Tracing Seven Hundred Years of Organ Registration
1300 – Present

---SCW (2010)

... portions used for ALCM Conference workshop, “This, That, Neither, or Both,” June 2012, Bethlehem, PA,
So, this all started when a student asked me questions about Spanish music about which I had not a clue ... just think
what would happen if they asked me about something really complicated!!

12th century

Theophilus, a monk, documented an organ that contained an ensemble of pipes speaking
in octaves and fifths known as a Blockwerk, literally a ‘block of sound’ from which
individual ranks could not be separated.

14th and 15th centuries – Late Medieval Organs

Multiple manuals and split-chest systems enabled separating the Principal ranks from the
higher Mixture sounds.

By the 14th century, there were pedals, fully chromatic keyboards, and tripartite façade
arrangements accommodating large ‘bourdon’ or ‘tenor’ pipes.

By the 2nd half of the 14th century, there was the addition of secondary manual and pedals
on separate actions and wind chests.

For organs built c. 1350-1400 (which can be translated to modern organs):
➢ simple organ would be a Blockwerk of Mixtures, probably based on 4-foot pitch
➢ double organ would add an octave lower at 8-foot pitch
➢ RH would probably feature a decorative treble voice on the Blockwerk sound,
while the LH on the ten lowest keys would sound the tenor on sustained Principals
➢ the organ could be played so that only the ten tenor keys of the main manual
were doubled an octave lower
➢ 4-foot Principal stops on a separate manual is an option
➢ 8-foot plenum for the tenor on one keyboard with other voices on the 4’ plenum

Organ built in 1361, renovated in 1498, described by Praetorius:
➢ two upper manuals were called Diskant with 22-note chromatic compass
➢ third manual or Bassklavier had 12 keys from B to b
➢ pedal had the same one-octave compass

The Principal chorus of inseparable registers is the most heavily documented type of late-
medieval organ.

The Robertsbridge Codex is the earliest known music to be written in Old German organ
tablature. Possible registrations for these pieces are:
Principal choruses based on 8' or 4' pitch to imitate the Blockwerk sound, or 4' or 2' Principal registers alone or in combination to evoke the high-pitched sounds of the late-medieval positive organs.

The presence of multiple manuals and pedals on northern organs seem to have been fairly widespread during the 15th century.

Italian organ builders were the first to separate the Principal ranks of late-medieval Blockwerk, but kept only one manual for many centuries.

**15th century** – German and Dutch Organs

The northern approach was to diversify color by constructing multiple manuals and split chests to activate different groups of ranks.

From about 1450, positive organs were added to Blockwerks.

*Faenza Codex*, significant source of 15th century instrumental music, the majority arrangements of French and Italian songs. Small organs may have been used to accompany these songs and dancing, since the portative is depicted with dancers in several 15th century manuscripts. The vocal intabulations and dance pieces benefit from:

> clear sounds of individual Flute or Principal registers
> verses of the Kyrie might alternate between the 8’ and 4’ Principal chorus and low Principals without Mixtures.

*Ileborgh Tablature* (1448, now at Curtis Institute in Philadelphia), earliest source specifying performance with pedals, as indicated by sustained low notes.

Pieces found in the *Buxheimer Orgelbuch* (copied between 1455 and 1460), mostly polyphonic or imitative, would benefit by being played on Principal choruses of varying timbres and loudness to bring out the dynamic changes of the repeated figurations.

Two sources from the 14th century, one by Praetorius, confirm the practice of playing open fifths in the pedal, creating what we now know as a ‘Resultant.’

**1500-1550** – The Renaissance

There is no treatise that describes issues of keyboard performance before Arnolt Schlick’s *Spiegel* (1511) and Hans Buchner’s *Fundamentum* (c. 1520), and these are of little use in understanding music from areas outside Germany.

Observing the various ways that pre-existing song and dance models were treated can provide insight into the stylistic developments of Renaissance organ music.
There were regional differences in construction, but Renaissance organs were generally full of color, whether by the reeds and mutations that characterized Flemish and German organs, or the vocal principals and flutes of Italy, Spain and England.

Northern European organs had multiple manuals with pedal, full principal choruses with Mixtures, reeds in all divisions, flutes and mutations.

English and southern instruments were generally of one manual, which had a Principal chorus of individually drawn registers with one or two flutes. The small size of these instruments did not mean they were devoid of color. Rather, the distinctiveness of each register and numerous possibilities for combination with others insured a vast tonal palette for even the smallest organs.

The only sources on registration from the period are the combination lists for Valvasone (1532) and few remarks by Arnolt Schlick in his Spiegel (1511), providing some insight into how Italian and German organs were used.

Andrea Antico, *Frottole intabulate da sonare organi*, Rome (1517)
> frottola may be played on Principal stops at 8’ or 4’, perhaps with a flute added to create a fuller, more Italian(?) sound
> combination of Prin and Flute created a suggestion of waver, which was appealing to the Italians (first celestes?).

Venice, Biblioteca Nazionale Marciana (c. 1520)
> for a Pavane, which suggests a solo with accompaniment, it would not have been possible to bring out the melody on an Italian organ of the time. This must be done with articulation, making LH chords short and percussive, while the RH is more sustained.

Cavazzoni, *Recerchari, motetti, canzoni*, Venice (1523)
> arrangements of motets, etc., use a 4’ flute or mild Principal
> Recercars – use the ripieno, a principal chorus of octaves and fifths

Keyboard dances, Venice (1551)
> a single Flute or Principal at 8’ or 4’ (or could have an added Flute 8’ and 4’)
> bright Principal chorus
> various combinations of Principals: 8 and 4, 8 and 2, 8-4-2, 8-4-1, 8-4-1 1/3, 4 and 2, 4-2-1 1/3, 4 and 1 1/3, 4 and 1, etc.
> more extreme gap registrations may also be used to great effect
St-Michel, Bordeaux Registrations (found in contract for the organ of 1510); reflects Italianate tradition, with many “gap” registrations:

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Stop</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand jeu</td>
<td>F8</td>
<td>4 1 1 1/3 2</td>
</tr>
<tr>
<td>Grand jeu doux</td>
<td>F8</td>
<td>4 1</td>
</tr>
<tr>
<td>Cornes</td>
<td>F8</td>
<td>2 2 2/3</td>
</tr>
<tr>
<td>Gros cornet</td>
<td>F8</td>
<td>4 2 2 2/3</td>
</tr>
<tr>
<td>Grans cornaiez</td>
<td>F8</td>
<td>2 2 2/3</td>
</tr>
<tr>
<td>Fleutes d’Alement</td>
<td>F8</td>
<td>1 8</td>
</tr>
<tr>
<td>Fl. à 9 pertuys</td>
<td>F8</td>
<td>8</td>
</tr>
<tr>
<td>Cimbales</td>
<td>F8</td>
<td>4 2 2/3 16</td>
</tr>
<tr>
<td>Petite cimbale</td>
<td>F8</td>
<td>2 2/3</td>
</tr>
<tr>
<td>Papegay</td>
<td>F8</td>
<td>4</td>
</tr>
<tr>
<td>Chantres (1)</td>
<td>F8</td>
<td>8</td>
</tr>
<tr>
<td>Chantres (2)</td>
<td>F8</td>
<td>1 1/3</td>
</tr>
</tbody>
</table>

“F” below tenor C – principal chorus based on 12-foot length

Sources reveal the Renaissance preoccupation with organ color, especially imitating other sounds, such as German flutes (Fleustes d’allemans), bagpipes (chantres), and parakeet (papegay). There is no known repertoire to which these sounds were applied, but Renaissance organists clearly used registration to create novel and interesting timbres and modern organists are encouraged to do the same.

France:
The only surviving French registration lists from the 16th century are from Bordeaux and Toulouse, and these reflect the more Italianate tradition of southern France. *Note: Northern France was then Flanders, so Flemish registration lists would be pertinent.

Reeds and cornets of French classical tradition derived from the developments in Flanders and the Low Countries, but it is unclear when these were first introduced. Sources suggest that reeds may have already been present on organs in the north of France by 1515:

St. Vivien, Rouen, 1515 – one manual
Double principal
Jeu de haultboys (oboe)
Cornetz (cornet)
Freutes d’Allemaigne (German flutes)
Cimballes (cymbale)
Roussignolletz (nightingale, ‘to sing with the organ’)
Flaiolletz (flageolet? ‘to sing with the German flutes making a simphronye’)
Tabourin de Suisse (Swiss drum)
Jeu de trompes clerons (bass clarions)
Douchainnes (bass? Dulcians ‘as well made as those being made at Notre Dame, Rouen’)

Germany:
In 1511, Arnold Schlick introduced the organ as ‘the pre-eminent instrument of music, since the greatest number of voice parts, as many as six or seven, may be controlled by one man.’
Book recommendation: “Bach’s Feet” by David Yearsley (available online) – lots of interesting information about Arnold Schlick!

Schlick’s remarks on registration: ‘It is not commendable to build many registers, especially those that sound like one another. One should select those that are to be heard and recognized as different from one another. (Comment: could this have been because of the need to conserve air pressure?) With eight or nine good registers, which go well together and yet are interchanged with one another for tonal variety, one may give much pleasure to the hearer.’ He recommends the following eight stops:

- principal (sometimes called koppel or flute)
- octave, long scale (or in large instruments, double octave)
- gemshorn, short wide scale, octave above principal (or double octave)
- zimbel, small mixtures that is ‘sharp, cutting’
- hintersatz, a mixture that is ‘sharp, pure, cutting’
- rauschpfeife, after the fashion of a schalmei
- wooden percussion, strange and wonderful to hear, ‘like a bowl hit with a spoon’
- zink

Schlick recommends four registers for the Rückpositiv:

- principal of wood pipes, or tine pipes made to sound like wood
- small gemshorn
- a good pure zimbel
- small hintersatz

Combination of manual stops:

- everything goes well with the rauschpfeife and trompete
- the RP hintersatz can be coupled with the main manual rauschpfeife
- the octave goes well with the principal
- all registers should be separable
- it is sometimes pleasant to hear to registers together, such as the zimbel and principal
  - it is strange and unusual to hear wooden pipes of the RP with the octave on the main manual

He stresses the importance of an independent pedal:

- the Pedal octave goes well with the principal, but the octave must be separated in order to use it alone
  - trumpets and posaunes are vital to pedal divisions, but not zimbels or small octaves

England:
It is clear that organ builders divided the old-fashioned Blockwerk into separable stops by 1500.
The most compelling evidence for the English organ during the first half of the 16th century are two sound boards recently discovered in Suffolk. The stop lists reconstructions:

Wetheringsett fragment, c. 1520
- ?Unison (open wood, suggested by large foot holes)
- Principal [8]
- Principal [8]
- Octave [4]
- Octave [4]
- Superoctave [2]
- Superoctave [2]
- Diapason [16] (i.e. suboctave, lowest 19 notes only, probably of wood)

Wingfield fragment, undated
- Principal [8]
- Octave [4]
- Octave [4]
- Superoctave [2]
- Superoctave [2]

These specifications are in keeping of the early Tudor organ as a small instrument of 4-8 separable registers based on a Principal/Diapason. They reflect the common practice of doubling registers at the same pitch with ranks that are scaled differently.

There were regals, short-resonator reeds, which sound right for ‘Hornepypes’ and ‘Dompes’.

Spain:
The Spanish organ during the middle of the 16th century typically had one manual of Principals (called Flautados because of their ‘flutey’ sound) and Flutes (Violón, Flauto) with pull-down pedals. The divided registers and chamade reeds that are associated with later Spanish organ music originated in the late 16th and 17th century, and are not linked to early 16th century repertoire. Another common sound was a mixture, called Lleno, which could be used with the Principals (Flautados).
\textbf{1550-1650 Late Renaissance}

Italy:
The organ was considered the finest of musical instruments in Italy throughout the period 1550-1830, as proclaimed by Diruta who found the organ most excellent because it ‘contains within itself all other musical instruments’.

Antegnati organs dominated in Lombardy (Brescia), and were based on a Principal rank and its overtones (unison and fifth-sounding ranks, but not those sounding a third) from the octave to the thirty-third, excluding the twelfth, to create a Principal chorus (Ripieno) that was clear, transparent and brilliant. To this basis were added several flutes (but never in unison with the lowest Principal rank) at the octave and twelfth, and a second Principal rank in unison with the lowest one and slightly wider in scale.

Stop names on Italian organs are always given in reference to the lowest Principal. \textit{Ottava} may mean a Principal of 8’ on a 16’ organ, or 4’ on an 8’ organ, or 2’ on a 4’ organ. (similar to the present French Montre/Praestant/Octave relationship)

The classical Brescian organ reached its basic form by 1575:
- one keyboard, with a short octave (first octave)
- only the Principal 8, Ottava 4, Flutes and Reeds were divided
- pedals were NOT common in Italy. If present, they were pulldowns and only one octave

Typical organ:

<table>
<thead>
<tr>
<th>Registri d’organo or Ripieno</th>
<th>Principale bassi</th>
<th>Principal 8 (bass)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principale soprani Principal</td>
<td>Ottava Octave</td>
<td>4</td>
</tr>
<tr>
<td>Decimaquinta 15\textsuperscript{th}</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Decimanona 19\textsuperscript{th}</td>
<td>1 1/3</td>
<td></td>
</tr>
<tr>
<td>Vigesimaneseconda 22\textsuperscript{nd}</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Vigesimasesta 26\textsuperscript{th}</td>
<td>2/3</td>
<td></td>
</tr>
<tr>
<td>Vigesimanona 29\textsuperscript{th}</td>
<td>1/2</td>
<td></td>
</tr>
<tr>
<td>Trigesimaterza 33\textsuperscript{rd}</td>
<td>1/3</td>
<td></td>
</tr>
<tr>
<td>Registri da Concerto Flauto in ottava Flute 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flauto in duodecima Flute 2 2/3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flauto in quintadecima Flute 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fifarro (Voce umana) Principal 8 ‘Celeste’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Registration suggestions by Diruta, by MODE (1609) – \textit{Note emotional descriptions}!
Mode 1: Principals 8, 4; Principals 8, 2; Principal 8, Flute 4. Grave and pleasing coloring
Mode 2: Principal 8, Tremolo. Melancholy harmony
Mode 3: Principal 8, Flute 4. To move to tears
Mode 4: Principal 8, Tremolo; some Flute (4, 2 2/3, or 2). Sorrowful, sad, lamenting, Elevation.
Mode 5: Principals 4, 2, Flute 4. Joyful, modest, delightful
Mode 6: Principal 8, 4, Flute 4, Devout and serious
Mode 7: Principals 4, 2, 1. Bright and sweet
Mode 8: Flute 4; Flute 4, Principle 4; Flute 4, Principal 2. Charming and pleasing
Mode 9: Principals 8, 2, 1. Bright, sweet, sonorous
Mode 10: Principals 8, 4; Principal 4, Flute 4. Rather doleful
Mode 11: Flute 4; Flute 4, Principal 2, Flute 4, Principals 2, 1/2; Principals 4, 2, 1. Lively and sweet
Mode 12: Flute 4, Principals 4, 2; Flute 4, Sweet and lively

Registrations by type of piece and function (Antegnati, 1608; Banchieri, 1605; Diruta, 1609; Monteverdi, 1610; Giovanni Ghizzolo, 1619; Porta, 1620; Piaggia, 1640)

Accompanying singers:
>few singers – Principal 8; Principal 8 and tremolo; Principal 8 and Fiffaro (Voce umana)
>more singers – Principals 8 and 4; Principals 8, 4, 2
>many singers – Ripieno
>alternating large and small choir: with and without Ripieno
>general – flutes (4, 2 2/3, 2)
>motets in Concertato style: Principal 8, Flute 4, Principals 8, 4, Flute 4; Principal 8
>Adagios – Principal 4, Flute 4, Tremolo; Flute 4, Tremolo

Ripieno:
>Principals 8, 4, 2, 1 1/3, 1, 2/3, 1/2, 1/3
>Principals 8, 4, 2, 1 1/3, 1, 2/3, 1/2
>Principals 8, 4, 2 1 1/3, 1, 2/3
>Principals 8, 4, 2, 1 1/3, 2/3, Flutes 2 2/3
>(never include flutes (Diruta)
>use pedals

[see Calvert Johnson, pp. 18, 19 for registrations of the following] Battaglia, Beginning of Service, Canzona, Concerto Style, Credo, Deo Gratias, Dialogues, Diminutions, Elevations, End of Service, Flutes, Funerals of Dignitaries, General Purpose, Gloria, Gradual, Intonations, Introits, Pedal, Preludes, Slow Pieces, Solo Stops, Sonatas, Toccatas, Tremolo, Miscellaneous, Versets
1550-1830 – Late Renaissance, Baroque

Spain:
Early (Gothic) Spanish organ:
> chest 1: Blockwerk
  Principal 8
  Bourdon 8
  Octave 4
  Mixture VIII-IX
  Mixture VIII-XXVIII

> chest 2:
  Principal 8
  Mixture

> pedals:
  12 or 13 keys pulling down Principal,
  usually permanent (complete chromatic octave)

> keyboards: one or two
> pipes: all were Principals – organ was a large mixture of octave and fifth ranks

Early 16th Century – Flemish Influence
> range becoming normal C-a2; new voicing style; slider chest; divided stops; new wide-scale flues; reeds; tremulant; toy stops
> keyboards: one or two
> Cadireta (Positiv-like), based on a principal an octave higher than the Organo Grande
> pedals: rarely present, but if so, pull downs from the bottom (short) octave of the main keyboard
> stops: Principals, Mixtures, Flutes, Reeds (Orlos or crumhorn, Trumpet 8 and 4, Dulzayna)
> unusual stops: birds, drums, bells, bagpipes
> tremulant was found even on the smallest organs, and up to 7 or 8 on large organs

Late 16th Century – Innovations
> keyboards: altered to have one manual divided, first applied to reeds and solo flutes, sometimes to mixtures, least often to Principals
> pipes: regals were sometimes mounted horizontally in the façade (for tuning purposes?)

Late 17th Century – Divided Keyboard in Castilla
> pedals: permanent contras 16 or 8 were occasionally present in addition to pull downs
> pipes:
  - usually full 8 Principal chorus, occasional 16
  - full flute chorus (stopped or open) to complement the Principal chorus
  - variety of high pitched mixtures reduced
  - Cornets were virtually always present
  - Reeds – horizontal full-length reeds mounted on both facades of the organ Trompeta real is vertical and inside the case

Late 17th Century – Catalunya
keyboards – 2 manuals, Partido are for two manuals
>half stops are rare before 1700
>mixtures – usually a tierce rank in the Cimbala
>flutes – new are the tierce and solo Corneta
>reeds – very rarely present
>tremulants retained, but toy stops disappeared

Mid 18th Century – Castilla, Catalunya
There is NO typical late-Baroque Iberian Organ because all are unique.
>keyboards – one, two, or three, all divided
>pedals: 12-13 keys at most. Occasionally independent pedal stops by late 18th century
>pipes: wooden stops disappeared; two mixtures; orchestral stops (Flauta traversa, Fagot, Oboe, Vox humana, Clarinet, Flauta dulce, Violin)
>sometimes a coupler between manuals
>knee and foot-operated levers commonly used for quick registration changes
>toy stops often operated by a foot-lever

Registration:
The earliest Spanish sources for organ registrations are early 17th century contracts for Catalan organs, which resemble 16th century Flemish registrations. Since Flemish influence was important earlier, these registrations using various combinations of one to four or five stops might be used in addition to the plenum. Virtually no indications are provided as to how the various registration combinations were used. The Barcelona area had several Flemish builders, so Flemish rules of registration would seemingly apply.

Principal Choruses:
>Important Principal Chorus: Principal 8, 4, 2, 1 1/3, 1, III, Flute 8, 1 1/3
>Small Principal Chorus: Principal 8, 4, 2, 1 1/3, 1, III
>Large Cadireta Chorus: Principal 8, 4, 1 1/3 III
>Small Cadireta Chorus: Principal 4, 2, 1, III, Flute 1 1/3

Accompanying two voices: Principal 8
Charming Combination: Principal 2, Flute 1 1/3, Tremulant
Cascabells (bells) or Mixtura: Principal III, Flute 8, Tremulant
Stops alone: all are acceptable except for Principals 1 1/3, 1, or III

Early divided keyboard registrations:
Correa (1626) indicates that the accompaniment is played on the Flautado (whether Principal or Flute rank), and the solo on Lleno (Principal Chorus with Lleno Mixture) based on 16, 8, or 4. A LH solo may be played on the Trompeta. Nassarre (1723) repeats the same information as Correa.

Late 17th Century:
Echoes: a number of organs included within an echo box a treble solo stop, such as a Corneta or Clarín, and also a Flautado in both treble and bass to accompany the solo stop.
18th Century:
>often LH and RH use reed registrations
>Orlos and Dulzaina: not for playing chords; do not combine them with full-length reeds
>Echo stops never combine with those of other manuals
>Lleno: never uses Corneta nor Nasardos, but includes Flautado Tapado/Violon 8 & 4
>registrational aids: levers operated by feet and knees to effect certain combinations

1550-1660, England:
There is no information concerning registration before c. 1600 in England. It was John Bull (1563-1628) who has the first known registration examples. Some pre-Commonwealth and early Restoration organ works indicate the use of two keyboards (“Double Organ” or alternations between “loud” and “soft” organs). Although most sources available are from the 18th century, their suggestions probably are valid as early as the 17th century since English organists and organ builders were extremely conservative. Stop lists changed very little from 1730 to 1830. Organ compositions from this period with detailed registrations and tempo indications bear out this assumption.

Basic registration: “Let the performer, when he sits down to the Organ, draw out the Diapasons on each set of Keys, by which means he is sure of a foundation.” (Blewitt). The only exceptions are ‘Flute,’ ‘Stopped Diapason,’ and ‘Open Diapason,’ all of which may be used alone.

Flues:
Diapasons: both Open and Stopped Diapasons together
Open Diapason: may be used alone for slow fugues and imitations, but it usually needs the Stopped Diapason with it due to slow speech in the bass
Stopped Diapason: may be used alone, or with the Flute for a ‘sweet and pleasant effect’

Flue Combinations:

>Open and Stopped Diapason
>Stopped Diapason and Flute
>Open Diapason and Flute
>

Diapasons and Principal: good for fast passages, used for ‘semi-forte’

Flue Combinations by Dynamic Level:

\[
\begin{align*}
\text{pp} & / \text{Stopped Diapason} \\
\text{p} & / \text{Both Diapasons} \\
\text{mf} & / \text{Diapasons, Flute} \\
\text{f} & / \text{Diapasons, Flute, Twelfth, Fifteenth} \\
\text{ff} & / \text{Diapasons, Flute, Twelfth, Fifteenth, Sesquialtera (bass), Cornet (treble), with sparing use of Trumpet}
\end{align*}
\]

Ensembles:

Great: (in order of appearance) Diapasons, Principal, Fifteenth plus Twelfth, Sesquialtera, Mixture or Trumpet, Mixture and Trumpet, Clarion

Full Great: (in ascending order)

>Diapasons, Principal, Twelfth, Fifteenth, Sesquialtera
>same, plus Mixture
>same, plus Trumpet
>same, plus Mixture and Trumpet
>above, plus Clarion

USE: fugues, largos, slow adagios, forte pieces, ‘Full Organ’

Full Choir:
>Diapasons, Principal, Fifteenth (alternating with Full Great, or accompanying the congregation)

Flute:
>Flute or Recorder (at 4’ pitch) (Do NOT use the Diapasons with the Flute)

Accompanying Singers:
- The Full Choir: Full Great or less
- Half the Choir: Full Choir or less
- Solo Sections: Stopped Diapason and Flute
- Chants: Stopped Diapason, Principal (more on Sundays)

Changing Registration:
When changing stops, the organist should not remove the hands from the keys, but rather sustains the last bass note until the registration is set for the succeeding movement or section. (Linley and Blewitt) ????!

1635 – Italy / Frescobaldi’s Fiori Musicali – (we could spend at least a week here – remember that Bach wrote out his own copy(s) of this music, found, well-worn, in his library)

Diruta’s ‘Registrations by Mode’ (Il Transilvano Part I, 1593, 1597, 1612, 1625, and Part II, 1609, 1622).

THIS BEARS REPEATING . . . .
Mode 1: Principals 8, 4; Principals 8, 2; Principal 8, Flute 4. Grave and pleasing coloring
Mode 2: Principal 8, Tremolo. Melancholy harmony
Mode 3: Principal 8, Flute 4. To move to tears
Mode 4: Principal 8, Tremolo; some Flute (4, 2 2/3, or 2). Sorrowful, sad, lamenting.
   Elevation.
Mode 5: Principals 4, 2, Flute 4. Joyful, modest, delightful
Mode 6: Principal 8, 4, Flute 4. Devout and serious
Mode 7: Principals 4, 2, 1. Bright and sweet
Mode 8: Flute 4; Flute 4, Principle 4; Flute 4, Principal 2. Charming and pleasing
Mode 9: Principals 8, 2, 1. Bright, sweet, sonorous
Mode 10: Principals 8, 4; Principal 4, Flute 4. Rather doleful
Mode 11: Flute 4; Flute 4, Principal 2, Flute 4, Principals 2, 1/2; Principals 4, 2, 1. Lively and sweet
Mode 12: Flute 4, Principals 4, 2; Flute 4, Sweet and lively
Registrations by type of piece and liturgical function:

> Accompanying singers:
a few singers (up to five): Principal 8; Principal 8, Tremolo; Principal 8, Fiffaro/Voce umana.
More singers (six or more): Principals 8, 4; Principals 8, 4, 2.
Many singers: Ripieno. Alternating between a large and a small choir: with and without Ripieno.
General: Flutes (4, 2 2/3, 2)
Motets in Concerto style: Principal 8, Flute 4; Principals 8, 4, Flute 4; Principal 8

> Adagios: Principal 4, Flute 4, Tremolo; Flute 4, Tremolo
> Battaglia: alternate between Principal 4, Flute 4 (Allegro); Principals 8, 4, Flute 4 (Adagio); Ripieno (Presto)
> Beginning of a service: Ripieno
> Canzona alla Francese: Principal 4, Flute 4
  Flute 4
  Principal 8, 4, Flute 2
  Principal 8, Flute 2
> Concerto style (consort of Cornets): Principals 4, 1 1/3, 1, Flute 4; Principal 8, Flute 4
> Credo Crucifixus: use Tremolo
> Deo Gratias: Ripieno with pedals
> Dialogues on organs with divided stops: Flute 4, Principal 8: only the Principal 8 is heard in the pedal; Flute 4 in the bass of the keyboard; Principal 8, Flute 4 in the treble and Pedal Contrabassi
> Diminutions: Principal 4, Flute 4
  Principals 8, 4, Flute 2 (very beautiful)
  Principal 8, Flute 2 (very beautiful)
  Principal 8, Flute 2 2/3
> Elevations: Principal 8. Serious style; Adagio and legato
  Principal 8, Voce umana/Fiffaro 8
  (Note: Roman organs of Frescobaldi’s day lacked the Voce umana)
  Principal 8, Tremolo
  Flute 4, 2 2/3, or 2
> End of Service: Ripieno
> Flutes: Accompanying Motets; see also Tremolo, Slow Pieces, and Solo Stops
> Funerals of Dignitaries: Principal 8 with case doors shut
> General Purpose: Principal 8, Flute 4; Principals 8, 4, Flute 4; Prin 8, 4, Flute 2 2/3
> Gloria Qui Tollis: see Tremolo
> Gradual: Flute 4
> Intonations: Ripieno
> Introits: Ripieno
> Pedal: with Ripieno and in Dialogues
> Preludes: Ripieno
> Ripieno: Principals 8, 4, 2, 1 1/3, 1, 2/3, 1/3
  Principals 8, 4, 2, 1 1/3, 1, 2/3, 1/2
  Principals 8, 4, 2, 1 1/3, 1, 2/3
Principals 8, 4, 2, 1 1/3, 1, 2/3, Flute 2 2/3
Never include Flutes
Use Pedals

>Half *Mezzo* Ripieno: Principals 8, 4, 1/2, 1/3, Flute 4
>Almost Half Ripieno: Principals 8, 4, 1, 2/3, Flute 4
>Slow Pieces: Principal 8, Tremolo
  Principal 8, Flute 4, Tremolo
  Flute 4, Tremolo
>Solo Stops: (large organs) Principal 8; Principal 4; Flute 4
  (small organs): Principal 4; Flute 2
>Sonatas:
  *Adagio*: Principal 8, Voce umana
  *Allegra e Spiritosa*: Principals 8, 4, 2, Flute 2 2/3
  *Andante*: Principals 8, 4, 2, Voce umana
  *Arcineto spiritoso*: Principal 8, Flute 2 2/3
  *Più dolce*: Principals 8, 4, Voce umana
>Toccatas: Ripieno
  Principals 8, 4, 1, 2/3, Flute 4
  Principals 8, 4, Flute 4
  Principal 8, Flute 4
>Tremolo: Use only with Principal 4, Flute 4; Flute 4; Principal 8. Slow pieces and those with no diminutions
>Versets: Play on one stop with treble (the chant tune) an octave higher than written – if you like Final versets: Ripieno
>Miscellaneous: Principal 8, Descant (divided) Principal 8

Antegnati suggests varying the registration from time to time to avoid monotony. Now THERE’S an idea!!

**1650-1725** – Italy
Not much has changed with the Italian organ, but there are registration suggestions by a variety of composers found on pp. 24 and 25 of Calvert Johnson’s book about the period (Leupold).

**1725-1830** – Italy
Central Italian Baroque Organs:
>Keyboards: the establishment of the possibility of two manuals used in dialogue for echoes. The 2\(^{nd}\) manual (Organo piccolo) was normally the lower one
>Pedals: pull downs from the manual’s short-octave bass; Contrabassi 16 occasionally present
>Pipes: selection of flute ranks nearly equals that of the Principals
  variety of reeds becomes more common; solo stops including Flemish reeds
  pre-eminence of the Ripieno is supplanted by a diversity of timbres, reeds and tierces
  Cornet stops were common
Central Italian Mid-Eighteenth Century Organs:
All stays pretty much the same, little variations from previous periods

Central Italian Late-Eighteenth, Early-Nineteenth Century Organs:
>Keyboards: two manual organs were frequently built; rare examples of three-manual organs; *da Concerto* stops, the *Principale*, and sometimes the *Ottava* were divided or were half-stops only.
Pedals: still consisted primarily of pull downs from the manual’s short-octave bass and coupler permanently ‘on’. Pedals reeds ranks do appear on various organs.
Pipes: many orchestral stops are added (Flutes, Strings, Reeds)

Venetian Baroque and Classical Organs:
>Keyboards: a number of two manual organs were built
>Pedals: sometimes stops cannot be drawn separately, but only as a group; some pedals controlled the *Tiratutti*, *Timpano* or *Tamburo* (drum) and *Usignoli*; another pedal controlled the swell shades (or echo box).
>Stops: the *Voce umana* was found in the most of Italy by 1532; however, it was rarely found in Venice before 1668, and when found, only in the treble range.

Further organ registrations from 17th century – late 19th century found in “Italy, 1725-1830, Calvert Johnson, ed., Historical Organ Techniques and Repertoire, Vol. 8, Wayne Leupold, ed.”

17th – 18th centuries
Germany, Austria, the Netherlands

Organs varied greatly from region to region and town to town. But they were united by two factors:
>Werk Principle – the idea that each division, or Werk, of the organ was well developed, given its own wind chest, and positioned in a particular spot within the organ case.
>the organs were normally located in a gallery in the rear of the church

North Germany and the Netherlands
The concept of independent divisions emerged in its fullest form in North Germany and the Netherlands.

*Hauptwerk* – 8, 4, 2 2/3, 2 Principals and incisive Mixtures a number of flutes, for accompanimental purposes

*Rückpositiv* – penetrating division, with pungent reed stops (Krummhorn, Bärpfeife)

*Brustwerk* – small division, often precluded 8’ stops

*Oberwerk* – just smaller than the Hauptwerk, same sort of design

*Pedal* – full Principal chorus from 32 or 16 Principals through Mixtures, solo stops (for use in pieces with a cantus firmus, and chorus reeds)

Full principal *plenum* – 16 Principal, Octav 8, Octav 4, Superoctav 2, Rauschpfeife II, Mixture VII-IX (see page 18)
(Note: So what is a Rauschpfeife II? Originally a Rauschpfeife was a pre-Baroque wind instrument having a capped reed and loud tone. On the organ, it was usually a stop of two unbroken ranks of flute-like pipes of pitches 2’ and 1 1/3’. The occasional three rank stop by this name included a 2 2/3’ pitch. It was indeed part of the plenum – good to know, since this stop is found on present day instruments!!)

Smaller plena could be formed on each of the other divisions. The plenum of the Oberwerk or the Rückpositiv could normally be joined with Hauptwerk plenum by coupling, to make a grand ensemble.

Flutes were found at 8, 4, 2 2/3, 2, and 1 1/3.
The tierce sound was found only in the Sesquialtera of the Rückpositiv or Brustwerk.

(Note: So what is a Sesquialtera? The word is Latin, and the organ stop is usually two unbroken ranks of smallish-scaled principal pipes of pitches 2 2/3’ and 1 3/5’. This stop was also found in English organs or the time, used to support the Cornet, but by the 19th century was largely omitted or did not have the 3rd sounding pitch. In France, the pitches were available, but not as a compound stop, and using less aggressive flute pipes.)

Quintadena, Spitzflöte, and Gemshorn stops were available at various pitches.

Reeds were well represented in every division, full-length stops (Trompete, Posaune, etc.) as well as colorful, short-length registers (Vox Humana, Trechter Regal, Bärpfife, etc.).

The Pedal contained full principal and reed choruses, solo flutes and reeds, enabling the playing of melodies at pitches other than 16’.

Central Germany
Utilized many features of the Werk Principle, but . .

The overall result was a sound that was bright yet gentle.

The Rückpositiv was encountered less frequently, commonly replaced by an Oberwerk or a Brustpositiv.

The Pedal division was commonly smaller and contained fewer high-pitched stops.

Chorus mixtures were milder, but Sesquialteras were penetrating, and French derived mutation stops (Tierces and Cornets) lent special coloration.

More 8’ flue stops of special colors were included in manual registers, such as Viola da Gamba, Salicional, and even Unda Maris. (actually, especially Unda Maris since we are certain that J. S. Bach admired this sound!)
Reeds played a smaller role.

**South Germany and Austria**
Principal chorus of the Hauptwerk remained important, but all other divisions became distinctly subsidiary.

On many organs, the Rückpositiv was retained.

Mixtures were more subdued.

Manual reeds played a smaller role. Color was produced by special 8 and 4 flue stops.

There was an abundance of 8 and 4 stops that were ‘heavier’ at the lower pitch levels.

Organs built after 1700 were in an expansive, horizontal layout, divisions spatially separated to the left and right, a free-standing console in between.

The balance of divisions seen in northern and central instruments was sacrificed in favor of coloristic and echo effects.

Further south into Catholic areas, the Pedal division became less important. As in Italy, the Pedal was used more for cadences and pedal point than for obbligato lines.

The organs of South Germany and Austria were progressive, for their emphasis on 8 and 4 pitch and their de-emphasis of mutations and higher-pitched stops set a trend that was to become the norm in the 19th century.

__________

In the Netherlands and Northern, Central Germany, composers wrote organ works primarily for the Lutheran worship service. Two fundamental types of pieces were needed: 1) chorale preludes – works based on the melody of a hymn, and 2) ‘free’ pieces – works that were not based on a pre-existing melody.

In Southern Germany and Austria, composers generally wrote organs works for the Catholic rite, which needed free pieces as preludes, interludes, and postludes for the service. Composers commonly cast their free works in Italian molds: the toccata, canzona, ricercar, intonazione, and fantasia. They also wrote smaller free works in types of prelude and fugue design: prelude and fugue; prelude, fugues, and finale, etc. Instead of chorales, they composed versets on Latin plainchant melodies, many of them for manuals alone (since the Pedal was limited).

__________
Even though united by the Werk Principle, there was no such thing as a ‘standard’ disposition. Regional practices in registration were never codified, as in France and England.

Composers rarely designated specific stops in their pieces; rather, they assumed that performers would choose appropriate registrations.

There were several basic precepts:
1) organum plenum was ‘full organ’ – principal chorus and mixtures normally drawn on the Hauptwerk, to which other manual principal choruses might be coupled, and the Pedal. Chorus reeds were used in the pedal, but not normally drawn on the manuals. The plenum was used for ‘free’ pieces: multi-sectional Praeludia, preludes and fugues, toccatas, fantasias, passacaglias, ciaconnas, fugues, etc.

A North German plenum

\[
\begin{array}{ccc}
\text{Hauptwerk} & + & \text{Oberwerk} & \text{or} & \text{Rückpositiv} \\
\text{Principal 16} & \text{Principal 8} & \text{Principal 8} \\
\text{Octav 8} & \text{Octav 4} & \text{Octav 4} \\
\text{Octav 4} & \text{Octav 2} & \text{Octav 2} \\
\text{Superoctav 2} & \text{Scharf VI} & \text{Scharf VI-VIII} \\
\text{Rauschpfiefe II} & \text{Cimbel III} & \\
\text{Mixture VI-VIII} & \\
\text{Pedal} \\
\text{Principal 32} & \text{Principal 8} \\
\text{Octav 16} & \text{Octav 4} \\
\text{Octav 8} & \text{Octav 2} \\
\text{Octav 4} & \text{Octav 4} \\
\text{Rauschpfiefe III} & \text{Scharf VI-VIII} \\
\text{Mixture VI-VIII} & \\
\text{Posaune 16} & \\
\text{Smaller plenum} \\
\text{Hauptwerk} & \text{Pedal} \\
\text{Principal 8} & \text{Octav 16} \\
\text{Octav 4} & \text{Octav 8} \\
\text{Octav 4} & \text{Octav 4} \\
\text{Superoctav 2} & \text{Octav 4} \\
\text{Rauschpfiefe II} & \\
\end{array}
\]
Silbermann organs in Saxony, principals doubled by flutes in the manner of a French *Plein jeu*, perhaps common in Central Germany in Bach’s time:

<table>
<thead>
<tr>
<th>Hauptwerk</th>
<th>Oberwerk</th>
<th>Pedal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal 8</td>
<td>Gedackt 8</td>
<td>Subbass 16</td>
</tr>
<tr>
<td>Rohrflöte 8</td>
<td>Rohrflöte 4</td>
<td>Posaune 16</td>
</tr>
<tr>
<td>Octave 4</td>
<td>Octave 2</td>
<td>Hw/Ped coupler ?</td>
</tr>
<tr>
<td>Spitzflöte 4</td>
<td>Quinta 1 1/3</td>
<td></td>
</tr>
<tr>
<td>Quinte 2 2/3</td>
<td>Sifflöte 1</td>
<td></td>
</tr>
<tr>
<td>Octave 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixture</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2) *Smaller combinations* – non-*plenum* combinations linked with chorale preludes, duos, trios, and other small genres. Small registrations were often realized through the use of several manuals. In chorale preludes, strong or striking combinations were used for the manual carrying the chorale melody.

Typical registrations for a solo voice included:

>fundamental stops alone, such as
Principal 8;
Quintadehn 8;
Quintadehn 16 and 8

>‘Gap’ combinations such as
Principal 8, Octav 2, Sifflöte 1; Principal 4, Sifflöte 1;
Quintadehn 8 and Cimbel;
Gedackt 8 and Waldflöte 2

>using the partial of the fifth:
Principal 8, Superoctav 2, Quint 1 1/3;
Gedackt 8, Rohflöte 4, Nasat 2 2/3

>upper partial of the third:
Principal 8, Sesquialtera II;
Principals 8, 4, 2, 2 2/3, 1 3/5;
Principal 8, Rohflöte 8, Octav4, Spitzflöte 4, Cornet III (Silbermann organs);
Gedackt 8, Nasat 2 2/3, Tierce 1 3/5, Sifflöte 1

>reeds used along or with a doubling principal, at 16, 8, or 4 pitch, such as
Trompete 8;
Trompete 8 and Principal 8

>reeds used with principals of higher pitch:
Rankett 16, Octav 4, Quint 2 2/3;
Krummhorn 8, Superoctave 2, Quint 1 1/3

When available, the tremulant was often used with the solo combinations.
Principal 8, or Gedackt 8 and Hohlflöte 4 was used for accompanimental voices.

*Cantus firmus* in the Pedal: highlighted through solo registers such as Trompete 4 or Clarin 4, or strong bright combinations such as Principal 32, Posaune 16, Trompete 8, Trompete 4, Cornet 2.

In Central Germany, combinations such as Principal 8 in the manual and Trompete 8 in the pedal (for a *cantus firmus*) were popular.

During the course of the 18th century, the smaller combinations became ‘thicker’, using large numbers of stops at 16, 8, 4 pitches, and fewer at higher registers.

**17th and 18th Centuries – France**

It was France’s ‘golden age’ in terms of organs and organ music, generally termed the Classical Era, when organ design, registration practice, and the music itself displayed an unusually high degree of convention.

This French Classical Era can be traced from around 1636 when the Classical style was first formulated in Marin Mersenne's *Harmonie universelle* to 1789, the year organ building came to a halt because of the outbreak of the Revolution.

The heart of the French organ was the *Grand Orgue* with a fully developed principal chorus, diverse flute ensemble, and full-length reed stops.

The second most important division was the *Positif à dos* (Positive at one’s back), a miniature version of the *Grand Orgue*. The *Positif* could be coupled to the *Grand Orgue* for ensemble registrations.

Larger instruments included a *Récit* and perhaps an *Echo*, containing only a few stops each, half-stops speaking just in the treble range, but adding to the organ’s coloristic possibilities. These divisions could not be coupled to other divisions.

The *Pédale* was also small, only two or three stops, usually an 8 Trompette and 8 Flûte used for modest bass part or for *cantus firmus* melodies.
Representative example of a French Classical organ:

<table>
<thead>
<tr>
<th>Grand Orgue (48 notes)</th>
<th>Positif à dos (48)</th>
<th>Echo (37)</th>
<th>Récit (30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 Montre</td>
<td>8 Montre</td>
<td>8 Bourdon</td>
<td>V Cornet séparée</td>
</tr>
<tr>
<td>16 Bourdon</td>
<td>8 Bourdon</td>
<td>4 Flûte</td>
<td>8 Trompette</td>
</tr>
<tr>
<td>8 Montre</td>
<td>4 Prestant</td>
<td>2 2/3 Nasard</td>
<td></td>
</tr>
<tr>
<td>8 Bourdon</td>
<td>4 Flûte</td>
<td>2 Quarte de Nasard</td>
<td></td>
</tr>
<tr>
<td>4 Prestant</td>
<td>2 2/3 Nasard</td>
<td>1 3/5 Tierce</td>
<td></td>
</tr>
<tr>
<td>4 Flûte</td>
<td>2 Doublette</td>
<td>III Cymbale</td>
<td></td>
</tr>
<tr>
<td>3 1/5 Grosse Tierce</td>
<td>1 3/5 Tierce</td>
<td>8 Cromorne</td>
<td></td>
</tr>
<tr>
<td>2 2/3 Nasard</td>
<td>1 1/3 Larigot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Doublette</td>
<td>III Fourniture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Quarte de Nasard</td>
<td>II Cymbale</td>
<td>Tremblant doux</td>
<td></td>
</tr>
<tr>
<td>1 3/5 Tierce</td>
<td>8 Cromorne</td>
<td>Tremblant fort</td>
<td></td>
</tr>
<tr>
<td>1 Flageolet</td>
<td>V Fourniture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV Cymbale</td>
<td>Pédale (30 notes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V Cornet</td>
<td>8 Flûte</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Trompette</td>
<td>8 Trompette</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Clarion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Voix humaine</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Essential elements to remember:

> The presence of so many mutation stops reflected the French penchant for bold, ‘nasal’ sounds.

> The Cornet was a quintessential French Classical sound, either available as one stop, created by separate mutations (Flute or Prestant 4, 2, 2 2/3, 1 3/5, and the like)

> The Tremblant fort affected the entire organ, used for Caprices (fugues or imitative like pieces) or other large pieces played on the Grand jeu; the Tremblant doux normally affected one division or sometimes just one stop, such as the Voix humaine.

The overall picture is one of remarkable uniformity. Central to French registration practice was the use of two plenum ensembles rather than one (as with German, Dutch, and Austrian organs): the Plein jeu built on principals and the Grand jeu built on reeds.
## Typical large Plein jeu

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand Orgue</td>
<td>+ Positif</td>
</tr>
<tr>
<td>16 Montre</td>
<td>8 Montre</td>
</tr>
<tr>
<td>16 Bourdon</td>
<td>8 Bourdon</td>
</tr>
<tr>
<td>8 Montre</td>
<td>4 Prestant</td>
</tr>
<tr>
<td>8 Bourdon</td>
<td>Fourniture</td>
</tr>
<tr>
<td>4 Prestant</td>
<td>Cymbale</td>
</tr>
<tr>
<td>2 Doublette</td>
<td></td>
</tr>
<tr>
<td>Fourniture</td>
<td></td>
</tr>
<tr>
<td>Cymbale</td>
<td></td>
</tr>
</tbody>
</table>

## Typical small Plein jeu

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand Orgue</td>
<td></td>
</tr>
<tr>
<td>8 Trompette</td>
<td></td>
</tr>
<tr>
<td>16 Montre</td>
<td>8 Montre</td>
</tr>
<tr>
<td>16 Bourdon</td>
<td>8 Bourdon</td>
</tr>
<tr>
<td>8 Montre</td>
<td>4 Prestant</td>
</tr>
<tr>
<td>8 Bourdon</td>
<td>Fourniture</td>
</tr>
<tr>
<td>4 Prestant</td>
<td>Cymbale</td>
</tr>
<tr>
<td>2 Doublette</td>
<td></td>
</tr>
<tr>
<td>Fourniture</td>
<td></td>
</tr>
<tr>
<td>Cymbale</td>
<td></td>
</tr>
</tbody>
</table>

## Typical large Grand jeu

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand Orgue</td>
<td>+ Positif</td>
</tr>
<tr>
<td>8 Trompette</td>
<td>8 Cromorne</td>
</tr>
<tr>
<td>4 Clairon</td>
<td></td>
</tr>
<tr>
<td>plus:</td>
<td>plus:</td>
</tr>
<tr>
<td>8 Bourdon</td>
<td>8 Bourdon</td>
</tr>
<tr>
<td>4 Prestant</td>
<td>4 Prestant</td>
</tr>
<tr>
<td>2 2/3 Nasard</td>
<td>2 2/3 Nasard</td>
</tr>
<tr>
<td>2 Quarte de Nasard</td>
<td>1 3/5 Tierce</td>
</tr>
<tr>
<td>1 3/5 Tierce</td>
<td></td>
</tr>
<tr>
<td>Cornet</td>
<td></td>
</tr>
</tbody>
</table>

## Typical small Grand jeu

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand Orgue</td>
<td></td>
</tr>
<tr>
<td>8 Trompette</td>
<td></td>
</tr>
<tr>
<td>16 Montre</td>
<td>8 Montre</td>
</tr>
<tr>
<td>16 Bourdon</td>
<td>8 Bourdon</td>
</tr>
<tr>
<td>8 Montre</td>
<td>4 Prestant</td>
</tr>
<tr>
<td>8 Bourdon</td>
<td>Fourniture</td>
</tr>
<tr>
<td>4 Prestant</td>
<td>Cymbale</td>
</tr>
<tr>
<td>2 Doublette</td>
<td></td>
</tr>
<tr>
<td>Fourniture</td>
<td></td>
</tr>
<tr>
<td>Cymbale</td>
<td></td>
</tr>
</tbody>
</table>

The *Pédale* Trompette was sometimes used in the *Grand jeu* when the player wished to take cadential notes, pedal points, or other selected bass notes on the pedal board.

Common smaller combinations (not exhaustive by any means):

- **La Tierce** – *Petite Tierce* Bourdon, Prestant, Nasard, Doublette, Tierce; *Grand jeu de tierce* 16, 8 Bourdon, Prestant, Gross Tierce, Nasard, Quarte de Nasard, Tierce
- **Jeu doux** – normally Bourdon and Prestant, used for accompaniment against reed, or solo combinations
- **Fond d’Orgue** – *Grand Orgue*, flutes and principals (16), 8, 4 sometimes with 8, 4 *Positif* coupled
- **Concert de Flûtes** – *Grand Orgue*, Bourdon, Flûte often with *Positif* coupled in
- **Fugues** – *Fugue grave*, played on the reed stops with light foundations. Typical was 8 Trompette, 8 Bourdon, 4 Prestant (GO) joined by 8 Cromorne of the *Positif*
- **Duos** – two manuals, contrasting sounds: RH *Jeu de tierce*, LH *Grand jeu de tierce* or perhaps Cornet séparé on the *Récit*
- **Trios** – often two keyboards, RH taking upper two parts, LH lowest part; contrasting combinations of reeds or mutation stops, the Cornet séparé often recommended for one manual.
- **Basse or Dessus de Trompette**, Basse de Cromorne – Trompette or Cromorne *with a ‘foundation’ of Bourdon and Prestant. Accompaniment was normally the *Jeu doux*.
- **Voix Humaine** – The Voix Humaine normally supported with Bourdon 8 and Flûte 4.
- **Tierce en Taille** – usually a solo on the tierce in the tenor range: LH, *Petite tierce* on the *Positif*; RH, G.O. 8 Bourdon and 4 Prestant (or Bourdon alone, or 8 & 16 Bourdon; *Pédale*, Flûte 8
17th and 18th Centuries – Italy

(see pages 5, 6, 10, 11, and 12 of this document for the history)

> Small instruments of one manual and pull-down pedals, perhaps ten to twelve stops, were the norm. (These were sufficient for the Catholic worship service or Mass.)
> The heart of the instrument was a full chorus of principals that constituted the Ripieno ensemble, ranging from 16 or 8 to as high as 1/3.
> The largest principal of 16 or 8 pitch was often split into two half-stops, allowing the organist to register dialogues on one manual.
> Flutes were present at two or three pitches for special solo effects and combinations with each other and with the principals.
> Reed stops were rarely encountered, but if so, they were short-length Regals.
> The Fiffaro (Piffaro) or Voce umana (‘human voice’) was not a reed stop as in France or Germany. It was a treble rank of principal-scale pipes tune sharp or flat with the Principale 8 to produce an undulating effect, similar to a modern ‘celeste’.
> In the late 17th and 18th centuries, a second manual was often added in the Brescian scheme, often called the Organo piccolo, mirroring the main division (now called the Organo grande), and used mostly for solo melodies and echo effects.

With delicate voicing of the principales, mellow quality of the flutes, absence of reed stops, and ‘sweetness’ of the Fiffaro, it seems that for Italian builders, it was the human voice that served as the basis for the overall sound of the instrument.

>Ripieno: principals alone, from Principale through the Vigesimanona (the 29th) or so. Large instruments sometimes contained two principals at 16 and 2; on such organs, only the first 16 and 2 were drawn. The Ripieno was used for intonaziones, preludes, and toccatas (except at the Elevation).
> Voce Umana: always drawn with the Principal, used for adagio pieces, toccata for the Elevation, played with slow and legato motion. The sound was unlike anything on most modern organs.

>Principal and Flute combinations:
  + half-ripieno: Principals 16, 8, 1 2/3, Flute 8, or (8’ instruments) 8, 4, 1, 2/3, Flt 4
  + Principals 16, 8, Flute 8, or (8’ instruments) Principal 8, 4, Flute 4
  + Principal 16 and Flute 8 or Principal 8 and Flute 4
  + Principals 8, 2 2/3, 2 for solo pieces (‘da concerto’); adding Flute 8 sounded like cornetti
  + Principal 8 and Flute 8 for Canzoni alla francese; or, 8 and Flute 2 2/3, or Octave 4 and Flute 4
  + Principal 8 and Flute 8, with tremulant for canzoni with small notes (‘diminuire’)
  + Principal 8 alone; delicate sound for Elevation, or accompanying motets, or with tremulant for slow music without flourishes
  + The two Principals 16 or the Principal 16 alone
  + Flute 8 alone
  + Flute 8 with Principale spezzato 16, treble half only; allowed a unison dialogue between the LH (Flute 8) and RH (Principal 16, Flute 8), with pedal supplying the bass

23
Principal 16 and Flute 4, and possibly the Principal 8; for fast passage-work (‘diminuito’)

1660-1730 – England (The Restoration)
Many organs that had been dismantled were restored to the Cathedrals, collegiate chapels, and churches. New organs were built in the style of the early 17th century, but soon new organs were built in a new style.

Builder Bernard Smith reflected his Dutch heritage (names of stops, variety of flutes, tapered ranks, Brustwerk-like Echo, variety of timbres).
Renatus Harris demonstrated some French influence (independent Quint and tierce ranks on all divisions, Recit-like Echo, replication of identical ranks on all keyboards for variety of echoes, dialogues, and solos).

Keyboards: one or two manuals
> The Stopped Diapason was often automatically “on”
> Great: Principal chorus with Stopped Diapason, Mixture, Sesquialtera (with tierce), treble Cornet, Tierce, Trumpet
> Choir: secondary Principal chorus with Stopped Diapason, Cimball, Flute 4, Tierce, Vox humana, and Cremona, but always soft stops for accompanying
> Echo (superseded by the Swell after 1712): smaller Principal chorus with Stopped Diapason, Cornet or Tierce, and Trumpet or Hautboy.

> Pedals: small keys allowed for toes only playing on rare organs with pedal boards (in French style)
> Pipes: mutation ranks of Principal scale; new stops include Sesquialtera, Tierce, Mixtures, reeds, a few tapered ranks (Gemshorn, Spitzflöte), imitation stops of instrumental sounds

All registration suggestions from above are still in effect, except:
> Full Swell: the Diapasons, Principal, Hautboy, Trumpet, Cornet. This was used as an echo to ‘Full Great.’
> Double Voluntaries: LH solo on the Great Sesquialtera or Great flue combination, and RH solo on the Great Cornet or Trumpet. These solo stops probably would have been used with the two Diapasons which would have already been drawn. Accompaniment may have increased to Principal or Flute 4 to balance.
> Bassoon (Choir, introduced 1665/6): Stopped Diapason and Bassoon, possibly the Dulciana. Used for Cantabile style
> Cornet (mounted open flutes at 2 2/3 and 1 3/5, adding 4’ in a four-rank Cornet and 8’ in a five-rank Cornet): on the Great, Cornet and Diapasons. Used for movements for Cornet and Trumpet Voluntaries, for giving out Psalm tunes.
> Corno or Horns (1722): Diapasons in the absence of the relatively rare French Horn stop.
> Cremona: Stopped Diapason and Cremona. Used for Cantabile style, also to imitate cello in the tenor range.
>Dulciana: Choir – Dulciana only
>Hauboy (1668): Swell, Hautboy and Stopped Diapason

Swell (introduced 1712): The earliest piece with indications for opening and shutting the
Swell box is Walond’s Voluntary No. 6 in D minor, c. 1752. Registration is Open
Diapason, Stopped Diapason, Trumpet and Hautboy, with added Principal to create a Full
Swell. The Swell box was normally shut except to effect a crescendo or diminuendo.

Trumpet (1662): Trumpet and Diapasons. Used for voluntaries, echoes, vivace passages.

>Vox Humana (Choir, 1669): Stopped Diapason in addition to the Vox Humana.
Cantabile style. Used to imitate the human voice, especially the tenor in ‘warlike’ music.

Accompanying Singers / Continuo (1736 manuscript, Handel):
>overture: Open and Stopped Diapasons, Principal, Flute
>recitatives: Stopped Diapason and Flute
>arias: Open and Stopped Diapasons

The chief qualities of the stop-list is summarized:
>Found on the Great of every English organ of the period were two native stops: the
Stopped Diapason and the Open Diapason. The Open Diapason was never pulled without
the Stopped Diapason. The Stopped Diapason was used as a foundation for almost every
combination.

>The Principal chorus on the Great included the Open Diapason, Principal, Twelfth,
Fifteenth and the Sesquialtera. The Sesquialtera was the first chorus mixture, and often
contained a tierce rank. The Furniture or ‘Mixture’ was added on top of the Sesquialtera.

>The Stopped Diapason and Flute were used in smaller combinations and to double the
principals in the full organ. The Stopped Diapason was also used to support reed
registers.

>The remaining Great stops (Block Flute, Cornet, Trumpet) were used for solos, in the
treble range.

>The Choir functioned as a miniature Great, and contained solo 8 reeds stops (Vox
humana, Cremona)

>The Echo functioned as a distant Great, the stops normally provided only in the treble
range. It was encased in a permanently closed box, and by the 18th century, the box was
given a lid that could be raised, controlled by a hitch-down pedal (much like the Spanish
organs). In time, the Echo evolved into the Swell, with a good number of stops and
graduated dynamics. By the 19th century, the Swell had replaced the Choir as the second
most important manual.

>Each manual stood on its own – no manual couplers.

>The pedal existed only as a set of pull-downs from the Great.
>For full organ, the 8 and 4 principals were doubled by 8 and 4 flutes (as in the Plein jeu)

>Gradations to full organ could be achieved by adding stops in the following order: Stopped Diapason, Open Diapason, Flute, Principal, Fifteenth, Twelfth, Sesquialtera, Mixture

### 19th Century – The Romantic Era – Germany

The German Romantic organ featured an ensemble of nobility and grandeur, a sound marked by gravity and weight but also by clarity and intensity. The character of this plenum was essentially set by the mid 18\textsuperscript{th} century and continued without interruption until the early 20\textsuperscript{th} century.

The plenum assumed new proportions, analogous to a large tonal pyramid, the base made up of numerous stops at 8’ pitch (scaled narrow in the lower pitches and wider in the upper pitches), fewer stops at each higher level pitch, crowned at the top by strong, even ‘reedy’ mixtures. The ‘reedy’ sound came from the presence of a Terz, sounding the upper partial of a major third.

In the 19\textsuperscript{th} century, organs became larger and weightier with greater numbers of manual stops at 16 and 8 pitch.

With the late addition of the Rollschweller (a revolving drum turned by the foot), stops could be added or subtracted producing a seamless crescendo and equally effective decrescendo.

The number of reeds was small, with even fewer at 4’ pitch.

The third manual was placed under expression, common on German organs only after about 1860. Even so, the Swell division was not used to create the dramatic effect of Swell divisions on French and English Romantic organs, but was used to create subtle shadings.

In the 1800s – 1920s, most German Romantic composers indicated dynamic levels, but not specific stops. Hence, the tradition continued, allowing the player to choose appropriate registrations.

To interpret a 19\textsuperscript{th} century piano on 20\textsuperscript{th} century organs, the performer must couple manuals and combine all or most of the 8’ string and flute stops. To increase the dynamic level, begin to add stops as the ear dictates.
A crescendo created by small increments would be roughly as follows:

(from *piano* to *forte*)
all or most 8’ string and flute stops, manuals coupled
all 4’ strings and flutes
8’ principals
all 2’ flutes
all 4’ principals
Bourdon or Gedackt 16’
Swell Trumpet 8’
all 2’ principals
Quinte 2 2/3
mixtures
other available reeds

High-pitched, repeating mixtures should probably be avoided.

Mendelssohn recommended that a 16’ stop should always be used in the pedal unless otherwise indicated, and this is considered standard practice for all German Romantic composers.

Baroque-like ‘gap’ registrations should be avoided.

The Voix Celeste was virtually non-existent on German organs until the late 19th century, making it questionable, maybe even inappropriate for music before Reger. *However*, on an organ of medium size, with limited 8’ sounds, and of those nothing that could be considered *ppp* or even ‘beautiful,’ what does one do? Probably use the celeste as often as needed.

19th Century into the 20th Century – The Romantic Era – France

The Romantic Era in French organ music is credited to two extraordinary 19th century figures: the organ builder Aristide Cavaillé-Coll and the composer César Franck.

Two terms (among many) a performer must know:
*Fonds* – the chorus of foundation stops that included most of the (16), 8, and 4 flues (except célestes).
*Anches* – reeds, and high-pitched flue stops and mixtures, intended to cap the *fonds* ensemble.

In effect, this united the *Plein jeu* and the *Grand jeu* of the French Classical organ into one, rather stupendous sound.

An important sound-feature of the Cavaillé-Coll organs came from the use of harmonic pipes: double-length flue and reed pipes that, when combined with increased wind
pressure, created particularly strong and full tones in the treble range. CC didn’t create these pipes, but ultimately refined them to an unprecedented degree.

Important mechanical features include the use of couplers and vents, allowing for combinations of stops and registration effects to be created with unprecedented ease (with the feet).

Combination pedals:
*Tirasses* – pedal couplers that linked each manual to the pedal board
*Accouplements* – manual couplers that linked one keyboard to another, mechanically
*Octaves graves* – suboctave couplers affecting the keyboard on which they were located
*Anches* – ventil pedals activating the reed and high-pitched flue and mixture stops of each division
*Pédale d’expression* – the expression pedal that operated the vertical shutters of the *Récit* chamber.

Note: Franck’s organ had a ‘ratchet’ or graded pedal with two notches. It wasn’t until later that CC used what we know as the modern expression pedal.

Cavaillé-Coll’s expressive *Récit* and system of combination pedals allowed Franck to conceive of large, gradual crescendos and decrescendos. In his pieces, Franck carefully marked the precise moments when couplers and *anches* were to be added or taken off, and when the swell box was to be opened or closed. This was revolutionary, and placed organ music on the same expressive plane as orchestral music.

Widor wrote ten organ symphonies during 1876-1900. Vierne wrote six organ symphonies from 1900-1930, extending the tradition of playing the organ as if it were an orchestra.

Duruflé and Langlais (and many others) were influenced by the Cavaillé-Coll organ and the ‘symphonic’ composers. But they were also affected by the bright tone of the French ‘neo-classic’ organ, with its additional mutations and high-pitched, repeating mixtures.

Messiaen was undoubtedly the most significant organ composer of the 20th century, spanning the period 1928-1986. His compositions blend the old and new: the old including intense chromaticism and evangelical mysticism of Franck, the traditional treatment of the French Romantic organ, the 19th century emphasis on emotional expression, and the sensuous quality of the organ sound. The new includes 20th century approaches to melody, harmony, and rhythm, and new ways of registering the French Romantic organ including innovative uses of mutations, creating a uniquely individual idiom.

French Romantic composers designated clearly the registrations they desired in their organ works. Also, they indicated where crescendos and decrescendos were to be made and where stops were to be added and subtracted.
Procedure for producing a French CRESCENDO on a Cavaillé-Coll organ:

. . . the organ had to be ‘prepared’

1) the *fonds* were drawn on each manual and the *Pédale*. The *fonds* normally included all the flue stops at 16, 8, and 4 (except célestes). The stops of the G.O. will not sound, since the G.O. sur machine (GO ‘on’) combination pedal was not yet depressed.

2) the *Tirasse Grand Orgue* was depressed, coupling the G.O. to the Pedal. Whatever stops sounded on the G.O would also play on the Pedal.

3) *anches* were drawn on each division. The *anches* included all chorus reeds at 16, 8, and 4 pitch, plus high-pitched flue stops. The *anches* would not sound until the proper ventil pedal for each division was depressed.

4) the *Pédale d’expression* was hooked down, thus opening the shutters of the *Récit*.

. . . then,

1) the organist began on the G.O. manual, with the *Récit* division coupled in. Only the *Récit* stops sounded since the G.O. sur la machine was not yet depressed. The *Récit* stops played in the Pedal via the *Tirasse Grand Orgue*

2) the *Positif* was coupled to the G.O., adding more *fonds*. The *Positif* stops also sounded on the pedal, via the *Tirasse Grand Orgue*.

3) the *Grand Orgue fonds* were now brought into play by depressing the *Grand Orgue sur machine*. The G.O. stops also sounded on the pedal via the *Tirasse Grand Orgue*.

4) the shutter of the *Récit* were now closed, a procedure masked by the Pos and G.O. *fonds*. the *Anches-Récit* pedal was depressed, bringing the *Récit* reeds and supporting stops into play. The swell box was now gradually reopened, producing a crescendo as the sound of the *Récit* reeds emerged on the G.O. and pedal.

5) the *Positif anches* were activated, sounding on the G.O. and pedal

6) the *Grand Orgue anches* were activated, sounding on the G.O. and pedal

7) finally, the apex of the crescendo was reached with the addition of the *anches* of the *Pédale*.

A decrescendo was attained by reversing these steps.

Franck used the *Récit* Hautbois as a foundation stop, with the *fonds*, rather than as a chorus reed. But it was quiet, non-aggressive, and cannot really be equated with the Oboe familiar to most of us.

The *Voix humaine* was a soft reed stop, used only when expressly called for in the score.
20th Century – A Modern Era

If it can be said that organ building and composition of the 17th, 18th, and 19th centuries belonged to Europe, then it can also be said that the 20th century belonged to the United States with its extraordinary eclectic culture, setting a new standard for the Modern Era.

American builders have built four distinctive types of organs (which may be part of the reasons why registration can be so frustrating and confusing at times):

1900-1930s
> the Orchestral Organ – outgrowth of the Romantic organ, designed primarily to play orchestral transcriptions. To produce rich, smooth sonorities and special effects, orchestral organs contained multiple divisions, and were attached to consoles with mechanical devices developed in the late 19th century. Many orchestral reeds (thanks to E.M. Skinner and others) and other imitative stops were developed while maintaining mutations and mixtures.

1906-1950s
> the Reform Movement or Neo-Baroque organ – also known as the German Orgelbewegung launched in 1906 by Albert Schweitzer’s pamphlet “The Arts of Organ Building in France and Germany,” proposed a return to pre-Romantic practices: smaller pipe scales, slider chests, mechanical key action, low wind pressures, and a ‘high and free’ placement of pipes. The Baroque Werk Principle (see page 11) was revived with the idea and ideal of a more direct sound in order to make objective musical statements.

1928-1960s
> the American Classic organ – in response to the Organ Reform Movement, spearheaded by G. Donald Harrison, was intending to develop a stylistically eclectic, all-purpose organ with ideas blended from the past and present to produce an organ on which literature from all periods could be performed. Silbermann Great flues were combined with Cavaillé-Coll Swell reeds; the Positive made a comeback, blending 17th and 18th century French and German styles. Most pipes were in free-standing displays. Robert Noehren was an influential proponent. Another leading builder of American all-purpose organs was Walter Holtkamp, answering the call for ‘stylistically pure’ instruments sought after by American organ students who traveled in Europe to study.

1970s-
> the Post-Reform Movement organ – based on the notion that one cannot do justice to a historical instrument by just imitating its specifications, slider chests, tracker action, Werk Principle, and scaling. One must go further and reproduce pipe material construction, voicing techniques, winding, temperament, and case construction.

So how does one register pieces on these organs?
Many composers of the period give registration guidelines that can be adapted to virtually any organ, if the basics of registration are understood.

Hindemith wrote in a Neo-Classic style, including dynamic markings, and leaving an interesting note that “organists who have crescendo and swell pedals at their disposal are free to intensify the expression beyond the prescribed dynamic indications.” Obviously, one must have some background into the style of the works, the organs at the composer’s disposal, and hopefully a choice of instrument on which to play such works.

Example: Leo Sowerby was a leading American composer of the first half of the 20th century, and his registrations reflect the orchestral organ built in 1920 by the Austin Organ Company. But one must also hopefully know that Sowerby did not much care for the instrument, and wrote his compositions with the organ from his previous church in mind. Only with this information does one begin to clear the fog about how these works should actually sound.

In Germany, the Organ Reform Movement was linked with renewed interest in Lutheran liturgical practices, leading to a significant body of new organ music for church organists in Germany and the US. With the prevailing style of this music neo-Baroque with contrapuntal textures, one hopefully will know a bit about how organ music of the Baroque was registered before attempting to make this music sound as it probably should.

French style has tremendously affected many American composers, particularly those who have studied in France. If one is familiar with both the French Classic era of registration as well as the French Symphonic approach to this unique organ, the chance of making this music come alive is much, much greater.

Since 1950, crosscurrents in American organ music have become even stronger. New compositional devices, i.e. twelve-tone, serial, and minimalist techniques, electronic tape, and chance music have all been used. Fortunately, most composers of this period have been fairly meticulous about providing at least the quality of sound that is desired, which is a relief to most organists when faced with this music. Also, perhaps fortunately as well, 21st century organists are almost never faced with having to deal with this kind of experimental music. The experimentation has moved from composer to organ builder, particularly when considering the digital age. We now have ‘smart boxes,’ MIDI systems, other interfacing devices, acoustical copies of ‘famous’ rooms, copies of ‘famous’ types of organs from around the world, copies of ‘famous’ orchestras and orchestral instruments, and the like. Unfortunately, when considering that the ‘how to’ is often very complicated and different from one instrument to the next, and to our knowledge we have only one life to live, all this usually ends up being more daunting and frustrating rather than helpful when it comes to making music in a most ideal and sensible way.

Almost all of the 21st century composers whose music this writer has performed, such as Dan Locklair, Denis Bédard, Aaron David Miller, George Baker, Naji Hakim, Jean Guillou, Stephen Paulus, Pamela Decker, and the host of current composers of chorale-
preludes or hymn-tune settings, have provided at least some instructions about how their pieces should be registered and performed. This is most important since performers are often given clear signals as to what new music might sound like, not only for this generation, but the generations or organists that are hopefully to come. Of course, what organs will sound like a hundred years from now . . that’s probably another story.

For the curious and/or the perpetual student, much of this information and further study in more detail may be found in the following books or studies:


Vol. 6 – Italy (1550-1650), ed. Calvert Johnson (2002)
Vol. 8 – Italy (1725-1830), ed. Calvert Johnson (2004)

Ragatz, Oswald. *Organ Technique, A Basic Course of Study*. Indiana Univ. Press (1979)


32
So, I was recently working with students who were playing works of Mendelssohn. Questions arose for which I had no definitive answers. If you should find yourself in the same situation, the following may help, even though I still promise no definitive answers . . .

**Mendelssohn & the Organ – Some SOUND considerations . . .**
[Freely borrowed from various treatises]

This information may be helpful when it comes to registering the organ for Mendelssohn sonatas and other works, Rheinberger sonatas and other works, Brahms chorale preludes and other works, works of other German Romantic composers, perhaps the earlier works of Liszt, Reger, Karg-Elert, etc.

**Performance Considerations: Dynamics**

An examination of the Mendelssohn’s organ sonatas, Op. 65, works for piano, and works for violin/orchestra composed around the same time reveal the following:

- Slurring are the same for all works.
- Signs exist for cresc. and dim. along with the words frequently in the works for piano, violin/orchestra.
- No signs exist for cresc. and dim. in Op. 37 and Op. 65
- The only increase in dynamics called for in Op 37/65 is at m. 58 of Sonata III: “poco a poco piu animato e piu forte”
- While forte and piano (or p and f) usually exist at the beginning of the Sonatas, these indications speak for the dynamic level as prescribed in Mendelssohn’s *preface*. When they occur in the body of a movement the meaning is usually for the suggested dynamic level of the manual change. It is quite unlikely the dynamics specified by Mendelssohn refer to the use of the Swell box.

*Prefatory Remarks by Mendelssohn:

_Much depends in these Sonatas on the right choice of the Stops: however, as every Organ with which I am acquainted has its own peculiar mode of treatment in this respect, and as the same nominal combination does not produce exactly the same effect in different Instruments, I have given only a general indication of the kind of effect intended to be produced without giving a precise List of the particular Stops to be used._

_By “Fortissimo”, I intend to designate the Full Organ: by “Pianissimo”, I generally mean a soft 8 feet Stop alone: by “forte” the Great Organ, but without some of the most powerful Stops: by “Piano”, some of the soft 8 feet Stops combined: and so forth._

_In the Pedal part, I should prefer throughout, even in the Pianissimo passages the 8 feet and the 16 feet Stops united: except when the contrary is expressly specified: see the 6th Sonata._

_It is therefore left to the judgment of the performer to mix the different Stops appropriately to the style of the various Pieces: advising him however to be careful that in combining the Stops belonging to two different sets of keys, the kind of tone in the one, should be distinguished from that in the other: but without forming too violent a contrast between the two distinct qualities of tone._

_F. M. B._
Questions of the Swell Box

The Swell Box: Quotations / comments

Marie-Claire Alain: the swell box seems not to have been in general use; even if Mendelssohn was familiar with the device, he does not call for its use.

Thomas Murray: we simply do not know whether Mendelssohn used the swell box; that it was there to be used is certain. It was admittedly an awkward thing to operate. Considering this, it is possible that a composer of commissioned pieces for the organ would intentionally avoid crescendo indications for the sake of simplicity.

François Sabatier: of the organs in Germany listed by Sabatier as having been played by Mendelssohn, none other than the Marienkirche in Berlin are described as possessing swell divisions; 3 in England list swell divisions. Sabatier conveys no opinion on Mendelssohn’s usage.

Wayne Leupold: only staged crescendos were available until the 1850s (on German organs of the time) . . the swell available to Mendelssohn was an unbalanced hitch-down pedal. From “The Mendelssohn School: ‘John Barnett (1837-1916), a 19th century English composer, was a student at the Leipzig Conservatory from 1856-59 . . he discusses the organ playing and teaching of that time in Germany . . Richter had also an organ class . . . I noticed that in Germany the swell organ was conspicuous by its absence . . he ridiculed the idea of the use of the swell organ, calling it ‘Spielerei’, freely translated ‘child’s play.’”

Robert Schunemann: . . there can be no doubt that Opus 65 is good music: it has withstood the ravages of being played in the neo-romantic style of the early part of this century (with all its swell shadings and crescendos and registration changes) as well as the severely neo-baroque sterilizing which followed in reaction.

Registration

Marie-Claire Alain:
- The works are written for instruments that have at least two manuals (all the changes of manuals being carefully indicated)
- The tonal qualities of the two manuals should be clearly contrasted
- The Pedal always acts as a bass. The Great should not, however, be coupled to the Pedal as there frequently occur notes common to both manual and pedal parts and the lowest manual part often goes below the pedal part. So the pedal department also needs to present a tonal contrast (contain enough stops to balance the manuals)
- The very high-pitched mixtures of the Baroque were out of fashion. Yet Mendelssohn’s love for Bach’s music often induced him to write fugal pieces containing highly complex counterpoint. In Germany the listener could only be sure of following such contrapuntal lines if they were played on a chorus containing reasonably high-pitched mixtures.
- The composer liked warm sounding registrations – he calls for the use of several 8’ stops in combination – but he makes no mention of a Tremulant or of a Voix céleste.
- There is in the music no hint of dynamic markings or crescendos, such as are found in organ music from 1860 on. So, even if Mendelssohn was familiar with the device of the
swell box, he does not call for its use. We must get rid of the idea that the large Romantic organs inherited by the present generation are ideal for Mendelssohn’s music. These organs were built between 30 and 50 years later and can only caricature the work of a composer who was still much more in love with classical counterpoint than with grandiose effects.

Thomas Murray:
- It is obvious that each age re-interprets great music to suit its own taste
- re Mendelssohn’s organs, there was virtually no string tone
- there is a curious absence of 16-foot stopped registers in the Pedal Organ, with 16-foot open pipes preferable
- the changing of registration during the course of a piece was the exception, not the rule
- there WERE occasions when stops were added and withdrawn during a piece
- bar 58, Sonata III, request to increase the tempo and dynamic level gradually while approaching the return of the original theme in the major key
- ‘gap’ combinations were discouraged by writers of the period; chorus work was to be added in the logical order of ascending pitch levels
- the combining of several stops at the fundamental pitch was very much a part of the Romantic aesthetic, both for rich unison tone for quiet pieces, and as foundation for the chorus
- the best 19th century English (and American) organs offered many possibilities – combined energy and restraint, grandeur and intimacy more successfully than organ of any other time

Douglas Butler:
- Mendelssohn left the exact combination of registers to the taste and discretion of the performer
- the composer apparently wrote for tracker-action instruments with few mechanical aids (ventils, combination pistons) for registration, or the rollschweller (crescendo pedal)
- many of the older instruments may well have been in unequal temperament
- early 19th century German organs had complete principal choruses, mixtures (although soft) and beginnings of new tonal palettes – strings, celestes, etc.
- it would appear that Mendelssohn wrote pieces which utilized the Baroque concepts of Organo pleno generally for broad fantasia or fugal (fugato style) movements, and the Romantic concept of expressive coloristic shadings for character pieces and ‘religious Adagios.’ In registrational practice, once again, counterpoint and cantilena combine for a uniquely personal idiom.’

W. L. Sumner:
- It should be noted that the full organ without reeds of the German and English organs of the first half of the 19th century was far less violent and destructive than many of the 20th century.

William Mason (1829-1908):
- In the old German school of organ-playing, no variation of registration was permitted, but fugue was played, as it is now, with full chorus stops from beginning to end.

John Fersperman:
- The cardinal point for the present-day performer is that 19th century repertoire of genuine musical worth can be adequately performed on an instrument designed in the traditional
manner. The notion that this is not possible stems from a misunderstanding of basic
design principles common to the organ in any style-period, from unrealistic and un-
idiomatic requirements sometimes associated with ‘service-playing’, and from
completely unmusical and inartistic attitudes about 19th century music.

Robert Schuneman:
• True authentic performances of this elegant music have been rare, if not nonexistent.
• As a result, many listeners have judged most of the music to be either trite or overloaded
  with maudlin sentimentality.
• By all accounts, Mendelssohn stood apart from the salon artists of the day, not wishing
  to indulge in the sentimental sweetness . . . it is not surprising to see his conservative and
  sparse directions for manual changes in Opus 65. Much more could have been done with
  registration in his day than he suggests in his own directions (Liszt was doing it!), but
  one notes his reserve and control in matching registration to form.

Gerald Frank’s review of ‘The Nebraska Conference on the Organ and German Romanticism’:
Re Mr. Schuneman’s lecture:
• the fundamental (8’ manual, 16’ pedal) is the predominant pitch to be heard
  three categories of stops:
• foundation voices (unison and octave multiples)
• filling voices (harmonic corroborating pitches between unisons and octaves) used only
  when the octave above was also used
• mixtures, used after all other flue stops were employed
• 8’s were used in multiples before 4’s were added / pyramidal building of sound
• no single 8’ stops dominated the others / the addition of a stops colored the sound

Re Wayne Leupold:
• the romantic German organ tended to retain a complete principal chorus in each manual
• a complete scheme of mutations was present
• only staged crescendos were available until the 1850s
• Mendelssohn used no registration changes within movements
• for Rheinberger and Mendelssohn, registration indications consisted of dynamic levels:
  ➢ ff = full organ
  ➢ f = the same without mixtures
  ➢ mf = principals 8’ and 4’ or full secondary manual
  ➢ p = two or three 8’s and 4’
  ➢ pp = salicional, gamba or aeoline 8’
  ➢ ppp = the softest 8’
  ➢ the Pedal should be ‘prominent’
Some General Considerations when Registering:

French Music
- It is essential to have a working knowledge of the organ the composer had in mind
- And also the period and style of the music to be registered
- One must memorize what these are, what they mean, how they are used: Plein Jeu, Grand Jeu, Grands Jeux, Jeux de Taille, Fond d’orgue, dessus, en taille, bassus, Anches, Tirasses, GR, GPR, GP, etc
- It is very important to know the different between flute sounds, i.e. Flûte, Flute, Bourdon, Flute harmonique
- Working knowledge of reeds, their actual names (there really aren’t that many options, truth be told), and the color and mood they often represent
- Very helpful to know how a French crescendo from pp to fff was accomplished on the Cavaille-Coll organs
- Read books and treatises by Rollin Smith, Fenner Douglass, Barbara Owen, Jon Gillock, and others that deal specifically with French organs, composers, and registration

German Music
- It is essential to know what a Plenum is, and the possible variations of this basic concept
- 16’ manual stops – how they were used and why
- Use of reeds – how, when, and why
- Use of couplers, how, when, and why (or perhaps mostly, why not)
- Solo sounds available to Bach and other composers of his time, such as the overused Cornet, other mutations, and some solo reeds – perhaps not essential, but interesting
- Use of Swell Box – yes, no, or maybe?
- Combining Principals with Flutes – yes, no, or maybe?

English Music
- A brief history dealing with the organs of England and the unique concept of the organ’s (and organist’s) function is very helpful when registering in an English style
- Combining Principals and Flutes (integrating families of sound) – ok, or no way?!
- Building a crescendo – reeds first, or mixtures first?
- Use of 16’ manual stops
- Do English organists really use Celestes very often?
- The Oboe – a real ‘bread and butter’ stop
- The English Swell – an essential concept, even if it might be a slightly different thing to, well, almost everybody
American Music

- The ‘American’ organ is an eclectic thing, usually well intentioned, but not always the best of all possible worlds
- American organists spend their lives compromising, making-do, substituting, re-evaluating, reconstituting, etc. And I daresay that’s not such a bad thing, since such actions lead to improvisation, or recreating!!
- Virtually every American organ is different – to the vexation of some and the delight of others
- An American organist who plays American organs must first learn to LISTEN to EVERYTHING – recordings and recitals using every type of organ imaginable (pipes AND others, classical AND others), teachers (whether in agreement or not), students (who often have very useful perceptions and very honest comments), audience or congregation members (who also are sometimes brutally honest about what they HEAR), individual pipes and combinations of varying styles of instruments (whether ‘orthodox’ or not), rooms (good and not-so-good)
- Utilizing the above points, every serious American organist will invariably develop a sound and color style that is unique and individual, and also sensible, appropriate and musical. And, in this writer’s opinion, that is the goal!
Hymn-Playing . . . Some Hopefully Helpful Hints

These quotes taken from a variety of methods, studio books, and study courses for beginning organists, advanced organists, and those interested in improvisation . . .

“Registration is improvisation.”
“Registration is like improvisation.”

“Registration is very much like cooking, and the organ is the organist’s kitchen. It takes years of listening to decide which recipes or combinations work best for certain effects or dishes.”

“The organ stoplist is the organist’s palette, with many individual and combinations of colors from which to choose.”

“Technique is absolutely necessary, but the color and soul of the musician/artist comes out in the choices of registration.”

“One must understand the uniqueness of the tonal resources . . harmonic language, musical ethos, and colorful registrations.”

“There is nothing sacred about four-voice harmonization. To introduce a hymn that everyone knows by playing through a standard harmonization (and typical registration) is most likely a waste of time and is hardly likely to do more than cue the congregation when to stand.”

“For most people, when they feel secure and supported they are most likely to sing with freedom and gusto.”

“Registration is, of course, almost always improvisational in nature. The desirable sound environment for the singer can easily be disturbed by raucous reeds and/or screaming mixtures, particularly in dry acoustical environments . . the organist must be sympathetic to the space in which he or she plays, the size of a given congregation, the nature of the day in the church year, and the particular place that each hymn has in the plan of the entire service of worship.”

_____________
Basic problem areas . . and discussion/demonstration of possible solutions:

TOO LOUD / resulting in legitimate complaints, reluctance to sing
- sustained use of ‘full organ’ – perception of being bull-dozed
- sustained use of the same sound, with no relief
- use of upper work (mixtures, etc) without proper underpinning
- use of low-pitched flues and reeds without a balance of upper work
- overuse of a ‘soggy legato’ touch without rhythmic vitality or sensitivity

TOO SOFT / resulting in non-committal singing, overall boredom
- combinations of sounds that don’t support congregational singing
- combinations of sounds that are boring, colorless
- use of sounds or attachments that are inappropriate for singing
- use of a polite or insecure touch

CAN’T HEAR THE MELODY
- every organist MUST learn to play a solo line on a separate keyboard (this is a SKILL)
- and play the accompaniment with the other hand on a separate keyboard!!!
- and use solo sounds like Trumpets, Cornets, other combinations of reeds, and other combinations of flues
- advanced organists should also try to master playing the melody in the pedal accompanied by full three or four part voices in the hands!

CAN’T FOLLOW THE ORGAN
- perhaps (probably) not a registration problem, but a rhythmic issue
- sing along with yourself, and see how that goes!
Some practical favorite tips & registrations for consideration:

Typical 2 or 3-manual organ and pedal

- rule of thumb: in general, for ensemble registrations, try to avoid using sub and super couplers, unless (!) there are no 16’ manual stops or mixtures available making couplers absolutely necessary, or for intentional special effects
- avoid using tremolo for ensemble registrations, particularly for hymn singing
- vary registrations from stanza to stanza, even slightly, but be sensible and musical; often the text can help make the right decision about volume or color, but not always
- use the organ at your disposal to the best of ITS ability!!!

[1] This is a great combination for ‘teaching’ a hymn with RH on the Great and LH on an accompanying manual; also useful for leading liturgical pieces such as Psalms, communion settings.

Couplers  Sw/Gr, Ch/Gr, Sw/Ch, Sw/Ped
Swell  8 & 4 Flutes, 4 Prin
Great  8 & 4 Flutes, 8 Prin (if small), 4 Prin
Choir  8 & 4 Flutes, 4 Prin
Pedal  16 Flutes & String, 8 Flutes & Prin, 4 Flutes (to balance LH)

[2] Using the above registration, add a small (Swell?) Mixture and a 16’ flue (Swell?) under expression to add some ‘gravitas’ and create a very secure and grounded sounding combination. Next, add a small 8’ reed for a little more ‘smolder’ followed by a small 16’ reed (yes, in the manuals) if such a luxury is available. This can be used to great advantage, giving the impression of a ‘lot’ of organ but at a medium volume level.

[3] For variety, you may have on Great thumb pistons other solo sounds:
i.e., 8 Trumpet, 8 Cornet, or other combinations that will stand out.

[4] Set Swell thumb pistons in succession, i.e., 3, 4, 5, 6 so that you can quickly access, something like:
   8.8.4.4
   8.8.4.8 reed
   8.8.4.16 reed.8 reed
   16.8.8.4.16 reed. 8 reed. Mix
   Full Swell
[5] **A Plenum registration:**

Gr 16 flue, 8 Prin, 4 Prin, 2 Prin, Mixture(s)
Sw 8 Prin, (8 Flute), 4 Prin, 2 Flute or Prin, Mixture
Ch 8 Flute, 4 Prin, 2 Flute or Prin, 1 1/3 Larigot, Mixture
Ped 16 Bdn or Subbass, 8 Prin, 4 Prin, Mix, 16 Posaune

*A few thoughts about this registration:*

- Gr – the 16’ flue could be a Quintaden (preferable but rarely available on recent American organs), a Violon, Flute of some kind, but probably not a Principal
- Gr – be careful about the 2nd mixture in the Great – could be pitched too high for comfort
- Gr – some use ‘fractions’ in this combination, i.e. 2 2/3 Quint; be advised to check this out and listen very carefully since this stop is sometimes, but not always voiced to work in a complimentary way with the Plenum; same goes for 5 1/3, 1 3/5 (danger! listen!)
- Sw – on most American organs, there is no principal, so use a flute as the 8’ base; if the flute and string together sound like a small principal, use them, by all means, and be careful that the sound remains clear
- Ch – this division rarely has a mixture, and can often be a bit sparky, so use great care in inviting this group to the ensemble party lest the organ begins to sound like tuned shrapnel to its blessed listener
- Ped – should always be clean and clear, which is not always very easy; often a Sw/Ped coupler is the best and only answer to balance, clarity of this division
- Ped – be careful of the 16’ flue; often one of these animals is enough, or sometimes it takes two soft 16s to make one sound that defines pitch – this can be tricky but almost always solvable
- Ped – also be careful of the 16’ reed since on many organs it sort of ‘takes over’ and obliterates everything else; sometimes an 8’ reed is the best bet, and is totally acceptable, or perhaps something coupled from the Swell

[6] **A reed-based registration that can lead congregational singing:**

Great 8 Flute(s), 4 Prin (perhaps), 4 flute, 8 reed
Swell 8 Flute & String, 4 Prin & Flute, 8 reed(s)
Choir 8 Flute & String, 4 Prin & Flute, 8 reed(s)
Ped 16 Subbass and/or Flute, 8 Prin & Flute, 8 reed and/or 16 reed (to balance)
Sw/Gr, Sw/Ch, Sw/Ped, Ch/Gr, Ch/Ped (maybe)

*A few thoughts:*

- Gr – can and should be available as a solo line in either soprano or tenor register
- Sw – if one is available, a 16’ reed (if soft enough) adds a nice smolder – and yes, this could be done with couplers by adding a 16 sub-octave; also adding Sw/Gr at 16 is a nice effect
• Ch – be careful of ‘quacky’ reeds – can sound mighty strange in an ensemble sometime, like a duck pond in October

[7] An orchestral registration that can be achieved on almost any organ:
All sub and super couplers to Great / ALL Tremolos
Gr – all 8’ flues without the large principals / add 8’ Prin + Trem for solo line
Sw – all 8’ flues including celestes, Vox Humana, and possibly a 4’ flute, Trem.
Ch – all 8’ flues including celestes, perhaps Trem if regulated sensibly
Ped – 16s, 8s, perhaps 32’s to balance – Sw and Ch/Ped

A few rules of thumb:

• Don’t assume the 8’ Principal is going to work as the foundation for any combination or ensemble. I have played concerts and services where the 8’ Principal was never drawn because of its muddiness or thickness, even for full organ (often, the scale is too big). If it must be used, this kind of 8’ Principal may work as a solo stop accompanied by other principals, strings, or a small reed chorus. SOLUTION: Most often there is available a flute, or two flutes, or flute and a string that will do a much better job of underpinning the choruses. Listen, and be honest. Don’t use stops assuming they work, in any case or variety!

• The 4’ Octave on the Great is a wonderful teacher, particularly when used as the top voice in a solo ensemble. More often than not, this stop is voiced perfectly with a ‘lead line’ that makes the solo/soprano/melody line clear to the listener.

• When mixtures are too much, screaming, over-the-top, confusing, etc., use them sparingly. A suggestion is to use experiment with playing down an octave or using sub-octave couplers. Again, don’t use stops just because they’re there!! Sometimes you must use your imagination to create a purpose for certain stops.

• Couplers can be incredible tools when used properly and to the organ’s advantage. Used improperly and without imagination (mixtures and 4’ reeds with super couplers, for instance), they can cook up a disaster. Consider this: very often, the 4’ flute on the Great (or any division) is the best, most articulate 8’ flute in the organ. This happens because of voicing and scaling. Of course, the only way to get this is to use the 4’ flute with the 16’ sub coupler and the Unison Off. Also, as mentioned before, to create a sumptuous orchestral effect, use the strings and celestes along with the 16’ and 4’ sub and super couplers and tremulant.

• Be very careful about balancing the pedal in ensemble combinations!! Most often the pedal is over registered and too heavy. It is generally a good rule to use Sw/Ped, giving a sense of continuity from the start. Be wary of using 16’
Principals, and know their varieties of names (Contrabass, Diapason, etc.). Obligato lines often become opaque, lugubrious and downright behind the beat when using these stops. They are best reserved for absolute full organ or other special effects. Often a 16’ string and flute will work just beautifully underneath a surprising amount of organ, and the clarity is maintained.

- Never be afraid to use reeds to their full advantage!! I like to think of reeds as the herbs and spices of the organ, and used wisely and with some experience, can create some wonderfully colorful sounds. An 8’ Oboe is worth its weight in gold since it can be used as a solo sound (don’t be afraid to use a 4’ or 8’ flute with it to boost or calm the sound), or as a little buzz in an ensemble of principals, flutes, and/or strings. The addition of an 8’ Trumpet to an innocent collection of principals and flutes will add the absolute right note of fire or brilliance, particularly when it’s done under the cover of a closed swell, gradually opened. Add a 16’ reed to that, and the pot immediately begins to boil, creating much interest to the listener’s ears.

- Solo sounds? There are lots . . but here are a few, some old, some new, that may be of interest to you and your listener:

  8’ Prin, 4’ Flute, (trem)
  8’ Prin, 2 2/3 Quinte (or Nazard), trem
  8’ Flute, 4’ Flute, Cornet (w or w/o trem)
  4’ Flue (w or w/o trem)
  16’ Flute, 4’ Flute, (trem)
  8’ Oboe, 4’ Flute
  16’ Oboe (Dulzian, Fagotto, Waldhorn, etc), 4’ Flute
  16’ Oboe, 4’ Prin
  8’ Clarinet, (4’ Flute), 2 2/3 Nazard (No trem)
  16’ Oboe, 8’ Trompette
  8’ Vox Humana, 8’ Flute, trem
  8’ Vox Humana, 8’ Strings and Celestes, trem
  8’ Vox, 8’ Strings & Celestes, 4’ Flute, trem, 16 sub, Un. Off

You can always use flutes and some strings to enhance the sound of a chorus reed.

Any and every stop on the organ is a potential solo stop!!
Conclusion:

So, what now?

The best teachers along my way as an organist have been those amazing musicians who have willfully and happily chosen to play great music on instruments that would probably be considered not-so-great, and usually with great success. It has been those moments that have taught me that when it comes to creativity, standards and rules are meant to be broken, and will be, time and again.

Knowing the rules, traditions, styles, cultures, and preferences of those who have paved the way for us is absolutely essential for recreating ‘their’ music. This knowledge also provides some legitimacy to what we do and how we do it, and gives us places to start as well as places to go with our own creativity. BUT, it is not the end of the story. Some of us are a little too comfortable “knowing” there is a correct way to re-create music, and attempting to do it that very same way every time (this also keeps a number of organ ‘teachers’ in business). In fact, that ideal is more often than not what wins competitions and makes the academic community proud. But, that in and of itself is not being creative, artistic, and open to the voice of the Spirit. Off the top of my head, not counting the assumed “correct” way, I can think of at least five ways to register Bach’s ‘Little’ Fugue in G minor, and depending on the organ, all five work splendidly. (By ‘work’ I mean the music comes alive and sounds wonderfully convincing.)

Every organ is different, and it is vitally important that we all understand that each organ has its own unique voice. It is our challenge and responsibility to find that voice in order to successfully convey the stories of our music. It is also our duty to listen with critical (meant in the most positive of ways) ears at all times, and assume and expect that we will learn from what we hear. The organ can very easily be a beast and just a noise machine to its player and to its listener. We must never let that happen. And it won’t if we keep our imagination switch turned “on” to full power.

Blessings, peace, and the best of wishes with your music making!