

=====

CARILLONS OF THE WORLD

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 November 2007 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 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.

The complete publication (online version) consists of, and the Terms of Use apply to, the following PDF files:

Title & Contents (this page, reproduced in each file)
Introduction - a complete guide to the display and interpretation of site, summary and other information.
North America (carillons)
North America (chimes, chimolas, rings and zvons)
(North America = The U.S.A., Canada and Mexico)
Central and South America
Africa and the Middle East
Asia and the Pacific Rim
Belgium
British Isles (including Eire)
Denmark and its dependencies
France
Germany (East and West united)
Italy
The Netherlands
Europe and the North Atlantic (remaining countries)
Order form for obtaining standard hardcopy
Survey forms for carillons, chimes and towers

Copyright holder: Carl Scott Zimmerman
1424 Wilton Lane
Saint Louis, MO 63122-6943
U. S. A.
Tel. +1-(314)821-8437 Email: csz_stl@swbell.net

=====

=====

INTRODUCTION

This publication contains three types of information about tower bell sites. (See Glossary on next page.) The first type is plain text, which identifies the location of each site, people associated with it, etc. The second type is technical data about the bells and the installation at each standard site. The third type is summaries which reflect the overall characteristics of the standard sites in an area. Every major geographic area or separately listed country has one section of each type.

Plain text information is arranged under headings beginning with "MASTER INFORMATION LISTING" (referenced as "MIL"). Where it pertains to a standard site, it is laid out according to the Site Text Pattern described on the third following page. Cross references and other non-standard material may appear in various places. Each MIL entry, of whatever type, is set off with blank lines before and after it, and has no blank lines within it.

At the very end of each MIL section there is usually a sub-section headed "Other sites of interest". These include museums, rings of 5 or 6 bells, large or historic bells, and other such places not otherwise qualified for entry in the main sections. "Great bells" are listed with the heaviest first, and include bells over about 4 tons in weight, or of pitch G# or below. Heavy bells contained in standard sites appear here also.

Technical data for every standard site is presented in a very compact tabular form under headings beginning with "CONDENSED INFORMATION LISTING" (referenced as "CIL") according to the Code Interpretation section which follows the Site Text Pattern page. There is no "incidental" material in the CIL. However, two blank lines around a row of dashes are inserted to provide a visual break wherever there is a break in alphabetic order that is due to subdivision of the geographic area. (This does NOT appear if consecutive subdivisions happen to form a continuous alphabetic sequence.)

Most geographic areas are further subdivided based on major classes of instruments; a few are also subdivided geographically. Such subdivision is always described at the beginning of the MIL for the area. All of the standard sites in a geographic area appear in exactly the same order in the MIL and CIL sections for that area.

Summaries always follow the CIL for the geographic area over which they apply, except that consolidated summaries which apply to the entire world are located at the very end of the book.

=====

=====

NOTE: Data for standard sites in the Americas appear essentially as published in a series of six articles in the "Bulletin" of the G.C.N.A. with subsequent changes which could have been published in another such article and actually have been published on the G.C.N.A. Website. However, those articles and that Website do not include the non-standard sites and the summaries which appear here. (The Website does contain the lists of great bells, as well as other summaries, both in different formats.)

DISCLAIMER:

The information presented in this book has been compiled from many sources. While some sites have been personally visited by the author, this has not been possible for all sites. There are obvious gaps in many data entries worldwide, and the validity of others is questionable. This publication can be no more accurate than the sources on which it is based. Therefore consider carefully the year of the source in determining the validity of any entry.

If you find any errors or omissions in this publication, please notify the author, so that they can be corrected in future editions. In return, you will receive a custom extract from the database, showing how your information has been entered, and also reflecting changes received from other contributors for the same area, section or sub-section.

Suggestions for enhancements to the display format or for new types of summaries are also welcome.

Write to this address:

Carl Scott Zimmerman
1424 Wilton Lane
Kirkwood, MO 63122-6943
U. S. A.

or send e-mail to this address:

mailto:csz_stl@swbell.net

or telephone:

+1 314 821-8437

=====

=====
 The definitions presented here are intended to clarify the usages and classifications found in this book. Other definitions and usages may be found elsewhere in the world of tower bells.

NOUNS

Tower bell - a cup-shaped cast bronze bell, of a size suitable for hanging in a tower; normally thicker at the "sound bow" where the clapper strikes. All bells listed in this book are presumed to fit this definition unless otherwise stated. (Some listed instruments are made of other kinds of bells, or of cup-shaped bells cast from a different material, but used in the same manner as tower bells.) The exception is great Oriental bells, which have a different profile and no sound bow.

All tower bells in listed instruments are presumed to be hung "dead" (i.e., non-swinging) unless otherwise stated. The exception is rings (see below).

Carillon bell - a tower bell which has been tuned so that its various partial tones (hum tone and "overtones") are in harmony with its strike tone according to widely accepted principles of tuning. This book does not attempt to indicate the degree to which any of the listed bells attain or fail such harmony.

Great bell - a tower bell which weighs 4 tonnes or more. (See Supplementary Information on Weights.)

Strike tone - the apparent initial pitch of a bell when struck. It is this pitch which is used throughout this book to describe bell notes.

Site - a single musical instrument made of tower bells, or a collection of such bells in one place.

A "standard" site, which appears in both MIL and CIL in this book, contains at least 8 bells. A "non-standard" site, which can appear only in a MIL section, has less than 8 bells. If a new instrument replaced an older one in the same tower, both are included in the same site rather than being counted separately, even if there was a gap of many years between removal and replacement.

=====
 Carillon -

- (1) "a musical instrument consisting of at least two octaves of carillon bells arranged in chromatic series and played from a keyboard permitting control of expression through variation of touch." [G.C.N.A.] This implies the use of a baton keyboard as defined below. In this book, the term "traditional carillon" is used when this definition is intended.
- (2) a site having at least 23 tower bells in at least two octaves of mostly chromatic series, but falling short of the "traditional" carillon either in the lack of tuning of the bells or in the type of mechanism (e.g., electric keyboard or automatic-only operation). In this book, all such "non-traditional" instruments are listed in "carillon" subsections.
- (3) an automatic mechanical tune-playing mechanism, usually found as auxiliary equipment on a ring (see below) in England; this distinctively British usage of the word is not employed in this book.
- (4) a chime (see below) played by a mechanical keyboard; this distinctively French usage of the word is not employed in this book. In this book, all such instruments are listed in "chime" subsections.

Chime -

- (1) a musical instrument consisting of at least 8 tower bells arranged in a diatonic (or partially chromatic) series, but with too few bells to be called a carillon, and upon which tunes can be played by some means.
- (2) any collection of at least 8 bells which is not a carillon by either definition (1) or definition (2) above. (But note that carillon-sized sites will be summarized as carillons even when listed in "chime" subsections.)

Ring - a set of at least 3 tower bells hung for full-circle ringing in either British ("change-ringing") or Veronese style, normally in diatonic series starting from the tonic note of the major scale in the bass. In the few instances of an added semitone, it is used to provide for a lighter (and smaller) diatonic range for ringing. In this book, rings are listed either with chimes or in a separate sub-section, but are always summarized as chimes; only rings of at least 8 bells are treated as standard sites.

=====
 continued...
 =====

=====

Peal -

- (1) a group of tower bells hung for swinging, each at its own natural pendulum frequency, and therefore at random with respect to each other; swung either by ropes or by individual electric motors.
- (2) the performance, by a band of change-ringers, of at least 5000 changes, non-stop; on a ring of 7 or more bells, no two changes can be the same. This definition is not used in this book.
- (3) a ring. This definition is fiercely held by some ringers, while being strongly deprecated by others; it is not used in this book.

Zvon - a set of tower bells hung dead with clapper ropes rigged for Russian-style rhythmic ringing; normally few (if any) of the bells fit into any musical scale, and there are large gaps between the pitches of some adjacent bells, particularly the heaviest.

Keyboard - any of several different devices which permit one person to play all the bells in an instrument by hand, with one key per bell. The key size and arrangement vary according to the mechanism used:

- "baton" keyboards, found in all traditional carillons and some chimes, have keys shaped somewhat like batons, have direct mechanical linkages to the clappers of the bells, and are arranged in two rows like the black and white keys of a piano;
- "pumphandle" (American) or "barrow-handle" (French) keyboards are found in chimes with direct mechanical actions much heavier than those of carillons, and the handles are usually in a single straight line;
- electric keyboards are similar to those of an organ, and typically use relays to control hammer solenoids, which may strike the bells on the inside or the outside.

Baton keyboards are played by striking a key gently or with the partially-closed fist; pumphandle keyboards are played by grasping a handle and pushing down with a full arm stroke; and electric keyboards are played with the fingers.

=====

Console (or clavier) - the case or framework which holds a keyboard; sometimes it also contains a pedal keyboard (pedalboard) by which the heaviest bells can be played with the feet as well as (or instead of) the hands. A pedalboard is always present for traditional carillons, sometimes for chimes, and never for non-traditional carillons.

Chimestand -

- (1) the console of a mechanical-keyboard chime (either baton or pumphandle);
 - (2) a wall-mounted rack to which are tied ropes leading to the clappers of a chime; sometimes called a taut-rope clavier. One variety, commonly called an "Ellacombe" stand, is used with rings; it is connected to externally mounted under-hammers so that it can easily lower them all out of the way simultaneously to permit the bells to swing without interference.
-

VERBS

Chime -

- (1) to swing a bell just enough for the clapper to strike, often on only one side of the bell rather than on alternating sides;
- (2) to sound one or more bells by any method (coll.);
- (3) to emit the sound of a bell (colloquial).

Peal -

- (1) to sound the bells of a peal (n.) by swinging;
- (2) to sound a bell by any method.

Ring -

- (1) to participate in a team of change-ringers;
 - (2) to sound a bell by any method.
-

ADJECTIVES

Carillon-sized - having 23 or more tower bells, regardless of any other characteristics.

Chime-sized - having 8 to 22 tower bells, regardless of any other characteristics.

Dead - refers to tower bells which are hung in a fixed (i.e., non-swinging) position. This is typical of carillons, chimes and zvons.

(END.)

=====

=====
 On pages headed "MASTER INFORMATION LISTING" (referenced as MIL) appears plain text descriptive material for all sites.

STANDARD SITES

For standard sites, text is organized in seven categories. Two of these categories will be present for every individual site, while the others are may or may not be; all will normally appear in the same order that they are listed here. Two categories are indicated by position, the rest by keyword.

A. City and country where the instrument is located, in capital letters, on one line (the first line). This site identification is always present, and connects the MIL and the CIL (described on the following pages).

Where a city has more than one tower bell site, the city name is followed by a letter code to distinguish between the sites. This letter code is usually based on the initials of the site name. Institutions with more than one instrument will have a number to distinguish between them. It is possible for a site to have both a letter code and a number.

Some country names include an abbreviation of the geographic section, state or province, to facilitate sorting.

Within each geographic area or subdivision, sites are listed in order by city name. Multiple sites in the same city are listed in order by the letter code and/or numeric code.

Cross-references are provided for variant city names, and sometimes between subdivisions for multi-site cities.

B. Name of the instrument, if specifically named. (There is no keyword associated with this, as there is for the remaining categories.)

C. "Location" of the instrument. This is the complete physical, civil or geographic location of the tower or other installation, and is always present, even if the exact location is unknown. This is not a postal address, although street numbers may be used when cross-street names or similar geographic references are not available. Tower name is included when one exists. If the instrument is not hung in a conventional tower, a descriptive word or phrase may be shown. If the name of the institution has changed during the lifetime of the instrument, any former name(s) of the institution will be shown in parentheses. If the location of the bells is not the same as their original site, then "Former Location" will be shown after the (present) "Location", using the same style.

D. Names of persons who play the instrument and/or who may be contacted about it, if known. Players are listed under the keyword "Carillonist" or "Chimer", depending on the size of the instrument; their formal titles (assigned by the employing institution) are included when known. Other persons or offices are listed under the keyword "Contact".

For both individuals and institutions, categories of membership in the G.C.N.A. (as of Oct. 2006) are indicated by letters in parentheses, as follows:

- (A) Associate
- (C) Carillonneur
- (H) Honorary
- (Su) Sustaining

Postal addresses and telephone numbers are included, and for G.C.N.A. members are current as of the above date. (Country names are not included in postal addresses, since they would not be used within that country.) Telephone numbers for individuals are designated "H:" for home and "W:" for work when known; in all other cases they are marked "Ph." or "T:". Facsimile machine numbers are marked "F:". Area codes within the country are shown where known, using either parentheses or "/" according to the custom of the country. Country codes are not shown within the site entries, but are listed at the beginning of each MIL section. E-mail addresses are included where known, designated "E:".

E. "Schedule" of concerts or other regular playing for the public (and practice times for rings), if known.

F. "Remarks" provide additional useful information, especially any explanation for items which belong in the CIL (see next page) but which do not fit the code tables. If the bells are not standard tower bells, their type is shown here.

OTHER SITES

In addition to standard site data (described above, and always matched to corresponding technical site data in the CIL), the MIL may contain plain-language information about other sites or points of interest. For example, rings of 5 or 6 bells outside of Great Britain are mentioned, as are bell museums or notable bells which cannot be covered in "Remarks" for a standard site. The text pattern given above for standard sites may be used to the extent convenient, but only a comma (without site code) will be used to separate city and country, and the keywords cited above are not used.

(END.)

=====

SUMMARY DESCRIPTIONS

On pages headed "SUMMARIES" appear various displays of summary information for the sites in the geographic area covered. The standard summaries are described here.

The simplest summary, which can appear at the end of a MIL or CIL section, is a "count of sites". It shows the numbers of carillon-sized and chime-sized sites which exist now (active) or formerly existed (defunct) in the area being summarized, regardless of the manner of operation.

A "summary by maker" consists of a table showing the number of distinct installations by each maker (named down the left side of the table) for each type of contribution (abbreviated across the top of the table). The bottom row of the table gives the totals for each type of contribution regardless of maker, while the right-most column of the table gives the total number of site contributions for each maker regardless of type. The bottom right figure in the table is the total number of contributions by all makers, which is the same as the number of CIL lines being summarized.

A "plot of site counts" is a scatter diagram showing the numbers of sites having each possible combination of bourdon (or treble) weight code and number of bells (instrument size). Weight codes increase from left to right and are displayed along the top edge of the plot; sizes decrease from top to bottom and are displayed along the right edge of the plot. For areas containing very large instruments, the diagram may be broken into two parts, with the carillon portion on the first page and the chime portion on the second page. The starting weight code may vary between areas, depending on the range of instruments which exist therein. The maximum carillon size and maximum chime size shown also vary as appropriate to each area.

=====

A great variety of other summaries are available from the author on a custom basis at relatively low cost. These include selective and/or sorted listings (MIL and/or CIL) based on any parameter(s) in the CIL, as well as standard summaries applied to any selected set of standard sites. (Non-standard sites cannot be summarized, since they do not appear in the CIL.)

Examples:

1. CIL of all sites in the southern hemisphere, sorted by year of installation.
2. MIL (Location, Player and Contact only) for all sites in Europe having a traditional keyboard, at least four octaves, where either a player or a contact is known.
3. CIL of all sites for which the maker is known, sorted by maker and year of installation, with bourdon scatter-plot for each maker.
4. MIL (Location only), CIL and site count for all sites with a traditional keyboard in which all notes appear on the manual, the lowest key is B-flat (A#), and the pedal C# is present.
5. CIL for all sites which have a bourdon heavier than middle-C and which transpose downward.
6. MIL &/or CIL for all sites for which there has been a significant change to the information recorded in the database since any specified date. (This methodology was used to prepare the articles which formerly appeared in the Bulletin of the G.C.N.A. from time to time.)

Within the limits of available data, the possibilities are very wide-ranging. Unfortunately no selection is possible based on the content of MIL data--only on the existence or non-existence of the various categories of information.

=====

* This section describes (a) the format of the tabular data
* shown on pages headed "CONDENSED INFORMATION LISTING" (refer-
* enced as CIL), column by column, starting from the left side
* of the CIL, and (b) how to interpret the codes used there.
*
* Location (city & country) of each site is shown exactly as
* in the first line of the corresponding entry in the MASTER
* INFORMATION LISTING (or MIL). For each site, there is one
* line of print for every distinct contribution to the history
* of the instrument (such as recasting or expansion), with the
* newest shown first. On lines after the first, dittos ("")
* are used for the location.
*
* The bells are specified by a bourdon code number, a
* chromatics letter, and the total number of bells.
*
* Bourdon code number, pitch and approximate weight:

1=C	18500kg	13=C	2300kg	25=C	270kg	37=C	54kg
2=C#	16500kg	14=C#	1900kg	26=C#	230kg	38=C#	50kg
3=D	14000kg	15=D	1600kg	27=D	190kg	39=D	46kg
4=D#	12000kg	16=D#	1300kg	28=D#	160kg	40=D#	41kg
5=E	9500kg	17=E	1100kg	29=E	135kg	41=E	36kg
6=F	7700kg	18=F	900kg	30=F	110kg	etc.	
7=F#	6400kg	19=F#	770kg	31=F#	100kg		
8=G	5500kg	20=G	640kg	32=G	90kg		
9=G#	4600kg	21=G#	540kg	33=G#	80kg		
10=A	3850kg	22=A	450kg	34=A	70kg		
11=A#	3200kg	23=A#	385kg	35=A#	64kg	99=unknown	
12=B	2700kg	24=B	320kg	36=B	59kg		

*(For other interpretations, see section on weights.)

* NOTE: If the bourdon code number is followed by +, then
* there is another bell which is heavier (by more than a
* whole tone) than that identified as the bourdon. This bell
* (the sub-bourdon) is included in the total number of bells.
* It is possible to have more than one sub-bourdon.
*
* Chromatics letter:
* Z-W for carillons (and some chimes):
* Z = completely chromatic
* Y = lowest semitone omitted
* X = lowest 2 semitones omitted
* W = lowest 3 semitones omitted
* H-M for chimes:
* H = diatonic scale only
* I = diatonic scale plus one semitone
* J = diatonic scale plus two semitones
* (et cetera; see Note on page 3 of this section)
* *, - for both carillons and chimes:
* * = other arrangement (see Remarks for site in MIL)
* - = unknown arrangement

Number of bells is self-explanatory.
99 = unknown, but reportedly a carillon.
(Chimes of unknown size are listed as 8 bells, with "*" chromatics letter and a Remark in the MIL for the site.)

The console description section is divided by the virgule (/) into manual and pedal subsections. In each subsection is shown the lowest and highest note of the respective keyboard. This does not include any extra bass bells (as above), whose keyboard note is shown in parentheses at the left of the appropriate subsection. If the manual keyboard does not include all bells, then the number of notes on the keyboard is shown to the right of the keyboard range. The pedal range is assumed to be at least one octave but not two or more octaves, unless the number of pedal notes is given to the right of the range. All semitones are indicated as sharps (#), as in the table at left, because there is no "flat" character on standard computer printers. The word "NONE" appears where there is no keyboard (manual and/or pedal, as appropriate). On rings of bells hung primarily for change-ringing, the word "ROPE" appears in place of NONE in the manual subsection.

Examples:

20X23:CC/CC describes a carillon having
- 23 bells, two octaves without the lowest two semitones;
- manual = 2 octaves (23 notes) C to C without low C# & D#;
- pedal = one octave (11 notes) C to C without low C# & D#;
- bourdon note G (code 20), approximately 640 kilograms (about 1400 pounds) weight, connected to keyboard C.
- Thus the instrument transposes a fifth up from concert pitch (7 semitones).

10+Y51:CC49/(G)A#A24 describes a carillon having
- 51 bells, covering over four octaves, missing one semi-tone above the bourdon but having also a sub-bourdon;
- manual keyboard of 4 octaves (49 notes), ranging from C to C and fully chromatic;
- pedal keyboard of over 2 octaves (24 notes), covering G-A#-C-chromatic-to-A;
- specified bourdon note A (code 10), approximately 3850 kilograms (about 8500 pounds) weight, connected to pedal A# key but not to the manual.
- Thus this carillon transposes one half-tone down from concert pitch (-1 semitone).
- Since the sub-bourdon is connected to pedal note G, it must therefore sound note F# and weigh about 6400 kilograms (about 14000 pounds).

continued..

```

*****
*
* In the following paragraphs, the "COLUMN" numbers listed
* in the code group headings refer to the numbers in the
* sub-heading line on each CIL page. In those columns,
* blanks can represent either "unknown" or "not applicable";
* this is usually obvious from context.
*
* Principal playing mechanism (COLUMN 1):
* B = mechanical (baton) keyboard (and pedalboard)
* C = chimestand (pump-handle keyboard; usually no pedals)
* E = electric automatic
* I = independent electric keyboard (piano style)
* L = Ellacombe stand, or other taut-rope clavier
* M = mechanical automatic (drum)
* n = no current workable playing mechanism (bells remain)
* N = none (instrument no longer exists)
* O = electric operation from organ keyboard
* R = rope and wheel (full-circle, for change-ringing)
* S = swung individually by electric motor
* V = rope and wheel (full-circle, Veronese system)
* W = rope and wheel (swing-chiming only)
* * = other (see Remarks for site in MIL)
* (See also COLUMN 10.)
*
* Bellfounders (COLUMN 2):
* A = van Aerschodt
* B = Bollée
* C = Schilling (Apolda & Heidelberg)
* D = van den Gheyn
* E = Eijsbouts
* F = Petit and Fritsen
* G = Gillett and Johnston
* H = Hemony
* I = Michiels
* M = Meneely (West Troy/Watervliet)
* N = McShane
* O = Olsen (Nauen)
* P = Paccard
* R = Rincker
* S = Sergeys
* T = Taylor
* V = van Bergen (Heiligerlee & Greenwood)
* W = Whitechapel (& its predecessors)
* X = Michaux
* Z = Bergholtz
* % = Porzeleinfabrik Meissen (porcelain bells)
* $ = Bochumer Stahlverein (steel bells)
* * = other conventional (see Remarks for site in MIL)
* | = other/unknown tubular (see Remarks for site in MIL)
* - = "not applicable" - used with Keyboard code in COLUMN 3.
*****

```

```

*****
*
* NOTE: In the last section of this book may be found an
* expanded list of bellfounders giving full names, locations,
* periods of work, and other information.
*
* Extent of founder's contribution (COLUMN 3):
* C = complete instrument (possibly in several installments)
* E = extended to present range
* F = foundation of later-extended instrument
* I = intermediate extension
* K = new keyboard of different range
* R = recast (or replaced) without extending range
* T = retuned (without recasting)
* * = a mixture of founders, no one of which made a complete
* instrument at this site; see Remarks for site in MIL.
* NOTE: Codes E and I may include recasting of older bells.
* Then the total added and recast will be shown in
* Column 4 (see below), and will be greater than the
* increase in the size of the instrument.
*
* Remainder (COLUMN 4):
* Number of bells by this maker remaining or included
* -U = unknown number removed or excluded
* -# = number excluded (usually after C in Column 3)
*
* Year installed (COLUMN 5): self-explanatory
* (NOTE: If the year the bells were cast is not the same as
* the year of installation, or the preceding year, then a
* Remark appears in the M.I.L.)
*
* Practice console (COLUMN 6):
* D = different from carillon console
* I = identical to carillon console
* N = none
* S = simulator for one or more bells of a ring
* Y = yes, but type is unknown
*
* Source and date of latest information (COLUMN 7):
* Last 2 digits of year, followed by a letter -
* b = British Carillon Society Newsletter
* B = "Bulletin of the G.C.N.A."
* C = personal communication to the author
* D = "Directory" of North American carillons, G.C.N.A.
* F = Frank Della Penna
* H = published lists of Leen 't Hart
* J = Rinus de Jong
* K = "Klok en Klepel" (magazine of the N.K.V.)
* k = Keating, "Bells in Australia", 1979
* L = Lefevere, "Bells over Belgium" (3d ed), 1953
* M = manufacturer (bellfounder or installer)
*
* continued...
*****

```

 * ...continued:
 * N = "The Clapper" (NAGCR newsletter; also annual report)
 * O = Peace Tower Summer Program booklet, Ottawa
 * P = Price, "Campanology Europe, 1945-47"
 * Q = questionnaire of the GCNA Committee on Tower and
 * Carillon Statistics
 * R = newsletter of the GCNA
 * (originally "Randschriften", now "Carillon News")
 * T = "De Zingende Toren van Nederland"
 * V = Dove, "A Bellringer's Guide..."
 * (8th ed., 1994; 7th ed., 1988; 6th ed., 1982)
 * W = "The Ringing World" (weekly news magazine)
 * Z = personal visit by the author
 *
 * Heights above ground, in meters (COLUMNS 8):
 * a...base of console (or ringing room);
 * * if not in tower--see REMARKS for site in MIL
 * 0 indicates ground floor
 * b...lowest level of bells
 * c...highest level of bells
 *
 * Percent of bellchamber walls open (COLUMN 9):
 * 99 = exposed frame, no walls
 * * = variable sound control
 *
 * Additional playing mechanisms (COLUMN 10):
 * Codes as for COLUMN 1, plus the following---
 * F = flywheel (Spanish style) full-circle free swinging
 * H = hour struck by clock
 * Q = quarters and hour struck by clock
 * T = tolling hammer with rope
 * n (before another code) = that mechanism is or was
 * installed, but is not operable now (notice lower case)
 * a number after a code = the number of bells thus sounded
 *
 * Transposition (COLUMN 11):
 * nn = transpose upward "nn" halftones (light bells)
 * 0 = in concert pitch
 * -nn = transpose downward "nn" halftones (heavy bells)
 * 12 = one octave above concert pitch
 * 24 = two octaves above concert pitch
 * 9x (or blank) = indeterminate for some reason
 *
 * Site type (COLUMN 12):
 * B = business
 * C = church or seminary
 * E = estate or foundation
 * M = monument or memorial structure
 * P = public building
 * U = university, college or school
 *

 Denominational affiliation - original (COLUMN 13):
 (specific branches within a major denomination may be
 indicated by initials in parentheses in the MIL)
 A = Anglican/Episcopal
 B = Baptist
 ABC = American Baptist Churches
 SBC = Southern Baptist Convention
 C = Roman Catholic
 L = Lutheran
 ELCA = Evangelical Lutheran Church in America
 ELCC = Evangelical Lutheran Church in Canada
 LCMS = Lutheran Church/Missouri Synod
 WELS = Wisconsin Evangelical Lutheran Synod
 M = Methodist (United Methodist)
 N = Non-denominational (general Protestant)
 O = Orthodox Catholic (all nationalities)
 P = Presbyterian/Reformed
 PCUSA = Presbyterian Church USA [United Presbyterian]
 S = Christian Science
 U = United Church of Christ/Congregational/
 United Church of Canada
 * = other (see Remarks under MIL)
 - = none
 *
 *
 * Latitude (Lat) and longitude (Long) are given in degrees
 * and minutes, east longitude and south latitude negative.
 * These values often represent only the general location of
 * the city and not the exact location of the instrument.
 *
 * -----
 * NOTE: For chromatics letters indicating added semitones in
 * chimes (I,J,K), the placement of such notes is indicated in
 * the MIL Remarks block for the site when known. It may be
 * shown as a specific note, or as an interval relative to the
 * bass (for chimes) or treble (for rings). Thus an F# added to
 * a C scale would be the sharp 4th of a chime (of any size) but
 * the flat 4th of a ring of 8 or the flat 6th of a ring of 10.
 *
 * -----
 * Readers of the first five Bulletin articles and/or the first
 * edition of "Carillons of the World" should note that some
 * changes in data format or codes have been made, as follows:
 * - All data (with the exception of site identification) is
 * now presented in mixed case instead of upper case.
 * - More codes for bellfounders have been added, and one has
 * been changed.
 * - The code for Arthur Bigelow has been changed from "B"
 * to "b", and "B" is now used for Bollée.
 * - Do not confuse lower-case "w" (Warner) with upper-case
 * "W" (Whitechapel and its various predecessors).
 * - Do not confuse "m" and "M" for the two Meneely
 * foundries.
 *
 * (END.)*
