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MP-90B/MP-65B MANPACK ANTENNAS

1.6 - 30 Mhz / 4 - 30 Mhz 20 Watts
Tactical Forward Folded Dipole

The Barker & Williamson MP-90 is a 90 foot long broadband folded dipole antenna, designed for continuous frequency operation from 1.6 to 30 Mhz while providing a low SWR without need for a coupler. The MP-65 is 65 feet long, and will operate 4 to 30 Mhz. The antennas are specifically designed for man pack use with rapid deployment, and the wires disconnect from the center assembly. They are all weather rated at 20W PEP input continuous, and permit use of the full HF capabilities of today's continuous coverage ALE field radios such as the PRC-150. Single feedline operation provides excellent performance for military and emergency management operations. Instant passive tuning with no moving parts allows continuous ALE or secure frequency hopping. Being designed for forward tactical use the antennas are best suited for NVIS propagation, although they can be utilized as an inverted Vee for longer range work. Our BWDS series of antennas will have better performance for longer range use.

Features include a high impact plastic housing for the balun and matching network. Feedline impedance is 50 ohms and comes equipped with a BNC female coax connector. The antennas must be installed in a three pole configuration, which may be as a flat-top or inverted Vee. NVIS is performed as a flat-top. We offer complete manpack rapid deployment kits for NVIS, with 6 foot fiberglass masts and a carry/storage bag. We also offer higher masts for tactical rear operations.

Determine Your Setup

(1) NVIS propagation offers approximately 250 miles of no skip operation in any type of terrain. It is performed as a flat-top with height varying from ground level to approximately 12 feet. This height is dependent on the ground (soil) conditions. It may be possible to lay the antenna on the ground in desert/low water table environments. The B&W Manpack NVIS mast kits (MK114-306T) are 6 feet in height, and the tactical rear NVIS mast kits (MK114-312T) are 12 feet in height. If you are not getting enough distance from your NVIS setup a counterpoise (wire laid under the antenna connected to ground) may enhance performance. If you still need more distance, try raising the center of the antenna a few feet to make a very shallow inverted Vee. Appropriate NVIS frequencies are approx 5-12 Mhz daytime, 2-4 Mhz for night. (The MP-65 is not suited for operation below 4 Mhz.)

(2) Conventional propagation can cover greater distance, but at the expense of having possible skip zones without communication coverage. This requires minimum clear height of 25 feet for operation down to approx 3.5 Mhz (ends 12 feet for inverted Vee), and 40 feet for 1.8 Mhz (ends 20 feet for inverted Vee). Less height does not necessarily disqualify operation, but may require a tuner on the lowest frequencies. Also, propagation efficiency may be reduced with inadequate height on the lower frequencies.

(3) This is a non-grounded antenna, so surrounding "grounded objects" try to absorb your radiated wave on low frequencies. This may result in poor SWR, and/or poor signal reports. "Grounded objects" include metal towers/poles, roofs, gutters, trees, and the ground itself. When supporting from metal towers/poles, step off (or up) from the metal with a non-metallic support arm 3 to 5 feet. Avoid crossing over roofs when possible. When using trees for supports, try to stay clear of the branches.

(4) When installing in a building or close to a roof, remember that power line and conduit/pipe runs become antennas that may cause coupling problems at certain frequencies. Attempt to stay perpendicular to such objects.

(5) Use the proper feedline. Examples are RG-8X or RG-58, which are 50 ohm impedance. Over 50% of operational problems are coax/ connector problems.

(6) This antenna is omnidirectional when used as a flat top. By using an inverted Vee, you may change the angle of radiation, and therefor affect the distance of transmission at different frequencies. Put simply, the steeper (more vertical than horizontal) an inverted Vee is made, the more it will favor DX, and tend to skip over local stations at low frequencies. As an inverted Vee, you will get more energy radiated off the ends than the broadside.

DEPLOYMENT

(1) Set up your mast poles or other supports. The MP-90 is 90 feet long, so set the end masts 50 feet from the center mast. The MP-65 is 65 feet long, so set the end masts 37 feet from the center mast.

(2) Hang the antenna center assembly to the middle mast by the top, center mounted eyebolt. Wrap the velcro straps from the wire winders around the center assembly and the mast pole to keep it more stable. (Fig 1 and 2)

(3) Take one of the wire spools. Connect both snap hooks to the top and bottom eyebolts on one side of the antenna center assembly. Unwind both wires together while walking towards the end mast. When you get to the end, remove any twisting in the wires, and hook the mast lanyard to the ring. (Fig 3 and 4)

(4) Repeat step 3 for the other side of the antenna.

(5) Tension both of the lanyards enough to hold the antenna wires up, but do not try to remove all sag. The maximum tension is about 25 lbs of pull. Insert the spreaders between the top and bottom wires approx 2 or 3 feet from the end. (Fig 5 and 6)

(6) Connect the 1/4 turn BNC connectors from the antenna wires to the antenna center assembly. The center connector on the bottom is for the coax from the radio. Otherwise, it does not matter which wire leg connects to which connector. (Fig 4 and 7)

(7) Connect the coax from the radio. (Fig 7)

Figure 1

Figure 2

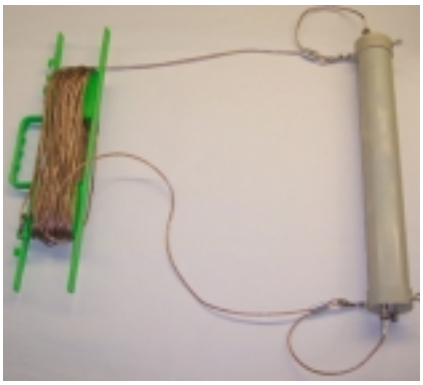

Figure 3

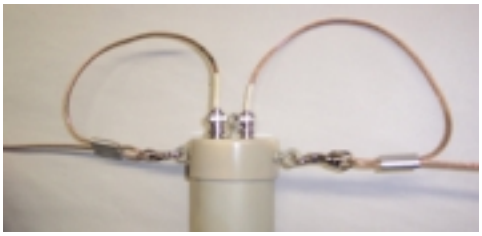

Figure 4

Figure 5

Figure 6

Figure 7 - Bottom View
Arrow points to
radio connection