



Questions?

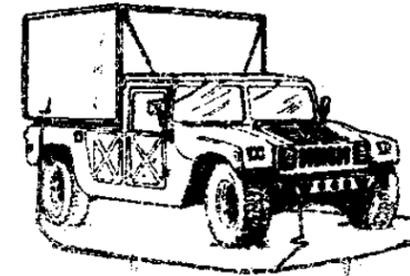
For technical and safety questions, contact your representative from the CECOM Safety Office or John M. Tobias, (908) 532-0084.

For fielding and availability information, please contact Diane Johnson at the CECOM Directorate for Materiel Management, (908) 532-4406

Field assistance and customized training is also available from the CECOM Safety Office. Call (908) 532-0084 to discuss any training needs.

CECOM Safety Office
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Surface Wire Grounding System



General Information



Prepared by the CECOM Safety Office
2 April 1993

Surface Wire Grounding System (SWGS)

The SWGS is a new alternative grounding system which has been designed primarily for use with systems requiring high mobility/quick installation and tear-down operational scenarios. It is easily emplaced and removed, offering a reasonable option in situations where driving/retracting conventional ground rods would be difficult and/or too time consuming.

Nomenclature: Grounding Kit, MK-2551A/U
NSN: 5820-01-263-1760

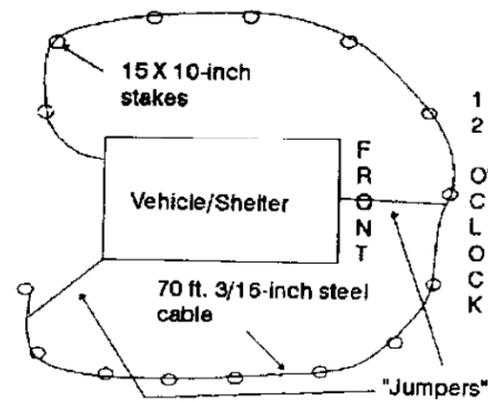
Components:

- 15 ground stakes (10 in. long).
- Interconnecting 3/16 in. steel cable approximately 70 ft. long.
- 2 grounding jumper cables w/clips

Installation:

SWGS is installed in a circular pattern surrounding the system being protected and utilizes two 3/16 inch jumper cables with clips to provide additional connections to the SWGS.

One end of the SWGS is connected to the shelter at the power entry panel. The SWGS is then installed in a circular fashion terminating in the rear. The 15 stakes are uniformly distributed around the circumference of the primary wire (keeping the wire from rear of the shelter where personnel traffic is heavier). The two additional "jumper" or "clip-on" cables are now attached at the 12 and 5 o'clock positions looking from above, as depicted, with the vehicle/shelter front at the 12 o'clock position.



SWGS is not intended to replace the familiar ground rod, but is rather an option for use as situations or circumstances may warrant. The SWGS is definitely not to be used as a permanent type facility grounding system, but is primarily for highly mobile tactical applications.

As with any grounding system, the SWGS provides a preferred lightning discharge path, enhances safety, and controls noise in signal circuits. The total resistance to ground is equal to or better than that of a single ground rod, and, when properly installed, may better survive a lightning strike than a ground rod would. Regardless of which grounding system is used, the soil in the immediate vicinity of the SWGS or ground rod will be potentially dangerous during a lightning discharge. For this reason, personnel should make every effort to seek shelter within metal enclosures, vehicles, or other relatively safe locations when electrical storms are imminent. This same precaution applies even if a grounding system is not installed, since personnel may also become a possible target for a direct strike.

Safety Precautions:

(1) Maintenance - The SWGS requires proper inspection before each installation, and be periodically reinspected if disturbed by personnel/vehicular movement. Follow the instructions provided with the SWGS, make sure the stakes/wire are firmly in contact with the soil, and that all connections are tight. Minimize all vehicular and personnel traffic adjacent to the SWGS.

(2) Operations - Assure that personnel find appropriate shelter during electrical storms. If personnel must be outside (i.e. during a real combat scenario) they will reduce their risk if they stay away (at least 6 feet) from the SWGS; however, the danger of them being struck directly would still exist.

(3) Installation - The clip-on jumper cables must always be used. Testing demonstrates that without the jumpers the system may not safely conduct currents to ground. These additional cables assist in the dissipation of high currents. Their use is essential to assure safe operation.

The Surface Wire Grounding System was thoroughly tested and is now approved for use.

If you want to order the SWGS, remember to use the official nomenclature: Grounding Kit, MK-2551A/U NSN: 5820-01-263-1760