

Trinity College Harp string chart

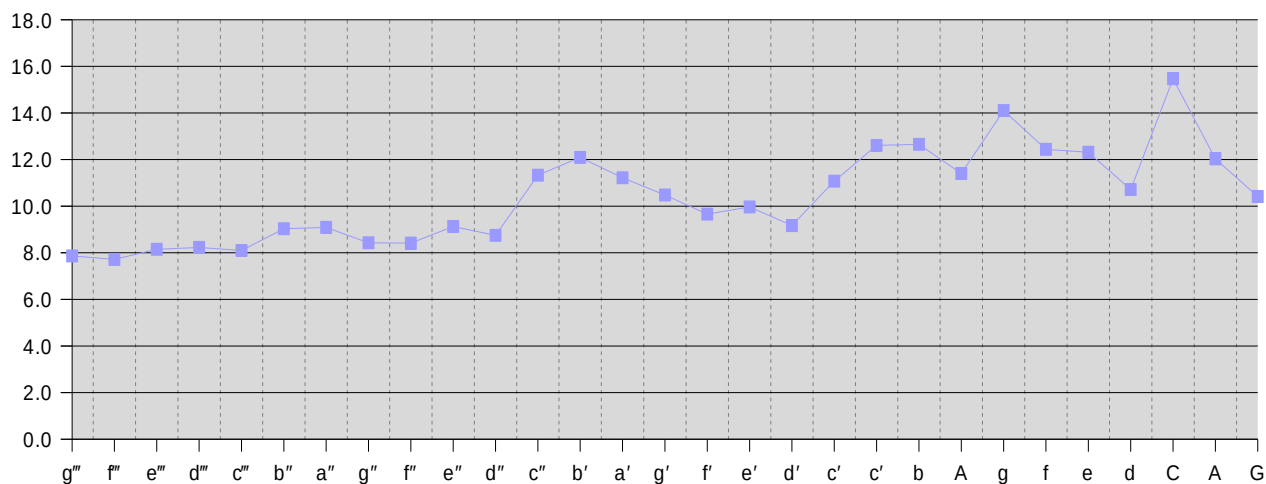
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String no.	freq	Note	Length (cm)	Length (in)	Gauge (mm)	Gauge (in)	Tension (kgf)	Metal	
1	1568	g'''	7.1	2.8	0.48	0.018912	7.9	Yellow brass	
2	1396	f'''	7.9	3.1	0.48	0.018912	7.7	Yellow brass	
3	1318	e'''	8.6	3.4	0.48	0.018912	8.2	Yellow brass	
4	1174	d'''	9.7	3.8	0.48	0.018912	8.2	Yellow brass	
5	1046	c'''	10.8	4.3	0.48	0.018912	8.1	Yellow brass	
6	986	b''	12.1	4.8	0.48	0.018912	9.0	Yellow brass	
7	880	a''	13.6	5.4	0.48	0.018912	9.1	Yellow brass	
8	784	g''	14.7	5.8	0.48	0.018912	8.4	Yellow brass	
9	698	f''	16.5	6.5	0.48	0.018912	8.4	Yellow brass	
10	659	e''	18.2	7.2	0.48	0.018912	9.1	Yellow brass	
11	587	d''	20	7.9	0.48	0.018912	8.7	Yellow brass	
12	523	c''	21.9	8.6	0.56	0.022064	11.3	Yellow brass	
13	493	b'	24	9.5	0.56	0.022064	12.1	Yellow brass	
14	440	a'	25.9	10.2	0.56	0.022064	11.2	Yellow brass	
15	392	g'	28.1	11.1	0.56	0.022064	10.5	Yellow brass	
16	349	f'	30.3	11.9	0.56	0.022064	9.7	Yellow brass	
17	329.5	e'	32.6	12.8	0.56	0.022064	10.0	Yellow brass	
18	293.5	d'	35.1	13.8	0.56	0.022064	9.2	Yellow brass	
19	261.5	c'	37.3	14.7	0.65	0.02561	11.1	Yellow brass	
20	261.5	c'	39.8	15.7	0.65	0.02561	12.6	Yellow brass	
21	246.5	b	42.3	16.7	0.65	0.02561	12.7	Yellow brass	
22	220	A	45	17.7	0.65	0.02561	11.4	Yellow brass	
23	196	g	47.5	18.7	0.7	0.02758	14.1	Hard Sterling Silver	
24	174.5	f	50.1	19.7	0.7	0.02758	12.4	Hard Sterling Silver	
25	164.75	e	52.8	20.8	0.7	0.02758	12.3	Hard Sterling Silver	
26	146.75	d	55.3	21.8	0.7	0.02758	10.7	Hard Sterling Silver	
27	130.75	C	58	22.9	0.9	0.03546	15.5	Hard Sterling Silver	
28	110	A	60.8	24.0	0.9	0.03546	12.0	Hard Sterling Silver	
29	98	G	63.5	25.0	0.9	0.03546	10.4	Hard Sterling Silver	
							Total:	302.0	

Tension



String lengths (and therefore tensions) are approximate, based on the most accurate measurements yet available, from Paul Dooley 'Reconstructing the medieval Irish harp', *Galpin Society Journal* LXVII, 2014, used with permission

Gauge (mm)	no spares cm	including one spare of each gauge cm	individual strings cm
0.48			23.1
0.48			23.9
0.48			24.6
0.48			25.7
0.48			26.8
0.48			28.1
0.48			29.6
0.48			30.7
0.48			32.5
0.48			34.2
0.48	315.2	351.2	36
0.56			37.9
0.56			40
0.56			41.9
0.56			44.1
0.56			46.3
0.56			48.6
0.56	309.9	361	51.1
0.65			53.3
0.65			55.8
0.65			58.3
0.65	228.4	289.4	61
0.7			63.5
0.7			66.1
0.7			68.8
0.7	269.7	341	71.3
0.9			74
0.9			76.8
0.9	230.3	309.8	79.5
	<i>no spares</i>	<i>with spares</i>	<i>each string toggled</i>
	8.54 m brass	10.02 m brass	<i>No spares</i> £146.34
	£2.50 per m	£2.50 per m	£2.50 brass toggle
	subtotal £21.34	subtotal £25.04	29 toggles
	5 m silver	6.508 m silver	subtotal £72.50
	£25.00 per m	£25.00 per m	<b>TOTAL £218.84</b>
	subtotal £125.00	subtotal £162.70	
	<b>TOTAL £146.34</b>	<b>TOTAL £187.74</b>	<i>With spares</i> £187.74
			£2.50 brass toggle
	<i>Replace the silver spares with brass</i>		43 toggles
	15.02 m brass	<i>...and add toggles</i>	subtotal £107.50
	£2.50 per m	£2.50 brass toggle	<b>TOTAL £295.24</b>
	subtotal £37.54	43 toggles	
	5 m silver	subtotal £107.50	
	£25.00 per m	<b>TOTAL £270.04</b>	
	subtotal £125.00		
	<b>TOTAL £162.54</b>		

Order your strings at [simonchadwick.net/shop/wire](http://simonchadwick.net/shop/wire)

Queen Mary Harp string chart (30 strings)



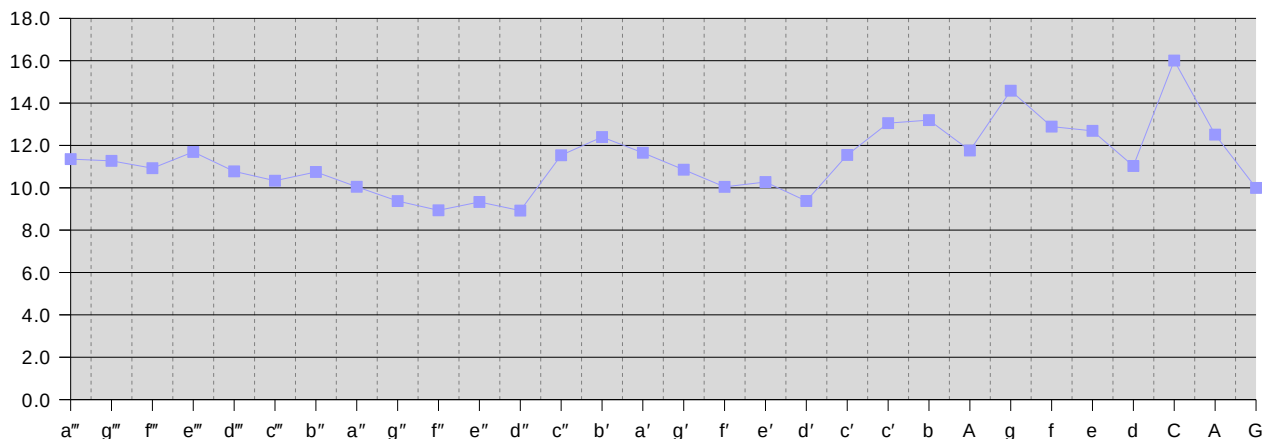
For replicas with shorter trebles, requiring the 30<sup>th</sup> pin and loop in the bass.

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String no.	freq	Note	Length (cm)	Length (in)	Gauge (mm)	Gauge (in)	Tension (kgf)	Metal	
1	1760	a <sup>'''</sup>	7.6	3.0	0.48	0.018912	11.4	Yellow brass	
2	1568	g <sup>'''</sup>	8.5	3.3	0.48	0.018912	11.3	Yellow brass	
3	1396	f <sup>'''</sup>	9.4	3.7	0.48	0.018912	10.9	Yellow brass	
4	1318	e <sup>'''</sup>	10.3	4.1	0.48	0.018912	11.7	Yellow brass	
5	1174	d <sup>'''</sup>	11.1	4.4	0.48	0.018912	10.8	Yellow brass	
6	1046	c <sup>'''</sup>	12.2	4.8	0.48	0.018912	10.3	Yellow brass	
7	986	b <sup>''</sup>	13.2	5.2	0.48	0.018912	10.7	Yellow brass	
8	880	a <sup>''</sup>	14.3	5.6	0.48	0.018912	10.0	Yellow brass	
9	784	g <sup>''</sup>	15.5	6.1	0.48	0.018912	9.4	Yellow brass	
10	698	f <sup>''</sup>	17	6.7	0.48	0.018912	8.9	Yellow brass	
11	659	e <sup>''</sup>	18.4	7.2	0.48	0.018912	9.3	Yellow brass	
12	587	d <sup>''</sup>	20.2	8.0	0.48	0.018912	8.9	Yellow brass	
13	523	c <sup>''</sup>	22.1	8.7	0.56	0.022064	11.5	Yellow brass	
14	493	b <sup>'</sup>	24.3	9.6	0.56	0.022064	12.4	Yellow brass	
15	440	a <sup>'</sup>	26.4	10.4	0.56	0.022064	11.7	Yellow brass	
16	392	g <sup>'</sup>	28.6	11.3	0.56	0.022064	10.9	Yellow brass	
17	349	f <sup>'</sup>	30.9	12.2	0.56	0.022064	10.0	Yellow brass	
18	329.5	e <sup>'</sup>	33.1	13.0	0.56	0.022064	10.3	Yellow brass	
19	293.5	d <sup>'</sup>	35.5	14.0	0.56	0.022064	9.4	Yellow brass	
20	261.5	c <sup>'</sup>	38.1	15.0	0.65	0.02561	11.6	Yellow brass	
21	261.5	c <sup>'</sup>	40.5	16.0	0.65	0.02561	13.1	Yellow brass	
22	246.5	b	43.2	17.0	0.65	0.02561	13.2	Yellow brass	
23	220	A	45.7	18.0	0.65	0.02561	11.8	Yellow brass	
24	196	g	48.3	19.0	0.7	0.02758	14.6	Hard Sterling Silver	
25	174.5	f	51	20.1	0.7	0.02758	12.9	Hard Sterling Silver	
26	164.75	e	53.6	21.1	0.7	0.02758	12.7	Hard Sterling Silver	
27	146.75	d	56.1	22.1	0.7	0.02758	11.0	Hard Sterling Silver	
28	130.75	C	59	23.2	0.9	0.03546	16.0	Hard Sterling Silver	
29	110	A	62	24.4	0.9	0.03546	12.5	Hard Sterling Silver	
30	98	G	62.2	24.5	0.9	0.03546	10.0	Hard Sterling Silver	
							Total:	339.1	

Tension



String lengths (and therefore tensions) are approximate, based on the most accurate measurements yet available, from

Karen A. Loomis, *The organology of the Queen Mary and Lamont harps*, PhD thesis, The University of Edinburgh, 2014, p.142

Online at <https://era.ed.ac.uk/handle/1842/19551> (cc by-nc-sa)

**including**

	<b>no spares</b>	<b>one spare of</b>	<b>individual</b>
Gauge (mm)	cm	each gauge	strings
		cm	cm
0.44			23.6
0.44			24.5
0.44			25.4
0.44			26.3
0.48			27.1
0.48			28.2
0.48			29.2
0.48			30.3
0.48			31.5
0.52			33
0.52			34.4
0.52	349.7	385.9	36.2
0.56			38.1
0.56			40.3
0.56			42.4
0.6			44.6
0.6			46.9
0.6			49.1
0.65	312.9	364.4	51.5
0.65			54.1
0.65			56.5
0.65			59.2
0.7	231.5	293.2	61.7
0.65			64.3
0.7			67
0.75			69.6
0.8	273	345.1	72.1
0.85			75
0.9			78
0.95	231.2	309.4	78.2
	<i>no spares</i>	<i>with spares</i>	<i>each string toggled</i>
	8.94 m brass	10.44 m brass	<i>No spares</i> £148.40
	£2.50 per m	£2.50 per m	£2.50 brass toggle
	subtotal £22.35	subtotal £26.09	30 toggles
	5.042 m silver	6.545 m silver	subtotal £75.00
	£25.00 per m	£25.00 per m	<b>TOTAL £223.40</b>
	subtotal £126.05	subtotal £163.63	<i>With spares</i> £189.71
	<b>TOTAL £148.40</b>	<b>TOTAL £189.71</b>	£2.50 brass toggle
	<i>Replace the silver spares with brass</i>		44 toggles
	15.48 m brass	<i>...and add toggles</i>	subtotal £110.00
	£2.50 per m	£2.50 brass toggle	<b>TOTAL £299.71</b>
	subtotal £38.69	44 toggles	
	5.042 m silver	subtotal £110.00	
	£25.00 per m	<b>TOTAL £274.74</b>	
	subtotal £126.05		
	<b>TOTAL £164.74</b>		

Order your strings at [simonchadwick.net/shop/wire](http://simonchadwick.net/shop/wire)

Queen Mary Harp string chart (29 strings)



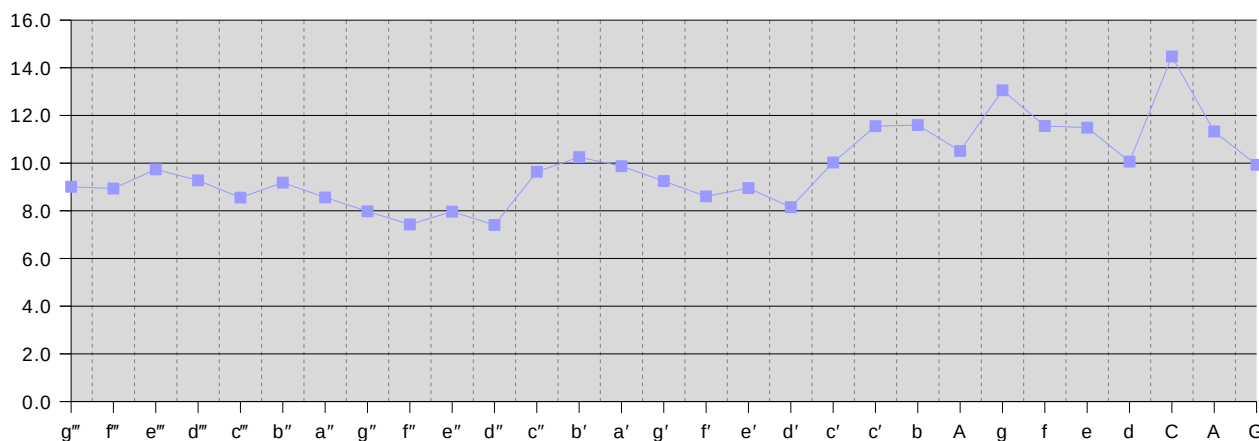
For replicas missing the 30<sup>th</sup> pin and loop, or for replicas with longer trebles

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String no.	freq	Note	Length (cm)	Length (in)	Gauge (mm)	Gauge (in)	Tension (kgf)	Metal	
1	1568	g'''	7.6	3.0	0.48	0.018912	9.0	Yellow brass	
2	1396	f'''	8.5	3.3	0.48	0.018912	8.9	Yellow brass	
3	1318	e'''	9.4	3.7	0.48	0.018912	9.7	Yellow brass	
4	1174	d'''	10.3	4.1	0.48	0.018912	9.3	Yellow brass	
5	1046	c'''	11.1	4.4	0.48	0.018912	8.6	Yellow brass	
6	986	b'''	12.2	4.8	0.48	0.018912	9.2	Yellow brass	
7	880	a'''	13.2	5.2	0.48	0.018912	8.6	Yellow brass	
8	784	g''	14.3	5.6	0.48	0.018912	8.0	Yellow brass	
9	698	f''	15.5	6.1	0.48	0.018912	7.4	Yellow brass	
10	659	e''	17	6.7	0.48	0.018912	8.0	Yellow brass	
11	587	d''	18.4	7.2	0.48	0.018912	7.4	Yellow brass	
12	523	c''	20.2	8.0	0.56	0.022064	9.6	Yellow brass	
13	493	b''	22.1	8.7	0.56	0.022064	10.3	Yellow brass	
14	440	a''	24.3	9.6	0.56	0.022064	9.9	Yellow brass	
15	392	g'	26.4	10.4	0.56	0.022064	9.2	Yellow brass	
16	349	f'	28.6	11.3	0.56	0.022064	8.6	Yellow brass	
17	329.5	e'	30.9	12.2	0.56	0.022064	9.0	Yellow brass	
18	293.5	d'	33.1	13.0	0.56	0.022064	8.2	Yellow brass	
19	261.5	c'	35.5	14.0	0.65	0.02561	10.0	Yellow brass	
20	261.5	c'	38.1	15.0	0.65	0.02561	11.6	Yellow brass	
21	246.5	b	40.5	16.0	0.65	0.02561	11.6	Yellow brass	
22	220	A	43.2	17.0	0.65	0.02561	10.5	Yellow brass	
23	196	g	45.7	18.0	0.7	0.02758	13.1	Hard Sterling Silver	
24	174.5	f	48.3	19.0	0.7	0.02758	11.6	Hard Sterling Silver	
25	164.75	e	51	20.1	0.7	0.02758	11.5	Hard Sterling Silver	
26	146.75	d	53.6	21.1	0.7	0.02758	10.1	Hard Sterling Silver	
27	130.75	C	56.1	22.1	0.9	0.03546	14.5	Hard Sterling Silver	
28	110	A	59	23.2	0.9	0.03546	11.3	Hard Sterling Silver	
29	98	G	62	24.4	0.9	0.03546	9.9	Hard Sterling Silver	
30	87.25	F	61	24.0	0.9	0.03546	7.6	Hard Sterling Silver	
							Total:	284.4	

Tension



String lengths (and therefore tensions) are approximate, based on the most accurate measurements yet available, from

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Online at <https://era.ed.ac.uk/handle/1842/19551> (cc by-nc-sa)

**including**

	<b>no spares</b>	<b>one spare of</b>	<b>individual</b>
Gauge (mm)	cm	each gauge	strings
		cm	cm
0.48			23.6
0.48			24.5
0.48			25.4
0.48			26.3
0.48			27.1
0.48			28.2
0.48			29.2
0.48			30.3
0.48			31.5
0.48			33
0.48	313.5	347.9	34.4
0.56			36.2
0.56			38.1
0.56			40.3
0.56			42.4
0.56			44.6
0.56			46.9
0.56	297.6	346.7	49.1
0.65			51.5
0.65			54.1
0.65			56.5
0.65	221.3	280.5	59.2
0.7			61.7
0.7			64.3
0.7			67
0.7	262.6	332.2	69.6
0.9			72.1
0.9			75
0.9	225.1	303.1	78
0.9	302.1	379.1	77
	<i>no spares</i>	<i>with spares</i>	<i>each string toggled</i>
	8.32 m brass	9.75 m brass	<i>No spares</i> £142.74
	£2.50 per m	£2.50 per m	£2.50 brass toggle
	subtotal £20.81	subtotal £24.38	29 toggles
	4.88 m silver	6.35 m silver	subtotal £72.50
	£25.00 per m	£25.00 per m	<b>TOTAL £215.24</b>
	subtotal £121.93	subtotal £158.83	
	<b>TOTAL £142.74</b>	<b>TOTAL £183.20</b>	<i>With spares</i> £183.20
			£2.50 brass toggle
	<i>Replace the silver spares with brass</i>		43 toggles
	14.63 m brass	<i>...and add toggles</i>	subtotal £107.50
	£2.50 per m	£2.50 brass toggle	<b>TOTAL £290.70</b>
	subtotal £36.57	43 toggles	
	4.88 m silver	subtotal £107.50	
	£25.00 per m	<b>TOTAL £266.00</b>	
	subtotal £121.93		
	<b>TOTAL £158.50</b>		

Order your strings at [simonchadwick.net/shop/wire](http://simonchadwick.net/shop/wire)