

AN ANTENNA DILEMMA

DEAR MSG HALF-MAST...



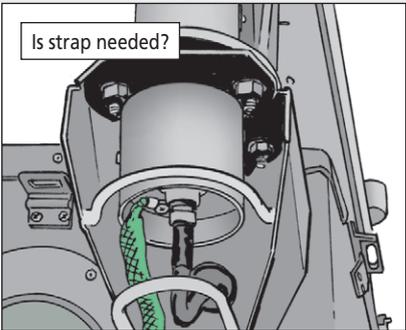
Dear MSG Half-Mast,

I got gigged for not having a ground strap on the base matching unit of the AS-3900A/VRC antenna, NSN 5985-01-308-8988.

I argued that a ground strap was not necessary since the antenna was grounded by the RF cable. Since we couldn't settle the argument, we said we'd ask you, and whatever you say, goes.

So, does the AS-3900A antenna really need that ground strap?

PVT L.C.N.



Dear Private L.C.N.,

Unless the ground strap that runs from the base matching unit to the vehicle is in place and working, your vehicle's radio is not fully mission capable. So, yes, you really need that ground strap.

It is true that the shield braid on the RF cable has some continuity and offers some DC grounding. But the cable offers a poor RF ground. The braid of the cable itself offers a DC path back to ground, but has length all the way back to the radio. This length may render the braid useless as it may no longer be at ground potential for RF frequencies even if it is for DC. As a rule of thumb, keep the connection to ground as short as possible, which is best accomplished by using the ground strap. Furthermore, although the antenna is a center-fed dipole and predominately ground-plane independent, there are still currents on the antenna which need to be "tied-off" right at the base of the antenna. The little ground strap, NSN 6150-01-214-5750, takes care of these currents, too.

That ground strap also helps in equalizing the electrical difference between the antenna and the vehicle it's mounted on. This is vitally important to your health and the health of your equipment if the antenna comes in contact with a power line, suffers from a direct or nearby lightning strike or is tagged by an electro-magnetic pulse.

So, make sure the ground strap from the AS-3900A/VRC antenna base matching unit is there and in good shape. If you need the screw that holds the ground strap to the base, order it with NSN 5305-01-225-2589. You'll also need lock washer, NSN 5310-01-205-9199.

The bolt holding the ground strap to the vehicle can be ordered with NSN 5306-00-225-9086. You'll also need two lock washers, NSN 5310-00-889-2527. This is a lock washer with gripping teeth. It will scar the paint on the HMMWV where you put it and ensure good metal to metal contact. Put one lock washer on the bolt, then the strap and the other washer. Finally, screw the bolt into place.

Half-Mast

