

# HANDLE LIKE GLASS

HEY! WATCH HOW YOU HANDLE THAT CABLE!



CHANCES ARE YOUR UNIT IS USING FIBER OPTIC CABLES. IF NOT, IT SOON WILL BE.

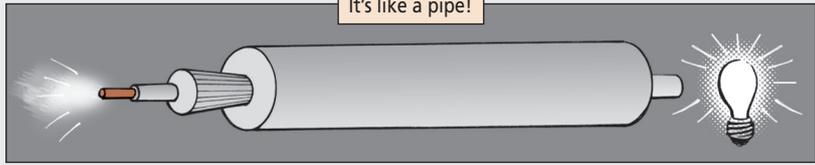
FIBER OPTIC CABLE HAS SOME SPECIAL HANDLING NEEDS AND REQUIRES SOME SPECIAL MAINTENANCE.



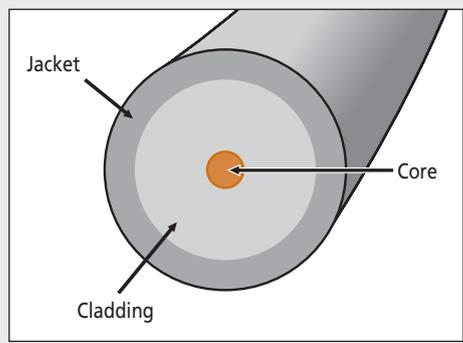
HERE IS A BAKER'S DOZEN THINGS YOU NEED TO KNOW ABOUT FIBER OPTIC CABLES AND THEIR SPECIAL NEEDS...

1. A fiber optic cable is a cylindrical pipe. It is made so the pipe—the fiber—can guide light from one end to the other.

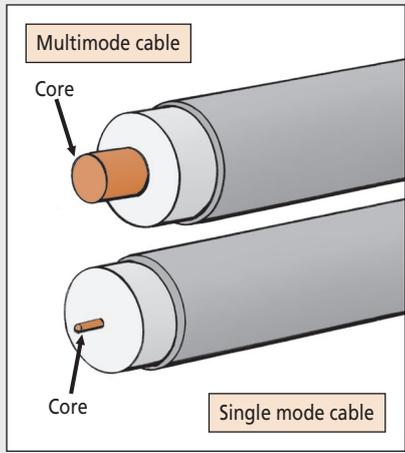
It's like a pipe!



2. A fiber optic cable has a core, a cladding and a jacket. The core carries the light beam and may be made of glass, plastic or a combination of both. The cladding strengthens the core. And the jacket acts like a shock absorber to protect the core and the cladding. It also protects them from abrasions, solvents and other contaminants. But it can't stand up to abuse.



3. When it comes to mode-of-light transmission, a fiber optic cable can be one of two types: multimode or single mode. Multimode is used for short range communications and is the most often used by the Army. Single mode is used for long range communications and is normally found in strategic-based systems.



4. Fiber optic cable can be spliced, but it's not like twisting two wires together. A splice requires a precise alignment of the mated fiber cores. There are two types of splices: fusion and mechanical. Field splices are almost always mechanical. Contact direct support for splicing help.

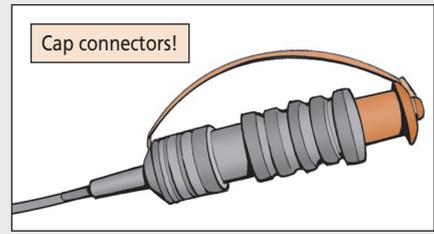
5. Know your cable's bend radius and do not bend it sharper than that. The current standard is 10 times the cable's outside diameter under a no-pull load and 15 times the cable's outside diameter when the cable is under tension.

6. Do not stretch, puncture or crush fiber cables.

7. Do not polish the end of the connectors with a cloth made of synthetic fibers. The residue fibers will attract dust.

8. Keep the dust caps on the cable connectors, transmitter and receiver until you connect the cable. When you disconnect, immediately, put the dust covers back.

9. The fiber end face and ferrule must be absolutely clean before it is inserted into a transmitter or receiver.



**10.** Dust, lint, oil from your hands and other foreign particles compromise the strength and integrity of the signal. Never touch the fiber-end face of the connector unless cleaning it.

**11.** Unprotected connector ends are most often damaged by impact, such as hitting the floor. Use protection boots on the connectors and use only those that cover the entire connector end and not just the ferrule.

**12.** The leading cause for signal loss is dirt on connectors. Clean the connectors with pure isopropyl alcohol. Do not use isopropyl alcohol that has been diluted with mineral oil or water.

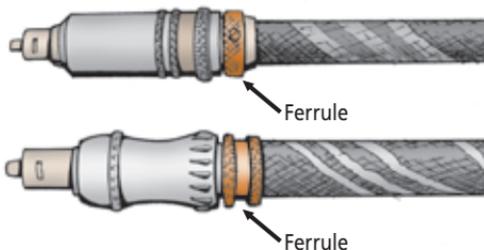
Always use a lens-grade, lint-free tissue to clean. It is best to fold the tissue twice to create a four-layer-thick pad.

Saturate the tissue with the alcohol and use your finger and fingernail to clean the connector area.

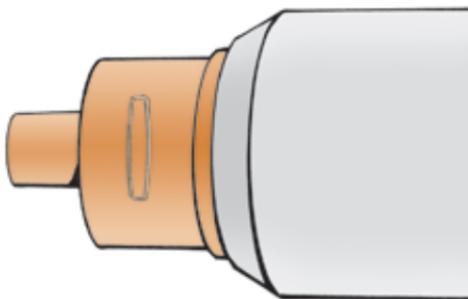
Canned dry air can be used to remove lint or loose dirt. Get six, 10-oz cans with NSN 7930-01-398-2473.

**13.** Fiber optic cables have the largest power loss at connectors and not on the length of the cable. Try not to use more than three connected cables.

Keep ferrule clean



Keep connectors clean



FINALLY, IF YOU HAVE TO REPLACE A CABLE, USE THE CABLE IDENTIFIED IN THE TM.

ALL FIBER OPTIC CABLES LOOK THE SAME ON THE OUTSIDE, BUT THE ACTUAL FIBERS CAN BE DIFFERENT AND NOT ALWAYS INTERCHANGEABLE.



TM 11-6020-200-10 AND -23&P COVER THE MAINTENANCE ON THE POPULAR CX-13295A/G FIBER OPTIC CABLE.

