



MULTUM IN PARVO

THE NEW SCHOENSTEIN AT CHURCH OF THE REDEEMER

CHESTNUT HILL, MASSACHUSETTS

BY JACK M. BETHARDS AND MICHAEL S. MURRAY

WORKING within strict space or budget limits is the intriguing challenge of organ-building. My fascination with it began with this description of the 1899 Willis at St. Bees Priory in James B. Jamison's marvelous book *Organ Design and Appraisal*. "The scheme resembles an athlete trained down to hard muscle, without a superfluous ounce of flesh. The specification disdains ornaments and concentrates on essentials. I can also state that its color flexibility is astonishing, largely because of the individual stop beauty (there never were lovelier voices) and the way they fit together. This is a 35-register cathedral organ, equivalent to the usual one of twice that size. All the major effects are there, in superlative fashion." Perhaps most astonishing to me was its Swell without flutes or strings! Years later a visit to St. Bees only intensified my quest for the secret of finding the right "essentials" on which to concentrate. In the remote village of St. Bees the limit was budget; in the

Boston suburb of Chestnut Hill the limit was space. We will describe what each stop had to do to pass the entrance exam at The Church of the Redeemer and then how this select ensemble gets whipped into shape at the console.

TONAL DESIGN

The Church of the Redeemer has an outstanding music program, with choir of professional standard, rooted in the Anglican tradition and led by Michael S. Murray. The magnificent Henry Vaughan church has a perfectly suited acoustic. Since the full spectrum of overtones is well transmitted throughout the building, the overall emphasis for the new organ was foundational tone with reserved upperwork. However, all the major effects necessary for the Victorian and Edwardian as well as the broader Anglican repertoire had to be included. This meant many tough decisions, eliminating some very desirable stops. Each decision came down to usefulness in

the service. Michael Murray and I were on the same page and he was often tougher than I in axing a color stop.

Taking precedence, of course, must be diapasons. Diapason (or principal) tone is unique to the organ. It is not found in the orchestra or band. Perhaps the human male voice comes closest to its quality. Certainly it is the preeminent leader of congregational song. Play just a few chords on a diapason and even the least musically attuned person will recognize it as the sound of an organ. One diapason can have a sweet or mellow tone, another a more brilliant edge. There is a quality of solidity, warmth, and even majesty in a well-voiced diapason. To hear unison diapasons accompanying a hymn such as “Lift High the Cross,” “Jerusalem,” or “Abide with Me” is an uplifting and emotional experience. Although a single 8’ diapason carries a bountiful range of harmonics and is enough to accompany a service in a village church, reinforcing those harmonics with upper pitches, including mixtures, creates a magnificent chorus.

There are as many varieties of diapason tone and chorus structure as there are organbuilders. A perfect diapason is poised between flute and string tone. Builders search for the exact middle point, which of course depends on their concept of pure string and pure open flute tone! The structure of upperwork is even more governed by an individual’s musical preference. Our concept is to place the 8’ diapason in the primary position with upper pitches in the chorus decreasing in power as they increase in pitch. The 8’ pitch, “where the music is written,” dominates. A diapason chorus without a definite 8’ center can be exciting, but lacks the nobility that only a solid foundation of multiple diapasons can give. Then there is the question of the position of diapasons in the various divisions. We believe in 8’ dominance for each division.

Of the Redeemer organ’s 25 voices, six are 8’ diapasons of varying tone character based on variations in scale, mouth width, slotting, taper, and wind pressure. They range in dynamics from

the Choir Dulciana, an echo diapason just at the break point between string and diapason tone, to the Grand Open Diapason, which can function nicely as a solo stop. In tonal color they progress from bright (brilliant overtones) to dark (subdued overtones) thus: Great No. 3, Choir Dulciana, Swell Horn Diapason, Great No. 1, Great No. 2, Grand Open. The two 4’ diapason tones are also differentiated—the Swell, called Gemshorn, being tapered and with a narrower mouth than the parallel, quarter-mouth Great Principal. Upperwork consists of Fifteenth or Mixture in the Great and Mixture in the Swell.



One group of Open Wood pipes at the west end

What about the rest of the instrument? The organ chamber was designed for a small two-manual organ. Even with a separate Choir division case located on the chancel floor below the chamber and the use of transept and west wall for some Pedal pipes, there was absolutely no chance of having an instrument larger than 25 voices. After the six diapasons and their upperwork our next concern was reed tone. The four chorus reeds range in tonal quality from dark to bright in this order: Tuba, Posaune, Cornopean, Trum-

pet. The heart of a good organ for the Anglican service is powerful reeds under expression in the Swell, in this case, 16’ Posaune and 8’ Cornopean, both in the middle of the tonal spectrum. The Great Trumpet and high-pressure Choir Tuba, both unenclosed, provide opportunities for solo and ensemble options at the opposite ends of the tonal color range. The scheme includes the two essential color reeds of the oboe (Swell) and clarinet (Choir) families. Flutes are next in importance. Stopped flutes, perhaps more properly called stopped diapasons, are essential organ colors and like open diapasons have no true orchestral counterparts; they have become indispensable elements of the organ especially in accompaniment. We had room for three and wanted them widely varied. The Great Bourdon is stopped metal, the Swell Stopped Diapason is wood with pierced stoppers, and the Choir Chimney Flute is metal of small scale with narrow chimneys much like the popular Edwardian Lieblich Gedeckts. There are two open flutes, both harmonic, 8’ on the Great and 2’ on the Swell. The small-scale Flageolet serves much like a French Romantic Octavin with enough lightness of tone to work with diapasons below. One string, an Echo Gamba (about halfway between a Viola Pomposa and a Viol d’Orchestre) and its full-compass Vox Celeste are the only real strings, but the ethereal effect is enhanced in the Choir by an Unda maris paired with the Dulciana.

Aside from the usual Pedal extensions and borrows a few stops were unified—a practice little different from octave coupling. When applied to certain voices where the resulting double sounds natural, it is a valuable device. In this organ it provides an alternate 4’ Octave for the Great, a softer, darker alternate to the Cornopean in the Swell, and delicate 4’ stops plus a mutation for the Choir.

So far we have all essentials—no extras—but what about the luxurious Pedal? A very good case for profound Pedal as an essential element of a fine church organ can be made. The 16’

Ophicleide is, in effect, an independent Pedal stop. The low 19 pipes have wood resonators and are hugely fundamental in contrast to the brighter Posaune. Being unenclosed it provides a powerful, commanding bass. The tonal break to the metal Tuba treble goes unnoticed in the ensemble. The low twelve pipes of the Swell Lieblich Bourdon are unenclosed, to make it a more versatile Pedal stop in support of larger manual registrations. This church is one that can easily support good 32' tone. The 32' full-length Contra Posaune extension is in the Swell box, providing a great deal of dynamic versatility. The 32' Double Open Wood stop is extended full length to F with independent 10 $\frac{2}{3}$ ' quint pipes below, producing a very realistic resultant. The Open Wood is placed partly on the west wall and on a transept wall, and it is very hard to tell that all of the low frequency sound is not coming from the organ chamber.

When an organ concentrates on essentials, the organist must create the luxuries through clever registration and console management. Michael Murray next explains some of the special features of the console and methods of registration he uses especially in service playing.

CONSOLE OPERATION

The spatial constraints and subsequent efficiencies in the tonal design of the organ, explained by Jack Bethards, inspired a reminiscence of the Victorian and Edwardian organs of England with their efficient console design and sagacious tonal conception. These organs, with minimal playing aids, fostered some of the greatest console technique doyens of all time: W.T. Best, Edwin H. Lemare, and George Thalben-Ball.

The well-known comparisons between organ consoles and airplane cockpits, often made in jest, were to be avoided here at all costs. The console had to be kept as low and shallow as was practical, in order to allow the “one-man band” to conduct and accompany from it simultaneously, as well as to provide good clearances. Double-row stop jambs keep the console shallow. Traditional red typeface on drawknob couplers expedites navigation. Through-coupling (see explanation in the stoplist) keeps the number of drawknobs to a minimum.

Console aids had to be prioritized carefully; liturgical organ registration in the Anglo-Episcopal tradition should be elegantly kaleidoscopic. In the spirit of the aforementioned great masters, constant changes of registration are required, responding to such fluid forces as the dynamic level of the congregation or choir (the volume of which can never be fully predetermined), as well as illuminating vivid texts.

Eight pistons per division facilitate smooth dynamic and color changes, without cluttering the console unnecessarily. Twelve general pistons, evenly split between the bass and treble of the manuals, provide generals within close proximity of either hand. The toe studs are laid out in traditional English fashion, numbered outwards from the expression pedals. The custom compound curvature of

the toe rail ensures that even the farthest reach to Pedal 8 or General 8 is a breeze, and the single-file design improves visibility and navigation. The two 32' stops come and go in a psalm or anthem accompaniment with such frequency that paramount importance was assigned to their convenient control. Thumb and toe reversers ensure they are always close by.

One of the oldest and most useful gadgets for accompanying is the “Great and Pedal Pistons Combined,” which has been around for well over 100 years. This staple of the British organist’s arsenal is a piston coupler that affects Great and Pedal simultaneously, triggering rapid changes in volume for the two main power divisions of the organ. An equal number of Great and Pedal pistons affords very even changes when this device is utilized. A crescendo pedal, typical for many an American organ, was excluded to save valuable real estate, minimizing clutter and promoting use of the divisional pistons with piston coupler—a far more artistic venture than the randomness of the crescendo pedal lottery.

If pistons are the liturgical organist’s bread and butter, divisionals are the bread, and generals the butter. In my service playing, I adopt a system based on the British model, employing these devices on the fly to respond to the forces at hand. The Great and Pedal are the master volume control, with the Swell and Choir the color palette. Great and Pedal pistons are set up to create a smooth crescendo, layering 8' flues before upperwork. Divisional pistons on the Swell move in careful gradation from the strings to Full Swell. The Choir pistons capitalize on the duality of the division, with both small chorus crescendos and solo registrations. Service-playing generals are set as convenient plateaus, providing instant access to specific, frequently used registrational starting points, or special effects.

Another marvelous convenience is the range (or compass) feature. Many of us have used a range feature to turn divisional pistons into generals, which can be very useful for general-heavy repertoire. Delving a little deeper into this tool reveals the ability to achieve quite a few handy functions. For instance, single divisionals can be modified to cancel or engage inter- and intra-manual couplers to ensure that stops do not accidentally couple through to other divisions; a “Swell Pistons on General Toe Studs” can be achieved by altering the range of the general toe studs; or a Choir piston may be altered to engage or disengage the Swell Tremulant. The system is as flexible as one’s imagination. These playing aids allow the organist to navigate the organ’s resources efficiently and instinctively, with punctilious piston-pushing becoming a natural extension of playing the notes.

Fine accompaniments are born more from words than music. The registrational gold mine of “speak through the earthquake, wind, and fire, O still, small voice of calm” is an exigent example of a veritable piston-pushing party. *Thunder, light, shine, splendor, glory, wrath, trumpet*—these

are just some of the words for which we liturgical organists must be vigilant!

The aforementioned registrational doctrine depends on the organ's 8' voices, which account for 64 percent of her total. Inspired by the multi-diapasoned Greats of the early 20th century, this wealth of organ tone affords the organist considerable reach, reserving the upperwork for color, not power. These ranks bathe the congregation in a most invigorating soundscape, encouraging their singing like none other, and endowing the organ the breadth and complexity of an instrument easily two or three times its size. The concise but extraordinarily colorful and expressive Swell and Choir divisions amply provide both drama and lyricism, complementing the dignity of the robust Great. The Pedal division, which essentially has one stop, is inspired by the same ideals as Arthur Harrison's 1932 twelve-rank instrument at

St. Sepulchre-without-Newgate, London, perhaps the smallest organ in the world with a 32' Double Open Wood.

There is much to be learned from past masters of both organ playing and building; the artful thing is not to be entombed there. In this instrument, Schoenstein has built on the innovative vision that Father Willis realized at St. Bees, advancing the *multum in parvo* paradigm to create a miniature cathedral organ in "superlative fashion."

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All photos by Louis Patterson

SCHOENSTEIN & CO.
Church of the Redeemer • Chestnut Hill, Massachusetts
 Three manuals, 25 voices, 31 ranks
 Electric-pneumatic action

GREAT

16	Double Diapason	61
8	Grand Diapason (Ch.)	
8	Open Diapason No. 1	61
8	Open Diapason No. 2	61
8	Open Diapason No. 3 (ext. Double Diapason)	12
8	Harmonic Flute (Swell Horn Diapason bass)	49
8	Bourdon	61
4	Principal	61
4	Octave (ext. Double Diapason)	12
2	Fifteenth	61
2	Mixture (III–IV)	187
8	Trumpet	61
8	Corno di Bassetto (Ch.) Cymbelstern	

SWELL (enclosed)

16	Lieblich Bourdon (unencl.)	12
8	Horn Diapason	61
8	Stopped Diapason	61
8	Echo Gamba	61
8	Vox Celeste	61
4	Gemshorn	61
2	Flageolet	61
2	Mixture (III–IV)	192
16	Contra Posaune	61
8	Cornopean	61
8	Posaune	12
8	Oboe Horn Tremulant Swell Sub Octave Swell Unison Off Swell Super Octave	61

PIPES

CHOIR (enclosed)

8	Dulciana	
8	Unda maris (TC)	
8	Lieblich Gedeckt	
4	Dulcet	
4	Lieblich Flute	
2½	Nazard (from Lieblich Flute)	
8	Corno di Bassetto Tremulant	
8	Grand Diapason (unencl.) (ext. Open Wood)	
8	Tuba (unencl.)	
8	Tuben II (Sw.)†	
8	Trumpet (Gt.) Choir Sub Octave Choir Unison Off Choir Super Octave	

† Draws Swell Cornopean and Swell Posaune

PEDAL

32	Double Open Wood †	12
16	Open Wood	32
16	Open Diapason (Gt.)	
16	Lieblich Bourdon (Sw.)	
8	Open Bass (ext. Open Wood)	12
8	Dulciana (Ch.)	
8	Stopped Diapason (Sw.)	
4	Harmonic Flute (Gt.)	
32	Contra Posaune (ext. Sw.)	12
16	Ophicleide (ext. Ch.)	12
16	Posaune (Sw.)	
8	Tuba (Ch.) Great and Pedal Combinations Coupled	

† Stopped quint pipes 1–5, open pipes 6–12. Resultant 1–5.

PIPES

INTERMANUAL COUPLERS

61	Swell to Great
49	Swell to Choir
61	Choir to Great
12	Great to Pedal
12	Swell to Pedal
	Choir to Pedal
61	NOTES Intermanual couplers read through Intramanual couplers; for example, when the Swell Super Octave coupler is drawn, Swell stops will sound at Unison and Super Octave pitch on the Great if Swell to Great is drawn. Manual Sub Octaves do not couple to the Pedal.

MECHANICALS

Solid State Capture Combination Action:
 100-level memory
 52 pistons and toe studs
 5 reversibles
 Programmable piston range
 Record/Playback system

TONAL ANALYSIS

PITCH SUMMARY		
16' and below	3	12%
8'	16	64%
4' and above	6	24%
	25	100%
TONAL FAMILIES		
Diapasons	12	48%
Open Flutes	2	8%
Stopped Flutes	3	12%
Strings	2	8%
Chorus Reeds	4	16%
Color Reeds	2	8%
	25	100%