



Just the Facts...

Guidance on the Use of Heaters Inside Tents and Other Enclosed Shelters

1. Commanders should only allow the use of heaters listed in the following sources. These vented heaters meet all military field heating requirements and are proven safe and effective.

Commanders' Smart Book Equipment Catalogue, RDECOM, Natick Soldier Center:
http://www.natick.army.mil/soldier/media/print/Smartbook_Web.pdf

Family of Space Heaters: Emphasis on Safety, Countermeasure, Vol. 24, No. 10, October 2003:
https://crc.army.mil/MediaAndPubs/magazines/countermeasure/2003_issues/cmoct03.pdf

To obtain these heaters via a funded requisition, units should use the following Defense Supply Center Philadelphia web site:
<http://www.dscp.dla.mil/gi/general/ols.htm>

2. All heaters, both vented and unvented (not ducted), if improperly used and maintained, pose a risk of fire and carbon monoxide (CO) poisoning. To ensure safe heater operation inside tents or other enclosed areas, slightly open a flap, door or window to allow the introduction of fresh make up air and/or use in accordance with the Technical Manual.

Personnel that set up and operate heaters must be trained and licensed in accordance with Chapters 6 and 7 of Army Regulation 600-55, 31 Dec 93, Motor Vehicle and Equipment Operator Selection, Training, Testing and Licensing: http://www.apd.army.mil/pdf/r600_55.pdf
The responsible unit fire or safety representative must inspect each heater before use.

3. Acquisition of commercial nonstandard heaters is justifiable only in mission-critical circumstances. If nonstandard heaters are used, the first general officer in the unit's chain of command should approve the purchase and or use of nonstandard heaters.

a. Personal (individually owned) heaters and commercial portable gas (e.g., propane, natural gas, etc.) heaters must not be used under any circumstances. Soldier deaths have been associated with their use in tents.

b. Unvented kerosene heater use is restricted to areas where people do not sleep (such as guard houses, ranges, or training areas) or when approved by the Commander as interim emergency heating.

4. If operational necessity demands that Commanders accept the risk of using an unvented kerosene heater in tents or other enclosed shelters, a complete risk assessment should be done (balancing the risk of cold stress and risks of using the heater), and the acquisition and use approved by safety and health, and fire protection personnel. At a minimum, implement the following steps when using unvented kerosene heaters:

a. Inspect, set up, operate, and maintain the heater in accordance with the manufacturer's instructions.

b. Ensure the heater meets the standard requirements of and bears the labels of the Underwriters Laboratories (UL), Inc. and the National Kerosene Heater Association's (NKHA).

c. Use only water-clear No. 1-K Kerosene in the heater. When No. 1-K Kerosene is unavailable, JA-1 or JP-8 fuel are the only substitute fuels that may be used, but then only as interim fuels, and only when an effort is made to quickly obtain No. 1-K Kerosene to replace the JP-8 or JA-1 fuel.

d. Store kerosene outside (and a minimum of 50 feet from tents, shelters, and vehicles) and in a sealed container labeled “No. 1-K Kerosene.”

e. Do not place the heater directly on the fabric floor of the tent; place on a firm and level fireproof base (e.g., sheet metal sand box) located in a marked area free of and a reasonable distance (as specified by the heater manufacturer) from clothing or other materials that can burn (e.g., bedding, people).

f. Operate the heater only when a fire guard/watch is on duty; otherwise, ensure the heater is turned off before going to sleep or leaving the tent or shelter. Brief the fire watch on the procedures for fire fighting and how to recognize signs of CO poisoning (see item 5, below).

g. Use the heater in well-ventilated tents and other well-ventilated enclosed structures.

h. Have the air measured (by safety or health personnel) for CO the first time the heater is used, and periodically thereafter.

i. The tactical situation warrants whether the following recommendation should be followed. Personnel are encouraged to use continuous CO detectors/alarms inside their tents or other enclosed shelters that are UL2034 listed for Recreational Vehicles (RVs) and unconditioned areas (such as attics and garages). The following CO detectors/alarms meet this standard and are battery-powered: COSTAR Model 9RV (QUANTUM GROUP INC.), <http://www.qginc.com/>; Model CO-338/RV (GARVAN ENTERPRISES LTD); Model SA-338/RV (MARINE TECHNOLOGIES INC.); Model CG-P (INVENSYS CLIMATE CONTROLS AMERICAS); Model CO5RV (FIRST ALERT). The Underwriters Laboratory Inc website can be checked for a current list of UL certified products: <http://www.ul.com/>

5. Safety and Health Training on Use of Tents, Enclosed Shelters, and Heaters. Ensure units are trained in the associated safety and health issues.

a. Training should include the recommendations, above, and include the following subjects: proper tent ventilation; corrective actions to take under extreme weather conditions (e.g., such as clearing built-up snow from around small tents and shelters to ensure proper air infiltration into them); and the recognition, prevention, and control of fire and CO hazards when using heaters. Training should include fire drills.

b. Train all individuals to recognize potential sources of CO and the symptoms of CO poisoning. Carbon monoxide may cause any of the following groups of symptoms, with the later groups representing greater levels of poisoning:

- Headache
- Throbbing headache and nausea
- Severe headache, nausea, vomiting, muscle weakness, dizziness, fainting, and loss of consciousness
- Coma and convulsions
- Death

6. Consult the following USACHPPM Fact Sheets for further information on the medical aspects of using tent heaters:

65-040-0503 (*Tent Heaters – Individual*): <http://chppm-www.apgea.army.mil/documents/FACT/65-040-0503.pdf>

65-045-0503 (*Tent Heaters – Medical*): <http://chppm-www.apgea.army.mil/documents/FACT/65-045-0503.pdf>

7. It should be noted that some U.S. Army Commands (e.g., Training and Doctrine Command) have written policies on the use of vented and unvented space heaters within their command, which include prohibiting the use of any unvented portable space heater (e.g., propane, kerosene, etc.) in tents or enclosures during field training or operations, as well as recommending against the use of CO detectors within tents or enclosures/shelters. Additionally, the older military M1941 “Pot Belly” and M1950 Yukon heaters present serious fire safety hazards and should not be used; some Commanders (e.g., U.S. Army Alaska) have wisely issued memorandums to turn these in and remove from their inventory.

8. Information on preventing cold weather injury can be found at the following website: <http://chppm-www.apgea.army.mil/coldinjury/>