Northeast
HamXposition

Effective Antennas for Contesting

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mini-CTU
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- There is no optimum contest antenna plan
- You configure your own based on your goals
- High Power, 100 watts, or QRP
- CW, SSB; all bands or single band entry
- DX, domestic contests, or both
- Single tower, multiple towers, and/or wires
- Entry class single op, SO2R, Multi-Single, or MM
- How to compensate for solar activity

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- Plan an operating strategy based on your goals
- Map out your bands and times for best results
- Include alternate plans for solar variations
- Look for strengths that can be exploited or weaknesses that can be overcome
- Consider the terrain near your antennas
- Monobanders, tribanders, and/or triplexors
- Single antennas or stacks?

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- Configure your antenna system for the solar conditions that will exist in the near future
- Expect 10 meters to fade and the low bands to be more active
- Yet, if 10 meters opens, you must be on that band.
- Plan your 160 antenna and operating times to take advantage of Europe's Grey line

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- 10 meters is a daytime only band
- Optimum antenna heights varies day to day
- Sometimes stacks at 35'/70' are optimum
- Other times, the higher the antenna, the better
- Expect skew path to Europe, especially during disturbed conditions
- If 10 doesn't open to Europe, get as any zones and counties as possible after 15 slows down

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- 15 meters is a good band to boost your score
- Optimum antennas heights varies hour to hour
- The band opens with low angles, which favors higher antennas
- As signals peak, stacks at 45' and 90' are very effective
- During disturbed conditions, expect skew path to Europe; aim at Africa!

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- In the early 1980's I built a stacked antenna for 10 and 15 meters that I called a "Baby Bertha"
- W2PV 4 over 4 on 10 meters at 35' and 70'
- Cushcraft 4 over 4 on 15 meters at 40' and 75'
- One rotator at 35' with a swinging gate.
- 40' long water pipe mast outside the tower extended above the tower top
- The upper antennas had no swinging gate

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- I considered this my primary antenna for the Sweepstakes, and a quick switch option for Carribean and SA
- Yet in a Multi-Two entry during the waning years of solar cycle 21, 15 meters was open to Europe skew path only toward Africa
- Using these low stacks we had more 15 meter QSOs than any of the Multi-Multis!

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- 20 meters will be the most important band as the solar cycle winds down.
- QSO rates in the early morning can be high when using an antenna at 100'
- Afternoon QSO rates are lower, but consistent, with an antenna at 70' or so.
- A stack of two antennas in the 55'-110' range is optimum

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- Monobanders vs Tribanders?
- I did experiments in the 1970's using two 4 element monobanders with an ULB switch
- The best Tribander at the time was a TH6-DX
- K1VR pioneered stacked Tribanders
- Tribanders at 40', 80', and 120'; perfect!
- Consider rotating the lower pair separately

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- Selecting stacked Tribanders?
- The old Stackmatch is now sold by Hamation
- The DX Engineering Prostack for SO2R
- Roll your own is possible using QST articles
- The lowest pair can be fed always combined
- Very effective when 20 is open to Europe and Asia simultaneously

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- Selecting stacked Tribanders?
- SO2V mode needs no Triplexor or filters
- SO2R mode needs two radios, two amplifiers, a triplexor, and a high isolation antenna matrix, but you must aim every band in the same direction
- Monobanders for either 20 or 15 with tribanders can add flexibility

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- 40 meters is dominated at night by high yagi antennas, but there are workarounds
- CW ops can run Europe in the late afternoon using a wire beam at ~75'
- Wire beams can be stacked horizontally!
- After dusk a 4-square beats a low wire beam
- SS ops will want a daytime dipole at ~ 45'

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- 80/75 meters can be effective with dipoles, inv-V, inv-L, a sloper, a delta loop, and even an EFHW, but higher QSO rates and more rare zones are possible with a 4-square.
- It is tricky to get a 4 square dialed in, especially with nearby towers or wires
- For SS a ~50' high dipole is fine
- A delta loop with reflector is a good option

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- Practical 160 antennas are a very high inv-V, an inv-L with radials, a sloper, or a tower mounted K2KQ style V-pole dipole with folded in upper and lower sections.
- It is tricky to get a 4 square tuned properly, especially with nearby towers or wires
- Most effective is a ~1/3 wave central tower with 4 parasitic reflector and director wires

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- Remember that a good antenna plan needs to adapt to your operating style and the current solar conditions
- A better antenna plan allows you to vary your operating strategy to maximize your score
- An optimum antenna plan can be fun to design and an fantastic experience to operate!