

=====

CARILLONS OF THE WORLD

(Special extract)

Privately published on behalf of the
World Carillon Federation and its member societies

by

Carl Scott Zimmerman
Chairman of the former
Special Committee on Tower and Carillon Statistics,
The Guild of Carillonneurs in North America

Online Edition (a set of Portable Document Format files)

Copyright January 2002 by Carl Scott Zimmerman

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form other than its original, or by any means (electronic, photographic, xerographic, recording or otherwise) which could have the effect of enabling two or more people to have access to that part simultaneously and independently, without the prior permission of the copyright holder (address at end of next column), except as stated below and in the Terms of Use opposite. In other words, regardless of its actual form, this publication must be treated like a printed paper book, which can be used by only one person at a time.

Notwithstanding the above, the following special permissions are granted:

- (1) to reviewers, permission to quote individual items of information for use in reviews provided that in each case mention is made of the World Carillon Federation, and reference is made to this publication;
- (2) to private individuals, permission to copy by hand any number of individual items of information for personal use;
- (3) to any individual who visits the GCNA Website, permission to utilize any component PDF file resident there as specified in the Terms of Use opposite;
- (4) general permission to make an unlimited number of print copies of the order form and survey forms for the purpose of communicating with the author or encouraging others to do so.

=====

TERMS OF USE

The PDF files which constitute the online edition of this publication (standard version or special extracts) are subject to the following terms of use:

- (1) Only the copy of each file which is resident on the GCNA Website is sharable. That copy is subject to revision at any time without prior notice to anyone.
- (2) A visitor to the GCNA Website may download any of the available PDF files to that individual's personal computer via a Web browser solely for viewing and optionally for printing at most one copy of each page.
- (3) A file copy so downloaded may not be further reproduced or distributed in any manner, except as incidental to the course of regularly scheduled backups of the disk on which it temporarily resides. In particular, it may not be subject to file sharing over a network.
- (4) A print copy so made may not be further reproduced.

=====

CONTENTS

The main purpose of this publication is to identify and describe all of the traditional carillons in the world. But it also covers electrified carillons, chimes, rings, zvons and other instruments or collections of 8 or more tower bells (even if not in a tower), and other significant tower bells.

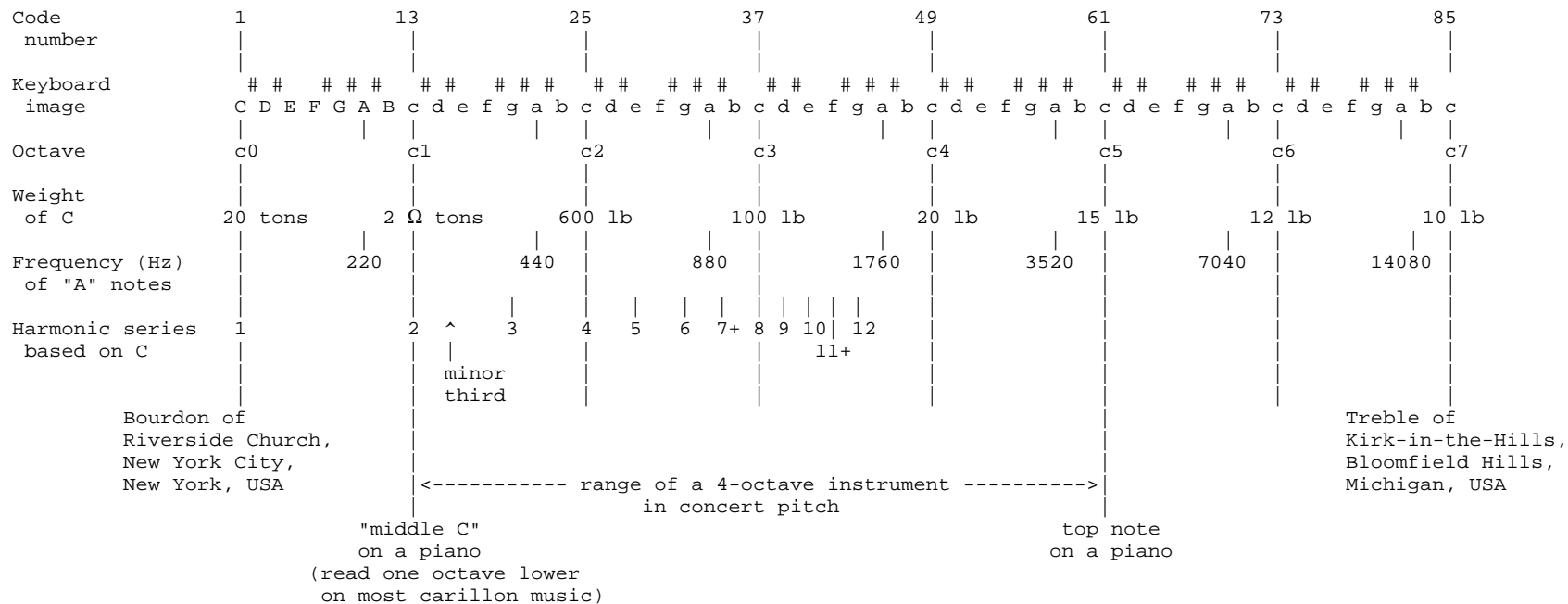
Special extracts, such as the PDF file to which this version of the standard title page is attached, contain selected data from the same database that is used to prepare the standard online and print editions of Carillons of the World, and from related source material. As such, the Copyright provisions opposite and the Terms of Use above are fully applicable to this file.

Copyright holder: Carl Scott Zimmerman
5547 Waterman Boulevard #3E
Saint Louis, MO 63112-1842
U. S. A.
Tel. +1-(314)361-5194 Email: csz_stl@swbell.net
=====

*
* EXPLANATION OF "BOURDON CODE NUMBER"
*
* A bourdon code number is used to give a general indication
* of the weight of a tower bell instrument by reflecting the
* approximate pitch or note of the heaviest bell in it.
*
* The code table in the left column of page 1 of the Code
* Interpretation section shows the relationship between code
* numbers and notes using approximate bell weights in kilo-
* grams. The following tables show other ways of looking at
* the bourdon code numbers.
*
* Bourdon code number versus international pitch notation:
* 1=c 13=c' 25=c"
* 2=c#/d-flat 14=c#'/d-flat' 26=c#"/d-flat"
* 3=d 15=d' 27=d"
* 4=d#/e-flat 16=d#'/e-flat' 28=d#"/e-flat"
* 5=e 17=e' 29=e"
* 6=f 18=f' 30=f"
* 7=f#/g-flat 19=f#'/g-flat' 31=f#"/g-flat"
* 8=g 20=g' 32=g"
* 9=g#/a-flat 21=g#'/a-flat' 33=g#"/a-flat"
* 10=a 22=a' 34=a"
* 11=a#/b-flat 23=a#'/b-flat' ...
* 12=b 24=b' etc.
*
* Bourdon code number versus European pitch notation:
* 1= c0 13= c1 25= c2
* 2= cis0/des0 14= cis1/des1 26= cis2/des2
* 3= d0 15= d1 27= d2
* 4= dis0/es0 16= dis1/es1 28= dis2/es2
* 5= e0 17= e1 29= e2
* 6= f0 18= f1 30= f2
* 7= fis0/ges0 19= fis1/ges1 31= fis2/ges2
* 8= g0 20= g1 32= g2
* 9= gis0/as0 21= gis1/as1 33= gis2/as2
* 10= a0 22= a1 34= a2
* 11= ais0/bes0 23= ais1/bes1 ...
* 12= b0 24= b1 etc.
*
* Bourdon code number versus approximate weight in pounds:
* 1=C 42000 lb 13=C 5000 lb 25=C 600 lb
* 2=C# 36000 lb 14=C# 4200 lb 26=C# 500 lb
* 3=D 31000 lb 15=D 3500 lb 27=D 420 lb
* 4=D# 26000 lb 16=D# 2900 lb 28=D# 350 lb
* 5=E 21000 lb 17=E 2400 lb 29=E 300 lb
* 6=F 17000 lb 18=F 2000 lb 30=F 250 lb
* 7=F# 14000 lb 19=F# 1700 lb 31=F# 225 lb
* 8=G 12000 lb 20=G 1400 lb 32=G 200 lb
* 9=G# 10000 lb 21=G# 1200 lb 33=G# 175 lb
* 10=A 8500 lb 22=A 1000 lb 34=A 155 lb
* 11=A# 7000 lb 23=A# 850 lb ...
* 12=B 5900 lb 24=B 700 lb etc.
*

* This method of numbering the bell notes permits a two-digit
* number to reflect the entire range of practical tower bell
* weights. Using any other method would take 3 to 5 digits or
* characters.
*
* A difference of 12 in code numbers always reflects a change
* of one octave in pitch. Code "13" is "middle C", so a tower
* bell instrument which has a C key connected to a bell of
* this pitch and weight is in concert pitch.
*
* Code number "1" corresponds to the bourdon of the carillon
* in Riverside Church, New York--the heaviest bell now in any
* carillon in the world, and unlikely to be surpassed. The
* few heavier tower bells which exist are either isolated
* (as in Asian temples) or are used in ways which do not
* correspond to the musical scale (as in Russian zvons).
* Isolated bells of more than a few tons are listed in plain
* language in the MIL under "Great Bells", and the enormous
* bells in a few zvons are handled by the "+" mark described
* on page 1 of the Code Interpretation section.
*
* On page 2 of this section is a diagram showing graphically
* some of the relationships which have been presented in
* tables and plain language above.
*
* The correspondence between weight and pitch is not exact.
* The weights of bass bells of the same pitch can vary by as
* much as 10%, and trebles by as much as 50%, depending on the
* profiles used by the bellfounder. In this book, pitch is
* more important than exact weight in determining the bourdon
* code number to use in the CIL.
*
* Weights given in the last table in the opposite column and
* in the similar table on page 1 of the Code Interpretation
* section are NOT equivalent, and should not be treated as
* such. They are simply round numbers chosen to show a general
* characteristic. For conversions among weight systems, see
* the tables and procedures on pages 3-7 of this section. They
* show the relationships among the metric (SI), American and
* British systems to varying degrees of accuracy.
*
* The difference between accuracy and precision often causes
* confusion in the reporting of bell weights. Accuracy refers
* to the number of significant digits in a number; precision
* refers to the value of the least digit used. If a weight is
* reported as 40,000 lbs, the precision is 1 pound (the unit of
* the rightmost zero), but the accuracy may be only 1 ton. If
* that is the case, then it is less misleading to report the
* weight as 20 short tons. When integer fractions are used
* (such as 1/2) there is often less confusion between accuracy
* and precision.
*
* For further information, see under "Weights and Measures" in
* the Encyclopedia Britannica.
*

Diagram of the relationship among different methods of indicating bell size/weight/pitch



Ton weights in the lower octave are in short tons.

Frequencies shown represent the "strike tone" of the bell (see Glossary). A lower frequency, the "hum tone", develops later.

The octave numbering system used above corresponds to the range of tuned tower bells, and differs slightly from other commonly used systems. For example, piano tuners designate the top C of a piano as "c8". Some piano players and composers use a "small/great" system in which the top note of a piano is c5, middle C is c1, next lower is "small c", then "great C", then "contra C", down to "sub-contra A".

The code numbering scheme is a free adaptation of one originally developed by carillon architect Frederick C. Mayer. That may be found in "Carillon Music & Singing Towers of the Old World and the New," by William Gorham Rice, Revised edition, following page 278c. The principal difference lies in the separation of two items of information which Mayer combined into one, namely the bourdon pitch and the number of missing bass semitones.

```

*****
*
* Kilograms to pounds avoirdupois
*
*   \kg:      0      1      2      3      4      5      6      7      8      9
*   kg \      =====
*   0         0.0     2.2     4.4     6.6     8.8     11.0    13.2    15.4    17.6    19.8
*   10        22.0    24.3    26.5    28.7    30.9    33.1    35.3    37.5    39.7    41.9
*   20        44.1    46.3    48.5    50.7    52.9    55.1    57.3    59.5    61.7    63.9
*   30        66.1    68.3    70.5    72.8    75.0    77.2    79.4    81.6    83.8    86.0
*   40        88.2    90.4    92.6    94.8    97.0    99.2    101.4   103.6   105.8   108.0
*   50       110.2   112.4   114.6   116.8   119.0   121.3   123.5   125.7   127.9   130.1
*   60       132.3   134.5   136.7   138.9   141.1   143.3   145.5   147.7   149.9   152.1
*   70       154.3   156.5   158.7   160.9   163.1   165.3   167.6   169.8   172.0   174.2
*   80       176.4   178.6   180.8   183.0   185.2   187.4   189.6   191.8   194.0   196.2
*   90       198.4   200.6   202.8   205.0   207.2   209.4   211.6   213.8   216.1   218.3
*   100      220.5   222.7   224.9   227.1   229.3   231.5   233.7   235.9   238.1   240.3
*
*   \kg:      0      10     20     30     40     50     60     70     80     90
*   kg \      =====
*   100      220.5   242.5   264.6   286.6   308.6   330.7   352.7   374.8   396.8   418.9
*   200      440.9   463.0   485.0   507.1   529.1   551.2   573.2   595.2   617.3   639.3
*   300      661.4   683.4   705.5   727.5   749.6   771.6   793.7   815.7   837.8   859.8
*   400      881.8   903.9   925.9   948.0   970.0   992.1   1014.1  1036.2  1058.2  1080.3
*   500     1102.3   1124.4   1146.4   1168.4   1190.5   1212.5   1234.6   1256.6   1278.7   1300.7
*   600     1322.8   1344.8   1366.9   1388.9   1411.0   1433.0   1455.0   1477.1   1499.1   1521.2
*   700     1543.2   1565.3   1587.3   1609.4   1631.4   1653.5   1675.5   1697.6   1719.6   1741.6
*   800     1763.7   1785.7   1807.8   1829.8   1851.9   1873.9   1896.0   1918.0   1940.1   1962.1
*   900     1984.2   2006.2   2028.3   2050.3   2072.3   2094.4   2116.4   2138.5   2160.5   2182.6
*   1000    2204.6   2226.7   2248.7   2270.8   2292.8   2314.9   2336.9   2358.9   2381.0   2403.0
*
*   \kg:      0*     100    200    300    400    500    600    700    800    900
*   kg \      =====
*   1000     2205    2425    2646    2866    3086    3307    3527    3748    3968    4189
*   2000     4409    4630    4850    5071    5291    5512    5732    5952    6173    6393
*   3000     6614    6834    7055    7275    7496    7716    7937    8157    8378    8598
*   4000     8818    9039    9259    9480    9700    9921    10141   10362   10582   10803
*   5000    11023   11244   11464   11684   11905   12125   12346   12566   12787   13007
*   6000    13228   13448   13669   13889   14110   14330   14550   14771   14991   15212
*   7000    15432   15653   15873   16094   16314   16535   16755   16976   17196   17416
*   8000    17637   17857   18078   18298   18519   18739   18960   19180   19401   19621
*   9000    19842   20062   20283   20503   20723   20944   21164   21385   21605   21826
*   10000   22046   22267   22487   22708   22928   23149   23369   23589   23810   24030
*   11000   24251   24471   24692   24912   25133   25353   25574   25794   26015   26235
*   12000   26455   26676   26896   27117   27337   27558   27778   27999   28219   28440
*   13000   28660   28881   29101   29321   29542   29762   29983   30203   30424   30644
*   14000   30865   31085   31306   31526   31747   31967   32187   32408   32628   32849
*   15000   33069   33290   33510   33731   33951   34172   34392   34613   34833   35053
*   16000   35274   35494   35715   35935   36156   36376   36597   36817   37038   37258
*   17000   37479   37699   37919   38140   38360   38581   38801   39022   39242   39463
*   18000   39683   39904   40124   40345   40565   40785   41006   41226   41447   41667
*   19000   41888   42108   42329   42549   42770   42990   43211   43431   43651   43872
*   20000   44092   44313   44533   44754   44974   45195   45415   45636   45856   46077
*
*   (see
*   page 6)
*
*****

```



```

*****
*
* British (cwt) to net pounds
*
* \cwt:      0      1      2      3      4      5      6      7      8      9      British tons
* cwt \      =====
* 40 4480 4592 4704 4816 4928 5040 5152 5264 5376 5488 2
* 50 5600 5712 5824 5936 6048 6160 6272 6384 6496 6608 2 Ω
* 60 6720 6832 6944 7056 7168 7280 7392 7504 7616 7728 3
* 70 7840 7952 8064 8176 8288 8400 8512 8624 8736 8848 3 Ω
* 80 8960 9072 9184 9296 9408 9520 9632 9744 9856 9968 4
* 90 10080 10192 10304 10416 10528 10640 10752 10864 10976 11088 4 Ω
* 100 11200 11312 11424 11536 11648 11760 11872 11984 12096 12208 5
* 110 12320 12432 12544 12656 12768 12880 12992 13104 13216 13328 5 Ω
* 120 13440 13552 13664 13776 13888 14000 14112 14224 14336 14448 6
* 130 14560 14672 14784 14896 15008 15120 15232 15344 15456 15568 6 Ω
* 140 15680 15792 15904 16016 16128 16240 16352 16464 16576 16688 7
* 150 16800 16912 17024 17136 17248 17360 17472 17584 17696 17808 7 Ω
* 160 17920 18032 18144 18256 18368 18480 18592 18704 18816 18928 8
* 170 19040 19152 19264 19376 19488 19600 19712 19824 19936 20048 8 Ω
* 180 20160 20272 20384 20496 20608 20720 20832 20944 21056 21168 9
* 190 21280 21392 21504 21616 21728 21840 21952 22064 22176 22288 9 Ω
* 200 22400* 22512 22624 22736 22848 22960 23072 23184 23296 23408 10
* 210 23520 23632 23744 23856 23968 24080 24192 24304 24416 24528 10 Ω
* 220 24640 24752 24864 24976 25088 25200 25312 25424 25536 25648 11
* 230 25760 25872 25984 26096 26208 26320 26432 26544 26656 26768 11 Ω
* 240 26880 26992 27104 27216 27328 27440 27552 27664 27776 27888 12
* 250 28000 28112 28224 28336 28448 28560 28672 28784 28896 29008 12 Ω
* 260 29120 29232 29344 29456 29568 29680 29792 29904 30016 30128 13
* 270 30240 30352 30464 30576 30688 30800 30912 31024 31136 31248 13 Ω
* 280 31360 31472 31584 31696 31808 31920 32032 32144 32256 32368 14
* 290 32480 32592 32704 32816 32928 33040 33152 33264 33376 33488 14 Ω
* 300 33600 33712 33824 33936 34048 34160 34272 34384 34496 34608 15
* 310 34720 34832 34944 35056 35168 35280 35392 35504 35616 35728 15 Ω
* 320 35840 35952 36064 36176 36288 36400 36512 36624 36736 36848 16
* 330 36960 37072 37184 37296 37408 37520 37632 37744 37856 37968 16 Ω
* 340 38080 38192 38304 38416 38528 38640 38752 38864 38976 39088 17
* 350 39200 39312 39424 39536 39648 39760 39872 39984 40096 40208 17 Ω
* 360 40320 40432 40544 40656 40768 40880 40992 41104 41216 41328 18
* 370 41440 41552 41664 41776 41888 42000 42112 42224 42336 42448 18 Ω
* 380 42560 42672 42784 42896 43008 43120 43232 43344 43456 43568 19
* 390 43680 43792 43904 44016 44128 44240 44352 44464 44576 44688 19 Ω
* 400 44800* 44912 45024 45136 45248 45360 45472 45584 45696 45808 20
*
* -----
*
* TONS & TONNES:
*
* 2000 lbs = 1 American [short] ton
*
* 2205 lbs = 1000 kg = 1 metric ton
*
* 2240 lbs = 1 American long ton
*
* 2240 lbs = 1 British ton (plural tonnes)
*
*****

```

- \
 --- > Note that these three kinds of "ton"
 - /
 differ by less than 2%.

