

## DEAR UNCLE MAX

Send questions to Dear Uncle Max, AGO National Headquarters, 475 Riverside Dr., Suite 1260, New York, NY 10115.

*Every time I pick up an article on Italian Renaissance organs, the writer mentions the 16' organ, or the 8' organ, and sometimes goes on to comment on the 4' organ, as if I would know exactly what these organs are. I would like to know, for example, if the 16' organ has 8', 4', and 2' pipes as well, and if the 4' organ would have 2', 2 $\frac{1}{2}$ ', 1', and 1 $\frac{1}{2}$ ' pipes.*

R.G., Mexico City

The short answer is yes and probably no. The 16' organ would have the 8', 4', and 2' pipes; the 4' organ following the usual Italian pattern of omitting the 12th, would not have the 2 $\frac{1}{2}$ ' or the 1 $\frac{1}{2}$ ', but might have a  $\frac{3}{4}$ '.

A slightly longer answer and explanation. It all seems to get worse before it gets better—we have at least to mention 24', 20', 12', and 6' organs.

The 16', 8', and 4' organs would be based on a lowest keyboard principal note of C; 24', 12', and 6' on a lowest note of F, and the 20' organ on a low A. The late 15th century frequently had a three-octave-plus keyboard corresponding to a normal vocal range from the second F below middle C to the second A above—a very sensible range. This would give you a 6' organ, the low F being 6' long; 24' would be below the 16' range halfway to the 32'. The lower the pitches used, the larger the keyboard compass up to 59 keys for a 24' organ. Italian pedalboards were limited from about eight to, at most, 20 notes. Short octaves were encountered at the bottoms of the keyboards, the pedals being permanently coupled.

Italian organs avoided pipe-length designations in their stop names, but rather used intervals measured from the lowest keyboard note. (We do something similar in calling stops 12th, 15th, and sometimes higher intervals, cleverly leaving the names in English, but the point of reference is usually not the same.) Foreign as it may seem to us, it is very sensible, especially given the variable keyboard ranges. To illustrate what is meant, it is necessary to understand the Italian Ripieno comprising all of the principal stops. The Ripieno is equivalent to the Organo Pleno, Full Organ (not interpreted as every stop available), Plein Jeu, or Volles Werk indications. By 1475, Lorenzo di Prato built an instrument in San Petronio's Church in Bologna that is the earliest known example of the completely divided princi-



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pal chorus. This became the pattern at the heart of the Italian organ until at least the middle of the 19th century. The plan for the Ripieno looks like this:

Principale	Unison
Octava	Octave
Quintadecima	15th
Decimanona	19th
Vigesimaseconda	22nd
Vigesimasesta	26th
Vigesimanona	29th
Trigesimaterza	33rd
Trigesimasesta	36th

The octaves would be: Octave, 15th, 22nd, 29th, 36th, while fifths would be: 19th, 26th, 33rd. With this very wide range of overtones represented, it is important to know that they did not all ascend in pitch indefinitely but broke back down an octave at  $\frac{1}{2}$ ' or two octaves above middle C on a 2' stop. Not excessively high!

With this sensible system, the registers could carry the same name and numbering regardless of whether the organ was a 24' or a 4' instrument—the whole terminology being shifted up or down as required. (You can appreciate, with an instrument no longer in existence and only register names surviving, why you can't be too sure what you actually are talking about.) Relation-

ships were constant and stable. It is curious that the third stop is a 15th above, a second octave, the third harmonic from the overtone series, the octave and a fifth, remaining un-reinforced. If the instrument were small, some of the top registers might be omitted. Theoretically, you could mix your mixtures, controlling the degree of "full."

In Italy, flutes, after the middle of the 15th century, became standard but, first, at pitches other than the lowest pitched principal (that is, if the principal appeared at 8' pitch, the first flute would be at the octave, 4' pitch, and called appropriately Flauto in Ottava. The Voce Umana was a second principal tuned to beat with the main principal for a broad celeste affect. Other stops appear, according to instrument size, region, date, builder, and so forth.

For a longer answer yet, you might want to look back in THE AMERICAN ORGANIST to the excellent articles on "The Italian Organ" by Joseph Horning. The instruments are discussed in the February 1991 issue; the registrations are discussed in the second part of the article in the September 1991 issue. The author will clue you in on divided keyboards, reed stops, and, with fine illustrations, the use of bells and feathers.

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