakage around the seal. Always refer to the manufacturer's face-piece fitting instructions.

7. Selection Chart for Respiratory Protection:

a. Atmospheres immediately dangerous to life and health (IDLH) or oxygen deficient	Pressure demand self-contained breathing apparatus (SCBA) or an airline respirator with an escape SCBA attached to the individual.
b. Atmospheres not IDLH	Airline respirators, full-face piece or half-mask chemical, particulate and/or combination cartridge.

* There will be no substitution (interchange) of respirator parts, filters, or cartridges.

APPENDIX F

ENERGY CONTROL (LOCKOUT/TAGOUT)

1. Scope:

a. These procedures apply to any maintenance or services performed on machinery within this organization which releases or has the potential to release hazardous energy. Energy may be in the form of electrical, hydraulic, pneumatic, thermal, mechanical or radiation.

b. These procedures also apply to contractor operations within USAG Daegu.

2. Purpose:

These procedures supplement federal occupational safety and health standards contained in 29 CFR 1910.147 relative to energy control (Lock Out / Tag Out). Application of these procedures will ensure that individuals performing maintenance or services will have control over energizing machines.

3. Responsibilities:

a. DPW Supervisor:

- 1) Overall management of the organization energy control plan.
- 2) Implementation and execution of Lock Out / Tag Out training program.

b. O&M Shop Leader:

- 1) Periodic compliance inspection of the energy control plan.
- 2) Maintenance and issue of Lock Out / Tag Out devices.

c. Individuals:

Implementation and compliance with established of Lock Out / Tag Out procedures.

4. Energy Control Training:

a. Two levels of training are required for energy control: maintenance personnel and effected personnel. Maintenance personnel will receive training in procedures and machine specific Lock Out / Tag Out. All personnel will receive training annually; records of this training will be maintained in the training files. Affected personnel are usually machine operators who may inadvertently reenergize machinery that is locked out. These people will receive training in the purpose and function of energy control measures.

b. Energy control training will be given to appropriate individuals as soon as possible after assignment to the organization.

c. Energy control training will be properly documented in training records.

5. Energy Control Procedures:

a. DPW Supervisor will inventory all machinery within their area of responsibility to determine which machinery requires energy controls during maintenance or servicing. Machine specific energy control procedures will be developed for each of these machines, attached to this SOP at Appendix A and maintained in the workplace.

b. Locks, chains, tags, valve caps, etc. will be maintained to accomplish Lock Out / Tag Out. Locks and tags will be put in place and removed only by the person(s) being protected by the Lock Out / Tag Out. This will allow such people to maintain control over the energy source(s).

c. Whenever possible, Lock Out procedures will be used. Tags will normally be used to supplement lock-out and warn effected personnel. If lock-out is impossible, tags may be used alone; however, other controls should be in place such as placing an attendant at the site or administratively controlling access to the area where energy control is necessary thus offering the same level of protection as lock-out.

d. When more than one person is working on the same machine or one energy source is locked out for multiple locations, a multiple locking device must be used such that each person has independent control over the energy source and each person must remove their lock-out before re-energizing.

e. Once locks have been installed on a machine, stored energy must be relieved before maintenance or servicing can begin. Store energy can be relieved by grounding capacitors, opening relief valves, block/bracing movable parts, cooling super-heated air/steam, etc.

f. Before beginning maintenance or servicing, check that the machine has been de-energized by turning it on and then off again.

g. Locks and tags will normally be removed by the person installing them; however, if that person has left the area and is not easily recallable, the first line supervisor may remove the locks/tags using extreme caution and only after a survey of the area surrounding the machine.

h. Before reenergizing machines, ensure that all tools have been removed and the area around the machine is clear.

i. At shift changes, a normal unlock and re-lock process will take place. Individuals may not depend on Lock Out / Tag Out of the previous shift.

6. Energy Control Evaluation:

Annually, the DPW Supervisor will evaluate the organization Energy Control Program to ensure compliance with federal OSHA standards and that procedures are being used.

APPENDIX G

ELEVATED WORK SURFACES & FALL PROTECTION

Purpose

This SOP provides general precautions for working at elevated heights. A fall arrest system may be required if an employee could fall from an elevated position. In general, employees must be protected from falls when working:

1. At heights of four feet or more.
2. On sloped roofs.
3. Within six feet of the edge of flat roofs.
4. On moving scaffolding, moving lifts, or buckets.
5. At the edge of an excavation 6 feet (1.8 m) or more in depth when the excavation is not readily seen because of plant growth or other visual barrier.
6. Above dangerous equipment.
7. At any location where the supervisor believes that it would be safer to have fall protection.

Responsibilities

a. Employees must be protected from falling objects that may originate from elevated working surfaces. Holes in elevated walking/working surfaces should be protected with covers to prevent people and tools or other items from falling. Covers must be of substantial construction capable of supporting twice the weight of people, materials, and equipment (including vehicles) that may be placed on it at any given time. Covers must be color coded or marked with the word "Hole" or "Cover" to provide warning of the hazard. Covers must be secured to prevent accidental displacement by wind, equipment, and people. When covers are not appropriate or applicable, toe-boards, screens, guardrails, canopies, barricaded exclusion zones at lower levels, or other means must be used to protect people from falling objects. When toe-boards are used as falling object protection, they must be:

1. Erected along the edge of the overhead walking/working surface for a distance sufficient to protect persons below.
2. Capable of withstanding, without failure, a force of at least 50 pounds applied in any downward or outward direction at any point along the toe-board.
3. Where tools, equipment, or materials are piled higher than the top edge of a toe-board, paneling or screening must be erected from the walking/working surface or toe-board to the top of a guardrail system's top rail or midrail, for a distance sufficient to protect persons below. Guardrail systems, when used as falling object protection, must have all openings small enough to prevent passage of potential falling objects.

b. Usually, fall protection is provided through guardrails or personal fall arrest systems. See EHS

SOP, Personal Fall Arrest Systems. Safety nets are also recognized by OSHA but are not used by UNL employees and therefore are not addressed in this SOP.

c. In general guardrail systems must have:

1. A height of 39 to 45 inches with intermediate members no more than 19 inches apart.
2. Midrails or vertical members midway between the top edge of the guardrail system and the walking/working level. If mesh is used instead, it must extend the entire height.
3. Adequate strength to withstand a force of at least 200 pounds applied within 2 inches of the top edge, in any outward or downward direction, at any point along the top edge.
4. Surfaced as to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing. Top rails and midrails shall be at least one-quarter inch (0.6 cm) nominal diameter or thickness to prevent cuts and lacerations. A secured chain, gate, or removable guardrail section must be placed across the access opening between guardrail sections when used in hoisting operations and such operations are not immediately taking place.

d. If a roof is 50-feet or less in width and has a slope of less than 4 in 12 (vertical to horizontal), only a safety monitoring system is required. If a roof is greater than 50-feet in width, the following systems are recognized under the OSHA standards:

1. Guardrail systems
2. Safety net systems
3. Personal fall arrest systems
4. Warning line system in combination with a safety monitoring system

e. A “safety monitoring system” means a safety system in which a competent person is responsible for warning employees of fall hazards. OSHA defines a “competent person” as: a person who can identify hazardous or dangerous conditions in the personal fall arrest system or any component thereof, as well as in their application and use with related equipment; and who has requisite authority to take prompt measures to eliminate hazards at the work site. OSHA defines a “warning line system” as “a barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, and which designates an area in which roofing work may take place without the use of guardrail, personal fall arrest, or safety net systems to protect employees in the area.”

f. In unusual circumstances, Fall Protection Plans can be developed and used in lieu of guardrails or personal fall arrest systems. This is usually limited to situations where use of a guardrail or personal fall arrest system is infeasible or creates more hazards than it protects against. A fall protection plan will generally incorporate one or more of the protection measures: positioning device systems, warning line systems, controlled access zones, safety monitoring systems. Fall protection plans are subject to heavy scrutiny, must be site and job specific, are limited in application, and must be prepared by a qualified individual. OSHA defines a “qualified person” as one with a recognized degree or professional certificate and extensive knowledge and experience in the subject field who is capable of design, analysis, evaluation and specifications in the subject work, project, or product; and who has requisite authority.

APPENDIX H

Hearing Conservation Procedures

Purpose.

To prescribe policy for the protection of hearing of all employee's assigned or attached to this shop. To delineate responsibilities for compliance with Federal Law, DOD Instruction, and Army Regulations concerned with hearing conservation.

1) Carpentry, Metal, Plumbing, HVAC, and Electrical Shops: Shop foreman will ensure wear of, check, maintain hearing protection, and monitor all tools, equipment, and engines/generators noise level. Shop workers must receive annual hearing examinations through industrial health.

2) Water and Wastewater Plants: Shop foreman will ensure workers have hearing protection when working close to the pumps, generators, and compressors.

Applicability.

This procedure applies to all assigned or attached employees of these shops.

Authority.

- a. 29 CFR 1910.95, Occupational Noise Exposure.
- b. DOD Instruction 6055.12, DOD Hearing Conservation Program.
- c. AR 40-5, Preventive Medicine.
- d. DA Pam 40-501, Hearing Conservation.

Responsibilities.

- a. The shop supervisor will:
 - 1) Support the Army Hearing Conservation Program.
 - 2) Use engineering controls as the primary means of reducing or eliminating personnel exposure to hazardous noise. All practical design approaches to reduce noise levels below hazardous levels by engineering principles shall be explored.
 - 3) Foreman is appointed as Hearing Conservation Manager (HCM) on orders.
 - 4) Appropriate funds to purchase supplies and materials in support of the Hearing Conservation Program.
 - 5) Ensure all shop employees are scheduled and receive the required annual audiometric examination.
 - 6) Counsel any employee found in non-compliance with this SOP.

b. The Hearing Conservation Manager (HCM) will:

- 1) Identify all noise hazardous areas and worksites within the shop area by completing a Job Hazard Analysis for Maintenance Equipment Noise Levels, (Enclosure 1 to Appendix M). Ensure surveys of suspected noise hazardous areas are scheduled with the supporting Industrial Hygiene Section, Preventive Medicine Service.
- 2) Ensure all noise hazardous areas and hazardous noise producing equipment are posted/labeled.
- 3) Document all noise hazardous areas/worksites and maintain copies of all Industrial Hygiene Noise Surveys.
- 4) Ensure all employees have a recorded baseline audiogram upon employment, annually thereafter, and upon transfer or termination.
- 5) Maintain an adequate supply of approved hearing protection devices (HPD) for use by unit personnel and visitors.
- 6) Ensure that DA Poster 40-501A and DD Form 2214 (Noise Survey) are posted in all noise hazardous areas.
- 7) Schedule employees who are exposed to noise at or above the 8-hour time-weighted average of 85 decibels to receive documented annual training. This training will consist of the effects of noise, the purpose of hearing protectors, instructions on selection, fitting, use and care, the purpose of audiometric testing, and an explanation of test procedures.
- 8) Ensure that personnel who experience substantial hearing losses are informed within 21 days of the determination of a Standard Threshold Shift (an average of 10 dB or more at 2000, 3000 and 4000 Hz in either ear).
- 9) Ensure that work related shifts in hearing of an average of 10 dB or more in 2000, 3000 and 4000 hertz (Hz) in either ear are recorded on a Record or Log of Occupational Injuries and Illnesses/OSHA Log 200.
- 10) Periodically inspect all Hearing Protection Devices (HPDs) for serviceability.
- 11) Check the shop's compliance with annual audiometric testing.
- 12) Update this SOP annually and maintain current copies of all pertinent references.

c. The Shop Foreman or Leader will:

- 1) Assist the Supervisor in administering the program.
- 2) Ensure that all shop employee's support the Hearing Conservation Program.
- 3) Ensure their employees have HPDs in their possession and that they are serviceable.
- 4) Ensure that their employee's properly utilize HPDs whenever performing duties in noise hazardous areas.

5) Bring any suspected noise hazards or noise hazardous areas to the attention of the Shop HCM and Shop Supervisor

6) Be aware of equipment noise levels and when single and double hearing protection is required.

d. Shop employee's will:

- 1) Keep always issued HPDs with them.
- 2) Wear HPDs appropriately during any operation where hazardous noise is produced.
- 3) Report to all annual hearing examinations and any required follow-up examinations.

APPENDIX I

Fire Prevention Plan

PURPOSE

- a. The purpose of this plan is to circulate procedures that will minimize hazards to employees, the public, and the environment from fire and to satisfy the requirements of 29 CFR 1910.38(b) which specifies a written Fire Prevention Plan.
- b. This plan is not intended to deal with all the complexities of fire prevention in building design, fire protection systems, high-hazard exposures, compliance with legal ordinances, or the many technicalities of fire prevention. It is meant to serve as an outline of the various aspects of the shop fire prevention program and as a resource for all employees and especially work area supervisors, who must carry out specific procedures in this plan.
- c. All personnel are required to become familiar with the contents of this plan. Copies may be obtained from the Shop Supervisor/Shop Fire Marshall.

SCOPE

This plan covers all assigned or attached personnel, visitors, and contractors who may become directly or indirectly involved in any fire situation associated with this facility. The fire prevention policy is designed to ensure that all reasonable steps are taken to preserve life, property, and the environment from exposure to fire hazards. This plan identifies the basic elements of the USAG Daegu DPW fire prevention program and day-to-day responsibilities.

RESPONSIBILITIES

- a. Shop Supervisor/Shop Fire Marshall will:
 - 1) Develop, coordinate, implement, and maintain the Fire Prevention Plan.
 - 2) Maintain a list of all personnel who have been designated to receive formal fire extinguisher training. Ensure scheduling and documentation of required annual training is accomplished.
 - 3) Provide logistical and maintenance support as required in support of this plan.
 - 4) Provide sufficient fire extinguishers of the types currently in use to accomplish the hands-on training requirement.
 - 5) Apprise employees of the fire hazards of materials and processes to which they are exposed.
 - 6) Review with each employee upon initial assignment those parts of the fire prevention plan that employees must know to protect themselves in the event of an emergency. Maintain documentation of this training readily accessible for review.

FIRE EVACUATION, REPORTING AND FIRE FIGHTING PROCEDURES

It is the policy of this organization that buildings and vehicles shall be evacuated upon discovery of a fire and that only those persons who have received proper training in the use of portable fire extinguishers shall attempt to fight the fire in its early stages if it can be controlled.

EVACUATION POLICY

- a. The evacuation policy is based upon whether the fire is of an interior or exterior nature.
 - 1) Interior. Fires in interior workplaces pose a greater hazard to employees. They can produce greater exposure to quantities of smoke, toxic gases, and heat because of the capability of a building or structure to contain or entrap these combustion products.
 - 2) Exterior. Work areas that are normally open to the environment are somewhat less hazardous because the products of combustion generally are carried away by the thermal column of the fire. Employees also have a greater selection of evacuation routes if it is necessary to abandon any ongoing employee firefighting actions.

INTERIOR FIRES

- a. Upon discovery of any interior fire, the following procedures shall be followed:
 - 1) Activate the building fire alarm if one exists in the building.
 - 2) If the building is not equipped with a fire alarm system, start a verbal alert to warn all personnel of the danger and to activate them to leave the building immediately. Leave the area immediately; if possible, without compromising safety, close all windows and doors in the vicinity of the fire.
 - 3) From a telephone in a safe location, dial 911 and provide the Emergency Dispatcher with the following information:
 - a. Your name.
 - b. Building name and location.
 - c. Nature of the fire and any specific information that may be valuable to the Fire Department such as any toxic chemicals that may be encountered or any incapacitated or trapped personnel that you are aware of.
 - d. Even if properly trained in the use of fire extinguishers, before you consider fighting an interior fire:
 - 1) Make sure everyone has left the immediate area or is leaving.
 - 2) Make sure the Emergency Dispatcher (911) has been notified.
 - 3) Make sure you are familiar with the operation of the portable fire extinguisher in the area.
 - 4) Decide your primary and secondary means of egress if the firefighting is unsuccessful.

- b. Never attempt to fight an interior fire if any of the following conditions exist:
- 1) If the fire is spreading beyond the immediate area where it started or is already a large fire.
 - 2) If the fire could block your escape.
 - 3) If you are unsure of the proper operation of the fire extinguisher.
- c. If any of the above conditions exist, it is reckless to attempt to fight the fire with a portable extinguisher. Instead, leave the area immediately; if possible, without compromising safety, close all windows and doors in the immediate area of the fire.
- d. In the event you are trapped in a building and cannot escape:
- 1) Call 911 and advise the Dispatcher of your location and the fact that you are trapped.
 - 2) If you get caught in smoke, get down on your hands and knees and stay low. Smoke and hot fumes rise, so the cleanest air is near the floor.
 - 3) If the fire is on the other side of the door to the room you are in, try to seal the doorway so that smoke and fumes cannot enter your room.
 - 4) If water is available in the room, use a wet rag or a piece of your clothing as a filter to breathe through.

APPENDIX J

GENERAL MATERIAL HANDLING / SAFE LIFTING

To prevent back injuries, use correct procedures for lifting and get help whenever necessary, as described in this SOP.

Maximum Comfort Zone

Handle boxes and materials within the maximum comfort zone, which is roughly the area just below the shoulders and just above the knees. Repeatedly lifting or carrying objects above shoulder height can put unnecessary strain on the neck and shoulders. Moving objects that are low to the ground (such as items on the bottom shelf of a storage rack) can put strain on the lower back.

Plan the Lift

Lifting an object from the ground is more stressful than lifting the same object from several inches off the ground. When possible, store objects on platforms (i.e., shelves or pallets) that raise them off the ground. Starting positions that are at a level between the knee and waist are the least stressful to the back.

- 1) Face the load squarely, keep back straight, and use legs to lift. Feet should be about shoulder width apart to provide a stable stance.
- 2) Never lift and twist. This action is hard on the back.
- 3) Use carts or mechanical lifting devices to prevent excessive lifting.
- 4) The load should be lifted and carried as close to the body as possible. When the load is not carried closely, the body is positioned out of alignment and more strain is put on the lower back.
- 5) This may require bringing the object to the edge of the shelf or pallet in preparation for the lift. Do not reach over other objects.

Plan the placement/delivery. Once the object reaches its destination, be sure to set it down in the same manner of lifting it: do not bend at the waist, keep the object close to body, and maintain a wide stance.

To prevent overuse injuries, pay attention to pain, numbness and/or tingling and take action to prevent further strain or injury. Have a co-worker observe the lifting technique to see if there are position changes that can be made. Change the routine: do not repeat the same activity over and over but alternate it with other activities. In some situations, equipment or tools are available that will reduce physical stress.

Reducing Push/Pull Forces

Pushing and pulling are common material handling tasks performed in just about any work environment, from factory floors to offices to field installations. Below are three simple approaches to reducing the force required to push or pull when using a wheeled device:

- 1) Lighten the load. This seems obvious, but sometimes making more trips with a lighter load makes sense, particularly when pushing and pulling up an incline, such as when loading a trailer.
- 2) Maintain your casters (wheels). Wear and tear on the casters can greatly increase push/pull force. Periodically check casters to ensure that they are moving and turning freely.
- 3) Select different casters. There are numerous sizes and materials available for casters. Selecting the right type can have a huge effect on the force required to push or pull equipment.

APPENDIX K

ERGONOMICS AND BACK SAFETY FOR CUSTODIAL WORKERS

Custodial workers are at risk for repetitive motion injuries during routine tasks such as using a broom or mop, moving furniture, using a vacuum cleaner, cleaning restrooms, and moving trash. In addition, custodial workers may find themselves frequently bending at the waist and lifting awkward objects. Some ergonomic tips to help reduce the risk of Musculoskeletal Disorders (MSDs) are listed below.

Moving Barrels / Carts

- a. Stock the barrel or cart only with materials needed.
- b. Place the most frequently used products/items closest to you.
- c. Pay attention to uneven surfaces. Slow down when rolling over thresholds.
- d. If the barrel tips, let go of it to avoid strain or injury.

Cleaning Restrooms

- a. Use personal protective equipment to protect the eyes and skin from chemical contact. Avoid spraying or applying cleaners directly overhead.
- b. Use long handled tools to reduce excessive reaching and smaller buckets to reduce weight being carried.
- c. Try to bend at the knee, instead of at the waist, as much as possible.
- d. Be cautious of wet floors, especially when cleaning shower areas.
- e. Alternate tasks between right and left hands, giving each hand time to rest and reducing the probability of muscle fatigue.

Mopping Floors

- a. Avoid extreme reaches to the left and to the right and excessive twisting of the torso. Stand upright, keep elbows close to the body, and move with the mop.
- b. Use knee pads if kneeling is necessary.
- c. Consider smaller mop heads, which are lighter when wet and easier to squeeze.
- d. When mopping stairs, keep within one or two steps of where you are cleaning to avoid reaching.
- e. Alternate use of right arm and left arm to avoid fatigue of dominant arm.
- f. Pad the handle or use an ergonomically designed handle to improve grip.

- g. Bend knees and keep a straight back when pushing the mop wringer handle down.

Trash Removal

- a. When removing trash, bend at the knees and keep back straight. Make several trips if necessary; don't try to carry everything at once.
- b. Try to keep trash bag or can out of "danger zone" (above head or below knees).
- c. Whenever possible, alternate hands to pick up and lower trash receptacles.
- d. Drill holes at bottom of trash can to reduce bag suction when removing it.
- e. Do not stoop over to reline trash cans. Instead, bend at the knees and try to maintain a straight back posture.

Vacuuming

- a. Alternate use of right arm and left arm to avoid fatigue of dominant arm.
- b. Do not twist your torso or excessively reach when cleaning. Move with the vacuum.
- c. Move furniture and then vacuum. Do not do both at the same time.

Storage Closets

- a. Store heavy items on middle and lower shelves. When retrieving heavy items, lift with your legs.
- b. Store frequently used items on middle shelves. This will keep items out of the "danger zone."
- c. Store lightweight and infrequently used items on top shelves.

General Tips

- a. Do not carry stacked items that obstruct view.
- b. Avoid jerky movements when moving and carrying materials.
- c. If a box or object is too heavy, reduce the load by putting items into smaller boxes, use a cart or dolly, or team lift (if possible).
- d. Obtain ergonomic tools or retrofit existing tools to fit the user. For example, use larger handles on items, such as buckets.
- e. Avoid awkward postures and instead maintain a comfortable posture, keeping the natural curve of the spine in place. Avoid static positions when standing for long periods of time or stooping over.

f. Wear shoes with good support and cushioning that have non-skid soles to help prevent slipping.

g. Stretch at the beginning and throughout the workday

APPENDIX L

LADDER SAFETY

Purpose: To establish a ladder safety guideline within DPW.

Scope: The scope of this SOP is limited to portable extension and step ladders.

General:

a. The main hazard associated with the use of portable ladders is falls. Falls occur for several reasons, including the following:

- 1) The ladder is in poor condition or is improper for the task at hand.
- 2) The ladder is poorly located and/or incorrectly positioned.
- 3) The surface on which the ladder is located is slippery or uneven.
- 4) Proper techniques are not observed when using the ladder.

b. The following guidelines, most of which evolve from Occupational Safety and Health Administration (OSHA) regulations, are intended to minimize the risk of falls when using portable ladders.

- 1) Select ladders based on anticipated use and rated load capacity.
 - a) Load ratings, safe working height, and other safety information must be posted on the ladder by the manufacturer. This information should be replaced if it becomes worn or defaced. The rated capacity must be sufficient to accommodate the weight of the person and everything that they are carrying.
 - b) Portable ladders are not suitable for all situations. Depending on the task at hand, an aerial lift or other device may be the better choice. For example, a portable ladder is not a good choice when it is necessary for a person to carry heavy loads or shift their center of gravity while on the ladder; the resting point for the top of the ladder is weak or marginally secure (e.g., guttering); three points of contact cannot be maintained (two feet and one hand); the foundation/surface upon which the ladder will be placed is uneven, slippery, angled, or will otherwise make the ladder unstable; etc.
 - c) Remember the full height of the ladder is not available for use. For example, multi-section extension ladders must maintain a minimum overlap distance and extend a minimum of 3' past the top of the landing point. The top step and next two rungs down on a step ladder are not intended for climbing.
 - d) Do not use portable ladders when working near (<20') live electrical lines.
 - e) Do not use metal ladders when working on or near electrical devices (e.g., changing light fixtures, etc.) and the ladder could become energized.

- 2) Keep the ladder, safety feet, and auxiliary equipment in good condition at all times, and

inspect before each day's use and after it tips over.

- a) Keep dry and free of oil, grease, mud, etc.
 - b) Verify that the joint between the steps and side rails is tight, all hardware and fittings are securely attached, and movable parts operate freely without binding or undue play; rivets are secure; and side rails and rungs are free of excessive denting or other signs of wear.
 - c) Lubricate metal bearings of locks, wheels, pulleys frequently.
 - d) Replace frayed or badly worn rope.
 - e) Safety feet and other auxiliary equipment shall be kept in good condition to ensure proper performance.
 - f) Immediately remove damaged ladders from service, label them as "Out-of-Service" and notify the appropriate supervisor.
 - g) Do not use ladders as guys, braces, skids, gin poles, or for other than their intended purpose.
- 3) Position the ladder appropriately and maintain a safe stance while on the ladder.
- a) Use a ladder of the proper height, as designed by the manufacturer. Do not splice or improvise to gain additional height.
 - b) Wear proper footwear; closed-toe, sturdy, and clean.
 - c) Inspect the area to be sure that it is free of electrical lines.
 - d) Do not position a ladder in an area where it can be bumped or dislodged (e.g., doorway, passage, window opening, etc.). If a ladder must be located where it can be struck or displaced, secure the area by locking doors, placing barricades, having someone stand watch, or other appropriate action.
 - e) The foundation upon which the ladder will be placed must be even, firm, level, and not subject to skidding/slippage. Do not use blocks, rocks, boxes, or other items to "level up" or gain height. Do not use a ladder in strong winds.
 - f) Observe the proper placement angle for extension ladders. The base of the ladder should be one foot (1') out from the wall for every 4 feet of height. The side rails of an extension ladder that is used to access a higher landing must extend a minimum of 3' beyond that landing.
 - g) Secure extension ladders with tie downs or blocking of the base. If using step ladders, ensure that the ladder is fully opened and locked in place.
 - h) Face the ladder while climbing and descending. Always maintain three points of contact.
 - i) Do not lean sideways out of the ladder's width. Do not lean so far that the navel passes outside of the ladder's side rails.

- 4) Properly transport, store, and maintain ladders.
 - a) Ladders should be secured while being transported in a vehicle.
 - b) Get assistance when carrying large ladders to the work area.
 - c) Store ladders in a sheltered area where they will not fall unexpectedly and will not block access to hallways and fire exits.
 - d) Wooden ladders are affected by exposure to heat and dampness. Therefore, they should be stored in a dry, well-ventilated area.
 - e) Never paint a wooden ladder as it can hide structural defects.
 - f) Ladders should be stored horizontally on racks or hooks with support points at the top, middle and bottom of the ladder to prevent sagging and warping.

APPENDIX M

ELECTRICAL SAFETY

Only authorized personnel at DPW are permitted to do any electrical service work. Only authorized personnel are permitted to repair, adjust, test, or service electrical equipment in any way. Governmental codes regulate these requirements and impose strict guidelines to follow in the area of electrical safety.

- a. Never expose yourself or others to energized electrical circuits. No types of work, tests, or adjustments on energized circuits are permitted unless company authorization has been given.
- b. Refrain from bringing in or using personal portable electrical equipment such as space heaters without following approval process.
- c. The responsible supervisor must approve such equipment prior to it being used at USAG Daegu.
- d. Before work begins, check to see that all electrical implements are in safe condition. If you have any doubts or questions regarding the safety of the equipment, notify your supervisor immediately and have the condition checked by the electrical department.
- e. Before plugging in and using electrical equipment, inspect it for the following:
 - 1) Make sure there is an attached electrical inspection label dated within the past six months.
 - 2) Ascertain that the electrical cord is free of cuts or abrasions through the outer insulation.
 - 3) Examine the male plug to be sure that the protective-insulating disc is in proper position and that no prongs are loose or missing.
 - 4) Check for evidence of loose or visually damaged parts, switches, shielding, nuts, bolts, etc.
 - 5) Report any of these defects to your supervisor.
 - 6) Inspect the receptacle before plugging in electrical cord. Check for burn marks, cracks, broken insulation, missing cover plate, or other noticeable defects. Notify your supervisor immediately, and do not use the equipment if you find any of these faults.
 - 7) Upon insertion of the plug, if the receptacle is discovered to be loose, immediately disconnect the plug and report the situation to your supervisor.

OPERATION OF ELECTRICAL EQUIPMENT

- a. Check to see that the male plug is correctly seated in the receptacle.
- b. If any shock sensation is felt when using the equipment, immediately shut it off, unplug it, and inform your supervisor.

- c. If the equipment does not operate, disconnect the plug, and inform your supervisor of the malfunction.
- d. Never unplug equipment by pulling the cord. Turn off the apparatus switch and then pull the plug from the receptacle.
- e. When you leave the work area, be sure that all equipment is unplugged.
- f. When your job is complete, recheck the equipment to be sure it is ready for the next operator.
- g. Extension cords used with portable electric tools and appliances shall be a three-wire type. It shall be placed in as dry a path as possible away from water and mud and kept away from doorways and walkways where it could become a tripping hazard.
- h. Supervisors must see that all electrically powered apparatuses are forwarded to the electrical department promptly for scheduled and emergency repairs.
- i. Supervisors must ascertain that all employees thoroughly understand the above inspection and operating instructions.

ADDITIONAL ELECTRICAL GUIDELINE

- a. Unauthorized persons shall not make or attempt to make repairs to electrical equipment.
- b. All unsafe cords, tools, and other equipment shall be reported immediately.
- c. Avoid stepping on live lines of lighting units or trouble lights when lines are lying on floors.
- d. Defective electrical cords or lines shall be replaced or repaired if possible.
- e. When working with energized lines, personnel wearing rings or other jewelry shall either remove jewelry or wear insulated gloves.
- f. Electric outlets shall not be overloaded. All outlets shall be grounded.
- g. Outlets providing power to portable electric tools shall be equipped with ground fault interrupt when working in damp or wet conditions.
- h. Doors or covers of electric panel boxes shall be kept closed.
- i. Panel boxes with removed circuit breakers shall be equipped with protective closure caps.
- j. When pulling fuses from fuse panel, fuse pullers shall be used.
- k. Never substitute fuses with other materials to make a connection such as tin foil, coins etc.
- l. Never replace a fuse with a larger fuse than what was in unit prior to changing.

- m. When opening or closing a switch in a panel box always stand to one side.
- n. Never paint over or conceal panel boxes.
- o. Electric panels shall be kept accessible. The area around boxes shall be kept clean and free of any flammable or combustible materials.
- p. Do not store metal or conductive materials near panel boxes or lines.
- q. All electric panels shall be labeled as to switch usage and as to what equipment or area that switch controls.
- r. All electric panels used in areas where moisture or damp conditions exist shall be waterproof and explosion proof.
- s. All electric switch panels shall be grounded.
- t. When repairs or work is performed on panels, lockout or tagout procedures shall be used.

EXTENSION CORDS GUIDELINES

- a. Use extension cords only when necessary and only on a temporary basis.
- b. Look for a certification label from an independent testing lab such as UL (Underwriters Laboratories) or ETL (Electrical Testing Laboratories) on the package and on the product.
- c. Use cords with polarized plugs or grounded three-pronged plugs.
- d. High wattage appliances need special, heavy-duty extension cords.
- e. Extension cords used outside should be specifically designed for outdoor use.
- f. Always insert plugs fully so that no parts of the prongs are exposed.
- g. Never cover cords with rugs or other objects because trapped heat may result in a fire.
- h. Do not overload cords with too many appliances.
- i. If a cord feels hot to the touch, stop using it and throw it away.
- j. Do not drive over or roll equipment over a cord.

ELECTRICAL INSPECTION CHECKLIST

Facility: _____ Department _____ Date _____

Production Areas:

	Disconnects have proper covers & covers closed & fastened		All seal tight & properly fitted
	No flexible cords taped or showing signs of wear		No exposed wires on equipment
	Emergency stop devices work		All controls function properly
	Indicator lamps operating		Electrical cords do not hang on pipes, nails, hooks
	Unused openings are plugged		No cords pass through walls, ceiling, doors or windows
	switches & circuit breakers labeled		Electrical panels accessible

Electrical Rooms:

	Boxes & Cabinets labeled		Motor control doors/covers closed and latched
	All equipment doors of original design		Disconnect arms operate breakers properly
	Floors dry		Rubber mats in place
	High Voltage Signs Posted		Restricted Access to Room
	No signs of deterioration of equipment		Emergency lighting works properly
	No Storage in Electrical Room		Ventilation adequate for heat load

Maintenance Shop:

	Power cords grounded		No sign of equipment deterioration
	No power cords are taped		Plugs properly attached to cords
	No broken/cracked handles		Tool Switches operate properly
	Extension cords not used for power bench tools		Equipment work lights operate properly
	Controls work properly		Emergency lighting works properly

Office, Labs, Laundry, Breakrooms:

	Power cords arranged in a neat and unhazardous manner		Electric heaters unplugged at the end of the day
	No cords strung along walkways		Power outlets and electrical devices covered
	Coffee pots / warmers turned off at end of the day		Outlets within 6 feet of sinks ground fault protected
	Extension cords not used for power bench tools		Equipment work lights operate properly
	On/Off switches function properly on all equipment		Power panels accessible (2 feet on each side and 4 feet in front)