

ö	A	öö	B	öö	C	öö	D	öö	E	öö	F	öö	G	öö	H	ö
10	KAPMATT		ANTENNER				ALLA	MÄTT	I	MM						
20			MITTDEL													KOMMENTARER
40							IN									
50	28	MM		490												
60	22	MM		1490												GENOMGÅENDE I 28 MM RÖR
70	19	MM		490		70							70	MM		"
80	15	MM		740		60							60	MM		"
90																
100	12	MM	INSKJUTES	60	MM											
110	MITTDELSMÄTT					3690	MM									
120																
130	ELEMENT	FÄRG			328		12	MM	428		12	MM	528		12	MM
140																
150	REFL	SVART		5450		940		5540		985		5550		990		
160	DRIV	GUL		5170		800		5180		805		5130		780		
170	1:A	DIR BRUN		4870		650		4960		695		4910		670		
180	2:A	DIR GRÖN		0				4820		625		4820		625		
190	3:DJE	DIRRÖD		0		0						4700		565		
200	4:DE	DIR BLÅ		0		0						0				
210	5:E	DIR		0		0						0				
220																
230																
240																
250	ELEMENT	FÄRG		628		12	MM	728		12	MM	928		12	MM	
260																
270	REFL	SVART		5600		1015		5380		905		5540		985		
280	DRIV	GUL		5180		805		5060		745		5180		805		
290	1:A	DIR BRUN		5040		735		4640		535		4960		695		
300	2:A	DIR GRÖN		4900		665		4580		505		4820		625		
310	3:DJE	DIRRÖD		4820		625		4520		475		4700		565		
320	4:DE	DIR BLÅ		4760		595		4480		455		4650		540		
330	5:E	DIR VIT		0				4440		435		4600		515		
340												4550		490		
350												4500		465		
360																
370																
380	ELEMENT	FÄRG		DU03		12	MM									
390																
400	REFL	SVART		5740		1085										
410	DRIV	GUL		5380		905										
420	1:A	DIR BRUN		5140		785										
430	2:A	DIR GRÖN		5000		715										
440																
450																

OBS! Holländarn Special 28-27 mhz  
 150 längre (alla 28 mhz)

ö	A	öö	B	öö	C	öö	D	öö	E	öö	F	öö	G	öö	H	ö
10	KAP	MATT	<del>30-100</del>	ANTENNER		ALLA	MATT	I	MM							
20																
30			MITTDEL													KOMMENTARER
40							IN									
50	28	MM		490												
60	22	MM		1490												GENOMGÅENDE I 28 MM RÖR
70	19	MM		490			70									" 70 MM
80	15	MM		740			60									" 60 MM
90																
100	12	MM	INSKJUTES	60	MM											
110	MITTDELSMATT					3690	MM									
120																
130	ELEMENT	FÄRG				328	12MM		428		12MM		528		12MM	
140																
150	REFL	SVART				5450	940		5540		985		5550		990	
160	DRIV	GUL				5170	800		5180		805		5130		780	
170	1:A	DIR BRUN				4870	650		4960		695		4910		670	
180	2:A	DIR GRÖN				0			4820		625		4820		625	
190	3:DJE	DIR RÖD				0			0				4700		565	
200	4:DE	DIR BLÅ				0			0				0			
210	5:E	DIR				0			0				0			
220																
230																
240																
250	ELEMENT	FÄRG				628	12MM		728		12MM		928		12MM	
260																
270	REFL	SVART				5600	1015		5380		905		5540		985	
280	DRIV	GUL				5180	805		5060		745		5180		805	
290	1:A	DIR BRUN				5040	735		4640		535		4960		695	
300	2:A	DIR GRÖN				4900	665		4580		505		4820		625	
310	3:DJE	DIR RÖD				4820	625		4520		475		4700		565	
320	4:DE	DIR BLÅ				4760	595		4480		455		4650		540	
330	5:E	DIR VIT				0			4440		435		4600		515	
340													4550		490	
350													4500		465	
360																
370																
380	ELEMENT	FÄRG				DU03	12MM									
390																
400	REFL	SVART				5740	1085									
410	DRIV	GUL				5380	905									
420	1:A	DIR BRUN				5140	785									
430	2:A	DIR GRÖN				5000	715									
440																
450																

OBS! Holländarn Special 28-27 mhz  
 150 längre (alla 28 mhz)

ö A öö B öö C öö D öö E öö F öö G öö H ö

16KAPMÄTT 21 MHz ANTENNER ALLA MÄTT I MM

2c  
3c MITTDEL KOMMENTARER

	MITTDEL	IN	GENOMGÅENDE I 28 MM RÖR				
5028 MM	490						
6022 MM	2000						
7019 MM	990	70				70 MM	
8015 MM	740	60				60 MM	

10012 MM INSPJUTES 60 MM

116 MITTDELSMÄTT 5200MM

	FÄRG	321	12MM	421	12MM	521	12MM
136 ELEMENT	FÄRG	321	12MM	421	12MM	521	12MM
156 REFL	SVART	7260	1090	7400	1160	7420	1170
166 DRIV	GUL	6890	905	6850	885	6880	900
1701:A DIR	BRUN	6490	705	6540	730	6570	745
1802:A DIR	GRÖN	0		6440	680	6450	685
1903:DJE DIR	RÖD	0		0		6450	685
2004:DE DIR	BLÅ	0		0		0	
2105:E DIR		0		0		0	

	FÄRG	621	12MM	721	12MM	DU026	12MM
260 ELEMENT	FÄRG	621	12MM	721	12MM	DU026	12MM
270 REFL	SVART	7420	1170	7420	1170	7400	1160
280 DRIV	GUL	6880	900	6880	900	6890	905
2901:A DIR	BRUN	6570	745	6570	745	6640	780
3002:A DIR	GRÖN	6450	685	6450	685	6440	680
3103:DJE DIR	RÖD	6450	685	6450	685	0	
3204:DE DIR	BLÅ	6450	685	6450	685	0	
3305:E DIR	VIT	0		6450	685	0	

34c  
35c

	A	B	C	D	E	F	G	H	
10	10KAPMATT 14 MHz ANTENNER			ALLA MATT I MM					
20	LANG MITTDEL			KORT MITTDEL		KOMMENTAREP			
30				IN					
40	5031 MM	1650		1650		GENOMGÅENDE I 31 MM RÖRET			
50	5025 MM	2010		2500		INSKJUTES 70 MM			
60	7622 MM	950	70	950		"			
70	8019 MM	1350	50	1000		50 MM			
80	9615 MM	1000	60	1000		60 MM			
90	11012 MM INSKJUTES 60 MM			TOTALLENGD &		L/2		KOMMENT	
100	120	130	140	150	160	170	180	190	
110	REFLEKTOR	925	SVART	11080	5540			PLASTHATT	
120	REF 314b	995		10900	5450	OBS!!!!			
130	DRIVEL	625	GUL	10360	5180			På ALLA	
140	1701:A DIP		BRUN	1010	9920	4960	12 MM RÖR		
150	1801:A 314b OBS!!	ENDAST	314b	920	9740	4870	OBS!!!!		
160	1802:A DIP		GRÖN	870	9640	4820			
170	2007:DJE DIP		RÖD	750	9400	4700			
180	1808:HE DIP		BLÅ	700	9300	4650			
190	220	230	240	250					

Duo 2. 5 ek

Isolator 104,5 mm

21 sec      Dur.

$$\frac{300}{2413} = 11.18$$

$$7 \quad 6.62$$

$$8 \quad 3.88$$

$$10 \quad 2.51$$

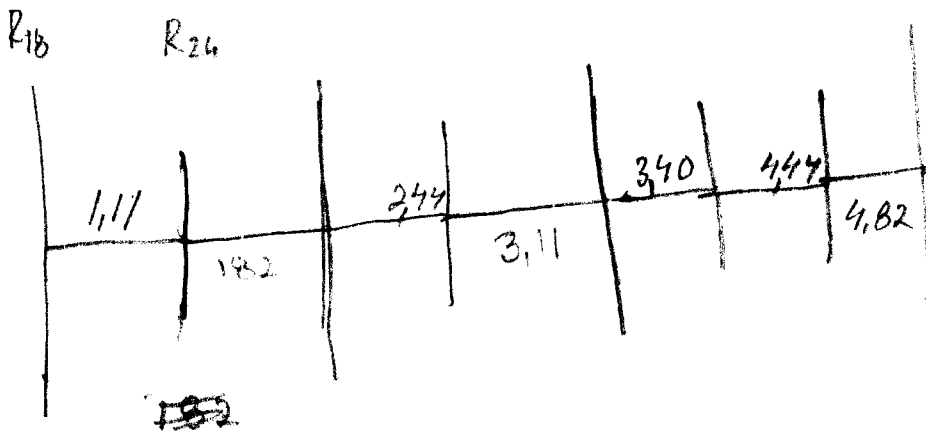
$$12 \quad 2.08 \quad \frac{52}{40} = 10.48$$

$$15 \text{ m} \quad \frac{300}{5.7} = \frac{52.63}{1.30} = 40.48$$

$$\frac{52.63}{2.14} = 24.59$$

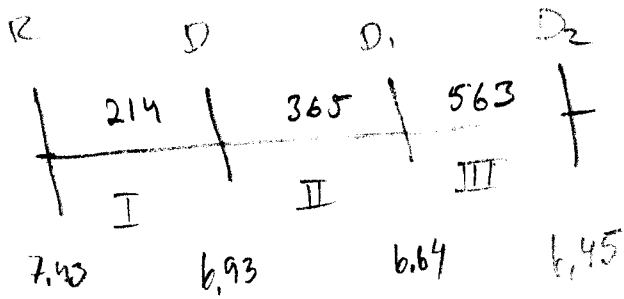
$$18 \quad \frac{300}{6.68} = \frac{44.91}{1.0} = 44.91$$

$$\frac{44.91}{1.0} = 44.91$$



21 ml 4el

$$\frac{300}{21,150} = 14,184$$

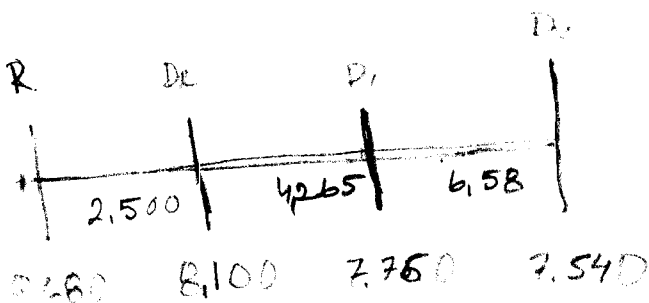


$$\text{I} \quad \frac{14,184}{2,14} = \underline{\underline{6,6282}}$$

$$\text{II} \quad \frac{14,184}{3,65} = 3,8861$$

$$\text{III} \quad \frac{14,184}{5,63} = 2,5194$$

18 ml



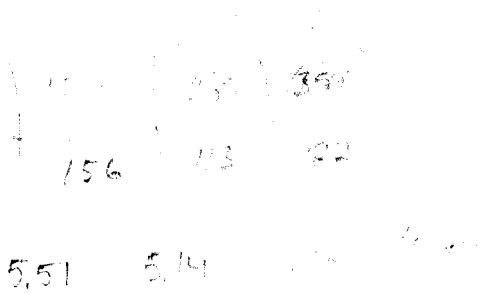
$$\frac{300}{18,100} = 16,57$$

$$\text{I} \quad \frac{16,57}{6,6282} = 2,50$$

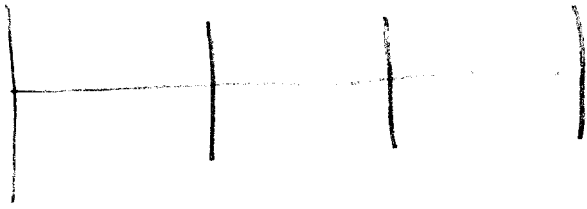
$$\text{II} \quad \frac{16,57}{3,8861} = 4,265$$

$$\text{III} \quad \frac{16,57}{2,5194} = 6,578$$

28 ml



17 m 18,1 ml



Bom 6,67

	84	72	77	34	122	42
130	214	286	365	399	521	563
1	2	3	4	5	6	7
			113			

$\frac{200}{29,59} =$  PUC

I  $\frac{200}{29,59} = 6,74$

II  $\frac{1016}{113} = 9,015$

III  $\frac{1016}{113} = 9,015$   
 $\frac{1016}{113} = 9,015$

	6580
	4265
	2500
1816	
1300	
	418

R.8	R.20	D.8	D.24	D.18	D.10	D.10
2500	1860	4205	3100	4780	510	

$$\frac{5.2}{1.3} = 4.38$$

$$\frac{5.7}{2.14} = 2.66$$

$$\frac{5.7}{2.86} = 1.99$$

$$\frac{5.7}{3.65} = 1.561$$

$$\frac{5.7}{2.99} = 1.925$$

$$\frac{5.7}{5.17} = 1.094$$

$$\frac{5.2}{5.15} = 1.0088$$

$$\frac{6.68}{2.66} = 2.51$$

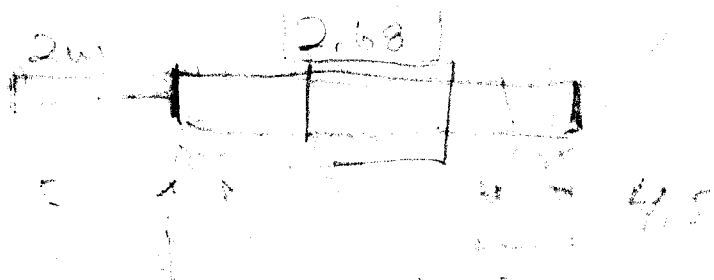
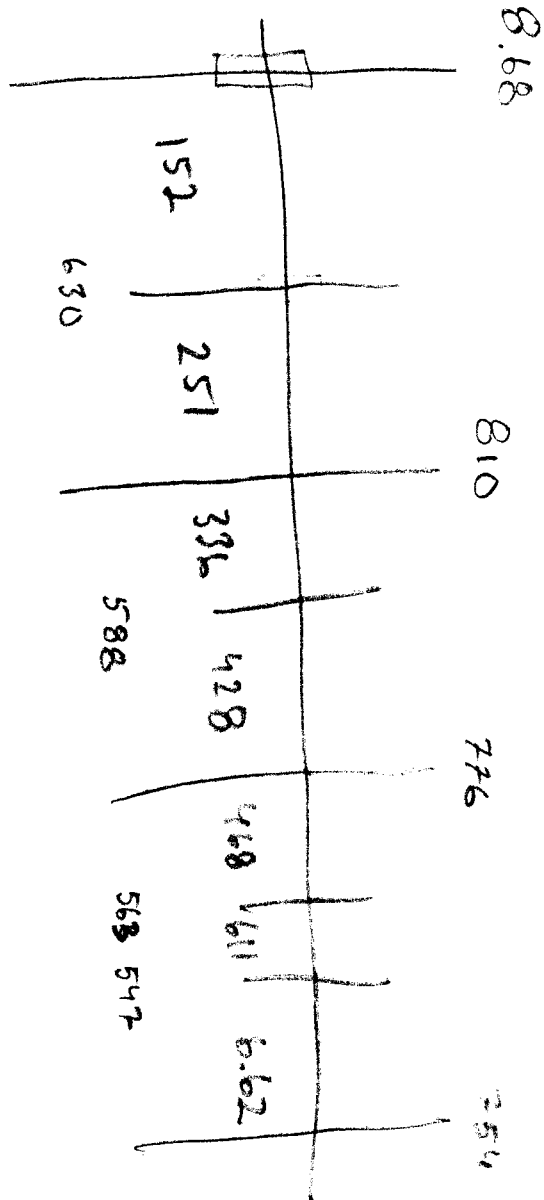
$$\frac{6.68}{2.99} = 3.36$$

$$\frac{6.68}{1.561} = 4.28$$

$$\frac{6.68}{1.428} = 4.68$$

$$\frac{6.68}{1.094} = 6.11$$

$$\frac{6.68}{1.0088} = 6.62$$



Duo 10/15

$$\frac{300}{5.7} = 52.631$$

$$I \quad \frac{52.631}{1.30} = 40.48$$

$$5 \quad \frac{52}{3.99} = 13.99$$

$$2 \quad \frac{52.631}{2.14} = 24.59$$

$$6 \quad \frac{52}{5.21} = 10.10$$

$$3 \quad \frac{52}{2.86} = 18.40$$

$$7 \quad \frac{52}{5.63} = 9.348$$

$$4 \quad \frac{52}{3.65} = 14.419$$

Duo 17/12

$$I \quad \frac{300}{6.68} = 44.91$$

$$1 \quad \frac{44}{1.1}$$

$$6 \quad 4.44$$

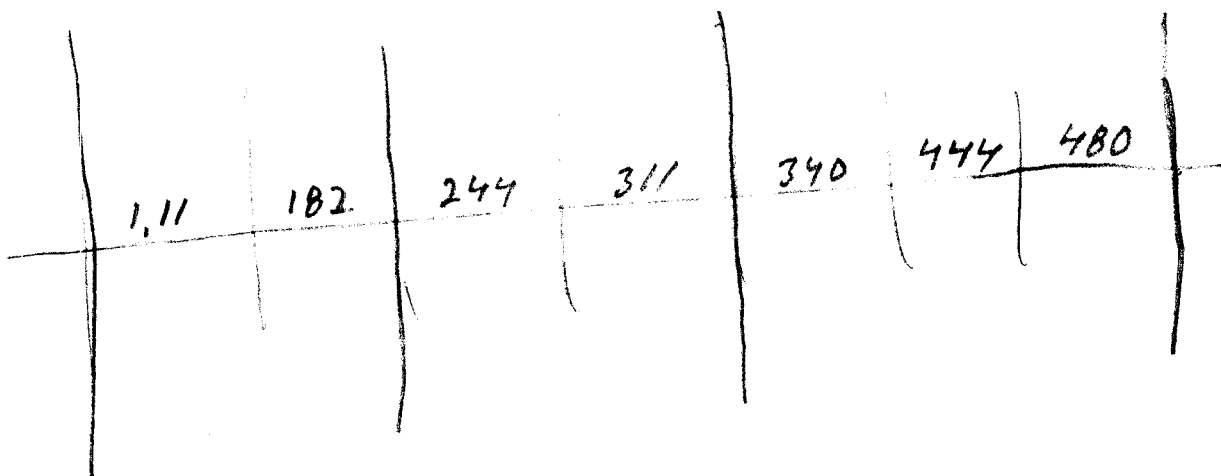
$$2 \quad 1.826$$

$$7 \quad 4.80$$

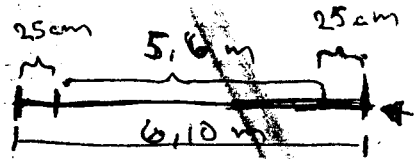
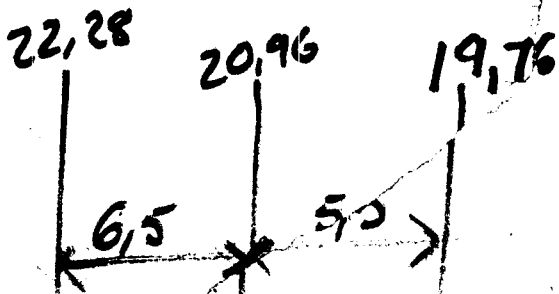
$$3 \quad 2.44$$

$$4 \quad 3.11$$

$$5 \quad 3.40$$



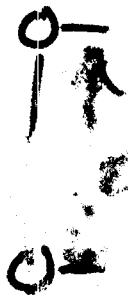
3 el / MHz



Bom 6/11

Bom 12,5 m

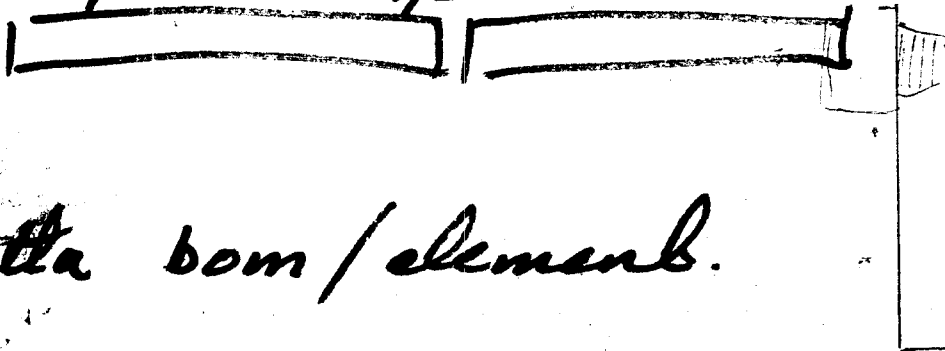
Gamma



Isolator 183,5

Vertikalrohr 187mm

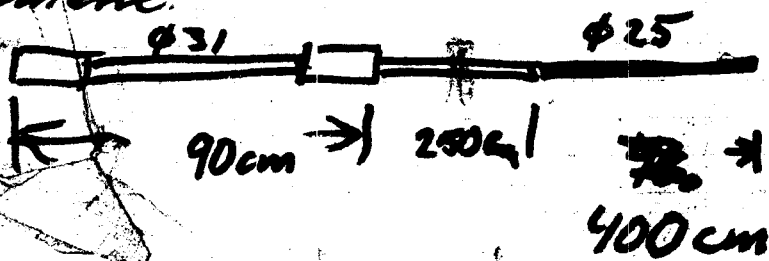
d.  $\phi 50$  2x 4,5m



Platta bom / element.

" bom / mast. 22,28

element



22

19

15

12

400cm

0,92 Reflektta

1) mittendel  $\longrightarrow \varnothing 31 \text{ m/m}$  6 st Calla  
 Längd 3,01 m  
 10,92  
 Rör inne i mittendel

2) Längd 4,00  $\longrightarrow \varnothing 25 \text{ m/m}$  6 st Calla

3) Längd 0,995  $\longrightarrow \varnothing 22 \text{ m/m}$  12 st Calla  
 (5 cm instopp)

$\longrightarrow \varnothing 19 \text{ m/m}$

4) Total längd 96 cm  
 instopp 5,5 cm ins 2 st = bara reflektta

5) Total längd 80 cm (inkl. 7,3 cm)  $\varnothing 15 \text{ m/m}$   
 instopp 7,3 cm  
 1 st reflektor  
 driven  
 i:a direktor  
 na samma

6) Total längd 95,0  $\varnothing 12 \text{ m/m}$  5 st reflektor  
 instopp 5,5 driven  
 i:a direktor

DRIVEN 10,48

I samma  $\varnothing 31 \varnothing$  m

II ~~Driv~~  $\varnothing 25 \varnothing$  m / m  
Samma

III Samma  $\varnothing 22$  m

~~NY~~ IV

Totalängd 73,5  $\varnothing 19$  m/m 2 st  
instopp 5,5

V

DIRECTOR - 1st

VI

~~NY~~

31  $\varnothing$   
25  $\varnothing$   
22  $\varnothing$   
~~18~~  
15  $\varnothing$   
12  $\varnothing$

Samma

NY =  
6 st

Totalängd 67 cm  
instopp 5 cm

$\varnothing 19$

DIRECTOR 2

31  $\varnothing$   
25  $\varnothing$   
22  $\varnothing$   
19  $\varnothing$   
~~15~~

Samma

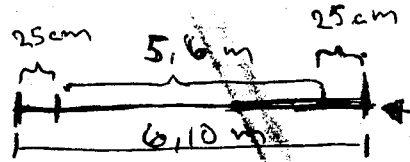
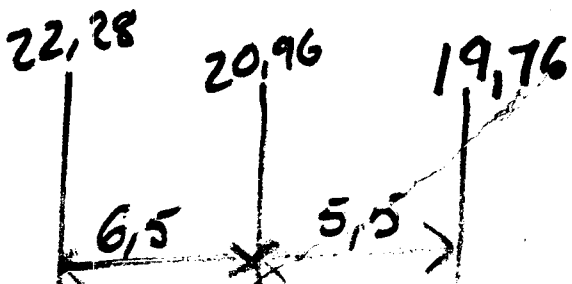
NY = Totalängd 63 cm  
 $\varnothing 15$  instopp 6 cm  
m/m 6 st

Totalängd =  $\varnothing 75,5$  cm  
NY  $\varnothing 12$  m/m instopp 6 cm 6 st

etika... EKIM designed for... pattern and gas...  
...

- Ø 50
- Ø 31
- Ø 25
- Ø 22
- Ø 17
- Ø 15
- Ø 12

3 el 7 MHz



Bom 12,7 m

Bom 12,7 m

Gamma



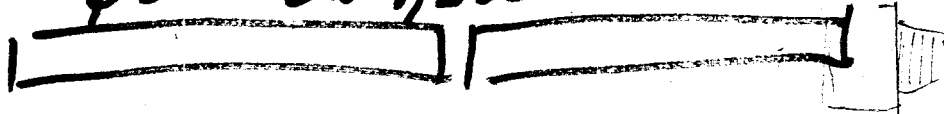
Isolator 183,5

35 mm

Korkskivn. 187mm



d.  $\phi 50$  2 x 4,5 m



↑

90mm

↓

Platta bom / element.

" bom / mast. 22,28

22

element

19



15

12

400cm

64 40 MHz 2921 3032

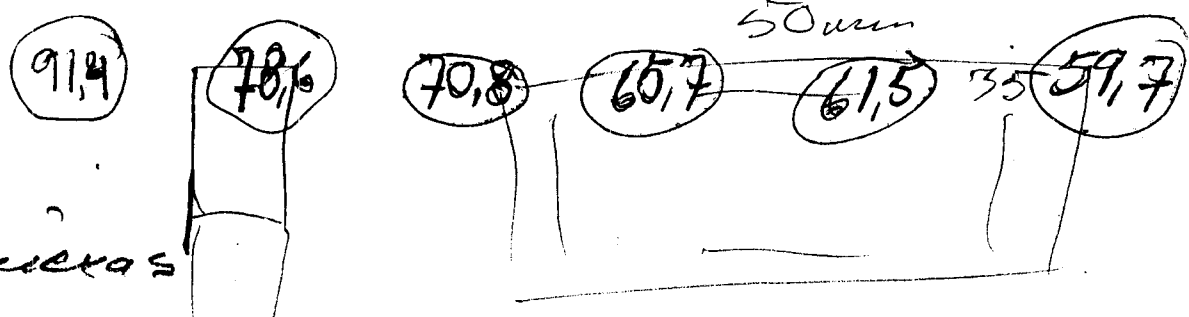
Ref	Dir	1:a	2:88	2:433	3:e	4:e	Ref φ 35
110	1106	802	863	1137	1415	5318	
50	885	642	67	906	1132	4255	
Ref	221	162	173	226	283		Alas faint

Dir	Ref	1:a	2:88	2:433	3:e	4:e	MHz
298	96	3679	3522	3470	3335	3299	40
242	92	3589	3436	3337	3251	3218	41
5750	87	3504	3354	3257	3176	3142	42
2663	83	3422	3276	3181	3102	3029	43
580	80	3345	3202	3109	3032	2999	44
3500	76	3270	3131	3040	2974	2937	45
3424	73	3199	3063	2974	2915	2869	46
3351	69	3131	2997	2911	2836	2808	47
3291	67	3066	2935	2855	2779	2749	48
3215	65	3003	2875	2792	2722	2693	49
3150	60	2943	2818	2736	2668	2639	50

28394

28330

φ Ref	Dir	1:a	2:a	3:e	4:e
28 290	290	290	290	290	290
22 890	890	890	890	890	890
19 740	740	740	740	740	740
* 15 500	500	500	500	500	500
12 474	346	268	217	175	157



\* variables

VA 80

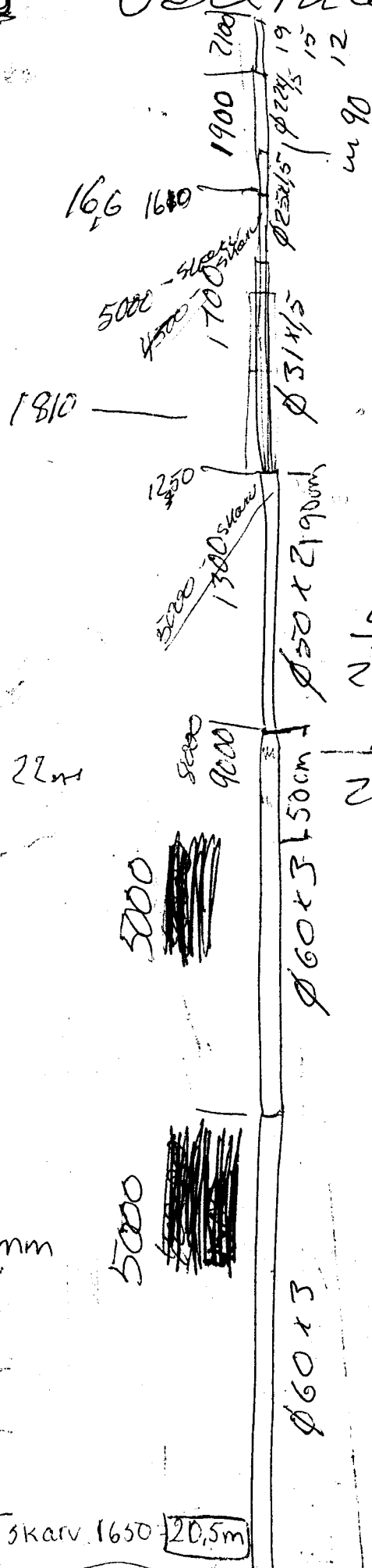
Vertical

3,5 MHz

~~21,5 kg~~

21,5 kg

20,5 m



13,5	φ60x3	2x 4500 = 9000
3,64	φ50x2	1x 4500 = 4500
0,85	φ <del>35</del>	<del>1x 4500 = 4500</del>
1,35	φ25x1,5	1x 4500 = 4500
0,55	φ22x1,5	<del>1x 4500 = 4500</del>
0,23	φ19x1,5	<del>1x 1060 = 1060</del>
0,09	φ15x1,5	<del>1x 560 = 560</del>
0,04	φ12x1,5	<del>1x 560 = 560</del>
<u>20,25</u>		<u>24530</u>

1,25 skarv  
 21,5 kg  
 $\frac{21,5}{29,50}$   
 29,50

3970
22 1060
19 1060
15 1010
12 1010

mm

12	680
15	560
19	350
22	1060
25	4500
30	2500
50	5000
60	5000
80	5000

22150 skarv 1650 20,5m

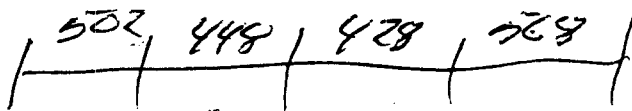
247.22-19-15-12  
 185.22-19-15  
 135.22-19

240  
 470  
 550

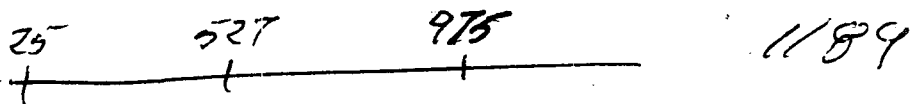
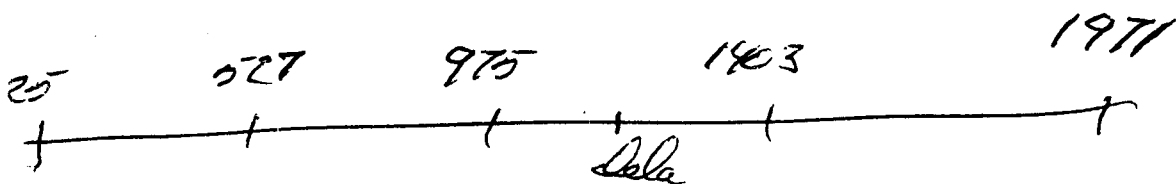
Tot 80 MHz

		$\phi 15$	$\phi 12$ in 60 mm
R	1953	1200	437
Q	1827	"	373
1	1750	"	335
2	1701	"	314
3	1660	"	290

Val, mitt  
 $\phi 4,2$



Bom längd 2000



Gamma som VHF-Suo

Montera irop anlämna för mätningar

195  
16  
~~255~~ 255  
315

Ø 31	Ø st	1600 mm	✓
Ø 25	2 st	1500 mm	✓
- u -	2 - u -	1600 mm	✓
- u -	2 - u -	1800 - u -	✓
- u -	2 - u -	<del>1800</del> - u -	✓
		500 - u -	✓
Ø 22	2 - u -	620 - u -	✓
	- u -	562 - u -	✓
	- u -	570 - u -	✓
	- u -	400 - u -	✓
Ø 19	2 st	900 - u -	✓
	- u -	567 - u -	✓
	4 st	300 - u -	✓
Ø 15	2 st	700 - u -	✓
	- u -	430 - u -	✓
	- u -	300 - u -	✓
	- u -	200 - u -	✓
Ø 12	2 st	880	✓
	- u -	1010	✓
	- u -	680	✓

Ø 19	2 st	834 + 9,5	929
	- u -	680	775
	- u -	924	933,5
	- u -	1315	1410

## Lars Wallmark

Från: Frank Donovan <donovanf@sgate.com>  
Till: Paul Hellenberg <hasben@ix.netcom.com>; towertalk@contesting.com  
Kopia: KS9K Paul Hellenberg <paulh@truline.com>  
Ämne: [TowerTalk] Re: Stacking Distance  
Datum: den 24 maj 1997 04:48

Hi Rich!

You have very ambitious plans! I wonder what boom lengths you plan to use? All of my booms are 48 ft long. And how many towers? My preferred modelling program for stacked Yagis is EZNEC.

From Iowa, I'd suggest that u use the following stacking plan. Other black hole contesters may have better ideas based on experience. I've been told that black hole propagation is somewhat different than east coast propagation...

10M: 35/70/105/140 ft  
15M: 48/96/144/192 ft  
20M: 64/128/192 ft  
40M: 100/195 ft

30, 48 cm

Perhaps some other Towertalkians will reply regarding switching. I've never used sophisticated switching since all of my current stacks are only 2-high.

73  
Frank  
W3LPL  
donovanf@sgate.com

- > I am thinking of putting up some stacked beams for the contests.
- > What is a good stacking height ????????
- > How do you feed/switch the stacks ????????
- > Any good sources of info, I have the W2PV book.
- > Hoping to put up 3 or 4 6el beams on 10 and 15
- > 2 or 3 20m 6els and a pair of 40 4el beams.
- >
- > de Rich K0XG
- > ex G3WJN in Iowa.

40 m

32,8 m

63,8 m

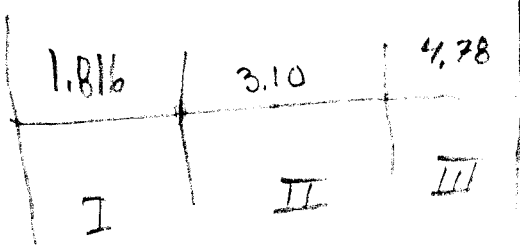
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FAQ on WWW: <http://www.contesting.com/towertalkfaq.html>  
Submissions: towertalk@contesting.com  
Administrative requests: towertalk-REQUEST@contesting.com  
Problems: owner-towertalk@contesting.com

6,30

588

5633

$\frac{24 \text{ ml}}{5.47}$



$$\frac{300}{24.920} = 12.038$$

$$\text{I} \quad \frac{12.038}{6.6282} = 1,8162$$

$$\text{II} \quad \frac{12.038}{3.8861} = 3.097$$

$$\text{III} \quad \frac{12.038}{2.5194} = 4.778$$

Now 4.88

