VK5DJ's YAGI CALCULATOR

Yagi design frequency =572.77 MHz
Wavelength =523 mm
Parasitic elements contacting a square section metal boom 25.00 mm across.
Folded dipole mounted same as directors and reflector
Director/reflector diam =9.5 mm
Radiator diam =9.5 mm

ELEMENT LENGTHS AND SPACING
The abbreviation "IT" means "Insert To", it is the construction distance from the element tip to the edge of
the boom for through boom mounting

Reflector
272 mm long at boom position = 30 mm (IT = 123.5 mm)

Radiator
Single dipole 240 mm tip to tip at boom posn =135 mm (IT = 107.5 mm)
Folded dipole 265 mm tip to tip at boom posn =135 mm (IT = 120.0 mm)

Dir (no.)	Length (mm)	Spaced (mm)	Boom position (mm)	IT (mm)	Gain (dBd)	Gain (dBi)
1	235	39	174	105.0	5.4	7.6
2	232	94	268	103.5	6.9	9.0
3	229	113	381	102.0	8.1	10.2
4	226	131	512	100.5	9.1	11.2
5	224	147	658	99.5	9.9	12.1
6	221	157	815	98.0	10.7	12.8
7	219	165	980	97.0	11.3	13.4
8	217	173	1153	96.0	11.8	14.0
9	215	181	1333	95.0	12.3	14.5
10	214	188	1522	94.5	12.8	14.9

Spacings measured centre to centre from previous element
Tolerance for element lengths is +/- 2 mm

Boom position is the mounting point for each element as measured
from the rear of the boom and includes the 30 mm overhang.The total boom length is 1552 mm including
two overhangs

The beam's estimated 3dB beamwidth is 36 deg

A half wave 4:1 balun uses 0.75 velocity factor RG-6 (foam PE) and is 196 mm long plus leads

Here are some construction details for a folded dipole

Measurements are taken from the inside of bends
Folded dipole length measured tip to tip = 265mm
Total rod length =575mm
Centre of rod=287mm
Distance HI=GF=101mm
Distance HA=GE=140mm
Distance HB=GD=180mm
Distance HC=GC=287mm
Gap at HG=13mm
Bend diameter BI=DF=50mm

If the dipole is considered as a flat plane (see ARRL Antenna Handbook) then its resonant frequency is
less than the flat plane algorithm's range of 10:1

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    B           C           D
   /-------------|------------\
  A                             E
   \-------------| |-------------/
    I           H G          F
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