

Into Practice

Registration in the organ music of Olivier Messiaen (1908-1992) -
an overview of its function and implications for performance.

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When considering both his orchestral and piano works, Olivier Messiaen's experiments with timbre have been discussed in great depth. However, as far as the organ works are concerned, the subject has been greatly overlooked, despite the fact that the 19th-century organ at the Paris church of La Trinité (where he was organist from 1928), was built in the French symphonic tradition specifically to re-create orchestral effects.

Many orchestral instruments are transposing; despite this, their function is considerably different to a series of organ stops known as mutations and mixtures. Mutations transpose pitches and sound different to the notes notated; for instance, a Larigot of 1 1/3-foot pitch sounds two octaves and a fifth higher than written. Depending on their makeup, mixtures combine mutations and octave transpositions that, in effect, create open chords ranging from two to five or more notes. Quite apart from the complicated compositional techniques employed by Messiaen, his use of specific instructions for registering his own organ music means that what is heard is often different to what is seen on the printed page. John Milsom in *The Messiaen Companion* writes about 'Les eaux de la grâce' from *Les corps glorieux*:

From the score alone it is hard to imagine the sound of the semiquaver flow that the left hand plays...Although notated in the bass clef, this line sounds simultaneously in three registers: at written pitch, functioning as the true bass of the texture, and as two treble sonorities. In those upper registers the pitches that the listener hears are not those that are written in the score [1].



At the dawn of the 20th century, organ playing in France was remarkably different to elsewhere due to the specific types of instrument and traditions of registration, a tradition to which Messiaen belonged firmly. It may be said that the catalyst for an entire school that grew up around these instruments was Aristide Cavaillé-Coll (1811–99), an engineer who, during the 19th century, turned to organ building as a career. Through the employment of the latest technologies, he created organs with the ability to approximate orchestral effects by means of a swell box for dynamics [2] and a range of stops consisting of strings [3], over-blowing flutes, rich diapasons and a battery of powerful reeds. A composer who made full use of this

revolutionary instrument was Charles-Marie Widor (1844–1937), who, as professor of organ and later composition at the Paris Conservatoire, and the composer of ten organ symphonies, exercised considerable influence on the future development of French organ music. Numbered among his pupils was Marcel Dupré (1886–1971), who taught Messiaen and thus passed on this symphonic organ tradition. French organists thus established a set of rules and instructions to indicate the registration of a piece; previously, this had been a rather vague subject and the French were the first to create a shorthand version of instructions to ensure that everyone would use the stops intended by the composers. Take, for example, the instructions that preface the fourth movement of Widor's first symphony:

G Fonds de 4,8,16
P et R Gambes et Voix Célestes
Ped. Fonds de 8 et 16

in which G (*Grand-Orgue*) is the equivalent of the Great Organ on English and American instruments, P (*Positif*) the Positive or an unenclosed Choir and R (*Récit*) the Swell. The inclusion of *et* indicates the employment of a coupler, thus allowing the *Récit* to be played from the *Positif's* keyboards.

Translated in terms of English instruments, this means:

Great: all flue and diapason stops at 4, 8 and 16-foot pitch
Positive and Swell (coupled): gambes and célestes
Pedal: all 8 and 16-foot flute stops

It is clear that the method, which saves space when writing registrations, can easily be adapted to any size of instrument and, since most French organs still work along similar lines, it is still in use today. Although the method was adequate for such early works as *Le Banquet Céleste* (1928), the timbres employed in his later music are more complex, resulting in Messiaen taking the system to extremes by indicating all the stops required. By this point it has become quite clear that he is thinking in very specific sounds and pitches. For example, in the first book of *Livre du Saint Sacrement*, we are faced with the following:

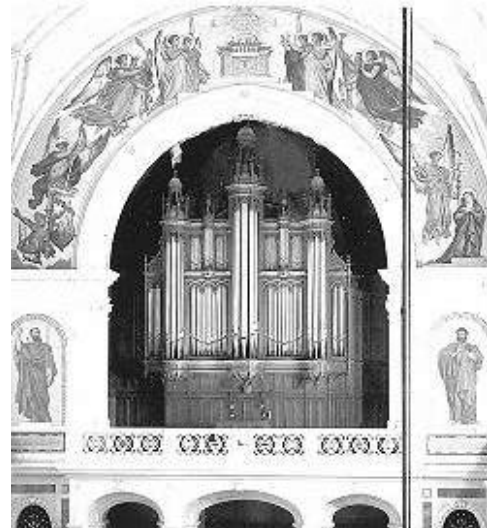
R: bourdon 16, flûte 8, bourdon 8, gambe, flûte 4, nazard 2 2/3, octavin 2, tierce 1 3/5, cymbale 3 rangs, bombarde 16, trompette 8, clairon 4.
P: quintaton 16, fonds 8, prestant 4, flûte 4.
G: montre 16, bourdon 16, fonds 8, prestant 4, flûte 4.
Ped: soubass 32, CB 16, soubass 16, fl.8, bourdon 8, violoncelle 8. PG, RG, RP
tirasses G, P, R.

As *titulaire* of La Trinité, Messiaen wrote his organ music for this instrument alone: one only has to look at the above registrations and the specification [see footnotes] of his organ to see that he was clear about which instrument was his ideal. Since no two organs sound or even play the same notes in their mixtures, it can only be assumed that he saw this as the perfect instrument on which to perform his music. The appendix to *Méditations sur le Mystère de la Sainte Trinité* gives a plan of the stop layout on the console of La Trinité and a set of *remarques*, a description of the timbres of the various divisions and solo stops of the organ:

...les flûtes sont rondes et moelleuses, les fonds sont très nobles, les petits mixtures sont piquantes et très caractérisées, les cornets 'portent' beaucoup, les pleins-jeux sont brillants, les anches sont éclatantes et très fortes. La voix céleste est ravissante dans le pianissimo. Le hautbois Récit est fin: on peut le jouer en accords. Tutti puissant, sans dureté.

...the flutes are round and mellow, the foundation stops are very noble, the little mixtures, prickly and clear, the cornets 'carry' much, the pleins-jeux are brilliant and the reeds are bright and very strong. The voix-céleste is ravishing when played pianissimo. The Récit's oboe is subtle: one can play chords on it. The tutti is powerful, without harshness.

Between 1962 and 1965, the Trinité organ was rebuilt. The mechanical action was electrified and pistons added [4], an innovation that allowed Messiaen to depart from the constraints of traditional French registration techniques, thus enabling him to combine stops in any order more easily. In *Mystère de la Sainte Trinité*, the composer gives a complete set of piston settings for La Trinité organ, showing that the entire eighty-minute work can be performed without the aid of an assistant. Messiaen was the first composer to go such trouble. Despite this, there are instances when he instructed people to go against what he had written in order to re-create the timbres of La Trinité:



👁️ *The Cavallé-Coll organ of La Trinité, Paris*

When playing *L'Ascension* for him before a festival performance in the seventies I was surprised when he added a Larigot to the 8' bourdon for the last section of 'Alléluias sereins'... There can be no hard and fast rule for transferring the registrations, but it is essential that the player fully understands the characteristics of the Cavallé-Coll tradition, and knows those specific features of his own organ that especially delighted him. [5]

Therefore, although many would argue that, when away from home territory, Messiaen often changed his own registrations, it was purely an attempt to re-create the timbres of the La Trinité instrument that he loved so much.

Another facet to Messiaen's organ music is the aural effect that particular registrations create in comparison with their visual representation in the score, as Milsom notes:

To speak of 'the aural experience' of the work immediately raises formidable questions. We have already seen that the notated score is a form of tablature, a set of instructions to the player's hands and feet, that only imprecisely represents the actual sound of the music. [6]

Although it is true that the aural experience is quite different to that notated, there is little that is imprecise in his instructions. He could have indicated little else: he has designated the stops he requires, the timbres they should have, and has given us all the notes. Such precision demonstrates that Messiaen has asked for specific sounds and pitches, the notation being, in effect, nothing more than a set of instructions to tell the performer which keys to depress.

In his earlier works (up to *L'Ascension*, 1933), registrations were used with an 8-foot (concert pitch) basis. All other notes that sounded, octaves, sub-octaves and mutations, were acting as an overtone series above the fundamental. The note at concert pitch is the principal sound heard and the other sounds are added to create effects of, for instance, brightness: the addition of mixtures, for example, lifts and lightens the sound. Although this was the traditional intention of the French organ symphonists, one that Messiaen initially adhered to, we shall see that it continued later only in his *forte* passages.

The musical score for Example 1 is organized into four main sections, each with multiple staves representing different organ ranks:

- Récit (Cymbale 3 ranks):** Includes staves for ranks 1, 1 3/5, 2', 2 2/3, 4', 8', and 16'.
- Positif (Fourniture 4 ranks):** Includes staves for ranks 1', 1 3/5, 2', 2 2/3, 4', 8', and 16'.
- Grand-Orgue (Cymbale 4 ranks):** Includes staves for ranks 2', 2 2/3, 4', 8', and 16'.
- Pedale:** Includes staves for ranks 4', 8', 16', and 32'.

Example 1:

Example 1 is an octave chromatic scale starting at CC on the organ of La Trinité, showing all the notes that sound on full organ (I have omitted the cornets since these are made up of already-existing notes). The only ranks that play as written are the stops of 8-foot pitch. Thus the pedal CC, coupled to the manuals (therefore sounding their lowest notes) plays the following:

- the C two octaves below
- the sub-octave
- the super-octave and its 12th, 15th, 17th, 19th, 22nd, 26th, 29th, 33rd and 36th.

Musical Example URL:

<http://www.musicteachers.co.uk/journal/2001-01/messiaen.1.mid>

Therefore, from a fundamental note of C, an entire chord of C major sounds across seven octaves: as with the natural harmonic series, the intervals lessen as the notes ascend, but always stay on the notes of the major chord. When heard, there is no ambiguity about the note; it is clearly a C but very loud and bright due to the 'harmonics' added by the other sympathetic stops. However, unlike the harmonic series produced by an instrument such as the piano, it can be altered with the addition and removal of other stops, thus allowing its timbre to change with the composer's intentions. This was probably a reason why the organ was such an attractive medium for Messiaen; aside from electronic instruments such as the ondes martenot, no other instrument has such capabilities of pitch and timbre.

Since the Baroque, organ registrations have always been built up layer-by-layer from the starting point of 8-foot pitch on the manuals and 16-foot on the pedals;

for example, from an 8-foot stop, one would add 4- and then 2-foot stops, etc. Example 2a, an excerpt from 'La Vierge et l'Enfant' from *La Nativité du Seigneur*, gives an example of how Messiaen altered this tradition to create new effects. The Grand-Orgue and Récit parts are more or less as they appear in the score. However, the pedal part, which is coupled to the Positif, does not sound as written; there is no fundamental note, but instead the octave, 12th, 15th, and 17th are heard above the fundamental pitch. Example 2b shows a version of the same extract written at sounding pitch. The main difference can be seen in the pedal part, which, although looking like a bass line in the score (2a), is in fact heard at approximately the same pitch as the other lines.

Example 2a:

Un peu vif

R Staccato

f legato

legato

G

3

3

Musical Example URL:

<http://www.musicteachers.co.uk/journal/2001-01/messiaen.2.mid>

Example 2b:

Musical score for Example 2b, featuring three parts: GO, Recit, and Pedal. The score is written in treble clef with a key signature of one sharp (F#). The GO part consists of a single melodic line. The Recit part consists of a series of chords. The Pedal part consists of a series of chords. The score is written in a single system with three staves.

Musical score for Example 2b, featuring a continuation of the GO, Recit, and Pedal parts. The score is written in treble clef with a key signature of one sharp (F#). The GO part consists of a single melodic line. The Recit part consists of a series of chords. The Pedal part consists of a series of chords. The score is written in a single system with three staves. There are triplets marked with a '3' above the notes in the GO and Recit parts.

Musical Example URL:

<http://www.musicteachers.co.uk/journal/2001-01/messiaen.2b.mid>

Widor and his contemporaries often used a more basic version of this idea, usually as a pedal solo and not with such high pitches (e.g. the 4th movement of Widor's Symphony No 5, where the pedal solo sounds an octave higher than written). Messiaen takes this idea of removing what is essentially the fundamental further and introduces it to the manuals so all that remains are overtones. For instance, Example 3 is from 'Méditation II' from his *Méditations sur le Mystère de la Sainte Trinité*.


Example 3:

Comb. 3 (Pos: doublette 2, 3ce 1 3/5, piccolo 1, fourniture 4 rangs)

(Troglodyte)

Un peu vif

Man. Pos: { *f*



Based on the song of the wren, none of the notes written actually sound, only the 15th, 17th, 22nd, 26th, 29th, 33rd and 36th above. What is heard instead is a shrieking collection of sounds of no particular fixed pitches; they are too high to perceive accurately and, since there is no fundamental note for the mutations to enhance, we are faced with nothing more than an aural effect.

Similarly, Messiaen also uses a combination of a 16-foot stop (which sounds an octave lower than written) and very high mutations. This can be seen in examples 4a and 4b from 'La Source de Vie' from *Livre du Saint Sacrement*: Example 4a is as written; 4b indicates the actual sounding pitches when using Messiaen's registration:

Example 4a:

Très modéré,
un peu lent

Pos:

legato *mf*

R:
(le plus lié possible)
pp

legato *pp*



Musical Example URL:

<http://www.musicteachers.co.uk/journal/2001-01/messiaen.4a.mid>

Example 4b:

The musical score for Example 4b consists of four staves. The top staff is labeled 'Pos' and contains a melodic line with a wide interval of a twelfth between notes. The second staff is labeled 'Récit' and contains a harmonic accompaniment. The third staff is labeled 'Ped' and contains a bass line. The score is in G major and 4/4 time.

Musical Example URL:

<http://www.musicteachers.co.uk/journal/2001-01/messiaen.4b.mid>

Registration:

Récit: gambe, voix céleste (all 8-foot pitch)

Positif: quintaton 16', nazard (twelfth)

Ped: coupled to Récit octave above.

In a footnote to the movement, Messiaen reveals that the pedal is playing an octave higher than written. The manuals play as written on the Récit, but the Positif, which provides the solo line, sounds at the sub-octave and twelfth around the written melody. No stop plays the written solo pitches. The effect of this 'gapped' combination is a rather hollow solo line, due to the two and a half octave spacing between the notes of the solo stops. This is heard above a shimmering bed of strings, creating a very ethereal effect that could not be achieved in any other way.

In conclusion, Messiaen, who made full use of the instrument he knew, can be seen to have two distinct styles of registration:

1. Loud passages, these make use of the full organ, treating it in its traditional way. Thus the fundamental sound heard is that which is written in the score, albeit with all the added stops to create more brilliant timbres (i.e. 'Dieu parmi nous' from *La Nativité*)
2. Quiet passages: where Messiaen makes use of the quieter, more unusual stops of the organ, often in very unusual combinations.

In the more delicate passages, it is obvious that Messiaen's registrations are so precise and the textures he writes so sparse that the notes which sound are more important than those written. This has repercussions on the analysis of his organ music since we do not know if Messiaen composed with the sounds of the organ in mind — did he compose organ music at the organ or at the piano, adding registrations later? Probably the former, as most of his compositions and more unusual registrations are likely to have started life as improvisations at La Trinité. It could be argued that Messiaen sets out his methods of composition at concert pitch (e.g. *Technique de mon langage musical* and the preface to *La Nativité*), where he explains the harmonies created from his limited modes of transposition. However, he does use such harmonies in conjunction with the mutations of

the organ, usually as an 8-foot accompaniment, with a mutated solo line. He also uses the full chords with the mutations but never without an 8-foot pitch to retain their fundamental pitches. It seems plausible, therefore, to further categorise Messiaen's quieter organ music:

1. Passages that are homophonic in style which require the use of mutations, i.e. 'Joie et Clarté des Corps Glorieux' from *Les Corps Glorieux*. These always have an 8-foot foundation to keep their pitches correct. In such instances, Messiaen's registrations are purely decorations of the fundamental 8-foot pitch to create a different timbre. This would suggest that it is acceptable to change Messiaen's registrations in order to approximate the timbres that he wanted.
2. Passages made up of either accompanied or unaccompanied solo lines. In these, Messiaen has obviously chosen his solo stops very carefully; changing them would alter their pitches, therefore producing a different melody. Since Messiaen was so precise about all aspects of composition, it would be unlikely that he would have left the pitches of notes purely to chance.

In the confines of such a short space, it is impossible to cover this obviously enormous subject completely. Only the relevant examples to demonstrate the main ideas have been included and it is impossible to state whether any of these suggestions were Messiaen's intentions (the same however, can be said of a great deal more of the ideas used in his compositions). However, the argument shows a logical way of analysing and categorising Messiaen's organ music through its timbres; moreover, it suggests a way of performing his music on instruments other than that of La Trinité in as authentic a manner as possible. This last point, however, does raise the issue of performing Messiaen's music on instruments that do not possess the required stops, a decision that only the performer can make.

Bibliography

Milsom, J., 'Organ Music I', *The Messiaen Companion*, ed. Peter Hill, London, 1995.
Griffiths, P., *Olivier Messiaen and the Music of Time*, London, 1985.
Sherlaw-Johnson, R., *Messiaen*, London, 1975.
Weir, G., 'Organ Music II', *The Messiaen Companion*, ed. Peter Hill, London, 1995.
Scores of *La Nativité du Seigneur*, *Méditations sur le Mystère de la Saint Trinité* and *Livre du Saint Sacrement* published by Alphonse Leduc, Paris.

Notes

1. John Milsom, 'Organ Music', 54-55
2. Pipes of a certain division are enclosed in a box and a pedal at the console operates Venetian shutters on the box, thus enabling crescendos and diminuendos.
3. A voix céleste stop is tuned slightly sharp to its partner, usually a gambe, causing the pitch to undulate and create a shimmering string effect.
4. Pistons are electronic buttons found between the keyboards which can be pre-set to draw specific stops when depressed; this allowed Messiaen to create new registrations at the touch of a button. French organists traditionally had mechanical levers which they operated with their feet to add either all the reeds or flues, and until electronic systems were created no specific stop combinations could be drawn without an assistant.
5. Gillian Weir, 'Organ Music II', 373
6. Milsom, 58

Specification of the Cavallé-Coll Organ at La Trinité, Paris.

Grand-Orgue (56 notes)		Positif (56 notes)	
Bourdon	16	Quintaton	16
Montre	16	Principal	8
Montre	8	Salicional	8
Bourdon	8	Flûte harmonique	8
Gambe	8	Unda Maris	8
Flûte harmonique	8 *	Cor de nuit	8
Prestant	4	Prestant	4
Flûte octaviane	4 *	Flûte douce	4
Nasard	2 *	Nasard	2
	2/3		2/3
Doublette	2	Doublette	2
Plein Jeu	IV *	Flageolet	2
Cymbale	II- *	Tierce	1
	IV		3/5
Cornet	V *	Piccolo	1
Bombarde	16	Cornet	II-V
Trompette	8	Fourniture	IV
Clairon	4	Basson	16
		Trompette	8
		* Clarinette	8
		Clairon	4

Récit expressif (56 notes)		Pédale (30 notes)	
Bourdon	16	Flûte	32
† Bourdon	8	Soubasse	16
Flûte traversière	8	Contrebasse	16
Gambe	8	Flûte	8
Voix céleste	8	Violoncelle	8
† 2Flûte octaviante	4	Bourdon	8
† 2Nasard	2 2/3	† 2Plein Jeu	IV
† 2Octavin	2	Bombarde	16
† 2Tierce	1 3/5	Trompette	8
† 2Cymbale	III	Clairon	4
Basson- Hautbois	8		
Voix humaine	8		
Bombarde	16		
Trompette	8		
Clairon	4		

Trémolo

* Enclosed

† New stops added by Beuchet-Debierre, 1965

Other details:

- o All couplers at 16, 8 and 4'
- o Tirasses: GO, POS, REC at 8' et 4'
- o General crescendo
- o Adjustable combinations