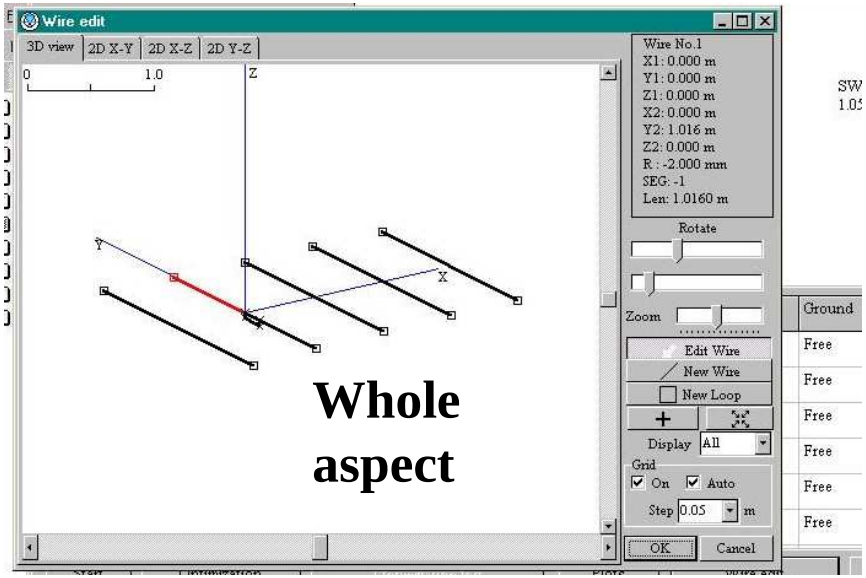
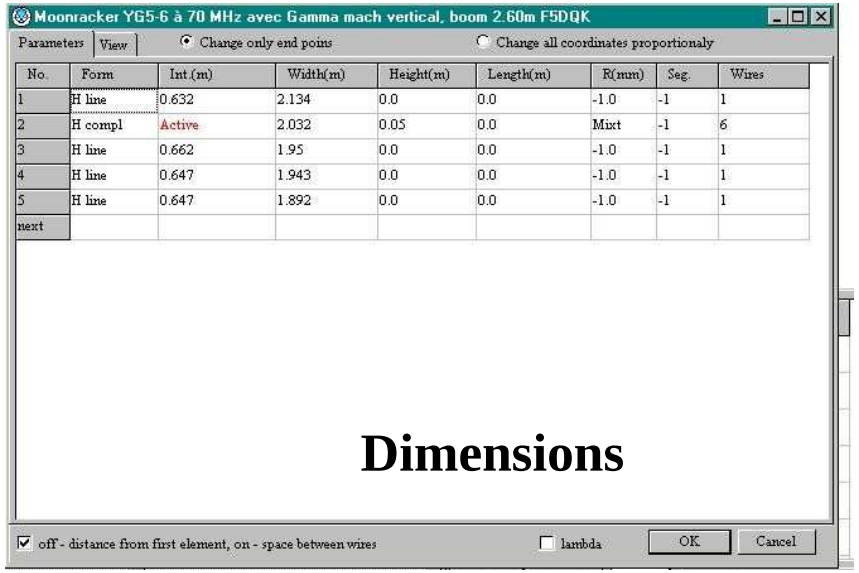
Moonracker YG5-4 transformations

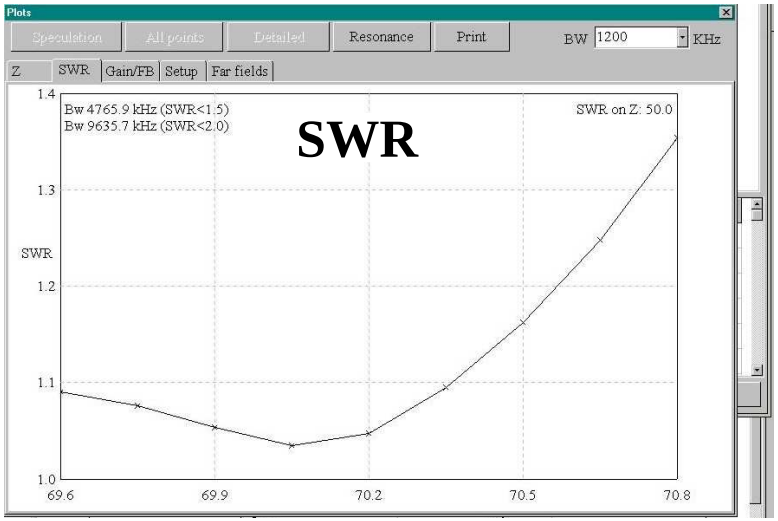
1/ Original Moonracker YG5-4
2/ YU7EF transformations
3/ SWR meas

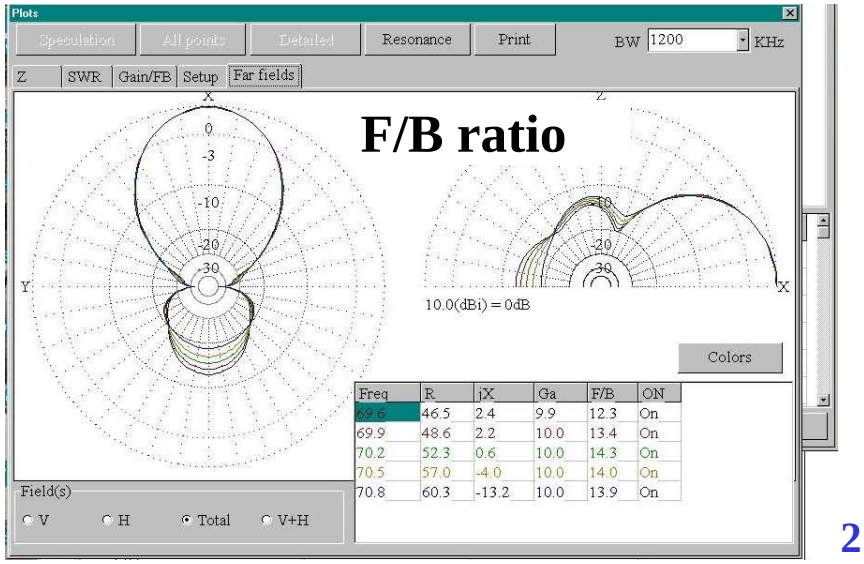
Original Moonracker YG5-4

Measures at 70.2 MHz using Mmana simulator





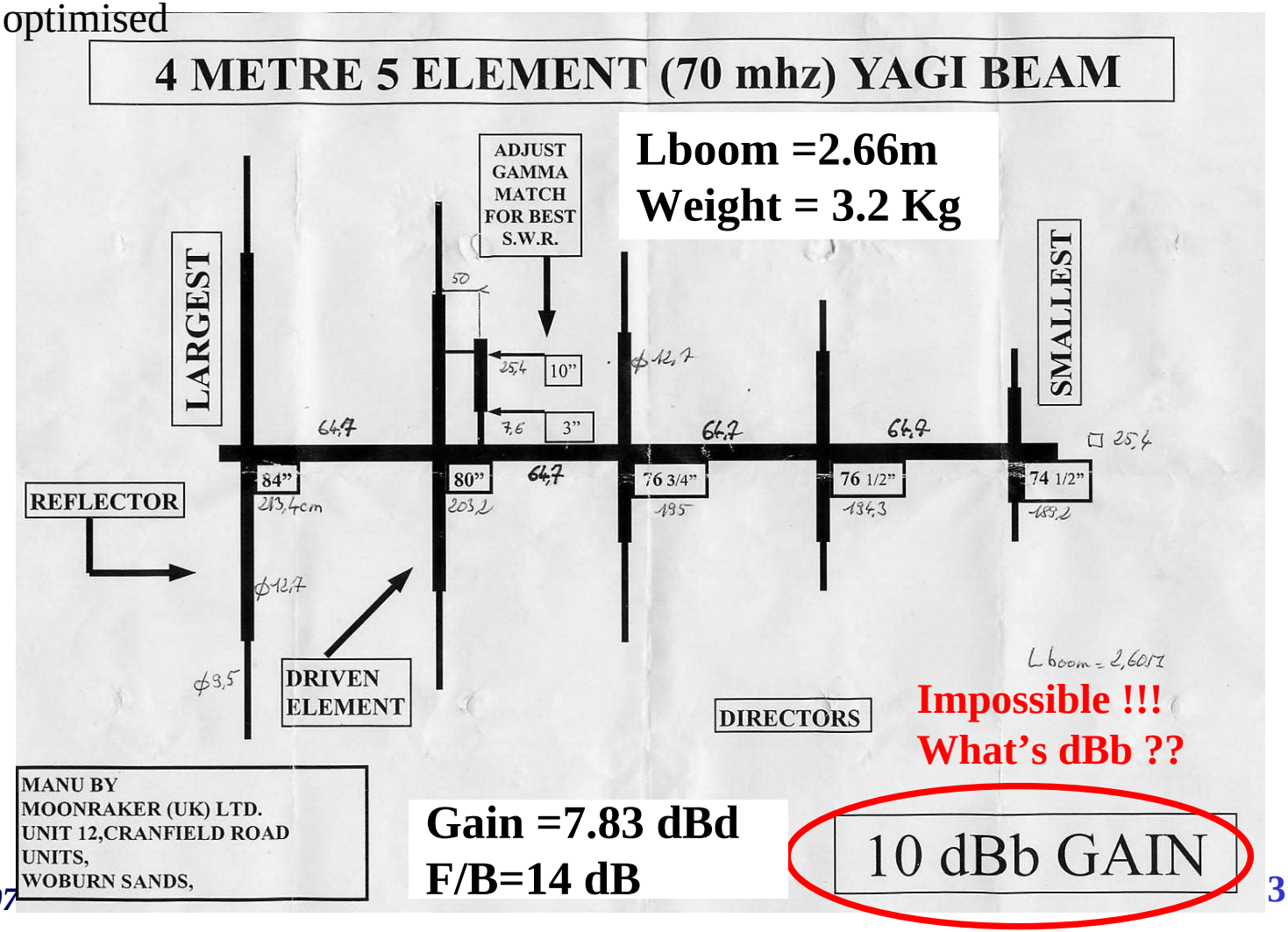




Original Moonracker YG5-4

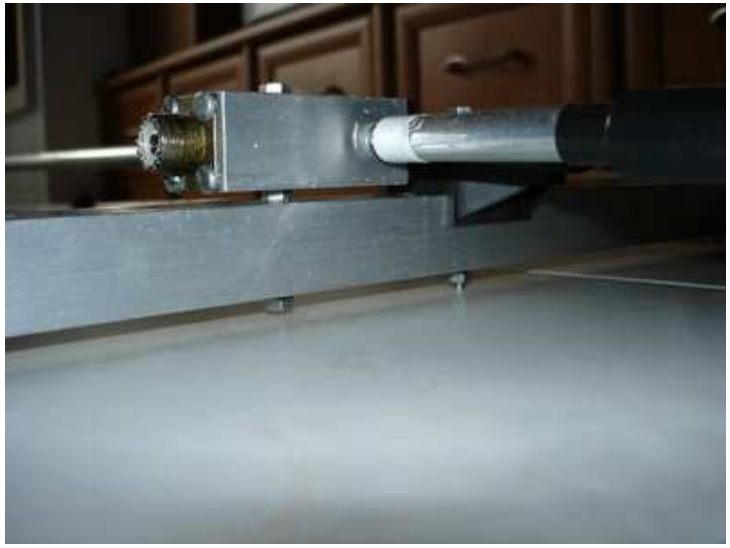
Original Moonracker design

- Equal spacement between elements
- Gamma Mach feed (serious problems with humidity and torque)
- F/B ratio not optimised



Original Moonracker YG5-4

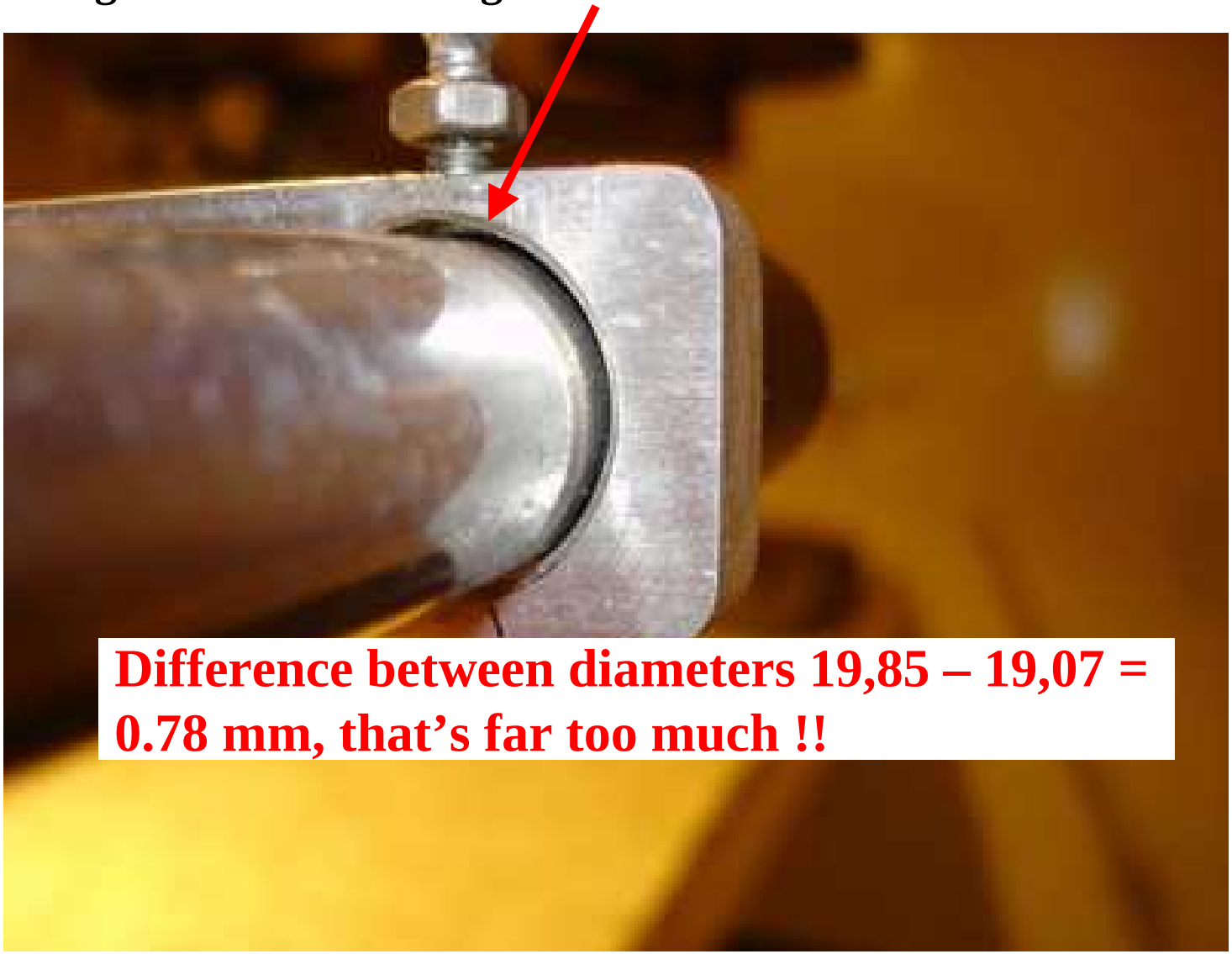
Gamma mach feeding



Gamma capacitor

Original Moonracker YG5-4

Zoom on gamma mach feeding : too much distance !!

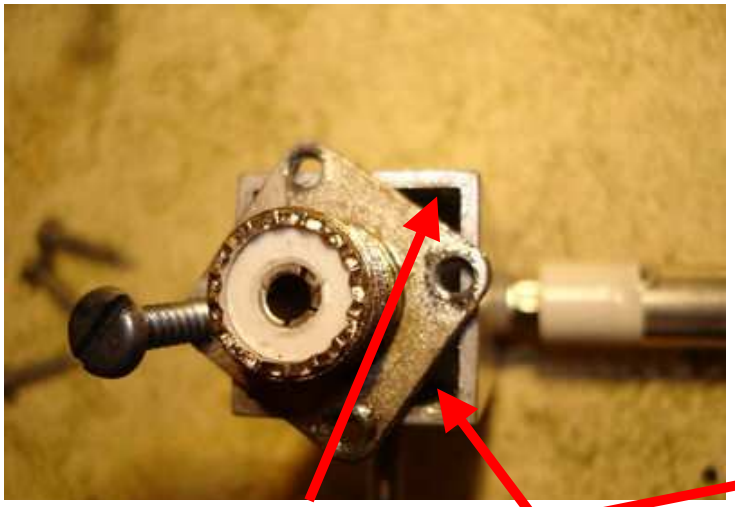


Original Moonracker YG5-4

Zoom on rear of feeding box

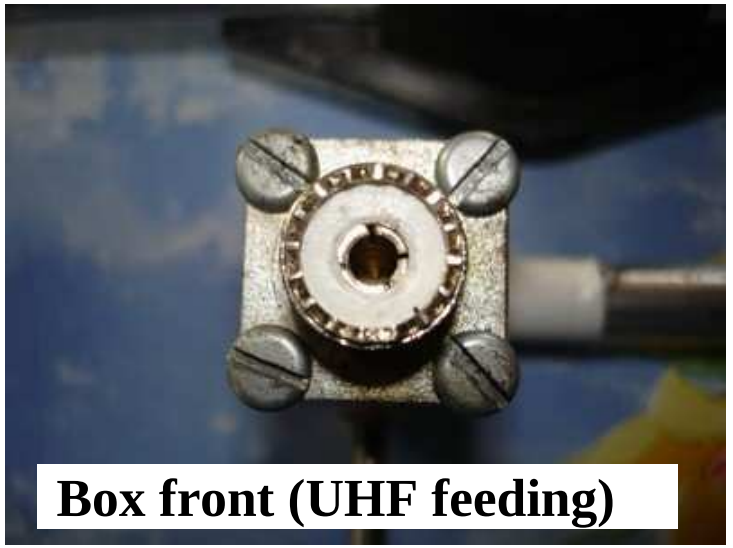
Original Moonracker YG5-4

Zoom on front of the feeding box : All the water can enter here !!



Metal screw WITHOUT dedicated nut part (very ugly) !!

Shield contact NOT reliable in the time !



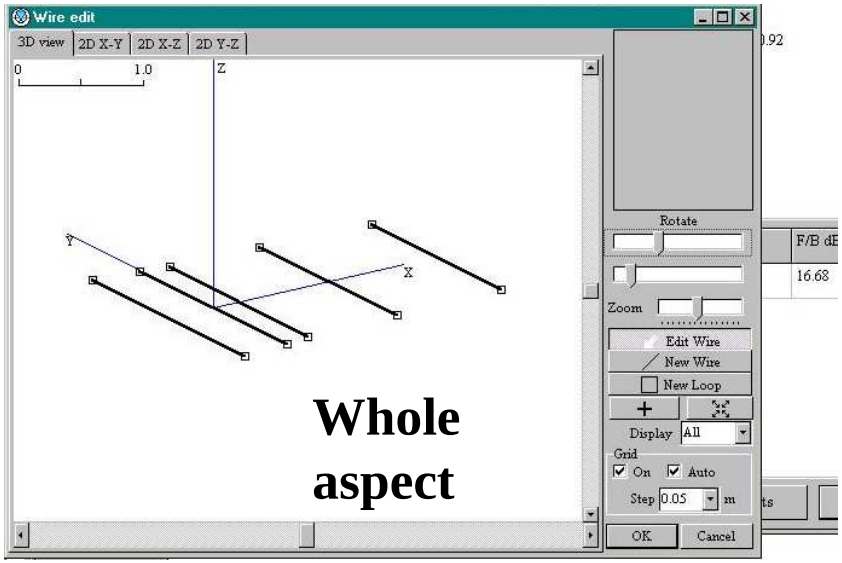
Box front (UHF feeding)

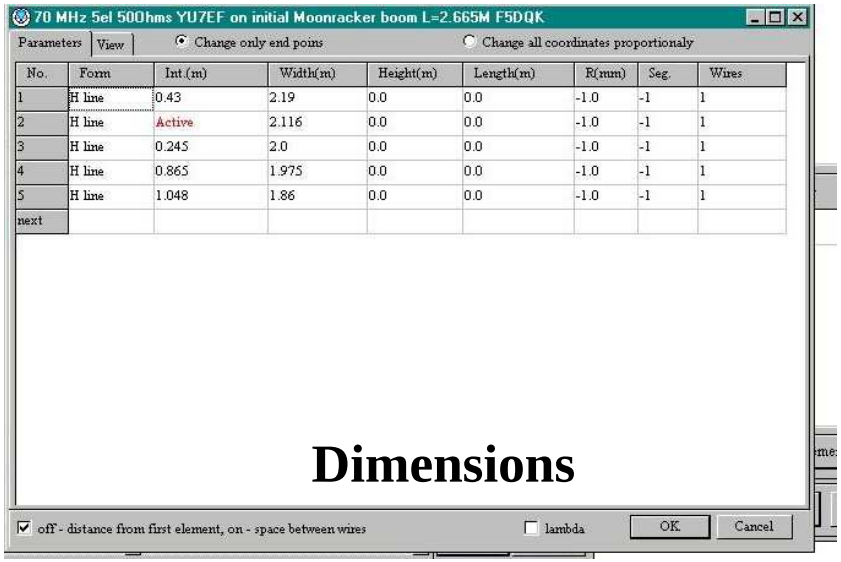
Original Moonracker YG5-4

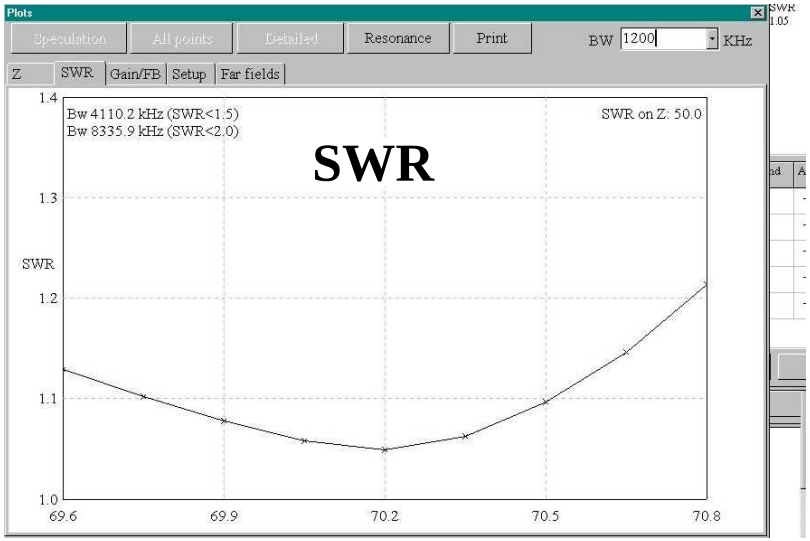
Initial elements fixing on boom and adjusting

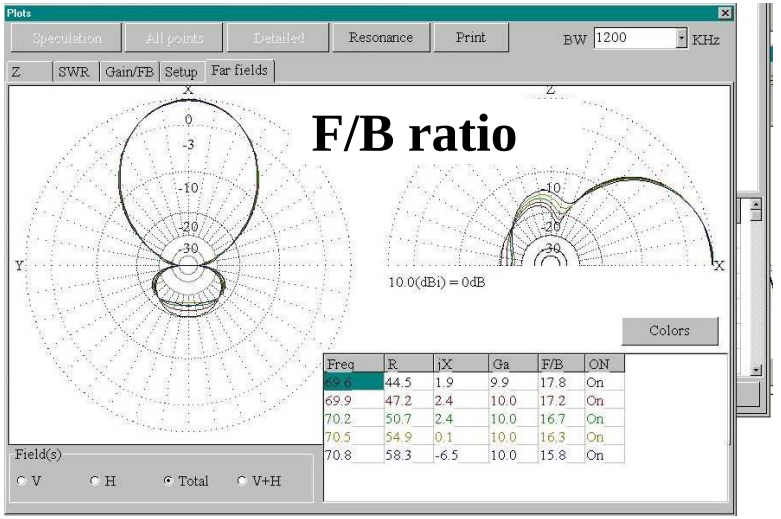
Moonracker YG5-4 transforming from YU7EF

Measures at 70.2 MHz using Mmana simulator



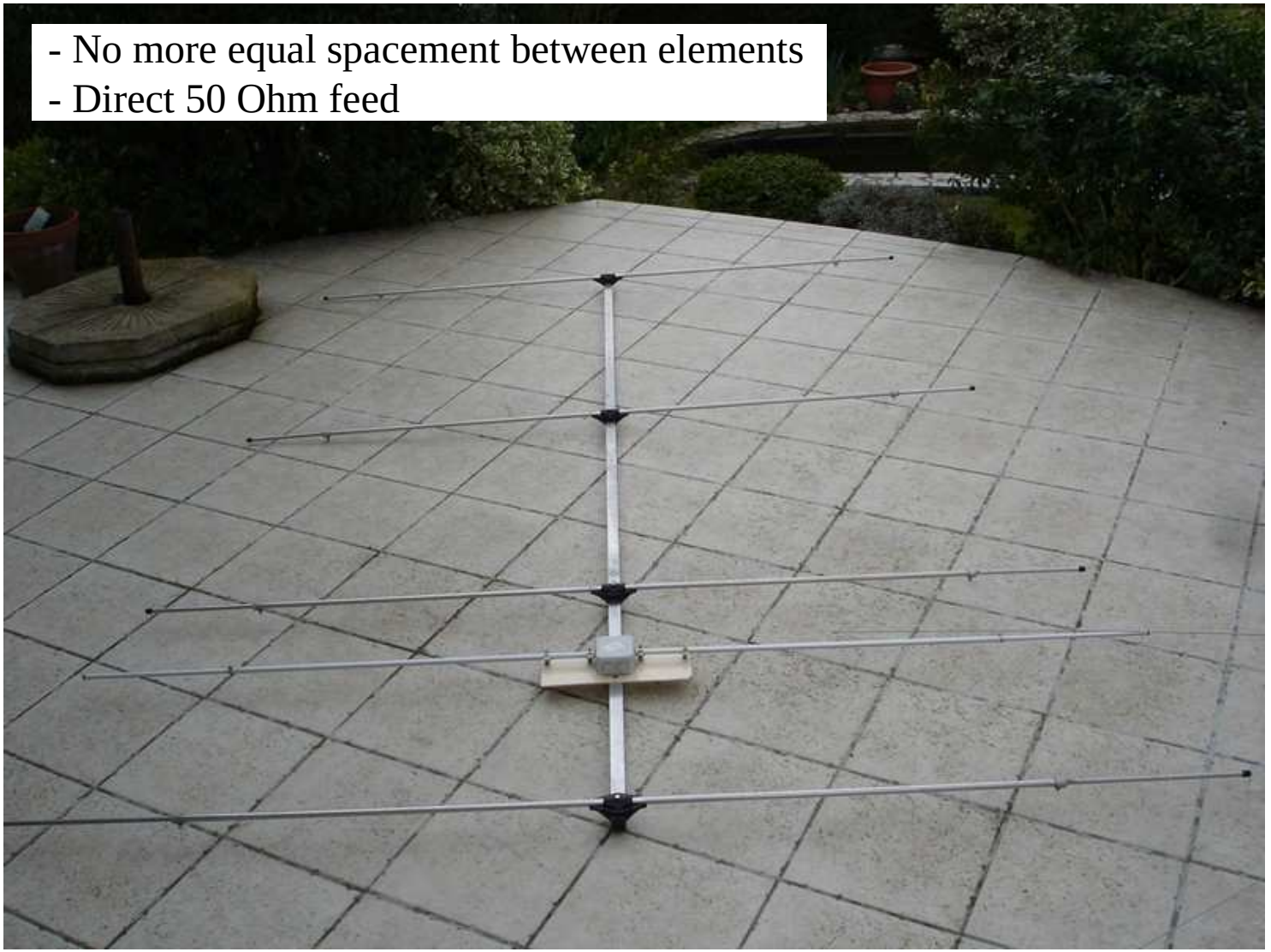






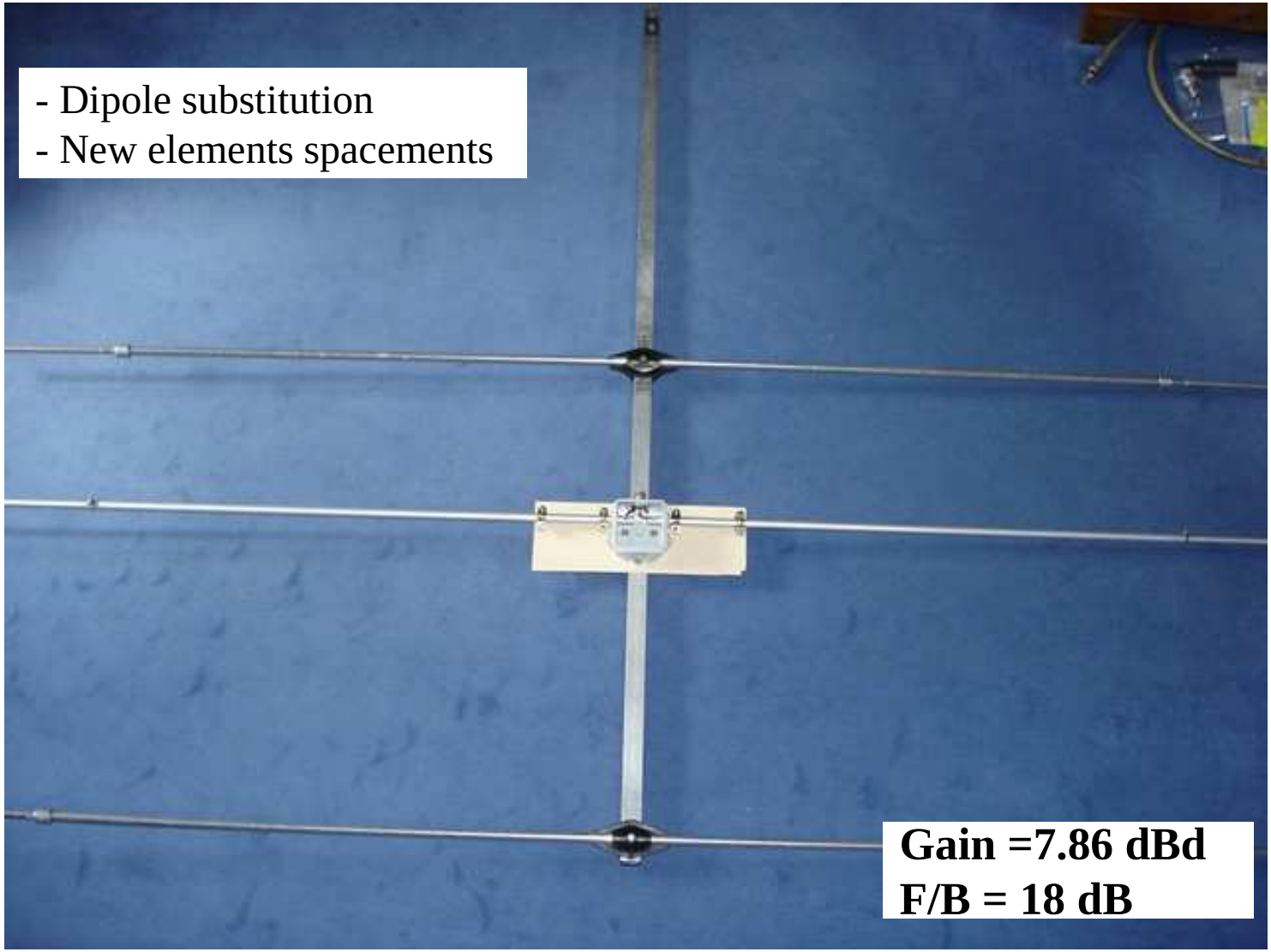
Moonracker YG5-4 transforming from YU7EF

Finished antenna



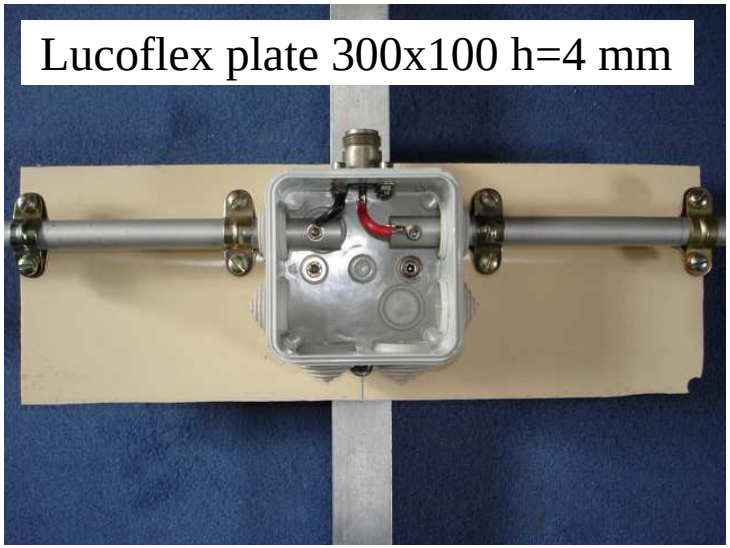
Moonracker YG5-4 transforming from YU7EF

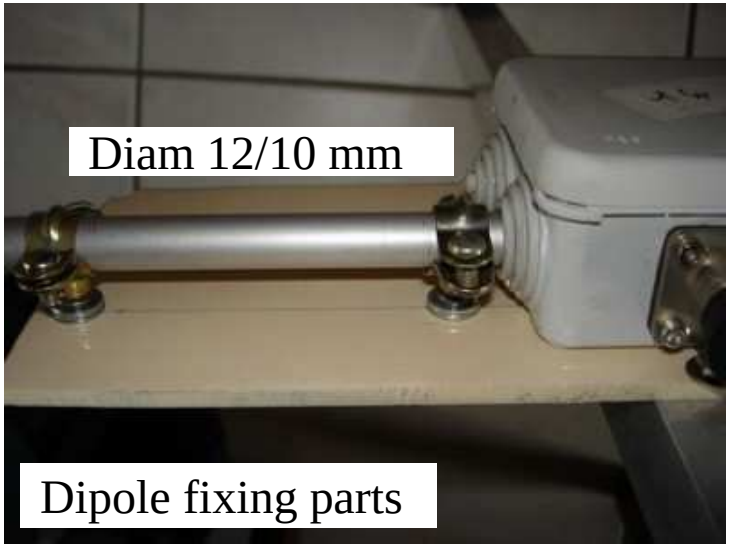
Construction of a brand new isolated dipole

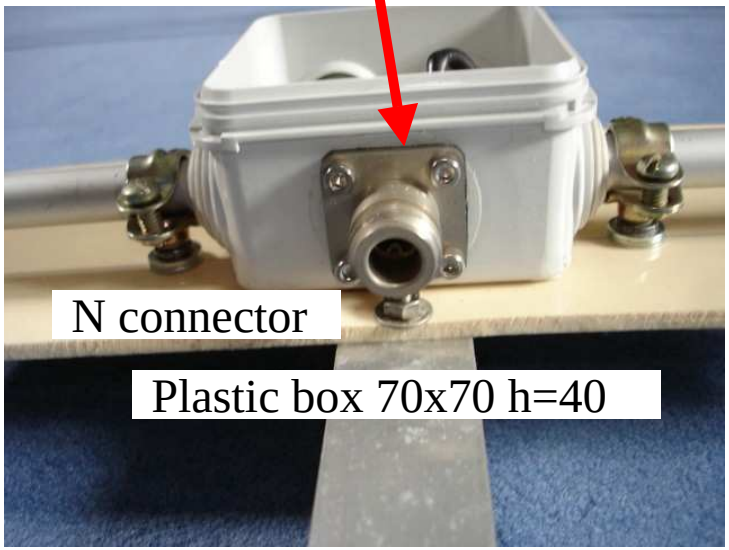


Moonracker YG5-4 transforming from YU7EF

Dipole feeding details

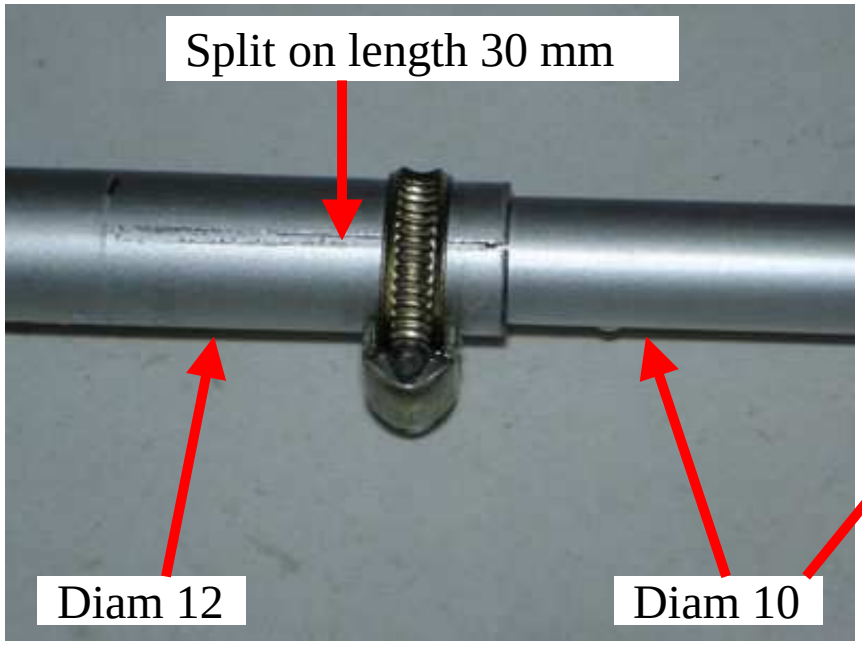






Moonracker YG5-4 transforming from YU7EF

50 Ohm dipole ends



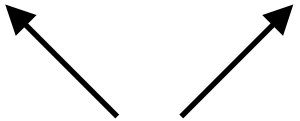
Moonracker YG5-4 : last improvements against rain

Moonracker YG5-4 measures

SWR with MFJ-269 analyser	**2**	**1.5**	**1.2**	**1**	**1.2**	**1.5**	**1.5**
Direct, mast at 3 meter heigth	69.5	69.5	70.18	70.5	70.8	70.95	70.95
+1 cm on all elements	69.25	69.25	69.83	70.28	70.5	70.68	70.68
Yagi now at 11 meter heigth	**69.1**	**69.1**	**69.96**	**70.3**	**70.56**	**70.77**	**70.77**
+2 cm on all elements - coming	67.5	67.5	67.8	70.12	70.32	70.49	70.49
New meas after 3 weeks	66.49	67.45	68.01	70.21	70.46	70.69	71.02

Moonracker YG5-4 final dimensions

Elements	El spacement (mm)	Real el dims (mm)	Simulated el dims (mm)
Ref 4	0	2198	2190
Dipole 4	430	2128	2116
D4a	675	2011	2000
D4b	1540	1986	1975
D4c	2588	1870	1860



Difference : about 10 mm

Moonracker YG5-4 : boomlength + 40 cm

Initial dims

Gain = 7.77 dBd
F/B = 13.73 dB

No.	Form	Int.(m)	Width(m)
1	H line	0.0	2.134
2	H line	0.647	2.032
3	H line	1.294	1.95
4	H line	1.941	1.943
5	H line	2.588	1.892

1st update

Gain = 7.86 dBd
F/B = 16.68 dB

No.	Form	Int.(m)	Width(m)
1	H line	0.0	2.19
2	H line	0.43	2.116
3	H line	0.675	2.0
4	H line	1.54	1.975
5	H line	2.588	1.86

Elements at equal spacements

Last updates

Boomlength + 312 mm

Gain = 8.35 dBd
F/B = 22 dB

No.	Form	Int.(m)	Width(m)
1	H line	0.0	2.162
2	H line	0.383	2.056
3	H line	0.619	2.004
4	H line	1.569	1.96
5	H line	2.9	1.85

Boomlength + 342 mm

Gain = 8.39 dBd
F/B = 22 dB

No.	Form	Int.(m)	Width(m)
1	H line	0.0	2.15
2	H line	0.384	2.052
3	H line	0.612	2.004
4	H line	1.584	1.96
5	H line	2.93	1.847

Boomlength + 402 mm

Gain = 8.47 dBd
F/B = 20.28

No.	Form	Int.(m)	Width(m)
1	H line	0.0	2.138
2	H line	0.391	2.036
3	H line	0.611	2.004
4	H line	1.584	1.96
5	H line	2.99	1.847

70 MHz 5el 50Ohms YU7EF on initial Moonracker

Parameters | View | Change only end poins

No.	Form	Int.(m)	Width(m)
1	H line	0.0	2.138
2	H line	0.391	2.036
3	H line	0.611	2.004
4	H line	1.584	1.96
5	H line	2.99	1.847