

## Working on the weekends, nights, and holidays

Supervisors and managers—look at your off-shift work—is it done safely? Who makes the risk management decisions about hazards? Off-shift work is hazardous. Workers are often tired, they want to be somewhere else, they may take shortcuts. Their head may not be on the task they are doing, but on the turkey dinner waiting at home.

Calling in a crew to do off-shift work means that there is an emergency. Something has to be fixed. If not fixed, the phone system will be dead; the electricity will be out; the quarters will have no water over Christmas; or whatever.

Many installations have only a minimum number of personnel to call regardless of situation. Some high voltage work requires two electricians and some installations only have two or three. That means that these people are literally on call 24 hours a day—seven days a week.

Whatever the problem, one or more maintenance people are working when they would normally be relaxing. There are

lots of things that can go wrong—they could have had a beer or two before they were called; they could have missed sleep because of the party last night; they could have.

The crew knows what happens if the emergency is not fixed and often takes personal responsibility for ensuring that something is fixed during these off-shift times.

### Things can go wrong— An example

It's the weekend. Isn't that when things usually go wrong? It sure did this weekend. The weekend emergency work order desk called in a Director of Public Works (DPW) maintenance crew to fix a stopped up sewer line in post housing. Sewage was backing up into family quarters—what a mess!

The crew began working on it on Saturday but couldn't finish. On Saturday, they dug a trench down to the sewer line - about 10 feet deep. They had to come back on Sunday to finish the job.

It rained during the night. When they came back the next day, the trench had standing water in it. It was very wet. The heavy equipment operator who had dug the trench looked at the condition of the trench and said that the trench should dry out first before anyone enters. The work



leader said "we're only going to be in there 15 minutes."

There was no shoring for the trench. A short time after the crew of three entered the trench, part of one sidewall collapsed. Two got out. The third worker was trapped. The other workers worked hard at keeping the third worker's head uncovered but something else went wrong. During the collapse, a water line broke, filling the trench with water. Despite the efforts of the other workers and onlookers, the trapped worker died.

**The remedy—  
Risk management is  
essential during off-shift  
work. Start with the basics:**

- Identify the hazards
- Assess the hazards
- Develop controls and make risk decisions

- **Implement the controls**
- **Supervise and evaluate**

Look at your SOP, do they include these risk management steps? A critical issue to look at is who makes the risk decision and how does that person get information about hazards.

Although the accident was tragic, the lesson is important. An off-shift accident can happen on any installation with any maintenance worker if the elements of risk management are not built into work plans. ■

**POC: Rosalene Graham, DSN 558-2450**

## **Paint Spray Booths**

Spray painting operations and using spray paint booths are hazardous if proper precautions are not taken. Painters and their helpers and supervisors

must identify work place hazards, assess the hazards, develop risk management controls, decide if the level of risk is acceptable, and implement risk management controls in order to prevent spray paint booth accidents. These are four of the five steps in the risk

Hazard	Control
Potential exposure to hazardous chemicals used in the workplace.	<p>Controls are engineered into the process.</p> <p>Use protective equipment. Employees must be issued personal protective equipment (PPE) that is required for each chemical identified in the workplace.</p> <p>Train supervisors and employees in the issue, storage, use and disposal of the required PPE.</p>
Lack of safety and health information on work place chemicals.	<p>All workers and supervisors become familiar with material safety data sheets on each chemical.</p> <p>Employees informed of all hazardous chemicals in their workplace.</p> <p>A copy of the MSDS is accessible to supervisors and employees during the period of work or exposure to the chemical.</p>
Improper handling of equipment and products	Follow manufacturer’s instructions. Manufactures provide proper and safe operating instructions for their equipment and products.
Failure to comply with occupational safety and health requirements	Provide training and education to comply with the instructions and requirements of the Occupational Safety and Health Administration as required by 29 CFR 1960 and Executive Order 12196.
Lack of individual awareness	Provide employee training on operational requirements and ongoing changes in the work environment.

**Table 1, Control measures to prevent disabling paint spray operation injuries. (Continued on next page)**

management process which is the Army’s primary means of managing workplace hazards. The final step of the process is supervision—ensuring that the controls are implemented as required.

### **General Paint Spray Operational Hazards and controls**

Good judgment and proper supervision of subordinates are instrumental in controlling workplace hazards. Avoid incidents of skin irritation, inhalation of hazardous vapors from solvents and paints, chemical reactions from improper mixing, solvent decomposition, paint solvent fires, blindness, and so forth, by applying the risk management process to

spray paint operations. Identify and evaluate the hazard, control the hazard, minimizing exposure to the hazard, use protective equipment, analyze job processes for safety features, and simply following the rules. Table 1 (page 2) is a short list of potential hazards and controls.

### **Fire**

Arguably, the most serious accident in paint spray operations is fire. The majority of these accidents result from the failure of management supervisors or employees to follow standing operating procedures and other written requirements and standards. Table 2 shows a short list of potential hazards and controls.

Hazard	Control
Broken electric lamps and other electrical defects	Paint spray areas must be inspected on regular scheduled intervals by knowledgeable personnel for electrical hazards and repairs effected immediately.
Cleaning interior of booths, fans, and motors with solvents	A less-hazardous materials should be substituted for one with greater risk whenever possible. This should be determined during a job hazard analysis and each time a new chemical in introduced into the workplace. Smoking must be prohibited in the painting area.
Accumulations of deposits in the booths, tubes, and ventilating ductwork	The paint spray booths must be inspected for accumulation of deposits and cleaned as required to remove the deposits
Defective fans and motors used for ventilating the booths	The fans and motors must be inspected on a regular basis and repaired or replaced before operations resume.
Poorly designed ventilation ductwork	Ventilation ductwork must be properly designed and installed on new paint spray booths. The ductwork on existing booths must be inspected for proper design by knowledgeable employees or contractors and repaired or redesigned as required.
Static electric	The paint spray area must be properly grounded and bonded before paint spray operations begin. The paint spray area should be tested for electrical continuity on a regular scheduled basis and the area tagged or otherwise marked to indicate the tests were performed.

**Table 2, Six principal hazards causing fires in paint spray booths.**

## **Training as a Risk Management Control**

One important control when managing the hazards in paint spray operations is training. Management's failure to provide adequate training to supervisors,



employees and collateral duty safety personnel often contribute to accidents. Supervisor, employees and collateral duty safety personnel require the following training:

**Supervisors.** Supervisors are required to be trained in occupational safety and

health requirements; physical/health hazards of chemicals in the workplace; adequate training to recognize hazards associated with specialized jobs

such as paint spray operations.

**Employees.** Employees must be provided safety and health training, including specialized job safety and health training appropriate to the work performed.

**Collateral duty safety personnel.** Collateral duty safety personnel must be provided sufficient training to recognize workplace hazards and develop controls for hazards.

Spray paint accidents are preventable. Integration of the risk management process into all facets of spray painting operations will reduce the number of accidents and incidents associated with the operation. The standard for risk management is leadership the appropriate level of authority making informed decisions to control hazards or accept risks. ■

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## **It's About More than Numbers**

Talk to anyone at the Abbeville Plant of Westpoint Stevens in Abbeville, AL about their safety program. They will tell you that "it is about more than numbers." This plant employs 865 people and currently has over 18 million workhours without a lost time accident. Their record is the best for a textile plant in the United States and perhaps in the world.

Their last lost time accident occurred in September 1989. Since they opened in 1952, the Abbeville plant had eighteen years without a lost time accident. Their emphasis is not on maintaining this world class record but on preventing their employees from getting hurt.

The plant processes 7 million yards of material weekly. The plant is clean, busy, and bright. Preventive maintenance is evident. One major production machine is down every shift for preventive maintenance. There was not one burnt out light bulb in sight. Signs

are visible announcing the monthly best team in each department. The employees are smiling and they waive to visitors.

They were the 78th



manufacturing plant in the nation to receive STAR status under the OSHA Voluntary Protection Program. There are currently less than 300 manufacturing plants to attain this status.

### **How do they do that?**

The textile industry is very competitive. Most competition comes from off-shore manufacturers. In order to stay competitive, the plant must keep costs to a minimum. The

Abbeville plant spends \$29 per person a year on workers' compensation insurance. Compare that with the Army who paid around \$700 per person for workers' compensation benefits in FY97. However, they keep the cost down by caring about people, not the numbers.

### **Employee involvement**

Each shift in each department has a safety committee made up of management and employees. The employees rotate on/off the committee every three months. That is, at any one time, there is a new member, a one-month member, and a two-month member. Each shift Safety Committee inspects their department once a month. The last week of the month, the department manager inspects the worksite. The plant manager inspects the plant monthly as well. Deficiencies are written up and then followed-up. The result of the follow-up is reported back to the safety committee.

Each month, one plant department does a plantwide

safety meeting on any subject. The subject does not have to be work related. They invite speakers from the community to present at these meetings.

The supervisory chain is used, although sometimes the employees go directly to the plant safety manager. He encourages them to take their concern to the supervisor or asks why they can't. He will follow-up to ensure that their complaint was handled.

Employees enjoy the incentive program although they are careful not to make the incentive program overrule reporting lost time accidents. For every one million accident free hours, the employees receive a free meal and a gift certificate. For going over the 18 million accident free hours, each employee received a steak dinner served by the plant manager and a \$60 gift certificate.

### **Management Involvement**

Supervisors and managers are held accountable for meeting their responsibilities. A major job responsibility is safety. There is visible management involvement with the workforce. The management personnel knew everyone by name. They personally gave safety incentives at events that look like pep rallies.

The managers and supervisors take action to prevent accidents if it is in their purview to do so.

### **The plant safety program**

The corporate safety program has more stringent standards than OSHA. The corporate safety manual is about a half inch thick. The procedures parallel OSHA's VPP areas. The plant safety manager has taken each small section of the manual and has a folder that describes how they comply with that section.

The corporation has 17 general safety rules. Each plant employee from General Manager to worker has a copy. These 17 general safety rules are constant and very simple. An example is - No Horseplay.

The plant workers do not do high hazard work. It is contracted out. However, the contractors must abide by the plant's safety rules. An example of this work is confined space entry. The plant employees are prohibited from entering confined spaces at any time for any reason.

Each accident and near miss is reported and investigated. The employee fills out the portion that explains what happened. The supervisor then fills out the investigation portion. Action is taken on every report filed. If the employee is negligent, the employee may receive discipline ranging from a counseling to dismissal. If a worker has to go to the emergency room for treatment, the Plant Manager, the nurse, and the safety manager will all go to the emergency room as well—regardless of time of day.

Lock out/tag out instructions are posted at each energy source. The maintenance personnel must read them each time they lock the energy source out.

The plant has a mandatory drug screening program for new employees and then random but once a year mandatory drug screening for every employee including the Plant Manager.

Fork lift operators receive an initial training and annual training thereafter unless the operator demonstrates a need for additional training.

### **Business approach**

The Westpoint Stevens approach to business is to tell the customer

what it can do for them rather than tell them what they have available for sale. In their quality control, they can trace a product in some cases almost back to the cotton field where quality starts for them.

Changes to the process such as changing a machine requires that a system analysis be completed. The Plant Manager, the Safety Manager, the Maintenance Manager, and one other run the new process before an employee is allowed to perform the process.

An Army organization can look to exemplars such as the Abbeville Plant of Westpoint Stevens for improving their safety performance. This plant leads its industry in its accident prevention performance. Its program is recognized by OSHA as one of the nation's best. Adopting some or all of the techniques that they used can improve almost any Army workplace. ■

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## **Update On Lennox Pulse Furnace Carbon Monoxide Warning**

Background: Lennox Industries is warning of possible carbon monoxide leaks in its older Pulse furnaces. Carbon monoxide is an odorless, colorless gas that can cause sickness or death. The units are experiencing corrosion in the furnace heat exchanger. These units were generally manufactured between 1982-1988 and installed before 1990. Lennox Industries is

willing to schedule inspections and safety checks of the units. The problem only applies to Lennox Pulse furnaces with model numbers beginning with G14 or GSR14. If an installation has Lennox Pulse furnaces with model numbers that begin with GSR14 or G14, they should contact Lennox Industries at 1-800-537-4341 or 1-800-986-2162 to arrange for inspection and replacement of the units in question. You may also register in the program through the Internet at <http://www.davelennox.com/pulse-info.html>. When registering, a complete model and serial number is required. The model number of problem units will be G14 or GSR14 followed by a series of letters and numbers. The serial number, also located on the product ID sticker, consists of four numbers, followed by one letter, followed by five numbers. Upon registration with Lennox, the installation POC will be contacted by a Lennox representative within a few days. Installations may be able to get faster service by contacting the local Lennox Distributor (a listing of these is available at the Lennox Internet site based upon zip code).

Update: A number of DOD installations have contacted Mr. John Lanzarone, at the U. S. Army Center for Public Works and confirmed that they do have the furnaces with the model/serial numbers that are experiencing the premature failure of the heat exchanger. One installation actually had a carbon monoxide (CO) alarm sound on 28 Oct 97 in a family housing unit that contained the furnace. The family was suffering the effects of CO poisoning (headache, dizziness, nausea, tiredness). Installations that have contacted me with

questions or additional information are working with the local Lennox distributor/ contractor to test the units. In a discussion I had with a Lennox Industries representative on 29 Oct 1997 I learned the following information on the Lennox Pulse Furnace program.

1. The program will be active for 2 more years, so there is no immediate need to register. However, in light of the elevated carbon monoxide levels found in a family housing unit with the furnace, it is recommended that units with the model number GSR14 or G14 be inspected as soon as possible.

2. After registering in the Lennox program, if an installation has difficulties working with the Lennox distributor, contact the Lennox Pulse hotline at 1-800-392-4003, or fax them at 1-800-381-7994.

3. Because of demand for replacement heat exchangers, Lennox is now offering owners of affected Pulse furnaces the following three options.

a) A replacement heat exchanger plus a subsidy on the labor cost to replace the heat exchanger. The subsidy may not cover all costs associated with the change out.

b) A replacement furnace (a Pulse 21 furnace) plus a subsidy on the labor cost to replace the furnace plus a \$400 rebate. The subsidy may not cover all costs associated with the change out.

c) A replacement furnace (a non pulse unit, a G26 Elite 90 furnace) with no labor subsidy. ■

**POC for this matter at U.S. Army Center for Public Works (USACPW) is John Lanzarone, comm. (703) 806-6067, DSN 656, E-mail: [john.r.lanzarone@cpw01.usace.army.mil](mailto:john.r.lanzarone@cpw01.usace.army.mil). This safety warning update has also been posted to the ACSIM Internet page at <http://www.hqda.army.mil/acsimweb/fd/fdl.htm> under the newly added**

**heading of Safety Links/Notices. This is an unofficial listing of safety notices and recalls, with Links to the Army Safety Center Home Page.**

## Carbon Monoxide Poisoning Increases with Cold Weather

With the onset of cold weather, the potential risk to workers from carbon monoxide increases. The



risk of overexposure increases in winter because traditional sources of ventilation—windows, doors, vents, garage doors, bays—are often closed to insulate against low outside temperature. OSHA has urged workers and employers to be aware of and take precautions against the hazards posed by this odorless, colorless, tasteless and lethal gas. Harmful levels of carbon monoxide present potential dangers to acetylene workers within the Department of Defense and several other occupations (i.e., blast furnace workers, boiler room workers, brewery workers, customs workers, miners, etc.).

Carbon monoxide gas is produced by the incomplete burning of any material that contains carbon. These materials include gasoline, natural gas, propane, coal, and wood. Machinery and appliances that burn these fuel sources include forges, blast furnaces, gas-fired

water heaters, space heaters, and coke ovens. The most common source of carbon monoxide in the workplace is the internal combustion engine. Any machinery or appliance powered by fossil fuels such as gasoline or propane trucks, cars, forklifts, floor polishers, and pressure washers, generate carbon monoxide.

Symptoms associated with exposure to carbon monoxide poisoning may include headaches, tightness of chest, nausea, drowsiness, flushed face, dizziness, inattention, or fatigue. Increased exposure results in lack of coordination, confusion, weakness, or loss of consciousness.

## **How Can Poisoning Be Prevented?**

### **Suggestions for Employers**

- Install an effective ventilation system to remove poisonous carbon monoxide from the area.

- Maintain appliances and equipment in good order, adjusting flames, burners and drafts to reduce the formation of carbon monoxide.

- Consider switching from fossil fuel-powered equipment to battery-powered machinery when possible.

- Provide approved respirators for emergency use. Regular respirators (negative pressure) will not work in this atmosphere. If necessary, provide an independent air supply to workers.

- Provide replacement and periodic medical examinations for workers who may be exposed to carbon monoxide. If possible, transfer affected workers to other jobs.

- Install carbon monoxide monitors or regularly test air in areas where carbon monoxide is

generated or used.

- Instruct workers on the hazards of carbon monoxide and train them in the proper use of respirators.

### **Suggestions for Workers**

- Report to your employer any condition that may create and accumulate carbon monoxide.

- Be alert to ventilation problems, especially in enclosed areas where gases of burning fuels may be released.

- Report complaints early. Don't overexert yourself if you suspect carbon monoxide poisoning. Physical activity increases the body's need for oxygen and thus increases the danger of poisoning.

- If you get sick, don't forget to tell your doctor about the possibility of exposure to carbon monoxide. ■

**\* Think carefully about your smoking habits. Tobacco, when burned, releases carbon monoxide which reduces the oxygen-carrying ability of the blood, even before any industrial exposure is added.**

**Article Extracted from HTIS, Volume 7, Number 6, Nov-Dec 97.**

## **Fitness not Just for Soldiers Anymore**

### **The Surgeon General addresses health benefits of physical activity**

More than 60 percent of adults do not get enough exercise to stay healthy, according to a new report put out by the Office of the Surgeon General. In addition the report indicates that one quarter of all adults get no exercise at all. Further, inactivity increases with age and is more common among women than men and among

those with lower incomes and less education. The major findings of the report bring together, for the first time, the results of decades of research on physical activity and health. These findings include the following—

- People who are usually inactive can improve their health and well being by becoming even moderately active on a regular basis.

- Physical activity need not be strenuous to achieve health benefits.

- Greater health benefits can be achieved by increasing the amount (duration, frequency, or intensity) of physical activity.

Regular physical activity is better than even the most perfect food. Performed most days of the week, it reduces the risk of developing or dying from some of the leading causes of illness and death in the United States. It reduces the risk of dying prematurely or of dying from heart disease. It reduces the risk of developing diabetes, high blood pressure, and colon cancer. It helps reduce high blood pressure and also reduces feelings of depression and anxiety and helps in weight control. In addition, regular physical activity helps build and maintain health bones, muscles, and joints, and it promotes psychological well-being.

To avoid soreness and injury, exercises should start out slowly and build gradually to give the body time to adjust to the new activity. People with chronic health problems (heart disease, diabetes or obesity), or who are at high risk for these problems, should first consult a physician before beginning a new exercise program. Men over age 40 and

women over age 50 should consult a physician before beginning a vigorous exercise program.

More information is available from the Centers of Disease Control and Prevention; 4770 Buford Highway, NE; Atlanta, GA 30341-3724. The CDCP's toll-free number is 888-CDC-4NRG or 888-232-4674. The web address is <http://www.cdc.gov>. ■

### The High Cost of Low Exercise

Millions of Americans suffer from illness that can be prevented or improved through regular physical activity. The Surgeon General report showed that—

- 13.5 million Americans have heart disease.
- 1.5 million suffer from heart attacks in any given year.
- 8 million have adult-onset or non-insulin dependent diabetes.
- 95,000 are newly diagnosed with Colon cancer each year.
- 250,000 suffer from hip fractures each year.
- 50 million have high blood pressure.
- More than 60 million (one third of the population) are overweight.

## Risk Management Integration (RMI) Responsibilities Defined

As of 1 May 1997, official Army policy defines responsibilities for the application and integration of Risk Management. The Secretary of the Army signature on HQDA

LTR 5-97-1 (1 May 97), subject: Risk Management Integration Responsibilities clarified the responsibilities and institutionalized risk management as the Army's operating philosophy.

The five paragraph HQDA LTR is also the foundation for one of a dozen management responsibilities found in draft AR 5-1, Total Army Quality: "Protect the force by making informed decisions to identify hazards and implement controls to manage risk." Proponent is the Director of Management, Office of the Chief of Staff, Army.

The HQDA LTR complements the Army Communities of Excellence Army Performance Improvement Criteria by defining RMI as a thread through all elements. The HQDA LTR makes RMI the Army's roadmap for continuous improvement in all functional areas.

### Key Elements of HQDA LTR 5-97-1

1. Establishes Army intent with respect to RMI: "...integrate risk management principles and practices into Army culture, organizations, systems, and individual behavior." (Paragraph 1)

2. Mandates responsibility: "Protecting the Total Force through risk management is a responsibility of leadership at all levels." (Paragraph 1)

3. Establishes risk management as an Army process: "Risk management is the principal risk-reduction process to assist leaders in identifying and controlling hazards and making informed decisions. (Paragraph 5a(1))

4. Defines the standard for risk management: "The standard for risk management is leadership at the appropriate level of authority making informed decisions to control hazards or accept risks." (Paragraph 5a(2))

**"Protect the force by making informed decisions to identify hazards and implement controls to manage risk."**

5. Defines Integrating Agents and their role in Risk Management Integration: "... HQDA Principal Officials and MACOM Commanders are designated as integrating agents responsible for developing and implementing programs to integrate risk management into their functional areas." (Paragraph 5b)

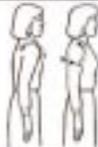
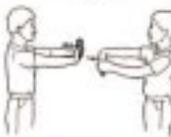
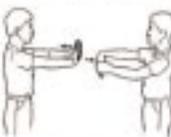
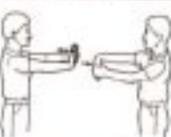
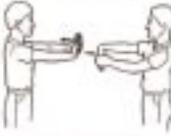
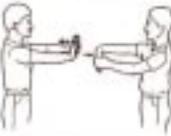
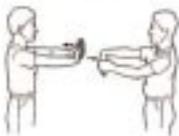
The HQDA LTR is enhanced by a draft Risk Management Integration Plan (RMIP) designed for two purposes: First, to assist Integrating Agents in meeting their responsibilities; Second, to meet the Director of Army Safety responsibilities to synchronize, advocate, and provide periodic reports to the Secretary of the Army and to the Chief of Staff, Army (Paragraph 5c, HQDA LTR). The RMIP provides management oversight procedures. It also includes a synchronization matrix to enhance action in focus areas of Policy, Training, Leadership, Information, and Tools (link to RMIP under Risk Management)

Embedding risk management into Army systems and individual behavior demands the unequivocal commitment by leaders at every level. The result will be the needed cultural change that captures the full power of risk management to shape America's Army in the 21st Century. ■

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## Fatigue Control Methods for the Workplace

Want to encourage on-the-job exercise but don't know how to start? Use this handy chart to promote flexibility of the entire body, and provide a lot of variety!

	Day 1	Day 2	Day 3	Day 4	Day 5
<b>First Half of Shift</b>					
<b>Back</b>					
<b>Neck</b>					
<b>Arms</b>					
<b>Hands</b>					
<b>Legs</b>					
<b>Second Half of Shift</b>					
<b>Back</b>					
<b>Neck</b>					
<b>Arms</b>					
<b>Hands</b>					
<b>Legs</b>					

# Winter Approaches, Winter Safety Tips

As winter approaches we should all once more take a quick look around our homes and consider the following:

If you make use of a fireplace more than four times a week during the winter, you should have the chimney and spark-arrester checked each year. This also applies if you use soft or green wood. You should also do the following.

- a. Open the damper before lighting the fire and keep it open until ashes are cool.
- b. Do not use flammable liquids to light or stoke a fire.
- c. Use seasoned hardwoods to reduce creosote formation.
- d. Never burn paper or pine boughs which can float out onto the roof.
- e. To prevent fire sparks, use a screen that completely covers the fireplace.
- f. Use only metal containers to remove ashes.
- g. Keep all flammable materials such as papers, magazines, blankets, and pillows away from the fireplace.
- h. Do not break apart burning artificial logs or use more than one artificial log at a time in a normal residential fireplace. Above all read the instructions. If used incorrectly, these logs can give off abnormal levels of carbon monoxide.
- i. Don't overload the fireplace. A roaring fire can put a strain on your walls and roof and could lead to disaster.
- j. Be sure the fire in the

fireplace is completely out before you got to bed or leave the house.

k. Always keep a fire extinguisher handy.

## PORTABLE SPACE HEATERS

- a. Place all portable space heaters on a sturdy floor at least three feet away from anything that can burn. (Remember, your pets can inadvertently tip them over.)
- b. Never use the heater to dry clothing or other combustibles.
- c. Turn off the heater whenever you go to bed.
- d. Never leave a heater unattended.

## ELECTRICAL HEATERS

- a. Always keep the cord stretched out, not curled. Do not bury the cord under carpets or rugs.
- b. Avoid using extension cords. If you must use an extension cord with a space heater, it should be marked #12 or #14 AWG.
- c. Check for fraying or splitting wires. Take a broken heater to a qualified service center. Do not attempt to repair it yourself.

## KEROSENE HEATERS

- a. Before purchasing a kerosene heater, call your local fire department to be sure the heaters are legal in your community.
- b. Keep the wick clean and properly adjusted.
- c. If flame-up occurs, activate the manual shut-off switch. Don't move the heater or try to put it out with a blanket or water.
- d. Keep the heater out of doorways and hallways.
- e. Use only 1-K kerosene purchased from a certified dealer. Always fill the heater outdoors and avoid spilling kerosene on the floor.
- f. Always turn off the heater

and let it cool down before adding fuel.

g. Always use in well-ventilated rooms, and crack open a window in the house.

## CARBON MONOXIDE DETECTORS

Each year about 200 people die from carbon monoxide poisoning associated with home fuel-burning equipment. Carbon monoxide detectors with the Underwriter Laboratories (UL) can provide an early warning system before this deadly gas builds up. They should be placed outside bedrooms and on the ceiling above the heating appliance. ■

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A handwritten signature in black ink, appearing to read "Burt S. Tackaberry".

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