A Quick To Deploy Marconi For MARS
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The Marconi Antenna For MARS
A simple Marconi can be quite effective for high frequency MARS use. Also known as the "Inverted L", it has the following features:

The Marconi:
> Covers areas from within 100 miles out to 1200 miles and farther.
> Can be adjusted to have a very low standing wave ratio (SWR).
> Is efficient such that a 100 watt transceiver will generate a respectable signal.
> Is fairly quiet on receive under most circumstances.
> Is easy and quick to deploy and can be stealthy.
> It can withstand very high winds and even light debris falling on it.
> Is inexpensive to deploy.

By limiting the number of radials, the radiation pattern in the vertical plane will demonstrate a fair portion of the lobe at a relatively low angle. Yet enough of the main lobe offers signals that provide respectable performance at short skip distances. With the number of radials suggested the match can be close to 50 ohms over average terrain. The receive capability is the surprising feature. It has the potential to hear weak signals better than a short vertical, long wire, or low dipole. It picks up less static than other vertical configurations.

All features considered the Marconi can be an effective antenna for area military purposes. For longer distance low power purposes such as digital, it is a respectable choice. This is especially true if the antenna is used for both transmit and receive (no separate receive antenna).

The following parts are advised for Frequency RH range:

One copper ground rod, 4 ft long (longer is better, as short as 2 feet will do).
One length of wire 51 feet 9 inches long. It can be hookup wire rather than bare wire.
4 pieces of wire 13 feet long (or 26 or 52 feet long if you wish. These are the Radials.
2 insulators (unless you want an insulator at the feed point, then 3)
50 feet or more of poly cord (from any hardware store)
A connector or strap for the ground rod.
50 ohm coax (I suggest RG213, else RG8U.)

Instructions

Pound in the ground rod where you want the base of the antenna. This is where most of the current is so don't put it too close to the house or shack. At least 25 feet away from the operating position is advised.

Attach the connector/strap to the ground rod a few inches from the ground. Connect the shield of the coax and the 4 radial wires securely to the connector. Spread the radials out flat on the ground to make an X or Plus Sign. Make sure the bare wire and coax shield is solidly connected to the rod. Bury the radials a few inches underground if desired.

Solder one end of the 51 foot 9 inch wire to the coax inner conductor. An insulator at the feed point strengthens the connection. Slip an insulator through the other end of the 51 ft 9 in wire. Let it move freely. It will be the highest point. The longer the vertical part the better, but if it goes up 12 to 15 feet you will get a signal out. Attach the other insulator to the far end of the 51 ft 9 in wire. Attach a poly cord to the free roaming insulator. Attach poly cord to the other insulator. Refer to the diagram provided with this article.

Raise the free roaming insulator to it's support (side of house, tree limb, whatever is available. Take the other end with the insulator out to some other point and tie it (a tree, garage, etc. It should not sag to the ground.

It's now ready to test. You should be able to get an SWR < 1.7 to 1. You can add more radials if desired. Four radials should provide decent efficiency while allowing good range within 200 miles. Farther than 200 miles it works and longer into a propagation opening it should perform well.

Ideas To Try

Depending on soil and terrain many more radials can be added. Added radials lowers the angle of radiation but also increase the efficiency and possibly the SWR. It’s not necessary for the vertical wire to be at a 90 degree angle. Effective results can be attained by using angles as great as 60 degrees from the vertical plane. Such angles can offer radiation lobes that are better for shorter distances. Use ELNEC software to model such performance. Use green wire or other colors to fit stealth deployment. For other frequency ranges calculate the length in feet by dividing 234 by the frequency in Megahertz.

Synopsis

The Marconi can be an effective choice for a quick deploy or permanent MARS HF antenna.

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