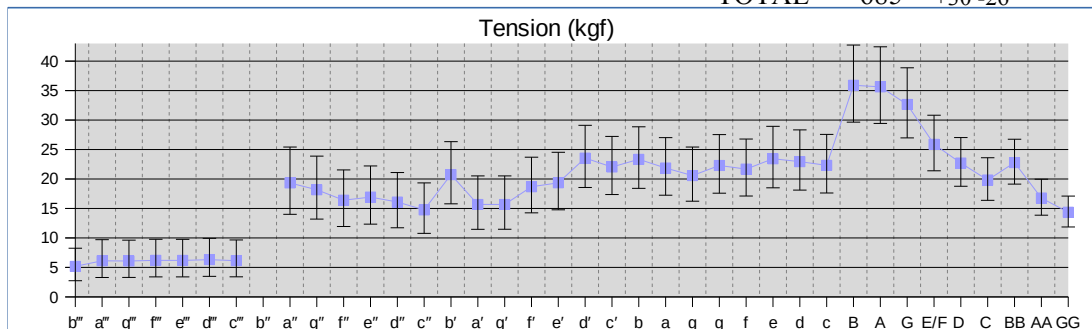


Analysis of string gauges as found

string	freq	Note	Length (cm)	Length (in)	Gauge (mm)	Gauge (in)	Tension	Metal	
1	1972	b ^{'''}	5.5	2.2	0.4	0.016	5.2	brass	
2	1760	a ^{'''}	6.7	2.6	0.4	0.016	6.1	brass	
3	1568	g ^{'''}	7.5	3.0	0.4	0.016	6.1	brass	
4	1396	f ^{'''}	8.5	3.3	0.4	0.016	6.2	brass	
5	1318	e ^{'''}	9	3.5	0.4	0.016	6.2	brass	
6	1174	d ^{'''}	10.2	4.0	0.4	0.016	6.3	brass	
7	1046	c ^{'''}	11.3	4.5	0.4	0.016	6.2	brass	
8	986	b ^{''}	12.8	5.0				missing completely	
9	880	a ^{''}	13.6	5.4	0.7	0.028	19.3	brass	
10	784	g ^{''}	14.8	5.8	0.7	0.028	18.2	brass	
11	698	f ^{''}	15.8	6.2	0.7	0.028	16.4	brass	
12	659	e ^{''}	17	6.7	0.7	0.028	16.9	brass	
13	587	d ^{''}	18.6	7.3	0.7	0.028	16.1	brass	
14	523	c ^{''}	20	7.9	0.7	0.028	14.8	brass	
15	493	b [']	22	8.7	0.8	0.032	20.7	brass	
16	440	a [']	24.5	9.7	0.7	0.028	15.7	brass	
17	392	g [']	27.5	10.8	0.7	0.028	15.7	brass	
18	349	f [']	29.5	11.6	0.8	0.032	18.7	brass	
19	329.5	e [']	31.8	12.5	0.8	0.032	19.4	brass	
20	293.5	d [']	35	13.8	0.9	0.035	23.5	brass	
21	261.5	c [']	38	15.0	0.9	0.035	22.0	brass	
22	246.5	b	41.5	16.4	0.9	0.035	23.3	brass	
23	220	a	45	17.7	0.9	0.035	21.9	brass	
24	196	g	49	19.3	0.9	0.035	20.6	brass	
25	196	g	51	20.1	0.9	0.035	22.3	brass	
26	174.5	f	56.5	22.3	0.9	0.035	21.7	brass	
27	164.75	e	62.2	24.5	0.9	0.035	23.4	brass	
28	146.75	d	69.1	27.2	0.9	0.035	22.9	brass	
29	130.75	c	76.5	30.1	0.9	0.035	22.3	brass	
30	123.25	B	84.2	33.2	1.1	0.043	35.9	brass	
31	110	A	94	37.0	1.1	0.043	35.6	brass	
32	98	G	101	39.8	1.1	0.043	32.6	brass	
33	82.375	E/F	107	42.2	1.1	0.043	25.9	brass	
34	73.375	D	112.5	44.3	1.1	0.043	22.7	brass	
35	65.375	C	118	46.5	1.1	0.043	19.8	brass	
36	61.625	BB	123	48.5	1.2	0.047	22.8	brass	
37	55	AA	129		1.1	0.043	16.8	brass	
38	49	GG	134	52.8	1.1	0.043	14.4	brass	
TOTAL							685	+30 -26	



String lengths and gauges measured by Simon Chadwick and Brenda Malloy at the National Museum of Ireland, 2nd March 2023. Lengths ± 5 mm, gauges ± 0.1 mm

Error bar calculations

Gauge +	diff	Gauge -	diff	Length +	diff	Length -	diff	rms diff +	<i>squared</i>	rms diff -	<i>squared</i>
8.1	2.9	2.9	2.3	6.2	1.0	4.3	0.9	3.1	9.5	2.4	6.0
9.6	3.4	3.4	2.7	7.1	0.9	5.2	0.9	3.6	12.8	2.8	8.0
9.5	3.4	3.4	2.7	6.9	0.8	5.3	0.8	3.5	12.5	2.8	7.7
9.7	3.5	3.5	2.7	7.0	0.8	5.5	0.7	3.6	12.7	2.8	7.9
9.7	3.5	3.5	2.7	6.9	0.7	5.5	0.7	3.6	12.7	2.8	7.8
9.9	3.6	3.6	2.8	7.0	0.6	5.7	0.6	3.6	13.0	2.8	8.0
9.6	3.5	3.5	2.7	6.7	0.6	5.6	0.5	3.5	12.3	2.7	7.5
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.2	5.9	14.2	5.1	20.8	1.4	17.9	1.4	6.1	37.1	5.3	28.2
23.7	5.6	13.3	4.8	19.4	1.2	17.0	1.2	5.7	32.5	5.0	24.7
21.4	5.0	12.1	4.4	17.5	1.1	15.4	1.0	5.1	26.4	4.5	20.0
22.1	5.2	12.4	4.5	17.9	1.0	16.0	1.0	5.3	27.9	4.6	21.2
21.0	4.9	11.8	4.3	17.0	0.9	15.2	0.9	5.0	25.0	4.4	18.9
19.3	4.5	10.8	3.9	15.5	0.7	14.0	0.7	4.6	21.0	4.0	15.9
26.2	5.5	15.9	4.9	21.7	1.0	19.8	0.9	5.6	31.2	4.9	24.5
20.5	4.8	11.5	4.2	16.3	0.6	15.0	0.6	4.8	23.5	4.2	17.7
20.5	4.8	11.5	4.2	16.3	0.6	15.1	0.6	4.8	23.4	4.2	17.6
23.6	5.0	14.3	4.4	19.3	0.6	18.1	0.6	5.0	25.0	4.4	19.6
24.5	5.1	14.8	4.5	20.0	0.6	18.7	0.6	5.2	26.8	4.6	20.9
29.1	5.5	18.6	4.9	24.2	0.7	22.9	0.7	5.6	31.0	5.0	24.9
27.2	5.2	17.4	4.6	22.6	0.6	21.5	0.6	5.2	27.0	4.7	21.7
28.8	5.5	18.4	4.9	23.9	0.6	22.8	0.6	5.5	30.3	4.9	24.3
27.0	5.1	17.3	4.6	22.4	0.5	21.4	0.5	5.2	26.5	4.6	21.3
25.4	4.8	16.3	4.3	21.0	0.4	20.2	0.4	4.8	23.5	4.3	18.8
27.5	5.2	17.6	4.7	22.7	0.4	21.9	0.4	5.2	27.5	4.7	22.1
26.8	5.1	17.1	4.6	22.1	0.4	21.3	0.4	5.1	26.0	4.6	20.9
28.9	5.5	18.5	4.9	23.8	0.4	23.1	0.4	5.5	30.3	4.9	24.3
28.3	5.4	18.1	4.8	23.3	0.3	22.6	0.3	5.4	29.1	4.8	23.3
27.6	5.2	17.6	4.7	22.6	0.3	22.0	0.3	5.2	27.5	4.7	22.0
42.7	6.8	29.7	6.2	36.3	0.4	35.5	0.4	6.8	46.7	6.2	39.0
42.4	6.8	29.4	6.2	36.0	0.4	35.3	0.4	6.8	46.0	6.2	38.4
38.9	6.2	27.0	5.7	33.0	0.3	32.3	0.3	6.2	38.6	5.7	32.2
30.8	4.9	21.4	4.5	26.1	0.2	25.6	0.2	4.9	24.3	4.5	20.2
27.0	4.3	18.8	3.9	22.9	0.2	22.5	0.2	4.3	18.7	3.9	15.6
23.6	3.8	16.4	3.4	20.0	0.2	19.7	0.2	3.8	14.2	3.4	11.9
26.7	4.0	19.1	3.6	23.0	0.2	22.6	0.2	4.0	15.7	3.6	13.3
20.0	3.2	13.9	2.9	16.9	0.1	16.6	0.1	3.2	10.2	2.9	8.5
17.1	2.7	11.9	2.5	14.5	0.1	14.3	0.1	2.7	7.5	2.5	6.2
								rms total +	29.8	rms total -	26.3