PROCEDURE 25 - Ergonomics

Table of Contents Page

Synopsis 25-ii
Ergonomics Checklist 25-iii
25 ERGONOMICS 25-1
25.1 Purpose and Scope 25-1
25.2 Definitions 25-1
25.3 Procedure 25-1
25.4 Quality Control 25-3
25.5 Responsibilities 25-4
25.6 References 25-5
25.7 Attachments 25-5
ATTACHMENT A 25-A-1
Lifting Safety Guidance 25-A-1

Synopsis
The purpose of this procedure is to provide guidance relative to ergonomic workplace hazards. The procedure applies to all NWS facilities, work locations, and employees.

Initial Implementation Requirements:

- **Analyze Site Operations versus Procedure Requirements**
  - Optimum Workstation Seating. *(25.3.1a)*
  - Optimum Workstation Surfaces. *(25.3.1b)*
  - Suitable Computer Monitors. *(25.3.2c)*
  - Wrist Rest or Wrist Support. *(25.5.1d)*
  - Adequate Lighting. *(25.5.1d)*
  - Routine Lifting Tasks. *(25.3.2)*
- **Develop/Obtain Documentation/Information required for Site**
  - Document Findings and Corrective Actions. *(25.3.3)*
- **Designate Person to Administer Ergonomics Procedure Requirements**
- **Provide Local Training of Site Personnel**

Recurring and Annual Task Requirements:

- **Review/Update Documentation/Information required for Site**
  - Maintain Findings and Corrective Actions Documentation. *(25.3.4)*
- **Inspect/Replace/Recalibrate/Maintain Material/Equipment**
  - Optimum Workstation Seating. *(25.3.1a)*
  - Optimum Workstation Surfaces. *(25.3.1b)*
  - Suitable Computer Monitors. *(25.3.2c)*
  - Wrist Rest or Wrist Support. *(25.5.1d)*
  - Adequate Lighting. *(25.5.1d)*

Ergonomics Checklist

REQUIREMENTS	Reference	YES	NO	N/A	Comments
Is initial and annual review of this procedure conducted and documented?	25.4.2				
Are employees ergonomics-related concerns evaluated?	25.3.3				
Are ergonomics-related findings and corrective actions being thoroughly documented?	25.3.3				
Do employees who exhibit physical symptoms consult a qualified medical professional?	25.3.3				
Do workstations provide optimum seating as described in the procedure?	25.3.1a				
Do workstations provide optimum worktable surfaces as described in this procedure?	25.3.1b				
Are guidelines for efficient use of monitors followed?	25.3.1c				
Are guidelines for lighting levels and designs in work areas followed?	25.3.1d				
Do routine lifting tasks conform to the guidelines referenced in this procedure?	25.3.2				

25 ERGONOMICS

25.1 Purpose and Scope

As part of its goal to provide a safe and healthful workplace, the National Weather Service (NWS) is promulgating this procedure related to ergonomic workplace hazards. This procedure applies to all NWS facilities, work locations, and employees.

25.2 Definitions

ACGIH. American Conference of Governmental Industrial Hygienists.

ANSI. American National Standards Institute.

Qualified Individual - An individual who, on the basis of professional training or experience, is qualified to analyze an NWS workstation for compliance with accepted ergonomics principles and who is capable of recommending corrective actions for noted deficiencies. Training courses dealing with ergonomics are available from numerous organizations, such as the American Society of Safety Engineers, American Industrial Hygiene Association, the National Safety Council, etc.

Field Office. A Field Office may include the following: Weather Forecast Office (WFO), River Forecast Center (RFC), Weather Service Office (WSO), and a Data Collection Office (DCO).

IES. Illumination Engineering Society.

NIOSH. National Institute of Occupational Safety and Health.

Operating Unit. For the purpose of this procedure, Operating Unit includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), Radar Operations Center (ROC), or the Sterling Field Support Center (SFSC).

OSHA. Occupational Safety and Health Administration.

Station Manager. For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; and Tropical Prediction Center, NP8); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

TLV. ACGIH Threshold Limit Value, representing conditions under which it is believed that nearly all workers may be repeatedly exposed to day after day without adverse health effects.

25.3 Procedure

25.3.1 Employee computer workstations should be designed to the greatest extent feasible to fit the employees using them. (See Figure 25-1 for illustration)

a. Optimum workstation seating includes:

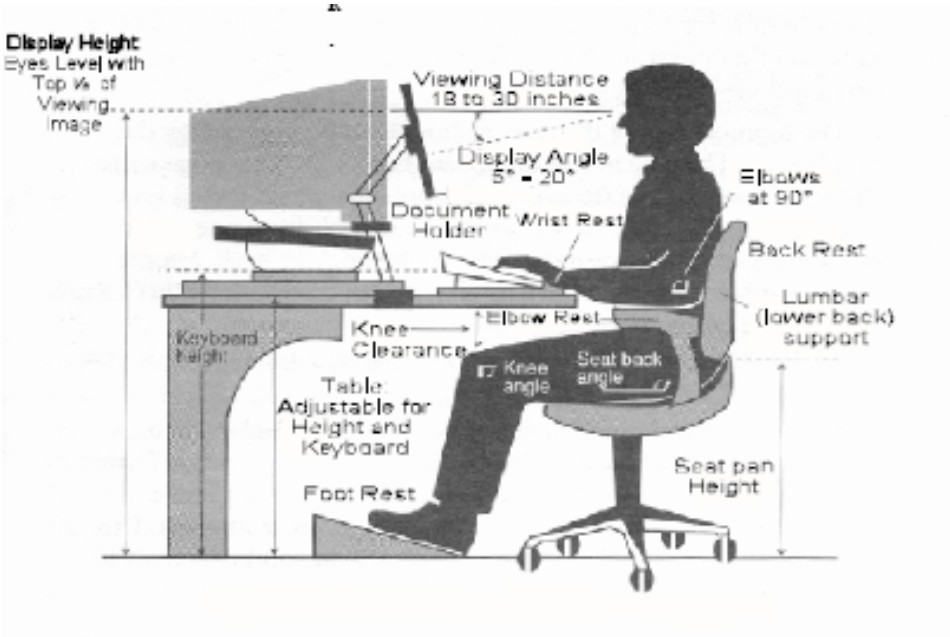
(1) Seat height range from 16 to 20.5 inches from the floor.

(2) The seat tilt range of 0 to 10 degrees.

(3) Seat constructed of material not conducive to sliding.

(4) Seat size of at least 18 inches wide, with a depth of 15-17 inches.

(5) Adjustable back rest to provide support to the lumbar region of the back.



(6) A minimum of five casters to support the chair.

b. Optimum worktable surfaces are:

(1) Adjustable to reduce the need for adjustment of individual components, such as keyboards and monitors.

(2) Large enough to permit to components to be moved forward and backward, while allowing room for a wrist rest and working documents.

c. Monitor use can be made most efficient by:

(1) Placing the monitor on articulating platforms which allow adjustability in all directions.

(2) Setting monitor so that there is minimal forward tilt of the head.

(3) Ensuring that the top of the monitor is never higher than eye level.

(4) Allowing for vertical adjustment of the monitor.

(5) Placing monitor so that it can be adjusted from 18 to 30 inches from the operator's eyes.

(6) Using a monitor that is tiltable to reduce glare and reflection. A clean screen will give off less glare.

d. Miscellaneous:

(1) Articulating arms which attach to the chair or worktable and allow a large number of work positions are recommended where extensive keyboard work is required.

(2) Wrist rests or wrist supports can reduce spinal disc pressure, alleviate shoulder muscle fatigue, and decrease wrist extension. These are low-cost items that can easily be added to most work stations.

(3) Excessive light levels should be avoided to reduce glare and eye fatigue. Workstations should be placed at 90 degrees from light sources, including all windows.

(4) Fatigue and excessive repetition can be avoided by:

i Changing work tasks at least once each hour.

ii Standing up, stretching, flexing muscles, rotating the head, and shifting the body's position every 15 minutes. Also, eyes can be rested by briefly closing them or changing focus by looking at distant objects.

iii Using a soft touch on the keyboard and keeping the shoulders, hands and fingers relaxed.

iv Using a document holder, positioned at about the same plane and distance as the display screen.

25.3.2 Routine lifting tasks should follow the guidelines listed in the NIOSH publication, "Applications Manual for the Revised Lifting Equation." The publication is used to analyze particular tasks and determine a maximum permissible load and lifting frequency. The lifting safety guidance for the office environment can be found in Attachment A.

25.3.3 All employee ergonomics-related concerns should be evaluated by the Station Manager or his/her designee (Qualified Individual) in conjunction with the Regional or Operating Unit Environmental/Safety Coordinator or the NOAA Regional Safety Manager (RSM). All findings and corrective actions should be thoroughly documented and maintained. When employees exhibit physical symptoms, a qualified medical professional should be consulted.

25.4 Quality Control

25.4.1 Regional or Operating Unit Environmental/Safety Coordinators

a. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this procedure.

b. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of this procedure every two years.

25.4.2 Station Manager

Shall review or delegate review, of this procedure on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

25.4.3 NWS Headquarters (NWSH)

a. The NWS Safety Office shall perform an annual assessment of the NWSH facilities to ensure that the facilities are in compliance with this procedure.

b. The NWSH Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this procedure. The frequency of these regional and field office assessments shall be determined by the NWSH Safety Office.

c. Requests for clarification concerning this procedure shall be directed to the NWSH Safety Office.

25.5 Responsibilities

25.5.1 Regional or Operating Unit Environmental/Safety Coordinators*

Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters, and field offices or operating units.

25.5.2 Station Manager*

a. Shall have oversight over the implementation of this procedure, and ensure that the requirements of this procedure are followed by individuals at the NWS facility.

b. Shall assume the duties of or designate a person to serve as Ergonomics Program Manager.

c. Shall ensure that all ergonomics-related problems are investigated and that all needed corrective actions are implemented.

d. Shall ensure that employee work stations are designed and maintained in accordance with the latest ergonomic principles to the greatest extent feasible.

25.5.3 Safety or Environmental/Safety Focal Point*

Shall ensure that any responsibilities delegated to them by the Station Manager are implemented in accordance with the requirements of this procedure.

25.5.4 Employees

a. Individual employees affected by this procedure are required to read, understand and comply with the requirements of this procedure.

b. Report unsafe or unhealthful conditions and practices to their supervisor or safety focal point.

NOTE: * - Reference NWS PD 50-11 for complete list of responsibilities
http://www.weather.gov/directives/050/pd05011c.pdf

25.6 References

Incorporated References. The following list of references is incorporated as a whole or in part into this procedure. These references can provide additional explanation or guidance for the implementation of this procedure.

25.6.1 American Conference of Governmental Industrial Hygienists, Threshold Limit Values for Chemical Substances and Physical Agents, Current Edition. The Illuminating Engineering Society/American National Standards Institute, IES/ANSI.

25.6.2 RP-1-1982, Office Lighting, American National Standard Practice The Illuminating Engineering Society/American National Standards Institute, IES/ANSI.

25.6.3 RP-7-1991, American National Standard Practice for Industrial Lighting. Occupational Safety and Health, NIOSH Applications Manual for the Revised Lifting Equation.

25.6.4 Working with Safety Video Display Terminals, OSHA Publication 3092

Additional information can be found at the following website:
http://www.cdc.gov/niosh/docs/97-141/

25.7 Attachments

Attachment A. Lifting Safety Guidance

ATTACHMENT A

Lifting Safety Guidance

Although a typical office job may not involve lifting large or especially heavy objects, it's important to follow the principles of safe lifting. Small, light loads (i.e., stacks of files, boxes of computer paper, books) can wreak havoc on your back, neck, and shoulders if you use your body incorrectly when you lift them. Backs are especially vulnerable; most back injuries result from improper lifting. Before you pick up a carton or load, ask yourself these questions:

- Is this too heavy for me to lift and carry alone?
- How high do I have to lift it?
- How far do I have to carry it?
- Am I trying to impress anyone by lifting this?

If you feel that the lift is beyond your ability, contact your supervisor or ask another employee to assist you.

Safe Lifting Steps

- Take a balanced stance, feet placed shoulder-width apart. When lifting something from the floor, squat close to the load.
- Keep your back in its neutral or straight position. Tuck in you chin so your head and neck continue the straight back line.
- Grip the object with your whole hand, rather than only with your fingers. Draw the object close to you, holding your elbows close to your body to keep the load and your body weight centered.
- Lift by straightening your legs. Let your leg muscles, not your back muscles, do the work. Tighten your stomach muscles to help support your back. Maintain your neutral back position as you lift.
- Never twist when lifting. When you must turn with a load, turn your whole body, feet first.
- Never carry a load that blocks your vision.
- To set something down, use the same body mechanics designed for lifting.

Lifting from a Seated Position

- Bending from a seated position and coming back up places tremendous strain on your back. Also, your chair could be unstable and slip out from under you. Instead, stand and move your chair out of the way.
- Squat and stand whenever you have to retrieve something from the floor.

Ergonomic Solutions to Backbreaking Tasks

- If you are doing a lot of twisting while lifting, try to rearrange the space to avoid this. People who have to twist under a load are more likely to suffer back injury.

- Rotate through tasks so that periods of standing alternate with moving or sitting. Ask for stools or footrests for stationary jobs.
- Store materials at knee level whenever possible instead of on the floor. Make shelves shallower (12-18") so one does not have to reach forward to lift the object. Break up loads so each weighs less.
- If your must carry a heavy object some distance, consider storing it closer, request a table to rest it on, or try to use a hand truck or cart to transport it.