

## Organ Registration

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### Basic Rules

*Register* is another name for organ stop, hence *registration* is the act of combining stops for a desired sound. *Registration* also means the combination of stops that are chosen or specified, as in "use a soft registration" or a "full registration."

8' pitch is *unison* pitch, the pitch that is written, the pitch level at which you sing or play on the piano. This is true for manuals and pedal. Unless there is a specific reason to the contrary, always begin registering with an 8' stop. In the pedal, which usually includes 16' pitch (one octave lower), 8' pitch may be supplied via one or more couplers (Swell to Pedal or Great to Pedal), but 8' pitch must never be omitted from pedal registrations, unless there is a clear reason to the contrary.

Stops of the same "family," pitched an octave apart, always combine well. This is called a "chorus," which term is usually used with the name of the family (e.g.: *principal chorus*, *flute chorus*, etc.). To build a principal chorus on the Great, begin with the 8' Principal (or Diapason) and 4' Octave, then add 2' Fifteenth or Super Octave, 2 2/3' Quint or Twelfth is optional, and finally the Mixture.

Stops of differing families usually combine well at the 8' level. The most cohesive sound is obtained by using just one stop per pitch level at higher pitches. Flutes and principals usually blend better when flutes are used for the lower pitches. For example, Flute 8 + Principal 4 usually blends better than Principal 8 + Flute 4. Strings are less common at pitches above 8'.

Effective hymn accompaniment usually includes a 4' stop on the manual. The principal chorus is the "backbone" sound of the organ and the "workhorse" of congregational hymn accompaniment. For softer (sacrament) hymns, the 8' principal may be used alone, or flutes and strings may be combined at 8' and 4' pitches. Celeste stops should *never* be used for congregational accompaniment.

Use the minimum number of stops required to achieve the desired effect. In large combinations, if turning off a stop makes no audible difference, leave it off. The resulting sound will be cleaner, and the stops will be easier to manage.

Never use the Tremulant or Celeste stops for congregational singing.

When choosing a registration, start with the expression (swell) pedal(s) at least half-way open. Using full registrations with the "volume turned down" makes the organ sound fake. On some electronic organs the reverse is also possible – opening the swell pedal fully may make the organ sound unnaturally loud.

## Basic Registration Types

### *Chorus or Ensemble Registration*

Most hymns are played using a chorus registration. It is the most basic type of organ registration. All voices are played on the same manual, and the pedal, where the bass voice is played, is registered to be very similar to the manual. Optionally, the pedal may be registered slightly more or less prominently, but it is a common mistake to under-register the pedal in chorus registrations. Separate choruses may be registered on each manual. The organist may alternate between manuals, and/or the manuals may be coupled together.

### *Solo-and-Accompaniment Registration*

Many hymn preludes (including centuries-old chorale preludes) require one voice to stand apart from the others. The solo voice is registered on one manual and an accompaniment stop or ensemble is registered on the other manual. The accompaniment manual is often coupled to the pedal which usually includes a single 16' stop. Alternatively, the pedal may be registered independently to balance the accompaniment manual. If so, always use at least one 8' stop, and sometimes it's nice to leave the 16' off.

Some common solo registrations:

- Principal 8'

- Reed 8'

- One or more mutation stops with 8', often with 4' and/or 2' as well – best for solos in the treble range (right hand)

- A tremulant may make a pleasing effect for the solo voice.

Depending on the strength, timbre, and tessitura of the solo voice, the accompaniment may range from a single 8' stop to a small chorus of flutes and strings at 8' and 4'. A string and celeste is a favorite accompaniment sound, but remember that as a special effect it becomes less effective with over-use.

### *Trio Registration*

As the name implies, three independent voices are registered, one on each of two manuals and one on the pedal. The manual voices should contrast distinctly but usually not dramatically. In most trios, the contrast should be one of timbre (tone color) more than volume. If the bass voice is active (e.g.: quarter notes) it should be registered to "hold its own" against the manual voices. If it is passive (e.g.: tied whole notes, such as in Kim Croft's *Nine Hymn Studies*), a single 8' stop or soft 16' and 8' together is usually sufficient.

## All About Stops

"Get to know the stops. Make them your friends."  
— Alexander Schreiner, former Tabernacle organist

### *Why are they called stops?*

One of the earliest developments in the sound of the organ was to add pipes to make a bigger sound. Playing one key would cause a whole group of pipes to sound together. The next development was to provide a means of varying the sound by *stopping* the air to some of those pipes, allowing only selected sets to play. Eventually, every set of pipes had it's own *stop*.

### *Why do organ stops have such funny names?*

Organ stop names come from centuries-old traditions in a variety of nationalities. Some names refer to the shape of the organ pipe that makes that particular sound, some refer to the quality of the sound itself, and some refer to an instrument that makes a similar kind of sound. The latter are the most easily recognized, such as *Viola*, *Oboe*, and *Trumpet*. Note, however, that the term "flute" is usually used in a general way (i.e. family of tone), not to refer to the modern orchestral instrument of that name. In fact, very few classical organ stops are designed to closely imitate their orchestral namesakes.

### *Two kinds of stops*

When an organ pipe makes sound it is said to *speak*. There are *speaking stops* and *non-speaking stops*. Non-speaking stops make no sound by themselves. *Couplers* and *tremulants* are the most common non-speaking stops. Couplers enable the sound of one manual to be added to that of another manual or to the pedal. A tremulant causes the normally straight, sustained tone of the organ to waver at a regular rate, something like the natural vibrato of a singer.

### *Two kinds of organ pipes*

Most organ pipes operate on the principal of a whistle. They are called *flue* pipes or just *flues*, referring to the slit through which air passes to set the air inside the pipe into vibration. The other kind works like a party horn. They are called *reeds*, because their sound is generated by the flow of air causing a metallic reed to vibrate, which in turn sets the air in the pipe into vibration.

### *Four families of tone*

Organ stops are classified in families of tone called *principal*, *flute*, *string*, and *reed*. Principal tone is the most basic and characteristic organ tone. Flutes are generally softer than principals, having more subdued overtones; they sound "hootier." Strings are generally softer than principals, too, but in a different way from flutes, having a more subdued *fundamental* and well-developed overtones; they sound thinner. There are also *hybrid* stops that combine the gentler tone of a flute with some of the overtones of a string. In terms of organ pipe construction, all of the above are *flues*.

Reeds may be sub-classified as *chorus reeds*, used to add "fire" and power to large

combinations of stops, and *solo reeds* with distinctive tone colors. Many reeds can be used effectively in both ways.

Flute	PRINCIPAL	string	REED
Softer and "fatter" (fewer overtones) Great variety within this family	Basic "organ" sound (balanced overtones)	Softer and "thinner" (enhanced overtones)	Distinctive and/or powerful (abundant overtones)

Some common stop names:

<i>Gedeckt, Bourdon, Subbass</i>	<i>(Open) Diapason, Prestant, Montre</i>	<i>Salicional, Gamba, Voix Celeste*</i>	Any name of a reed or brass instrument. Some common foreign language examples are: <i>Hautbois</i> (Fr. oboe), <i>Fagot</i> (Ger. bassoon, emphasis on second syllable), <i>Posaune</i> (Ger. trombone) Some common medieval/renaissance examples are: <i>Krummhorn</i> or <i>Cromorne, Schalmey</i> Other fairly common reeds: <i>Bombarde, Clarion</i>
Any kind of <i>Flute</i> or <i>-flöte</i> (German)  <i>Stopped Diapason, Nachthorn, Copula, Clarabella, Melodia</i>	Any interval ( <i>Octave, Twelfth</i> , etc.) without an indication of another tone family	Any derivative of Viol ( <i>Viola, Viole de Gambe, Violone...</i> )  <i>Gemshorn</i> (pronounced with a hard G: GEMS-horn) is really a hybrid, but usually tends more toward string tone than flute tone	

***Pitch level***

An Arabic numeral indicates the pitch of the stop. 8' is unison pitch – the pitch that you sing or play on the piano. The number roughly corresponds to the length in feet of an organ pipe required to sound the lowest note in a given stop. A pipe half as long sounds one octave higher. Thus, 4' sounds one octave higher than 8', 2' sounds another octave higher, and so on. 16', twice as long, sounds an octave lower. Dividing 8' by an odd number, usually 3 or 5, gives pitches like 2 2/3' and 1 3/5'. Stops with pitches like these are called *mutations*, because of their ability to change the quality of the *foundation* stop with which they are combined.

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\*Any stop including the word *Celeste* (not to be confused with the percussion instrument *Celesta*) or called *Unda Maris*, is designed to be used as a special effect in combination with usually just one partner stop (on stop tab consoles, usually the stop to it's immediate left). It does not belong in a chorus registration, and it is ***not recommended*** for congregational singing.

***Multi-rank stops***

Most stops employ a single *rank* of pipes – one pipe per note. When two or more ranks are combined in a single stop (two or more pipes per note), the number of ranks is usually indicated by a Roman numeral, often in lieu of a pitch designation. The most common example is a *Mixture*, usually of three or four ranks. Another example is *Celeste II*, in which two ranks (usually at 8' pitch), one deliberately mis-tuned, sound together to create a lush effect. (See previous footnote).

***Standard order of stops on a stop tab console***

If all of the above information seems like just too much, and if your organ has stop tabs instead of drawknobs you can RELAX! Within each division (Pedal, Swell, Great – and that's the usual order), stops are arranged as follows, left to right:

- a) Flues, then reeds, then non-speaking stops
  - b) Within each of those groups: Low pitches to high pitches
  - c) Within each pitch group: Principals, flutes, then strings (although sometimes strings come before flutes)
  - d) Within each of those groups: Loudest to softest

***More information on stop names***

A *Geigen Principal* is one that leans toward string tone, and sometimes it's called just plain *Geigen*. *Geigen Octave* is another possibility. They're still principals.

The German adjective *Spitz*, meaning "pointed," refers to the shape of a pipe that is narrower at the top. The most common example is *Spitzflöte* (sometimes *Spitz Flute*, also *Conical Flute* or *Flûte conique*). While still a flute, it tends toward the hybrid tone of the *Gemshorn*. Generally, a *Spitz*- anything blends better with other families of tone than does a "non-spitz" variety.

*Aeoline*, *Fugara*, and *Salicet* are strings. A *Dulciana* is actually a very soft principal, but it is often used as a string.

*Dolce* and *Erzähler* are fairly common names of hybrid stops. They are usually quite soft.

*Vox Humana* is a reed, but it falls into the category of special effects along with celestes and tremulants. In fact, it usually includes it's own tremulant. In the context of basic organ instruction it has absolutely no use, and it should never be used for congregational accompaniment.