



KNOW SAFETY NO MISHAPS

NAVFAC SAFETY & HEALTH HANDBOOK

NAVAL FACILITIES ENGINEERING COMMAND

December 2012 P-1300

THIS BOOK BELONGS TO:

I recognize and acknowledge my responsibility to actively contribute to NAVFAC's safety culture, and will commit to ensuring the safety of myself and my co-workers at all times.

SIGNED:

IMPORTANT NUMBERS

EMERGENCY RESPONSE

Fire/Emergency/Ambulance:

Security Office:

Activity Duty Office:

Safety Office:

Supervisor/Manager:

Other:

This handbook provides specific guidelines and tools for NAVFAC's Safety and Health Program, as well as hazards common to Public Works and construction. Even though most of this information may be well known to experienced facilities professionals, the handbook is designed to provide useful reminders prior to performing potentially hazardous operations.

Information in this handbook is not all inclusive. Check with your supervisor, specific Standard Operating Procedures (SOPs) or Safe Acts for Employees (SAFEs) for specific requirements to complete your task.

Make safety a part of everything you do – for your safety and for the safety of those around you:

**KNOW SAFETY,
NO MISHAPS!**

NAVFAC's Safety & Health Handbook has been developed as a tool to help ensure your safety: on the job and off duty. However, it can in no way replace the situational awareness and safety achieved through the use of Operational Risk Management (ORM). ORM is a tool for systematically identifying the risks and benefits to aid in making smart decisions. A detachable card highlighting "The 5 Steps of ORM" is included with this handbook; please keep it with you.

At NAVFAC, we are committed to creating a safety culture that emphasizes each individual's responsibility for ensuring a safe workplace for you and your co-workers. However, only through your personal commitment and open communication will we grow the proper command climate conducive to achieve NAVFAC's safety goals.

Your willingness to accept and follow the safety rules outlined in this handbook plays a major role in the prevention of mishaps throughout the NAVFAC organization. Your ability to identify deck plate issues and take the appropriate measures can be enhanced with this handbook, as well as through the many safety-related educational resources offered by the U.S. Navy.

Know safety. No mishaps.

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NAVFAC SAFETY TALK TIPS

If you are a NAVFAC supervisor, you may be required to present a safety talk to employees. Here are some tips to help you with an effective presentation:

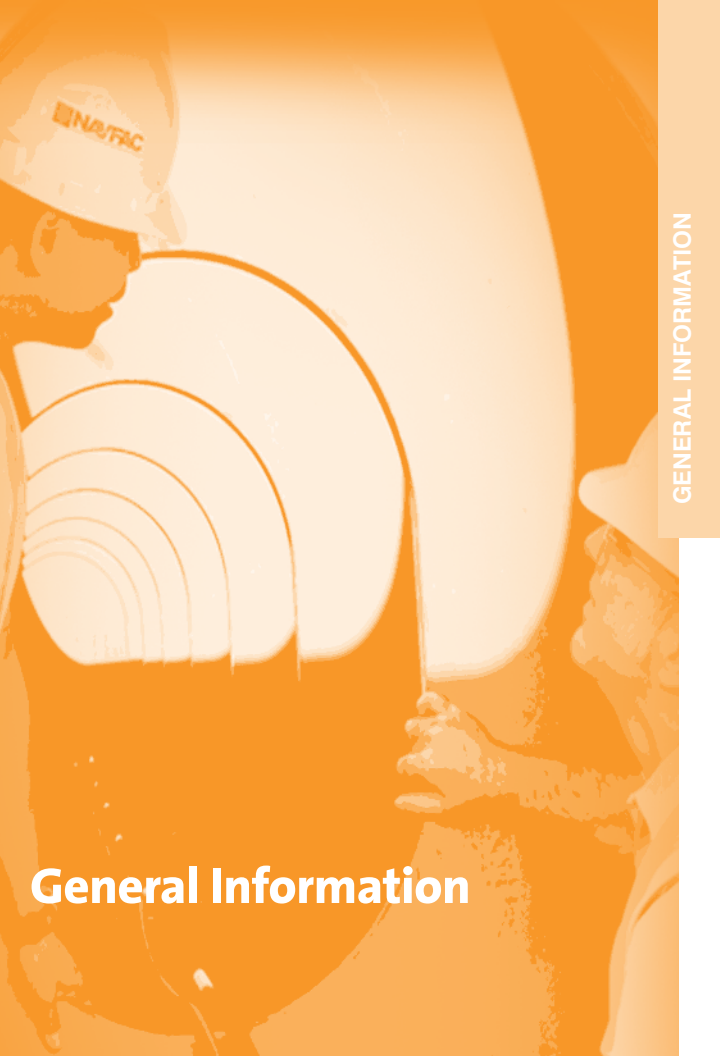
Select the safety topic



Divide presentation into sections

1. What is the specific safety-related activity/ job/task, i.e., driving, painting, etc.?
2. What are the hazards (Hazard Assessment)?
3. What are the controls?
4. What are the risk decisions?
5. How do we supervise or continuously revalidate the effectiveness of controls being used? What should you do if conditions change?

NOTE Make the lecture as interactive and participative as possible.



General Information



NAVFAC SAFETY POLICY/ SAFETY GOALS



NAVFAC SAFETY POLICY: The safety of our people is paramount. An energetic, proactive Safety and Occupational Health (SOH) Program through the strong, personal leadership of all managers, supervisors and employees is essential to the overall quality of life of NAVFAC military and civilian personnel.

Our NAVFAC safety culture must ensure that risk management is fully integrated in all on-duty and off-duty decisions. Our safety culture must also reflect the value we place on taking care of each other, including those for whom we are responsible (such as contract partners).

Accidents cost the Department of Defense (DoD) approximately \$3 billion per year, with indirect costs up to four times that amount. NAVFAC's Strategic Plan for 2010–2017 includes safety as one of its major strategic imperatives:

GOAL

Embed a culture of safety mindset in every member of the in-house and contractor workforce, ensuring individuals are accountable for the safety of others and themselves.

NAVFAC SAFETY COMMUNICATION PLAN GOALS

- Embed a culture of safety mindset in every member of the in-house and contractor workforce, ensuring individuals are accountable for the safety of others and themselves.
- Ensure employees are aware of the personal and professional value of reducing risk in daily work activities.
- Reinforce personal commitment to safety by all employees as a necessity to accomplish our mission.



EMPLOYEE RIGHTS AND RESPONSIBILITIES

EMPLOYEE RIGHTS:

- Participate in the safety and health program.
- Be trained in hazard recognition and safe work practices.
- Have representation when their work areas are inspected.
- Be informed of unsafe or unhealthful conditions.
- Refuse to work if imminent danger exists or if it is believed to exist.
- Be free from reprisal or retaliation by a supervisor or other manager because personnel exercised any right under the Occupational and Safety Health Administration (OSHA) or Navy Safety & Occupational Health (SOH) Program, such as reporting unsafe conditions, accidents or injuries.

EMPLOYEE RESPONSIBILITIES:

- Follow safety rules and use safe work practices so employees do not endanger themselves or their co-workers, or infringe upon the rights of other workers.
- Use protective clothing or equipment, when required.
- Attend scheduled safety and occupational health-related training.
- Report unsafe or unhealthful conditions which pose a hazard to themselves or others.
- Report mishaps, injuries, illnesses and near misses to their supervisor.

OPERATIONAL RISK MANAGEMENT

Operational Risk Management (ORM) is a tool that has been implemented Navy-wide. The ORM process is a program to help reduce and mitigate risks on and off the job.

Although ORM will not fix all problems, it is a helpful tool which helps employees accomplish a multitude of tasks safely, from performing a pressure test to completing a construction project.

FOUR PRINCIPLES OF ORM

1. Accept risk when benefits outweigh the cost.
2. Accept no unnecessary risks.
3. Make risk decisions at the right level by planning.
4. Anticipate and manage risk by planning.

FIVE STEPS OF ORM

1. Identify hazards
2. Assess hazards
3. Identify potential controls/
Make risk decisions
4. Implement controls
5. Supervise controls



ASK THREE BASIC ORM QUESTIONS:

1. **What can go wrong?**
2. **What can I do about it?**
3. **If I can't do anything about the problem, whom do I tell?**

Enterprise Safety Applications Management System (ESAMS)

ESAMS is a web-based safety management system that enables NAVFAC to standardize Safety & Occupational Health (SOH) Program mishap, training, medical monitoring and facility deficiency data.

Specific SOH training requirements are based on the duty/task assigned to each person. A list of your specific training requirements can be found by clicking the “Outstanding Training” button located in the Reports Management System (RMS) module.

Many classes are available online and can be located under the “Online Web Training” section on the ESAMS main navigation bar. A user may take any of the classes available, but must take the required classes

The ESAMS website can be accessed at
<http://www.hgwllc.com/Home/default.html>

EMPLOYEE HAZARD REPORTS

If you observe an unsafe or unhealthful practice or condition, or a violation of a safety or health regulation, communicate it to your workplace supervisor or submit a note of the deficiency using an Employee Hazard Report form and forward it to the Safety & Occupational Health (SOH) Office.



Employees who would like anonymity may submit verbal or written reports to the SOH office without first notifying a supervisor. You will be provided with a written response form if you identify yourself.

REMEMBER:

Not reporting a hazard may result in injury.

REPORTING INJURIES AND ILLNESSES

If you become injured, your injury must be reported to your supervisor as soon as possible. All injured employees should seek first aid or medical care from an installation medical treatment facility.

Emergency medical treatment is normally available from branch medical clinics during day shifts only. During other times, emergency medical care is available from naval or local hospitals.

If care is needed, your supervisor will arrange transportation. In emergency situations, ambulance service is available by calling the emergency number from any phone.

Emergency Phone Numbers:

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Supervisors shall submit mishap reports in ESAMS within 3 days of the occurrence. General information that the supervisor should collect includes:

- Event date
- Event time
- Event type
- Number of people involved
- Facility where event occurred
- Location where event occurred
- Description of the event, including, who, what, when, and where.
- Actions taken to prevent recurrence.
- If you are involved with a property damage or vehicular mishap, report the mishap to your supervisor. Supervisors shall submit the mishap report in ESAMS the same way as an injury/illness.
- Make sure to assist the Safety Office in investigating the mishap further.



REPORTING A NEAR MISS

Any situation resulting in no personal injury, no property damage, and no interruption in business operations (i.e. utility outage), but where a slight shift in time or position or the absence of intervention, the ongoing sequence of events would have easily resulted in injury, property damage, or interruption to operations.

All NAVFAC individuals shall report a perceived near miss to their supervisor. The information the individual should provide to their supervisor includes:

- Event date
- Event time
- Event type
- Number of people involved
- Facility where event occurred
- Location where event occurred
- Description of the event, including, who, what, when, and where.
- Actions taken to prevent recurrence.

The supervisor, upon receiving the near miss report should immediately suspend any ongoing work that may result in injury, illness, or property damage.

All near misses shall be reported into ESAMS either by the supervisor or the employee witnessing the near miss with the information listed above, within 3 days of the event.

AWARDS

NAVFAC is recognized across the U.S. Navy as a leader in safety. This recognition is a result of the safety track record of its employees and contractors, and how safety has become embedded in NAVFAC's culture.

In order to recognize outstanding individual, team and contractor efforts, NAVFAC created the Safety Through Awards and Recognition (STAR) Program. This program rewards a combination of safe behaviors in the workplace and initiatives to increase the safety of fellow co-workers.



A photograph of a person standing on a ladder, viewed from a low angle looking up. The person is wearing a white hard hat, a light-colored long-sleeved shirt, and a safety harness. The entire image is overlaid with a semi-transparent orange filter. The person's arms are raised, and they appear to be working on something at the top of the ladder. The ladder's rungs and side rails are clearly visible.

High-Risk Activities

HIGH-RISK ACTIVITIES



CONFINED AND ENCLOSED SPACES

A confined and/or enclosed space is defined as a space where design has limited and restricted openings for entry or exit, lacks natural ventilation, and which could contain or produce hazardous contaminants or oxygen deficiencies or enrichment. Confined spaces are not designed for continuous employee occupancy.

Facility confined spaces include: fuel storage tanks, process vessels, boilers, furnaces, sewers, utility tunnels, vaults and similar spaces.

HAZARDS

Confined spaces can sometimes contain hazardous atmospheres. These atmospheres include an oxygen-deficient or oxygen-enriched environment, flammable gases and vapors, and toxic gases and vapors.

Oxygen-deficient environment—less than 19.5% of available oxygen (O₂). Any space with less than 19.5% oxygen shall not be entered. The oxygen level in a confined space can decrease due to the nature of work, such as welding, cutting and/or chemical reactions.

Oxygen-enriched atmosphere—contains more than 22% oxygen by volume.

(Continued)

Flammable atmosphere—occurs when the concentration of a flammable gas vapor is equal to or greater than 10% of its LEL (Lower Explosion Limit). Different gases have different flammable ranges. If a source of ignition is brought into a flammable atmosphere, an explosion may result.

Toxic gases and vapors—may be produced from the following:

- Liquids or sludge from previously stored material.
- Toxic materials absorbed into the walls when they are removed or cleaned.
- Decay or accumulation (since gases are heavier than air).
- Materials used or produced as a result of the work being performed (for example, cleaning solvents, paints and welding fumes).



Only properly trained and designated confined space program managers, assistants or qualified persons can perform initial entry testing of confined spaces. If safe for entry, a permit is issued and a copy posted at each point of entry into the confined space.

Do not enter or work in confined spaces unless a current permit is posted indicating it is safe to enter, and you are trained or qualified to enter the space.

Observe all special requirements/precautions listed on the permit, and use specific personal protective equipment (PPE) when required.

When employees work in a confined space, an attendant stationed outside the space shall perform frequent checks on the workers inside the confined space.

Checks shall be made by voice communication, signal, visual contact or electronic means; checks shall be made as often and as necessary to ensure worker safety.

If you experience lightheadedness, shortness of breath, stinging eyes or if an evacuation signal or order is given, exit the space immediately.

IF YOU SEE AN UNCONSCIOUS OR OBVIOUSLY DISORIENTED PERSON IN A CONFINED SPACE, DO NOT ENTER THE SPACE TO ATTEMPT A RESCUE. CALL THE BASE EMERGENCY RESPONSE TEAM

Emergency Phone Numbers:

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Placing any part of your body through the opening of a confined space is considered entering the space.

HOT WORK



Hot work is defined as burning, welding, grinding.

An adequate amount of dry powder fire extinguishers shall be located within close proximity to hot work areas.

In an area of high fire risk, a dedicated trained fire watcher shall be positioned at the worksite or risk area.

All slag and sparks must be contained within the immediate work area.

Ensure employee is wearing flame retardant material, including their PPE.

Temporary fabrication shelters must be made of flame retardant material.

Welding and burning on certain materials may give rise to hazardous fumes. In certain areas local exhaust ventilation may be required. In other more open areas respiratory protective equipment may be required.

Hot work shall not normally be carried out in office or accommodation areas.

FLAMMABLES AND COMBUSTIBLES

Flammable and combustible materials can be solid, liquid or gas, and can be present or introduced into the work-place either intentionally or accidentally. It is critical to know how to identify these materials, take the necessary precautions while using them during the normal course of work and take measures to avoid unintended reactions.

Flammable solids are solids that will readily ignite. Gunpowder and nitrates are examples of flammable solids.

Flammable liquids are liquids that will readily ignite. They have a flash point below 100°F. Gasoline, alcohol, acetone, mineral spirits, solvents and thinners are examples of flammable liquids.

Combustible liquids have flash points at or above 100°F. Kerosene, diesel fuel, some paints and hydraulic fluid are examples of combustible liquids.



FLASH POINT Flammable and combustible liquids are classified primarily according to their “flash point” to indicate the danger they pose as a fire hazard. Flash point means the minimum temperature at which a liquid gives off vapor in sufficient concentration to form an ignitable mixture with air.

Flammable gases burn very rapidly when ignited.

Hydrogen, acetylene, MAPP (methylacetylene-propadiene) gas, propane and butane are examples of flammable gases. If these gases are released accidentally and ignited by a spark, they could explode or burn violently, injuring workers.

STORAGE AND HANDLING

Flammable and combustible materials must be stored and handled in accordance with the Material Safety Data Sheets (MSDS) associated with each specific product.

MATERIAL SAFETY DATA SHEETS (MSDS)

MSDS contain safety, health and environmental information, including handling precautions, storage, disposal information and emergency numbers.

EMERGENCY RESPONSE

An unintended release or contact with a flammable or combustible material shall be mitigated in accordance with the directions of the product's MSDS. The appropriate emergency response resource shall be contacted as soon as possible to assist with mitigation of the hazard.



HAZARDOUS MATERIALS

Hazardous materials, such as paints, solvents, weld filler metal, chemicals and compressed gases, can create a variety of physical or health hazards.

Make sure you know the proper handling precautions prior to using hazardous materials. Handling precautions should be displayed on the container label or MSDS, with your supervisor or in the Safety Office.

Hazardous materials must only be stored in approved storage areas and end-use storage locations. Do not mix different chemicals or residues together in the same containers; keep them separated. Mixing incompatible materials can be dangerous and/or illegal, and may create additional problems and disposal costs.



WARNING LABELS

All hazardous materials containers received must be labeled, tagged or marked with the following information:

- Product name
- Name, address of the manufacturer and/or distributor
- Hazard warning(s).

**IF THE MANUFACTURER'S LABEL IS DAMAGED OR REMOVED,
THEN A REPLACEMENT LABEL IS REQUIRED.**

To prevent possible spills or material release:

- Follow proper work procedures when handling hazardous materials.
- Keep containers closed except during transfer or use of hazardous materials.
- Segregate incompatible or reactive materials.
- Store different classes of chemicals, such as oxidizers, corrosives and flammables, separate from each other.

ELECTRICAL SAFETY



Whenever you work with power tools or on electrical circuits there is a risk of electrical hazards.

Coming in contact with an electrical voltage can cause current to flow through the body, resulting in electrical shock, burns, serious injuries or even death.

Bureau of Labor Statistics NATIONAL CENSUS OF FATAL OCCUPATIONAL INJURIES in 2011 indicated:

- In 2010, 163 workers were electrocuted, down from 170 in 2009.
- Electrocution was the cause of 4% of all workplace deaths.

Injuries associated with electrical shock include burns, heart failure and other injuries. Falls may also be common. Workers on a platform or ladder may fall as a result of the reaction to the initial shock; these falls can result in serious injuries.

Some fundamentals when working on or near electrical equipment:

- NAVFAC prohibits employees from working on energized circuitry, except in very limited circumstances, and then only by following carefully prescribed procedures.
- All temporary and portable lights must have bulb guards and no open sockets.
- Temporary lights and all portable electrical tools and equipment must be either grounded or double insulated.
- In potentially explosive atmospheres, use only explosion-proof or intrinsically safe electrical tools, and non-ferrous, non-sparking hand tools.
- Make sure all tools and loose materials are removed from electrical boxes and enclosures before closing. An extra tool left behind may start a fire or cause an explosion when the circuit is energized.
- Being in close proximity to electrical equipment during an arc fault condition can result in serious burns or death.
- Consult your local SOPs, JHAs and the Unified Facilities Criteria 3-560-01, Electrical Safety in the Workplace, before performing work on electrical systems or equipment, to ensure you, and the system or equipment to be worked on, are fully prepared for the work.



Always treat electricity with caution and respect.

CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT/VERIFY)



NAVFAC policy states that all hazardous energy sources shall be de-energized before work begins.

If these sources cannot be de-energized, then a comprehensive Job Hazard Analysis and Standard Operating Procedure (SOP), including commanding officer (CO) approval, is required to protect employees.

OSHA standards are established to prevent injuries and fatalities from contact with hazardous energy [29 CFR 1910.147]. This standard requires energy control procedures, employee training and periodic inspections. This ensures that before any employee performs servicing or maintenance on equipment where the unexpected energizing, start up or release of stored energy could occur, the equipment shall be isolated from the energy source and rendered inoperative.

A comprehensive hazardous energy control program should address the following:

- **Kinetic (mechanical) energy** in the moving parts of mechanical systems.
- **Potential energy** stored in pressure vessels, gas tanks, hydraulic or pneumatic systems, and springs (potential energy can be released as hazardous kinetic energy).
- **Electrical energy** from generated electrical power, static sources or electrical storage devices (such as batteries or capacitors).
- **Thermal energy (high or low temperature)** resulting from mechanical work, radiation, chemical reaction or electrical resistance.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Mandatory Personal Protective Equipment (PPE) on all construction sites and industrial areas includes the following gear: hard hat, safety glasses, safety-toed shoes or boots, reflective vest and ear protection. At all other sites, PPE is required as posted on appropriate signage.



Do not assume you will be able to get the PPE you need at your destination—take it with you!



Hard hats provide protection against falling objects. Wearing a baseball cap under your hard hat is prohibited. Hard hats should always be worn with the brim facing forward.

Eye and face protection can help you avoid injury from flying dirt and debris, and burns from various welding operations and chemical splashes.

Some specific jobs require additional protection, such as face shields, chemical goggles and welding shields. You will be provided with all required protective eyewear, including prescription goggles.



Hearing Protection. Specific areas of the shops and construction sites may require hearing protection. Extreme noise levels should only be present when machinery is active. A variety of hearing protection devices should be available to you. *USE THEM!*



*Ear plugs
(preformed)*



*Ear plugs
(disposable)*



Canal caps



Ear muffs

HOW DO I KNOW IF I NEED HEARING PROTECTION?

If you cannot carry on a conversation in a normal tone of voice with a person at arm's length, you are in a noise hazard area. Always wear hearing protection in noise hazard areas.

Observe all signs indicating the need for hearing protection.



Hand protection. Gloves should be worn when handling rough or abrasive material. Gloves should not be worn when operating moving machinery or rotating equipment. Selecting the wrong glove can result in a serious injury.


Foot protection. NAVFAC provides reimbursement for the purchase of safety shoes or boots. Foot protection can prevent injuries caused by falling or sharp objects (causing punctures), or coming into contact with electrical equipment or slick surfaces.

Respiratory protection. Working with or around hazardous materials may require you to wear respiratory protection. Respirators protect you from airborne hazards, including dust, mist, vapor and particulates during jobs such as welding, painting and blasting.

Respirators must be approved by the National Institute for Occupational Safety and Health (NIOSH). Employees must be qualified before being issued an approved respirator (this includes training, fit-testing and medical certification).

All employee respirator user training, testing and equipment information must be included in the users' ESAMS account.



 MSDS (Material Safety Data Sheets) are also a source of proper personal protective equipment (PPE) selection information.

Approved filtering face pieces (dust masks) can be used for dust, mist, welding fumes, etc. They do not provide protection from gases or vapors. **DO NOT USE FOR ASBESTOS OR LEAD**; instead, select from the respirators below:

- Half-face respirators can be used for protection against most vapors, acid gases, dust or welding fumes.
- Cartridges/filters must match contaminant(s) and must be changed periodically.
- Full-face respirators are more protective than half-face respirators. They can also be used for protection against most vapors, acid gases, dust or welding fumes. The face-shield protects face and eyes from irritants and contaminants.
- Loose-fitting powered-air purifying respirators (PAPRs) offer breathing comfort from a battery-operated fan which pulls air through filters and circulates it throughout the helmet/hood.
- Self-Contained Breathing Apparatus (SCBA) is used for entry and escape from atmospheres that are considered immediately dangerous to life and health (IDLH) or oxygen deficient.
- Employees with facial hair or any condition that interferes with the face-to-face piece seal may not wear respirators with tight-fitting face pieces.
- Breathing air or sources of breathing air for supplied air respirators or SCBA shall meet the minimum Grade D breathing air requirements of OSHA and the Compressed Gas Association, Inc., Commodity Specification for Air, Pamphlet, G-7.1-1989.

SLIPS, TRIPS & SAME LEVEL FALLS

Slips, trips and same level falls can occur anywhere, especially when you least expect them. To help prevent potential accidents and injuries:

- Wear slip-resistant or waterproof footwear, when appropriate.
- Shorten your stride when crossing wet surfaces.
- Slow down and use caution when walking on wet or slippery surfaces.
- Poor lighting can impair vision and increase the likelihood of slipping, tripping and falling. Keep a flashlight in your tool-bag at all times, and use it when necessary.
- Be alert for uneven surfaces, such as potholes, speed bumps, platforms, doorways, cover plates, soft patches, curbs and elevator thresholds.



Some recommended good housekeeping practices to consider:

- Keep workplaces clean, orderly and in a sanitary condition.
- Keep aisles, passageways, walkways and exits uncluttered and clear from obstructions.
- Keep work area clear of debris, trade litter, obstacles and spills.
- Keep cords, hoses and wires properly contained and covered.
- Clean up spills right away. If the area cannot be dried immediately, rope it off and post warning signs.
- Icy, snowy surfaces should be cleared, salted or sanded.



PORTABLE LADDER SAFETY

- Read and follow all labels/markings on the ladder.
- Avoid electrical hazards.
- Look for overhead power lines before handling a ladder.
- Avoid using a metal ladder near power lines or exposed energized electrical equipment.
- Always inspect the ladder prior to use. If the ladder is damaged, it must be removed from service and tagged until repaired or discarded.
- Always maintain a 3-point (two hands and one foot, or two feet and one hand) contact on the ladder when climbing.
- Always face the ladder while climbing.
- Only use ladders and appropriate accessories (ladder levelers, jacks or hooks) for their designed purposes.
- Use ladders only on stable and level surfaces.
- An extension or straight ladder used to access an elevated surface must extend at least 3 feet above the point of support.
- Do not stand on the top three rungs of a straight, single or extension ladder.
- The proper angle for setting up a ladder is to place its base a quarter of the working length of the ladder from the wall or other vertical surface.
- Do not exceed the maximum load rating of a ladder.



Stepladders are rated into 3 basic types:

- Type I—Industrial, Heavy Duty
- Type II—Commercial, Medium Duty
- Type III—Household, Light Duty.

Stepladders are also weight rated. The weight rating of the ladder should never be exceeded.



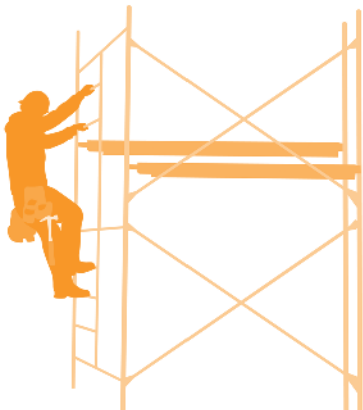
Never use the top of the stepladder as a step.

SCAFFOLDING/STAGING

GENERAL REQUIREMENTS

OSHA standards and manufacturer manuals provide specific safety requirements for scaffolds:

- A “competent person” must supervise the erection, dismantlement or movement of any scaffolding. OSHA defines a competent person as *“one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.”*
- All personnel constructing or using scaffolding shall be instructed in its proper and safe use.
- All equipment shall be inspected by a competent person before each use. Damaged or weakened equipment shall be repaired immediately or pulled from service.
- Scaffold legs shall be set on foundations adequate to support the maximum intended load.
- Screw base adjustment shall be used to compensate for any unevenness of ground or working surfaces. Loose bricks or cinder blocks shall not be used.
- Scaffolds shall be level, upright and rigidly braced at all times.



- Guardrails and toe boards shall be used on all open sides and ends of scaffolding 10 feet or greater in height. The Navy requirement is 4 feet and EM 385 (Construction work) is 6 feet.
- Ladders shall be provided to scaffold platforms.
- Work shall not be performed on scaffolding during high winds or storms.
- Scaffolds must not be placed near power lines or energized equipment.
- Scaffolding components from different manufacturers shall not be assembled together.
- All load-carrying timber members of scaffold framings shall be a minimum of 1,500 feet (stress grade/ construction grade lumber).

- Wood planking must have at least 12 inches of overlap and extend 6 inches beyond centers of support, or be cleated. Unsupported plank ends shall not extend 12 inches beyond end supports. Plank span shall not exceed 10 feet and platform shall be fully planked.

MANUALLY PROPELLED MOBILE SCAFFOLDS

- The height of free-standing mobile scaffold towers shall not exceed 3 times the minimum base dimension.
- Wheels or casters with a positive locking device shall be provided.
- Set the brake locking device on casters when erecting, dismantling, climbing or descending, and when in a stationary position.
- Do not attempt to move a mobile scaffold from the top. Apply the force necessary to move the scaffold as close to the base as practical.
- Mobile scaffolds shall only be moved on level surfaces, free of obstructions and openings. Make sure there are no electrical power lines or other potentially lethal hazards in the direction of travel.
- Employees shall not ride on mobile scaffolding.

AERIAL LIFTS

Aerial lifts include boom-supported aerial platforms, such as cherry pickers or bucket trucks. The major causes of fatalities are falls, electrocutions, collapses or tip-overs.

SAFE WORK PRACTICES

- Workers who operate aerial lifts must be trained and licensed per NAVFAC P-300 for the specific equipment operated.
- Maintain and operate elevating work platforms in accordance with the manufacturer's instructions.
- Never override hydraulic safety devices.
- Never move the equipment with workers in an elevated platform.
- Do not allow workers to position themselves between overhead hazards, such as joists and beams, and the rails of the basket.
- Maintain a minimum clearance of at least 10 feet away from the nearest overhead lines.
- Use a full body harness with a lanyard attached to the boom or basket to prevent the worker(s) from being ejected or pulled from the basket.
- Set the brakes and use wheel chocks when on an incline.
- Use outriggers, if provided.
- Do not exceed the load limits of the equipment. Allow for the combined weight of the worker, tools and materials.

WORKSITE INSPECTION

Before the beginning of each shift the worksite in which the AWP shall be utilized shall be given a thorough survey by the AWP operator. The operator shall walk the projected path of the AWP noting potential hazards to AWP operation including but not limited to:

- Drop offs or holes, including those concealed by water, ice, mud, etc.
- Slope
- Bumps and floor obstructions
- Debris
- Overhead obstructions and electrical conductors
- Hazardous locations and atmospheres
- Inadequate surface and support to withstand all load forces imposed by the aerial platform in all operating configurations
- Wind and weather conditions
- Presence of unauthorized persons
- Other possible unsafe conditions



PRESTART INSPECTION

Before the beginning of each shift, aerial platform shall be given a visual inspection and function test including but not limited to:

- Inspection plate indicates unit within 12 month inspection periodicity
- Operating manual in container
- Operating and emergency controls
- Safety devices
- Personnel protective devices
- Air, hydraulic and fuel system leaks
- Cables and wiring harness
- Loose or missing parts
- Tires and wheels
- Placards, warnings, control markings
- Outriggers, stabilizers and other structures
- Guard rail system
- Other items specified by manufacturer's operating manual

FALL PROTECTION WHEN WORKING AT HEIGHTS

There are many potential fall hazard situations at Public Works and construction sites. Be especially careful on walkways, ladders, elevated platforms, roofs and other high locations. Ensure walking working surfaces are stable and have the strength and structural integrity to safely support the workers.

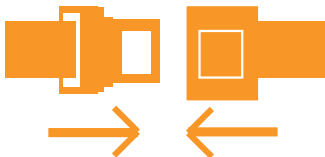
A Personal Fall Arrest System (PFAS) must be used by all employees working near an unguarded edge more than 4 feet (6 feet for construction work) above the next solid surface, or above water when it is not practical to eliminate the hazard or provide other suitable fall protection methods, such as , guardrails or safety nets. When working above water, it may be practical to wear both a personal flotation device as well as a PFAS.

PFAS consist of 4 elements:

- **Body Support** (Full Body Harness)
- **Anchorage System:** strength of 5000 lbs when selected by Competent Person for fall protection (lower strength anchor may be designed and approved by Qualified Person for fall protection)
- **Connecting Means:** Energy Absorbing Lanyarder, Self Retracting Lanyard (SRL), or Fall Arrestor (rope grab)
- **Rescue Plan and procedures**



Prior to using PFAS, you must be trained by the competent person for fall protection and authorized by the Command to use the equipments in a typical fall hazard situation.



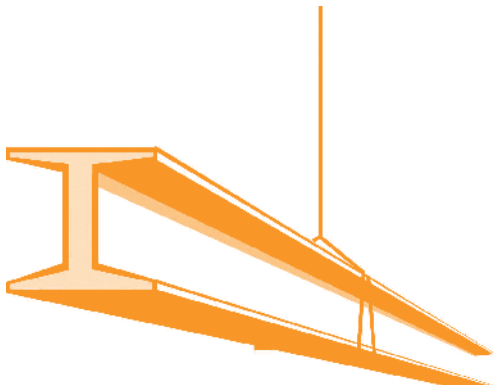
WEIGHT HANDLING EQUIPMENT/ CRANE/RIGGING SAFETY

Fatalities and serious injuries can occur if cranes are not inspected and used properly. Fatalities can also occur if the crane boom, load line or load contacts power lines and shorts electricity to ground.

SAFE WORK PRACTICES

- Cranes must only be operated by qualified personnel who have been trained, tested and licensed in accordance with NAVFAC P-307.
- Cranes must be inspected by a licensed crane operator prior to use.
- Be sure the crane is on a firm, stable surface and level.
- Fully extend outriggers and barricade accessible areas inside the crane's swing radius.
- Watch for overhead electric power lines and maintain at least a 20-foot safe working clearance from the lines.
- Inspect all rigging prior to use; do not wrap hoist lines around the load.
- Always use tag lines to guide loads.
- Be sure to use the correct load chart for the crane's current configuration and setup, load weight and lift path.
- Do not exceed the load chart capacity.
- Raise load a few inches, hold, verify capacity/balance and test brake system before delivering load.

- Do not move loads over workers.
- Be sure to follow signals and manufacturer instructions while operating cranes.
- Multi-purpose machines, material handling equipment (forklift), and construction equipment used to lift loads suspended by rigging equipment shall be considered weight handling equipment and shall follow NAVFAC P-307 requirements.
- Inspect all rigging gear for signs of wear and abuse
- Ensure the rigging load rating is adequate for the total load force that will be applied to the gear.
- Do not tie knots into any type of slings.
- Use chafing gear to protect slings from sharp edges.



MATERIALS HANDLING/ FORKLIFT TRUCKS

Each year, tens of thousands of injuries related to powered industrial trucks (PIT), or forklifts, occur in U.S. workplaces.

Source: <http://www.osha.gov/SLTC/poweredinustrialtrucks/index.html>

SAFE WORK PRACTICES

- Forklift truck operators must be trained and certified as required by OSHA. In addition, forklift truck operator training must be conducted at least every 3 years.
- Modifications must not be made on any forklift truck without prior written approval from the manufacturer.
- Nameplates shall be legible and indicate truck capacity, approximate weight and any instructional information.
- Only approved forklift trucks may be used in hazardous locations. Trucks are designated as approved by a recognized testing laboratory for specific hazardous locations and are so marked.
- Forklift trucks must be inspected for operational condition IAW the manufacturer's recommendations. Any vehicle not in safe operating condition must be removed from service.
- Every truck shall be equipped with an operator-controlled sound-producing warning device.

- When vehicles are left unattended, load engaging means shall be lowered, controls neutralized, power off, keys removed, and brakes set.
- No persons shall be permitted to stand or pass under the elevated portion of any truck.
- No additional persons are allowed to ride on forklift trucks unless a safe place and seat belt are provided.
- A manufacture-approved overhead guard shall be provided for protection against falling objects.
- Material handling equipment (forklift), and used to lift loads suspended by rigging equipment shall be considered weight handling equipment and shall follow NAVFAC P-307 requirements.



TRENCHING/EXCAVATIONS

GENERAL

- While cave-ins are of major concern, flooding, fire asphyxiation and electrocution are all serious hazards when performing excavation work.
- Prior to digging, location of electric power, natural gas and water lines must be identified and marked.
- Rain, melting snow, ground water, etc., can loosen soil and/or increase pressure on walls.
- Spoils (excavated materials), heavy equipment, etc., can exert great pressures on trench walls. Vibrations caused by moving machinery, vehicle traffic, etc., can loosen soil and cause walls to collapse.
- Poisonous and/or combustible gases can build up in trenches. This can overcome workers, lead to fire or explosion, and/or result in an oxygen-deficient atmosphere.

BASIC REQUIREMENTS

- A “competent person” must supervise all excavation work and inspect sites at least daily prior to the start of work, throughout the shift and after every hazard-increasing event, such as rain storms, earthquakes, etc. OSHA defines a competent person as *“one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.”*

- Unless excavating in stable rock or digging less than 5 feet down and examination of the ground by a competent person provides no indication of a potential cave-in, a protective support system of (1) sloping or benching or (2) shoring and shielding must be used.
 - ▷ Shoring consists of tightly placed timber shores, bracing, trench jacks, etc., installed in a manner strong enough to resist the pressures surrounding the excavation. Shoring must be designed and approved by a registered professional engineer. Trench shields, prefabricated movable structures composed of steel plates welded to a heavy steel frame, may also be used. Plywood sheeting used to prevent sloughing at the trench face must be a minimum of 1–1/4 inches thick.
- Ladders must be located within 25 feet of any worker in trenches 4 feet deep or greater.
- Excavated material and other objects must be at least 2 feet away from the edge of an excavation.
- Walkways or bridges with guardrails must be provided whenever workers are required to cross over trenches.
- Adequate barrier protection must be provided for trenches/excavations at the end of the shift. Special precautions must be provided for trenches/excavations in housing areas.



ERGONOMIC AND MUSCULOSKELETAL HAZARDS

Ergonomics designs the job to fit the person. Poor ergonomics can result in injuries and illnesses known as Cumulative Trauma Disorders (CTDs).

These disorders can occur at the wrist, elbow, shoulder, knee or back. They are usually caused by awkward posture, overuse of muscles, forceful exertions, vibration from power tools, restrictive workstations and repeated physical tasks.

Ergonomics hazards can be prevented by the design of the job, workstation or tools.

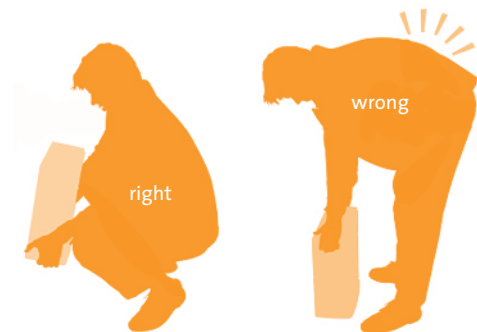


To help prevent injuries, use teams of two or more to move bulky objects, avoid lifting any material that weighs more than 50 pounds (per person), and use proper mechanical lifting devices.

LIFTING

Special attention is needed to avoid back injuries associated with manual lifting and handling materials.

1. Size up the load prior to lifting to determine if you need assistance.
2. Make sure you can carry the load to the desired location along a clear, unobstructed path.
3. Bend your knees, not your back:
 - a. Position your feet close to the load
 - b. Center your body over the load
 - c. Bend your knees and get a good grip
 - d. Straighten your legs to lift the load straight up
 - e. Let your legs do the work, not your back.
4. Do not twist once you have lifted the item.
5. Set the item down properly, bending your knees.
6. Always push, do not pull. This puts less pressure on your back.



PINCH POINT SAFETY

A pinch point is a place where the hand (or entire body) can be crushed between two moving objects, or between a moving object and a stationary one.

- Wear the right kind of gloves for the job, keeping in mind possible moving equipment.
- Travel only in designated traffic areas, and be constantly alert.
- Never tamper with machine guards.
- Follow LO/TO policy and procedures, so machinery doesn't accidentally start when you are cleaning, making adjustments or repairs.
- Secure materials so it cannot fall or roll. They should be strapped, racked or interlocked so they cannot shift.
- Be careful when handling drums, rings, rebar and other metal objects.
- Know how to turn off machinery in your work area in case of an emergency.
- Don't wear jewelry or loose clothing when you are working near moving equipment.
- Use knobs and handles, to prevent slamming your finger in a pinch point.

THERMAL STRESS

Heat stress normally results from a combination of exposure to high temperatures and physical exertion, especially in the summer.

Excessive exposure to hot environments can cause a variety of heat related problems, including heat stroke, heat exhaustion, heat cramps, and fainting. Workers have increased risk when they are taking certain medication, have had a heat-induced illness in the past, or are wearing personal protective equipment. As much as possible incorporate work-rest cycles into work routines.

Tips to protect workers include:

- Train workers about heat induced illnesses and what to do to help the worker.
- Perform the heaviest work in the coolest part of the day.
- Plan the work for the day based on weather alerts.
- Slowly build up tolerance to the heat and the work activity.
- Drink plenty of water.
- Wear light, loose fitting, breathable clothing.
- Take frequent short breaks in cool shaded areas.
- Avoid eating large meals, or drinking caffeine or alcohol before working in a hot environment.

The four environmental conditions that cause cold-related stress are **low temperatures, high/cool winds, dampness and cold water**. Wind chill, a combination of temperature and velocity, is a crucial factor to evaluate when working outside.

Excessive exposure to cold environments can result in a number of cold related problems that include trench foot, frostbite and hypothermia.

Tips to protect workers include:

- Educate employees to the symptoms of cold-related stresses.
- Allow a period of adjustment to the cold before embarking on a full work schedule.
- When employees must brave the cold, select the warmest hours of the day and minimize activities that reduce circulation.
- Ensure that employees remain hydrated.
- Provide a heated shelter for employees who experience prolonged exposure to equivalent wind-chill temperatures of 20°F (-6°C) or less.
- Use thermal insulating material on equipment handles when temperatures drop below 30°F (-1°C).
- Shield work areas from drafty or windy conditions.
- Wear at least 3 layers of clothing, an outer layer to serve as a wind break, a middle layer of wool or synthetics, and an inner layer of cotton. Pay close attention to protecting feet, hands, face, and head.

NOTES



A large, light orange silhouette of an office chair is centered on the page. The chair has a high backrest, armrests, and a five-point base with casters. The text 'Office Safety' is overlaid on the seat area of the chair.

Office Safety

OFFICE SAFETY

Despite the common belief that an office provides a safe working environment, many hazards exist which cause thousands of injuries and health problems each year.

Source: <http://www.labtrain.noaa.gov/osha600/mod27/2701-----.htm>

GENERAL INFORMATION

The leading types of disabling injuries that occur in the office are:

- Falls
- Strains and overexertion
- Being struck by or striking objects
- Being caught in or between objects.

In addition to obvious hazards, such as a slippery floor or an open file drawer, a modern office may also contain hazards such as improper lighting, extreme noise, poorly designed furniture and equipment, and machinery which emits noxious gases and fumes. In addition, long hours at a computer monitor can cause pain in the neck and back, eyestrain, and a general feeling of tension and irritability.

Faulty design and/or poor housekeeping can lead to crowding, lack of privacy, slips, trips and falls. The following are important factors related to office layout and orderliness:

- Maintain at least 3 feet between desks and at least 50 square feet of space per employee.
- Keep telephone and electrical cords out of aisles.
- Group employees who use the same equipment.
- Keep office machines away from edges of desks and tables.
- Conduct regular inspection, repair and replacement of floor coverings.
- Place mats inside building entrances.

Controls to ensure proper means of egress, or exit, include:

- All exit access must be at least 28 inches wide.
- Generally, two exits should be provided.
- Exits and access to exits must be marked.
- Means of egress, including stairways used for emergency exits, should be free of obstructions and adequately lit.
- Employees must be aware of exits and trained in evacuation procedures.



Improperly stored office materials can become hazards. Here are some helpful storage guidelines:

- Materials should not be stored on top of cabinets.
- Heavy objects should be stored on lower shelves.
- Materials should be stored inside cabinets, files or lockers whenever possible, not in aisles.
- Fire equipment should remain unobstructed.
- Flammable and combustible materials must be identified and properly stored.

Electrical accidents in an office usually occur as a result of faulty or defective equipment, unsafe installation, or misuse of equipment. Other guidelines for electrical work include the following:

- Equipment must be properly grounded to prevent shock injuries.
- A sufficient number of outlets must be available to help prevent circuit overloading.
- Avoid the use of poorly maintained or non-approved equipment.
- Cords should not be dragged over nails, hooks or other sharp objects.
- Receptacles should be installed and electric equipment maintained so that live parts are not exposed.
- Machines and equipment should be locked or tagged out during maintenance.
- Avoid the use of temporary wiring, such as extension cords, in lieu of fixed wiring.
- Ensure power strips (surge protectors) are only used for intended purposes, such as protecting electronic equipment.



COMPUTER WORKSTATIONS

HEALTHY WORKING POSITIONS

To understand the best way to set up a computer workstation, it is helpful to understand the concept of neutral body positioning. This is a comfortable working posture in which your joints are naturally aligned. Working with the body in a neutral position reduces stress and strain on the muscles, tendons and skeletal system, and reduces your risk of developing a musculoskeletal disorder (MSD).

The following are important considerations when attempting to maintain neutral body postures while working at the computer workstation:

- **Hands, wrists and forearms** are straight, in line and roughly parallel to the floor.
- **Head** is level or bent slightly forward, forward facing and balanced. Generally the head is in line with the torso.
- **Shoulders** are relaxed and upper arms hang normally at the side of the body.
- **Elbows** stay in close to the body, and are bent between 90 and 120 degrees.
- **Feet** are fully supported by the floor, or a footrest may be used if the desk height is not adjustable.
- **Back** is fully supported with appropriate lumbar support when sitting up straight or leaning back slightly.
- **Thighs and hips** are supported by a well-padded seat, and are generally parallel to the floor.
- **Knees** are about the same height as the hips with the feet slightly forward.

Regardless of how healthy and comfortable your working posture, you should change your position frequently throughout the day in the following ways:

- Make small adjustments to your chair or backrest.
- Stretch your fingers, hands, arms and torso.
- Stand up and walk around for a few minutes periodically.

Additional resources, including information for workstation adjustments, can be found at the Navy's Ergonomics website:

https://portal.navfac.navy.mil/portal/page/portal/navfac/navfac_ww_pp/navfac_hq_pp/navfac_sf_pp/navfac_sf_ergonomics

Or select Ergonomics at:

https://portal.navfac.navy.mil/portal/page/portal/NAVFAC/NAVFAC_WW_PP/NAVFAC_HQ_PP/NAVFAC_SF_PP

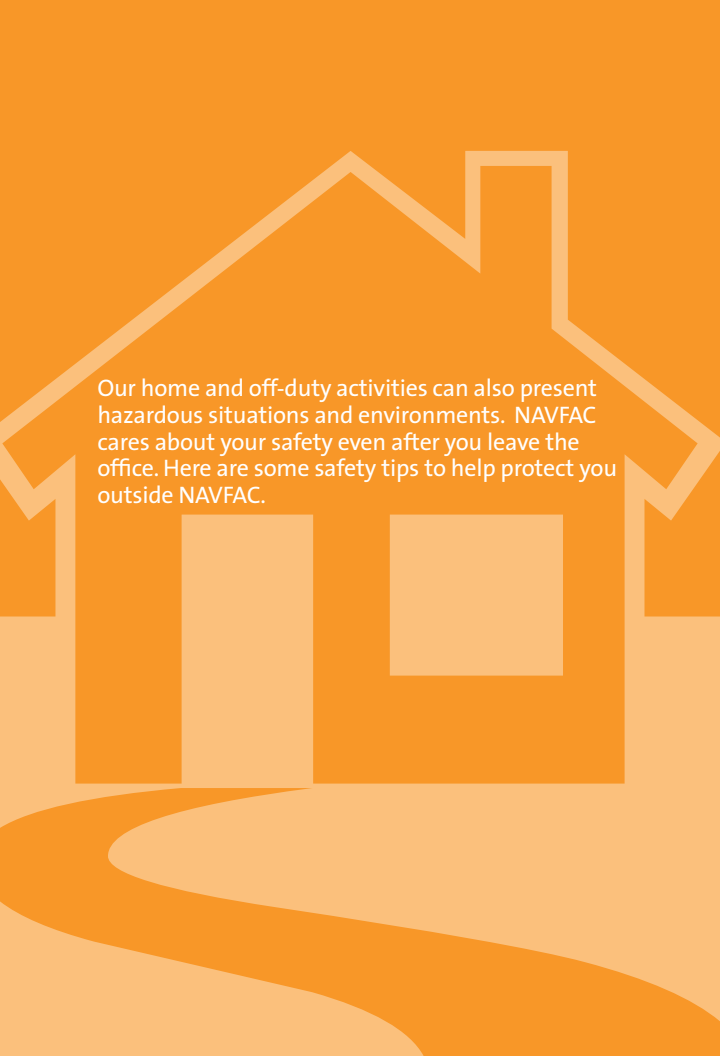


NOTES



A stylized, light orange outline of a house with a chimney, a door, and a window, set against a solid orange background. The house is positioned in the upper half of the frame, with a wavy line below it suggesting a path or driveway.

Off-Duty Safety



Our home and off-duty activities can also present hazardous situations and environments. NAVFAC cares about your safety even after you leave the office. Here are some safety tips to help protect you outside NAVFAC.

FIRE SAFETY

Deaths from fires and burns are the 5th most common cause of unintentional injury deaths in the United States (CDC 2005), and the 3rd leading cause of fatal home injury (Runyan 2004).

Source -<http://www.usfa.fema.gov/statistics/>

Here are some fire safety tips for your home:

- Install smoke detectors and check them monthly. Change batteries at least once a year.
- Install carbon monoxide detectors (in addition to smoke detectors) if gas appliances or other combustion related appliances, such as wood burning stoves, are in the home.
- Read and follow the rules for where to install them. You should have at least one smoke/carbon monoxide detector on each floor.
- When you buy smoke/carbon monoxide detectors, look for a label from Underwriters Laboratories (UL) or Factory Mutual (FM).
- Devise and practice a fire escape plan for your family.
- Keep portable heaters at least 3 feet away from flammable materials. Turn heaters off when you leave the house.



- Do not smoke in bed or when you are tired. Neglected cigarettes are a major cause of fires.
- When cooking, make sure handles on pots and frying pans do not hang over the edge of the stove.
- If grease catches fire, cover it with a metal lid and then turn off the burner. Do not use water to put out a grease fire.
- Keep matches and lighters out of the hands of children. The best place to store these items is in a locked drawer or cabinet.



GRILLING AND COOKING OUT

In 2003–2006, U.S. fire departments responded to an average of 7,900 home fires involving grills, hibachis or barbecues per year, including an average of 2,900 structure fires and 5,000 outside fires. Source - www.nfpa.org/grilling

Here are some safety tips for grilling and cooking out:

- Keep your grill at least 3 feet away from your house, porch or shed, as well as trees or bushes.
- Use only starter fluid made for barbecue grills.
- Do not squirt starter fluid on a fire after you have already tried to start it.
- If you have a gas grill, read and follow the instructions on how to use and store it. Turn valves off when the grill is not in use.
- Store gas cylinders outside and keep them away from buildings.
- Keep children away from the grill, both while you are cooking and after you finish (while the grill is still hot).
- Do not leave lit grills unattended
- Turkey fryers should always be used outdoors and placed at a safe distance from buildings.
- Keep a working ABC multi-purpose dry chemical fire extinguisher nearby.



WATER SAFETY



You can prevent many accidents from occurring by observing common-sense precautions, and making sure you are prepared before you reach the water.

SAFE PRACTICES

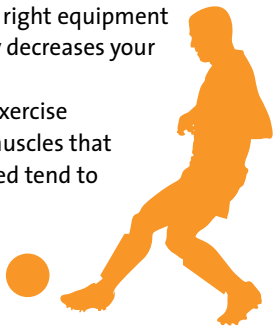
- Read and obey all posted rules and signs.
- Do not mix alcohol with swimming, diving or boating. Alcohol impairs judgment, balance and coordination. It also affects your swimming and diving skills, and reduces your body's ability to stay warm.
- Pay attention to local weather conditions and forecasts. Stop swimming at the first indication of bad weather.
- Pack a "safety bag" for a day at the beach or pool. Be sure to include waterproof sunscreen, a hat, sunglasses (UV/IR protective), and water shoes to keep feet safe from the heat and sharp objects, and plenty of water to stay hydrated. All containers should be plastic to prevent injuries from broken glass.
- Do not dive headfirst into any unknown water.
- Do not jump or dive from a cliff, pier, jetty or bridge.
- Never leave a child alone or unattended near the water.
- Children who are not strong enough to swim on their own should use U.S. Coast Guard-approved personal flotation devices.
- Always swim with a buddy and be knowledgeable of the water environment, taking notice of deep and shallow areas, currents, exit areas and obstructions.

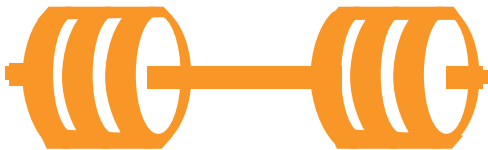
SPORTS & EXERCISE SAFETY

The equipment you wear while participating in sports and other activities is key to preventing injuries. Start with helmets. They're important for sports such as football, hockey, baseball, softball, biking, skateboarding, inline skating, skiing and snowboarding.

Eye protection also is a must for many sports: Facemasks or polycarbonate guards or shields that attach to a helmet are worn in sports such as football, ice hockey, and softball and baseball when batting. Goggles are often worn for soccer, basketball, racquet sports, snowboarding, street hockey, and baseball and softball when fielding.

- Mouth guards can protect your mouth, teeth, and tongue.
- Wrist, knee, and elbow guards are important.
- Proper footwear can keep you from tripping and falling.
- The bottom line: Wearing the right equipment with the right fit dramatically decreases your chances of getting hurt.
- Don't rush into any sport or exercise without warming up first—muscles that haven't been properly prepared tend to be injured more easily.





- Know what you are doing, if you are weight training, boating, golfing etc. Learn from someone who has experience with that sport or activity.
- Don't ignore head injuries. Many apparently innocuous head injuries have led to death. If you experience a head injury get it checked out by a medical professional.
- Remain hydrated and give proper regard for heat and cold injuries.

VEHICLE SAFETY: BICYCLES

Around 33,000 people die in car crashes in the United States each year. About 1 in 41 is a bicyclist.

Source - <http://www.bicyclesafe.com>

SAFE PRACTICES

- Always wear an approved helmet.
- Wear gloves.
- Wear comfortable, brightly colored clothing.
- Use lights and reflectors from dusk until dawn.
- Wear shatterproof glasses (UV/IR protective).
- Check tires for nicks, cuts and wear before each ride, and that they are properly inflated. Also make sure of the following: all nuts, bolts and connectors are tight; brakes work and cables are lubed; and seat/saddle is tight and adjusted to the proper height.
- Learn and follow the applicable laws governing bicycle usage.
- Stay off sidewalks. Slow-moving pedestrians are as dangerous to you as you are to them.
- When riding in the street, obey traffic signals and traffic laws. Use hand signals when turning.
- Make eye contact with drivers, pedestrians and other cyclists to be sure they see you.
- Walk your bike across crosswalks.
- Be extremely cautious crossing railroad and crane tracks. They can be very slippery and can cause you to fall.



VEHICLE SAFETY: GENERAL

- Check on road and highway conditions before leaving on any trip. Provide a family member or friend with your route, and let them know when you are leaving and when you expect to arrive at your destination.
- Travel during daylight hours if possible.
- Have your vehicle serviced before the trip to allow for repairs, if needed.
- Keep a “breakdown kit” in your vehicle at all times. At a minimum, the kit should include:
 - Spare fuses
 - Thermal blanket/bag
 - Gallon of water
 - “Help” sign/flag and flares/reflectors
 - Flashlight and spare batteries
 - Duct tape

Also consider carrying:

- Jumper cables
- 12-volt tire inflator
- Tire gauge
- Work gloves
- Rope and bungee cords
- Empty one-gallon gas can
- Towels
- Disposable rain coat/poncho

DO NOT DRINK AND DRIVE.

Be a smart party host or guest by being sensible about alcohol. Keep taxi cab company contact information on hand or have a designated driver.



VEHICLE SAFETY: MOTORCYCLES

Before operating a motorcycle on base, riders must successfully complete training courses approved by the Naval Safety Center.

Motorcycle operators/passengers must wear:

- Helmet approved by the U.S. Department of Transportation (DoT).
- Eyeglasses, goggles or face shield attached to the helmet.
- Long-sleeved shirt/jacket, long-legged trousers and full-finger leather gloves.
- Hard-soled shoes or boots with heels.

Reflective wear, including yellow or orange vest with 1 - to 2-inch wide reflective strips on front or back are required at night time and recommended during daylight hours.

HEADLIGHTS SHOULD BE TURNED ON AT ALL TIMES WHILE OPERATING MOTORCYCLES



DO IT YOURSELF HOME SAFETY

Wear appropriate clothing, footwear and personal protective equipment including safety glasses, goggles, gloves and dust mask as appropriate.

- Work in well-ventilated area when painting or working with noxious chemicals. Never smoke or introduce an ignition source while painting or standing close to a freshly painted area.
- Always use the correct tool for the job—even though it may take time to get the right tool or even a different-sized tool that is the safer option and will allow for more efficient completion of the project.
- Tools should be cleaned, stored in a safe place and maintained in accordance with manufacturer guidance. Keep tools out of the reach of children.
- When using knives, always cut away from you. Keep knives and all tools with edges and blades appropriately sharpened. A dull blade is a dangerous blade.
- When working with electrical appliances, always switch off the power at the breaker. For portable electrical appliances and other equipment, switch off the power and unplug it, prior to commencing any work.
- Always keep smoke detectors and appropriate fire extinguishers readily available and properly maintained. Never use water on an electrical fire.

- When using a power drill, choose a model that has a plastic non-conducting body. Unplug the drill before fitting parts and remove the chuck key before switching it on. Avoid wearing loose clothing or jewelry, which could get caught in the drill.
- Ladders are one of the main causes of DIY accidents. Erect the ladder according to the manufacturer's instructions. Never lean to one side as you could lose balance.
- Don't rush as you're more likely to have an accident. Carefully plan the job before you start work. Know your limitations and consult a professional if you are unsure. It's also a good idea to ask someone if they can help you.
- Ensure that lawn mowers and weed eaters are in proper working order and utilized with all required protective equipment.
- Several household products are hazardous. Ensure that cleaners, paints, pesticides, automotive fluids and other similar materials are properly stowed and used in accordance with manufacturer guidance.
- If accidental exposure or ingestion of hazardous household products occurs, call poison control 1-800-222-1222 (US only).
- When performing any sort of digging or excavating projects, always call 811 (US only) or your local utility company several days before you start any digging project! You'll avoid injury, expense, embarrassment—and a very inconvenient day in the dark.

UNDERGROUND UTILITIES

As a homeowner working around your house, digging can be dangerous if you do not first check for underground wiring or cables. There could also be other underground utilities, such as natural gas, water or sewer lines.

Most cities and large utility companies offer a free service that helps make the excavation process safe. In many areas, residents can call a service to notify utilities with buried facilities that may be affected by an excavation project. The goal of this service is to prevent personal injury and property damage to buried services during any excavation project.



MISHAP REPORT

WHO _____

WHAT _____

WHERE _____

WHEN _____

HOW _____

5 STEPS OF ORM

[OPERATIONAL RISK MANAGEMENT]

1. Identify hazards
2. Assess hazards
3. Identify potential controls/Make risk decisions
4. Implement controls
5. Supervise controls

ASK THREE BASIC QUESTIONS:

1. What can go wrong?
2. What can I do about it?
3. If I can't do anything about the problem, whom do I tell?

Sources for the information contained in this guide include:

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

[HTTP://WWW.OSHA.GOV/](http://www.osha.gov/)

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

[HTTP://WWW.CDC.GOV/NIOSH/](http://www.cdc.gov/NIOSH/)

NORFOLK NAVAL SHIPYARD SAFETY HANDBOOK, NAVAL SAFETY CENTER

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