

AMATEUR RADIO FACT SHEET / DISCUSSION POINTS

TOPIC: EOC HF Antenna Recommendations

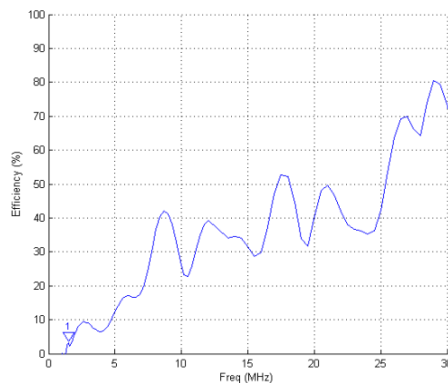
Problem: wide bandwidth requirement

- 3-5% typical antenna resonant bandwidth works well at VHF
- Coverage from 3MHz past 20MHz is 150% bandwidth.....requires special techniques

Typical commercial wide bandwidth HF solutions

- auto tuner to wire antenna
 - lowest loss but may require careful design
 - EOC already owns workable tuner
 - carefully designed would cover both amateur & SHARES frequencies
- multi-wire resistively loaded folded dipole
 - Barker & Williamson <https://www.bwantennas.com/bwds.html>
 - losses may exceed 10dB (resistor absorbs energy)
 - loss system results in good SWR across wide frequency bands
- transformer fed end-fed antenna
 - Alaris inverted vee <http://www.alarisantennas.com/index.php?q=catalogueproductinfo,77,HF-Inverted-V-Antenna>
 - losses exceed 10dB (transformers are lossy at poor matching frequencies)
 - Current EOC 24-foot vertical end-fed antenna is electrically somewhat similar, “short” for important bands

EFFICIENCY:



MAST TOP PHOTOGRAPH:



Local experience with three inexpensive broadband HF antennas

- Broadband non-resonant inverted-V 3.5-18 MHz, two traps, auto-tuner, public WINLINK 24/7
- Broadband non-resonant sloping dipole 3-18 MHz, two traps, auto-tuner, federal SHARES, 24/7
- Broadband off-center fed WINDOM 3.5-18 MHz, one trap (10MHz), auto-tuner
- EOC already owns useful auto-tuner