1968

A Brief Survey of the Art of Registration

David Allen Glaze
Ouachita Baptist University

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A Research Paper
Presented to
the Faculty of the Honors Program
Ouachita Baptist University

In Partial Fulfillment
of the Requirements for the
Honors Special Studies

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by
David Allen Glaze
January 1968

A BRIEF SURVEY OF THE ART OF REGISTRATION

The art of registration is a branch of organ technic pertaining to the use of stops, couplers, and accessories of the modern organ. It is a subject of great importance in the development of fine organ playing, and should be studied simultaneously with ordinary organ studies of actual playing if the desired perfection is to be fully achieved. An organist needs a good workable understanding of registration and the stops of his particular organ in order that he may use his technical proficiency to its best advantage in making his music speak to others. This makes registration important, and someone has simplified it even to a greater degree saying, "when to use what stop on what song."

In order to understand the subject of registration more easily, possibly a deeper look into the term "stop" will help. On many occasions, the word "stop" is used in a very loose manner, such as an abbreviation of draw-stop knob, or stop key. Also, it is used for the non-sounding or mechanical parts of the instrument, such as couplers, tremulants, and so on. It is better to use

it when describing the complete set of pipes including one unit of organ tone. When basing the definition on history, a stop most correctly means the complete mechanism which literally "stops" any given rank of pipes from sounding until desired by the player. In the case of mixtures, the mechanism "stops" several ranks from sounding. Before the invention of stops, early in the fifteenth century, all ranks, or "full organ" was heard every time a key was depressed.[1]

Today, most organists think of stops as a way to add more sound, or variety in the tone of the organ as one listens during a performance. Some even make a difference in the sounding and non-sounding stops, such as stops and couplers. There would certainly be less confusion if the use of the word "stop" was reserved for speaking registers only, excluding couplers and the other devices.

The word "register" has been mentioned, and should be considered in order to better understand the development of registration. This term "register", is very interesting because it is very often interchanged with the word "stop". It is said to have been derived from the slider which registers or regulates the number of pipes permitted to sound at any one time, and from this word is derived the term "registration". In organ terminology, this means the use, control, and management

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[1]Reginald Whitworth, Organ Stops and Their Use (London: Sir Isaac Pitman & Sons, Ltd., 1951), pp. 3-4.

of all the stops, couplers, and other mechanical devices, except the actual keyboards, manual and pedal, and of course the blower.[2]

It has been mentioned earlier that the stops (or draw-knobs in some cases) of the organ console control the ranks of pipes, making them sound or keeping them silent until they are needed. On modern day organs, they are divided according to their sound into families. This has not always been true, as history shows a slow but steady advance in the organ art from early centuries. Organ builders were not only craftsmen, but artists and musicians as well. Their instruments were designed and built to meet requirements of polyphony and accompanied monody. Organ registration was an art of its own, uninfluenced by the special considerations required in the scoring for other instruments. In other words, registration was very organistic, not orchestral.

In the 1700's, Georg Joseph Vogler had a portable organ which was called an "orchestrion", and was designed to imitate different instruments of the orchestra as much as possible. He tried doing away with sounds natural to an organ, did away with mixtures and enclosed all pipes in swell chambers. The manuals were classified according to families in the orchestra, one manual for

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[2]Ibid.

flutes, one for reeds, one for strings, and so forth. Vogler did recognize the fact that mutations were very useful for coloristic purposes.

In the classic organs (before Bach's death), all the divisions, manual and pedal, were of equal importance, coordinated with one another, and each was equipped with an independent ensemble. They were designed for variety in color, and the color combinations were the result of artistry on the part of the organist. Every division was provided with its own ensemble group, usually of different pitch, always of different timbre, insuring contrast with homogeneity.

The classic principals of registration were gradually being done away with, because they were replaced by a new method which concentrated on ways to make the organ sound like, and have the buoyance and flexibility of the orchestra. Everything else was secondary. In order to rival the orchestra, this new organ was provided with registers of the very widest dynamic range, from pianissimo to fortissimo, color now being merely incidental. The diapason family was almost forgotten, finally reduced to a mere remnant, the orchestra being without a model for this voice. The neglect was shared by the mutation stops and compound registers, being replaced by string and solo registers, still imitating more or less successfully sounds extraneous to the organ. The mutation and

compound registers had always served the classic organist as a palette for his special color devices.[3]

As organs and registrations developed, there was formed a system of names which described the quality and pitch of the various stops, or individual "voices" in the different organs. The basic groups of organ stops fall into two categories and four families:

I. Flues (or labials):
1. diapasons
2. flutes
3. strings

II. Reeds (or linguals):
4. reeds:
   a. solo reeds (clarinet)
   b. ensemble reeds (trumpet)

A further description of these "families" is helpful in familiarizing a person with their individual qualities.

DIAPASONS

The diapason is considered the true foundation tone of the organ, a sound most naturally associated with the instrument. In fact, it is just this clear and pervading quality which is at once recognized as "organ tone". With its various ranks this family is the most

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[3]Caspar Koch, The Organ Student's Gradus ad Parnassum (New York: J. Fischer & Bro., 1945), pp. XIII-XV, and pp. 42-59.

important of the organ. The diapason tone lies somewhere between flute and string tone, but is completely individual. It combines ample fundamental tone with good harmonic development. Diapasons played singly offer more subtle variety than many seem to realize. Generally, the family includes the diapasons 16' and 8' (principal, violin diapason, geigen principal); octave (8' in pedal, 4' in manual divisions); twelfth; fifteenth; and various compound stops known as mixtures.

FLUTES

Flutes are flue pipes with high-cut mouths and relatively low harmonic development, although there is an amazing variety of flutes with considerable variation in their construction. They are made of wood or metal and may be (a) open, (b) stopped, or (c) partially stopped, and are roughly divided into two main classes, stopped flutes and open flutes. In pitch they range from 32' to 2' (and even occasionally 1'). Stopped flutes are essentially of duller tone than open flutes, which are comparatively bright. Both will blend well together however, and where a number of different types exist in various pitches, a few experiments will often reveal some fascinating combinations within the family.

Stopping a pipe has the effect of making it sound

an octave lower than it would sound if open. This principal has been used in organ design not simply for economy reasons but for the purpose that is creates new and distinctive voices.

The "harmonic" flute is one which, on the other hand, has been constructed twice the length of the pitch desired and "overblown" to produce its octave, the speaking of this particular harmonic being facilitated through the placing of a hole in the side of the pipe at its half-length (where the partial or overtone normally occurs).

For accompanimental use, flutes may well be employed in combination with dulcianas, gemshorns, salicionals, gambas, and even violes. If the stops themselves or the couplers allow, variety may be obtained by combining the flute tone with string or other tone quality in contrasted octaves (gamba 8' with flute 4', or flute 8' with viole 4', etc.).

Large combinations or ensembles of soft stops may well include 16, 8, 4, and 2 foot flutes, but it is important to remember that stopped flutes like the stopped diapason, gedeckt, or rohr flute blend more readily than open flutes. Harmonic flutes sometimes will not blend.

Clarity is very essential. For this reason, as a general rule, it is better not to use flutes with diapasons. Of course, there are exceptions. The 16 foot stopped flute or bourdon may be an organist's only great double, and in this pitch it often blends very well;

but even this must be removed when playing a fugal entry, otherwise it may sound like a gruff bass voice singing an octave below the pitch in a hymn or chant. Doubles, especially reeds, should be avoided in playing fugal music wherever their use would interfere with the correct hearing of the fugal structure.

Naturally, flutes make beautiful solo stops. With the exception of the diapasons, as mentioned above, flutes blend well with most other stops for solo use. They can often be used with excellent effect combined with imitative orchestral reeds, and full combinational advantage may be taken of the several pitches, both of flutes and orchestral reeds. Generally speaking, the flute will take the higher pitch better, say, for example, clarinet 8' and flute 4', but the reverse is often quite good.

There are also flute-toned stops which give two distinct pitches per note, the ground tone and its twelfth above in about equal proportion. These are the quintaton family, 16, 8, and 4 foot pitch, and the quintadena, generally 8 or 4 foot pitch. The note C would give in addition the G an octave and a half above.[4]

Some types of stopped flutes are: bourdon (wood), cor de nuit, doppelflöte (double flute having two mouths on opposite sides), gedeckt (or gedackt), lieblichflöte

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[4]Whitworth, op. cit., pp. 44-46.

(or lieblichgedeckt), nason flute (with pronounced twelfth), quintaton (quintadena, metal flute with strong twelfth), stopped diapason (or stopped flute).

Some open flutes are: clarabella, concert flute, hohlflöte, major flute, melodia, orchestral flute (or flauto traverso), blockflöte, flute ouverte, harmonic flute, nachthorn, sifflöte, spitzflöte (tapered with narrow top and having an audible seventeenth; also called flute conique, waldflöte).[5]

STRINGS

Under this heading the large modern organ offers a considerable variety of stops, both in pitch and in power, and also in quality. Strings are the flues with the highest harmonic development. They are generally of metal, relatively narrow, and have a special mouth treatment to bring about their unique qualities. Strings sometimes use rollers or harmonic bridges to help facilitate their speech. These range tonally from the quiet salicional and vox angelica, sometimes having only just enough "bite" to escape being dulcianas, to the keenest viole, or in power from the merest whisper of an echo gamba, to the admirable powerful string tone. The majority of organs,

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[5]Jack C. Goode, Pipe Organ Registration (Nashville: Abingdon Press, 1964), pp. 15-16.

however, generally possess but a single gamba and voix céleste on the swell, a string-toned stop of some sort on the choir, and a violone 16' on the pedal.

String tone generally, and the célestes effects especially, need using with discretion. It is not a necessary part of the organ ensemble. It forms a most valuable contrast to the true organ tone, and this is lost if the string effects are overused. Nevertheless, some gambas, salicionals, and even violes can be used in general ensemble. The geigen is a string which blends very well.

The use of string tone for solo effects, either alone or combined with other stops, is most valuable. Good string tone frequently blends well with flute tone, more particularly if the latter can be an octave above or below the string tone in pitch. This proves to be really effective in both solo and harmonic use. There are organs, also, where string tone will easily combine with the imitative reeds of the woodwind group, when absolutely in tune.

String tone is, however, being more appreciated at its true worth, and it is a pleasure to note that fair-sized organs are now being equipped with something approximating a complete string family on at least one manual. The string and reed families will, by reason of their universal incompleteness, furnish obstacles

to their study by similar methods; they are so generally limited by commercial necessity that single stops are the rule rather than the exception.[6]

Some common members of the string family are: gamba, salicet, salicional, viola, viole de gambe, viole d'orchestre, violina, violone, violoncello, and viola pompose. Strings may be orchestral (imitative) in character or foundational (stops that blend well in ensemble).[7]

REEDS

The reed stops offer great color variety in organ registration. They are excellent sources of solo tone, whether soft (corno d'amore) or loud (trumpet). They give power and weight (trumpet) as well as brilliance (bombarde, clarion) to an ensemble. They serve well in lending special color for romantic music.

A solo reed can be subtly changed through addition of mutation. Solo reeds may, of course, be used as required without seriously upsetting the general effect of the organ: it is when reeds are combined with other reeds or with flue stops that fatal errors are frequently perpetrated.[8] In other words, as a rule, a solo reed

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[6]Gordon Balch Nevin, A Primer of Organ Registration (Boston: Oliver Ditson Company, 1920), p. 28.

[7]Goode, op. cit., p. 16.

[8]Noel A. Bonavia-Hunt and H. W. Homer, The Organ Reed (New York: J. Fischer & Bro., 1950), p. 43.

is altered to its best advantage by adding pitches other than that of the reed itself.

The best use of reeds in building ensembles, particularly in romantic music, is simply to combine them in the course of buildup of the flues, bringing them in as their pitch and volume would dictate. For example, softer 8' reeds may be added after light diapasons, the heavier reeds like the trumpet being brought in last.

The reed stops having the names of orchestral woodwind instruments are naturally most effectively used for solo purposes. The occasional use of imitative reeds in chords is valuable. Even the acid-sweet tones of the orchestral oboe may be so employed. The clarinet, if in a good swell box, will stand much more prolonged usage in harmony than other stops of this group, and has been used successfully as a swell foundation double reed.

Chorus reeds form the equivalent of the brass of an orchestra, adding power and richness. They vary in tonal color from the relatively smooth, broad tuba tone to the brilliant, edgy tone of the bombarde, a French type reed. Typical examples are: bassoon, bombarde, clarion (French: clairon), cornopean, flügelhorn, oboe (French: hautbois, meaning "high woodwind"), oboe clarion, ophicleide (named from an ancestor of the tuba), trombone (German: posaune), trumpet (Italian: tromba), and trompette. These reeds can also serve as solo voices.

Solo, or orchestral, reeds are imitative in quality. They are generally omitted in ensembles due to their poor blending qualities. Typical examples are: clarinet, cor anglais (English horn), corno d'amore, corno di bassette, French horn, and orchestral oboe.

Some reeds of early origin which prove useful for solo and ensemble purposes are: cromorne (German: krummhorn, also spelled cormorne), dulcian, regal, and singend regal (a high-pitched pedal reed).

For many years, the term "full organ" has been taken in the most literal sense, only tremulants, undulating stops, and vox humana being omitted. Even the quietest vox angelicas and dulcianas were included in full organ, and, of course, all flutes, open or stopped. Today, the call is for clarity of sound, and on small organs, a little experimentation will show which stops obscure the clarity of the full organ , and these should be allowed to remain at rest. Often the culprits will be found to be the flutes, especially harmonic flutes, 16' bourdons, and couplers. Of course, the use of flutes will depend on the acoustics of the building being performed in. It should be remembered that clarity of bass parts is of very great importance. On larger organs, the over-use of the weighty open wood 16' must be avoided. Open 16' stops, such as the violone, contra bass, and contra

viole, with their 8' companions, whether made of metal or wood, add greatly to the appreciation of the true contour of the bass part. In the accompanying of hymns and psalms, occasional rest is most desirable, even with a large and varied pedal organ, still more so with a limited pedal scheme. Needless to say, the division most likely to be deficient in American organs is that supplied for the pedal organ.[9]

Before ending this brief survey of the art of registration, it seems that a few general remarks should be included concerning the subject of registration in connection with the use of the organ as an accompanying instrument. In the work of church services, an organist should realize that the organ cannot and must not be regarded as a solo instrument. The whole perspective in church service work is totally different from the requirements for recital work, and the following remarks are intended for the church related work——First: In the accompanying of solo voices and the choir, and Second: In accompanying the congregational singing.

The first attribute of a successful accompanist of both solo voices and also voices in groups is a feeling for balance——good judgement as to the proper volume and quality of tone. A really fine accompanist must know when to play the subordinate part, and when to assume

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[9]Goode, op. cit., p. 35.

the temporary leadership to save some struggling singer from disaster.

It may be asked what quality or qualities of tone are best suited to the different voices, and to this question a definite answer would almost be impossible; but it may be stated in a general way that predominance of flute tone is advisable with many soprano voices, that frequently it will be found that strings are good stops for altos, that tenors are safely accompanied by a combination of strings and flutes, and that soft reeds in combination with other soft stops are of value with many bass voices. Of course, voices are as different as organ tones, and alteration may be needed to lessen deficiencies in the voice. Much can be done to neutralize or relieve an unpleasant quality in a voice by a skillful selection of stops: with voices inclined to the hard, penetrating type it is better to be sparing with reeds or strings, relying mostly on full, round-tone diapasons and flutes; while with voices of a muffled, throaty or "fuzzy" quality, a more decisive, keen quality of accompaniment may be desirable——thus supplying the element of definition lacking in the voice.

Singers frequently wander from the pitch, and the organist can be of great assistance in such cases. If the trouble is a tendency to flatten, it is a sure indication that more of the stops of 4' and 2' pitch are needed; should the singer sharpen, add more reed and string

tone, and during the interludes thicken the tone with diapasons. In both cases, strengthening the interludes can be of help.

In accompanying the choir (or chorus and quartet forms), the problem becomes largely one of balance and selection of quality or qualities of tone which shall make most effective the part assigned to the organ. If the music is scored so that the main interest is with the voices and but little of independent interest is given the organ, it is the duty of the organist to furnish an unobtrusive support for the voices. But, should the organ part contain thematic matter of independent interest, then this part also should be so treated that it will prove interesting as well.

Turning to the subject of congregational singing, the organist's part is a two-function one: he must accompany and he must also lead. Besides tone, tempo, and tone color, an organist's job is to create the principal moods and meanings of the text of the hymns. It is not necessary or artistic to give out one line fortissimo, following it immediately by a sentimental pianissimo on the next line. In brief, the congregation should be led to sing the hymn in the general mood and style of the entire hymn, and not in a line-by-line attempt at interpretation.

The voices should be supported by a "fat" registration:

diapasons, flutes——in both 8' and 4' registers, as the foundation, using good judgement in adding strings and reeds——together or alternately, to give the element of variety. Such a heavy mass of foundation tone is really a necessity in leading the singing of the congregation; most untrained singers are literally afraid of the sound of their own voices and before they can be persuaded to attempt singing, they must by made to feel that there is sufficient support from the organ and choir. The plea is for support, and not noise. Forcefulness, strong accent, rhythm, and ample volume of diapasons and flutes (with little of heavy reeds)——these are the necessary requirements.

Finally, a church organist should not become standardized in his registrations, or satisfied with a few stock combinations to be used on any and all hymns. There should be some slight variation in the registration of each hymn during a service; the practical combinations which may be used in accompanying a congregation are quite numerous. After all, it is in the church that the organ finds its greatest sphere of usefulness.[10]

In conclusion, one author has written that organ music is music being rendered on an instrument hallowed by long service in assisting man in his approach to, and in his worship of Almighty God. Despite the lack of

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[10]Nevin, op. cit., pp. 47-54.

appreciation the church organist receives, he cannot offer the Almighty less than his best. This means hard work and careful thought. It is important, not only to thoroughly master the technique of manuals and pedal, but that of registration also. The uninteresting way in which too many organists are content to accompany psalms and hymns shows the great need for the study of effective registration, quite apart from recital work. It cannot be too strongly emphasized that, to get the best out of any organ, the player will of necessity have recourse to much hand registration——pistons, however numerous, will not do it all. Fortunately, there are some players who realize this, and even in the simplest hymns they try by original and subtle registration to make the sacred words they are accompanying reach the hearts of singers and listeners alike. Truly, such effort is worth while, for the end is, or should be to the greater glory of God.[11]

11Whitworth, op. cit., pp 113-114.

BIBLIOGRAPHY

Aldrich, Putnam. Ornamentation in J. S. Bach's Organ Works. New York: Coleman-Ross Company, Inc., 1950.

Barnes, William Harrison. The Contemporary American Organ. New York: J. Fischer and Brothers, 1956

Bonavia-Hunt, Noel A., and H. W. Homer. The Organ Reed. New York: J. Fischer and Brothers, 1950.

Buck, Dudley. Choir Accompaniment. New York: G. Schirmer Company, 1905.

Conway, Marmaduke P. Church Organ Accompaniment. London and Edinburgh: The Canterbury Press, 1952.

Geer, E. Harold. Organ Registration In Theory and Practice. Glenrock, New Jersey: J. Fischer and Brothers, 1957.

Goode, Jack C. Pipe Organ Registration. New York: Abingdon Press, 1964.

Koch, Caspar. The Organ Student's Gradus ad Parnassum. Book I: The Elements of Interpretation. New York: J. Fischer and Brothers, 1945.

Nevin, Gordon Balch. A Primer of Organ Registration. Boston: Oliver Ditson Company, 1920.

Sumner, William Leslie. The Organ. New York: Philosophical Library, Inc., 1952.

Whitworth, Reginald. Organ Stops and Their Use. London: Sir Issac Pitman and Sons, 1951.