Organ Works

SOMETHING OLD, SOMETHING NEW

From Marmite to Marvellous

The recent story of the Gloucester Cathedral organ.



Gloucester Cathedral's new Nicholson organ was officially dedicated in July 2026 by the Duke and Duchess of Gloucester, replacing a digital instrument used since an electrical failure. Paul Hale explores the new instrument and the history of its predecessor.

PAUL HALE



1 East cases after cleaning and pipe restoration

I love Marmite – but not all my family does, to be sure. The same is probably true of most households. It's a matter of taste, despite the spread being full of healthful ingredients. However, were Marmite not to be able to fulfil its function – that of spreadability on toast or crumpet/pikelet – its devotees might be fewer.

"For some, it was definitely a 'Marmite' instrument; for others, a special, unique sound. But could it fulfil its *function*?"

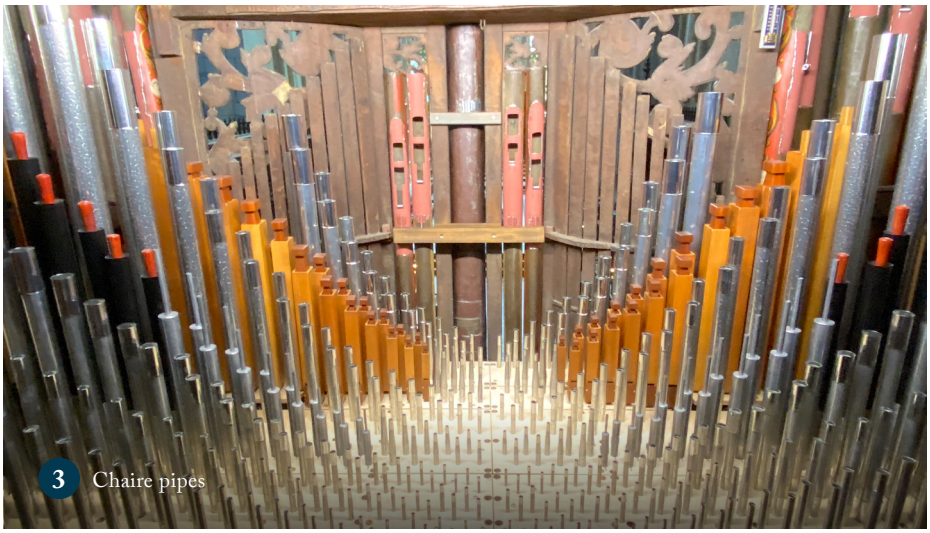
Some will aver that there's nothing wrong with Marmite (despite its impeded function), others might still like the taste, but have to admit that it simply doesn't do what's needed of it.

No, we've not started a food column in *OR* (though perhaps, Mr Editor, a wine column might go down well with readers?). It's just that I am seeking a parallel – as readers must already have guessed – with organists' attitudes to the now departed Gloucester Cathedral organ of 1971, before we look at the new one. For some, it was definitely a 'Marmite' instrument; for others, a special, unique sound. But could it fulfil its *function*?

The organ designed by Ralph Downes and built by Hill, Norman & Beard in 1970-71, was conceived at a time when the performance of Baroque solo organ music on stops which might approximate those heard by their composers was at the forefront of organ design. The pendulum had swung so far away from the sounds of the 1920 Harrison & Harrison rebuild of the Cathedral's 'Father' Willis organ, that its ability to accompany authentically and beautifully great swathes of Anglican choral repertoire counted for nothing. It's



2 The handsome Nicholson console



3 Chaire pipes



4 Great Diapason chorus

not really surprising: young organists in the 1960s had, after all, been captivated by the new sounds emerging from the Royal Festival Hall organ at one end of the size spectrum and, at the other end, enchanted by the beautiful Frobenius in The Queen's College, Oxford. Baroque-revival organs fulfilled many musical aims, and the fact that they had few of the late romantic sounds cathedral organists loved was considered of relatively little importance. My generation of organ scholars all went along with this: I, for example, was perfectly happy accompanying New College Choir, Oxford, in all musical genres on the [then] new Grant, Degens & Bradbeer.

The 1971 Gloucester organ had a character all of its own – a character made even more vivid in the 1990s when it gained Pedal mutations, a 32ft reed and a bright solo trumpet, a Septième and sub-octave couplers. A group of players revelled in its enhanced sonorities – but it had, one could reasonably say – become essentially an *improviser's* organ, a vibrant colour machine made louder and more quasi-French when the sub-octave couplers were added to the snarly reeds and abundant mixtures. But for Psalms, Sumsion and Howells? Hmm...

When my phone rang, one day in February 2019, Adrian Partington, Director of Music at Gloucester Cathedral, was on the other end, asking me to come on board to help the Cathedral with a new organ project. Note – not a 'rebuild' but a 'new organ'. Intrigued and honoured, I agreed, little imagining that it would take over seven years for the concept to become a reality.

This is not the place to go into what happened during those years, save to say that the first plan had to be radically altered when a lower budget had to be set, meaning that the restrictive 1971 building-frame (the only thing holding up the 1665/6 Thomas Harris casework) had to be re-used. The planned new building frame had allowed room for a small enclosed Solo Organ and an almost entirely 'straight' instrument (i.e., one

with few ranks used at more than one pitch). Re-using the 1971 framework meant the loss of these two benefits and a complete re-design.

The new organ had, above all, to address key weaknesses of the 1971 organ with which players had to contend:

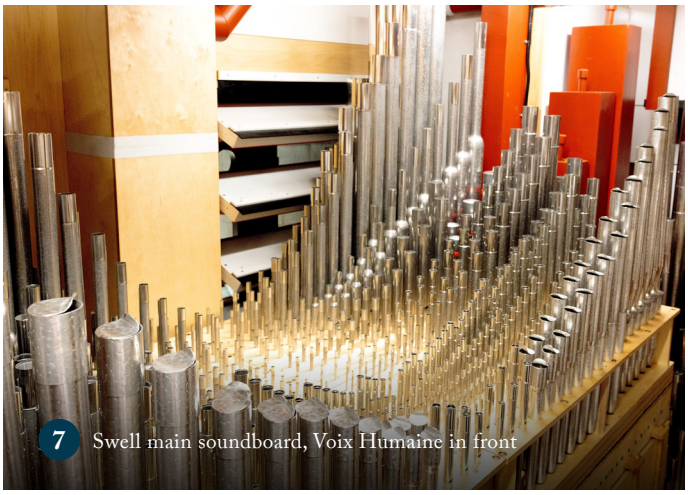
- A lack of general sonority at 8ft and 16ft on the manuals.
- No 32ft flue on the Pedal organ [the loss of the 32ft Double Open Wood became a local *cause célèbre*, as gleefully reported in the *Gloucester Citizen* from time to time].
- A Swell Organ containing few of the necessary stops for choral accompaniment.
- A Choir Organ more useful for solo repertoire (when listened to from the East) than for choral accompaniment.
- A West Positive with insufficient sonority and power to have an impact in the Nave.
- Reeds which were not of the first quality of tone, speech or stability of tuning, and which, though exciting, lacked body and failed to blend with the fluty sound of the full flue chorus or with the Mixtures, which 'stood away' on top of them.
- Two extremely high-pitched Cimbel stops of little use, which blended poorly and were hard to tune.
- No loud solo reed.
- No enclosed soft orchestral reed (e.g., Clarinet) or Harmonic Flute.
- No true string stops (the Swell undulants were tapered Erzählers).
- Excessive 'chiff' on some of the new 'open foot' pipework, which spoke in contrast to the chiff-free original Harris pipes.
- A dryness of tone in the Spitzflute and in the new stopped flutes, with excessive 'twelfth' in the several of the latter.
- A nervous wind supply with a lack of capacity and a distinct bounce on full demand.
- The inability to fill the nave with sufficient sound at all pitches to lead full congregations and to stand up to and enrich a full symphony orchestra.
- The speech of the flute pipes – both attack and (particularly) release – adversely affected by the otherwise commendably rapid direct-electric note action.



5 Chaire case



6 West case, viewed from the north nave aisle



7 Swell main soundboard, Voix Humaine in front



8 Chaire case carving

As part of my early work for the Cathedral, I produced a substantial 'Statement of Significance' about the organ. This took much research and just as much thought. I came to a conclusion – in addition to the points already made above – as to why the 1971 organ seemed so aurally unsatisfactory in that building; why it seemed to lack effectiveness in the nave unless played full with the sub-octave couplers (not a sound everyone admired).

This conclusion was that Ralph Downes made a fundamental mistake in choosing the *basic pitch* of each department. A building the size of Gloucester Cathedral demands a 32ft-based Pedal, a 16ft-based Great, an 8ft-based Swell and a 4ft-[or 8ft] based Positive. All the grand historic *Werkprinzip* organs Downes admired in Northern Europe derive their richness and majesty from this very concept – along with a more solid and singing 8ft Principal line in the Hauptwerk, which the Gloucester organ completely lacked. The Gloucester Pedal was based on a 16ft Principal, the Great on an 8ft (softer than the 4ft), the Swell and West Positive on a 4ft, and the East Choir on a 2ft. Altogether too thin-toned for such a vast building. This failing is never seen in the organs of the great craftsmen of previous centuries (e.g., Gottfried and Andreas Silbermann, Arp and Franz Caspar Schnitger, Robert and François-Henri Clicquot or Aristide Cavaillé-Coll), whose work Downes admired. This fundamental design flaw, along with the Downes preference for louder 4ft principals than 8fts (not in itself a bad thing if there are sufficient 8fts), was arguably at the heart of why the 1971 Gloucester organ – superficially exciting though it was when played loudly – lacked sonority 'in the middle' and had little real quality of tone in its principal/diapason chorus, the general flutiness of the organ (even in the Mixtures) dominating the full flue ensembles.

The current Cathedral organists eventually become exasperated with the inability of the organ to accompany so much Anglican choral music – from Wesley to Britten, shall we say – with appropriate sounds. They desired an organ which: (a) could do that; (b) could lead a huge congregation in the nave; (c) could hold its own with a full symphony orchestra and massed chorus in the Three Choirs Festival; (d) could play convincingly as much solo repertoire as possible; and (e) could have, once again, some sonorous 32ft flue tone, to replace the 1920 Double Open Wood, sawn up in 1971 at the behest of Downes, who considered it an 'irrelevance' [Downes, *Baroque Tricks*, 1993].

The time had come to realise this aim, as by 2017 the old Willis / HNB soundboards in the 1971 organ were on their last legs, as was the wind system, the console and much of the action.

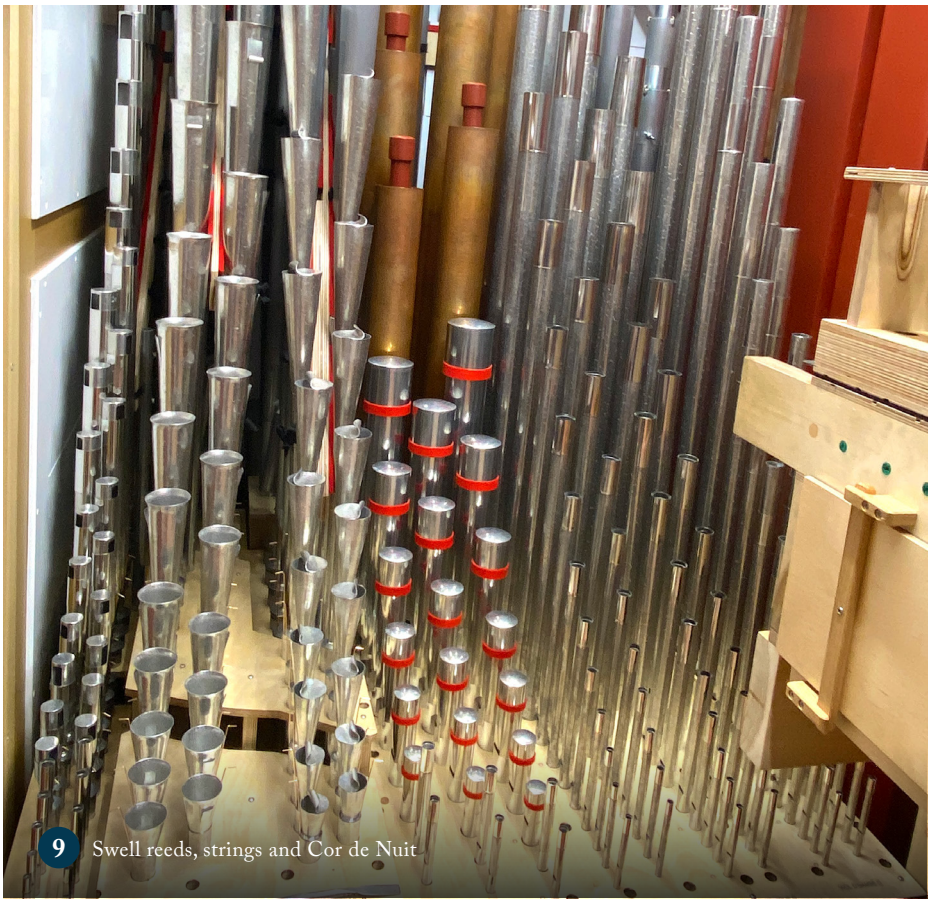
The final Nicholson scheme was for a comprehensive instrument with an eastward-facing Great, a westward-facing Nave (a 'Grand Great'), a large and richly-endowed Swell in the base of the case, a Chaire Organ based on its original gentle sonorities, a modest Solo Organ with a harmonic flute and clarinet (the latter in the Swell box) and two solo reeds – the 2010 Nicholson Trompette Harmonique and a new Tuba Mirabilis (on 18ins/450mm wind pressure), plus a large Pedal Organ (in the north side of the Screen) with the ability to cope with all demands on it as a bass department for manual combinations, also having a Principal chorus for contrapuntal music and solo registers for both repertoire and improvisation.

Other than the Solo, each department has a diapason chorus up to Mixture (for space reasons, the Pedal chorus is completed by the low-pitched Nave Mixture, coupled down). Great and Swell have contrasting tierce combinations (narrow and wide-scale) whereas the Chaire has the delicate 1⅓ and 1ft stops which it might have had when its case was [probably] made in 1642 by Dallam. The Swell has three string ranks – returning one of the many tonalities not heard in this building since 1970. Other than the reedless Chaire and the powerful flue Nave Organs, each department has a full chorus of reeds. The Pedal has regained 32ft flue tone, produced by a large wooden 'polyphone' pipe which plays the top eight notes of the 32ft octave and has proved to be tremendously effective in the generous Gloucester acoustic. It plays on two wind pressures to produce both soft and sonorous 32ft tone, depending on which stop is drawn. The 1999

Nicholson 32ft reed has been replaced by a much more powerful rank – to be used with discretion! Flutes are abundant and richly varied, the Great having open and stopped flutes at various pitches, the Swell having a delightful and rare 4ft Flûte à Biberon, the Chaire narrow-scale stopped flutes of the utmost charm, and the Solo a bold and acoustic-catching Flûte Harmonique, with a melodically ascendant treble.

People have commented, in puzzlement, about the number of ranks extended to more than one pitch and/or available on more than one manual. Leaving aside Pedal borrowings and extension (which have been a feature of British organs for well over a century) we are left with these 'unified' ranks: Great Stopped Diapason 16/8/4, Great Clarabel Flute 8/4, Great Posaune 16/8/4, Swell Cor de Nuit 16/8, Swell Viole de Gambe 16/8/4, Swell Trompette 16/8/4, Swell Basson et Hautbois 16/8, Solo Flûte Harmonique 8/4/2, Solo Bombarde (was Trompette Harmonique) 16/8/4, Solo Tuba Mirabilis 16/8/4. There is some sharing of bottom and top octaves, and the Great and Swell reed ranks also draw on the Solo.

Taking the three extended flue ranks first: the Great flutes allow the player to draw 8 (open) & 4 (stopped), or 8 (stopped) & 4 (open), or 8 & 4 (open), or 8 & 4 (stopped) and also to draw the stopped 16ft as the bass of a lesser diapason (or flute) chorus. How useful. On the Swell the extended string can be used with the Celeste to build a massed string chorus 16/8/4 or the Dulciane can be drawn at 8ft instead, to minimise the 'missing note' syndrome; the 8ft stopped flute appearing also at 16ft (as is commonplace in the USA) provides a welcome rich-toned alternative to the 16ft string. Swell reeds: with both Trompette and Hautbois available at various pitches, all sorts of combinations can be planned, altering the main 'weight' of the ensemble from 16ft to 8ft, for example. Careful use again obviates or disguises the 'missing note' effect. That deals with all the ranks likely to be used in chorus. Note that all the diapason choruses on the organ are straight and complete: the full diapason chorus of the Great is built of 10 ranks (plus 9 Nave ranks) and that of the Swell of 5-8 ranks. As chorus reeds are usually added to a reasonably 'full' diapason chorus, any aural evidence of reed ranks playing at two pitches is completely disguised. Notice, too, that there are no octave couplers on the Solo Organ, as these are a far more crude method of achieving stops at more than one pitch, for they cannot select individual ranks.



9 Swell reeds, strings and Cor de Nuit

Looking at the extended ranks on the Solo Organ – the key is in the name: 'Solo'. Much of the time, all Solo combinations are played in single notes, so the Flûte in any combination of its pitches is extremely useful. All the extended reeds appear here, the Swell reeds solely at 8ft. Having so many ranks available at multiple pitches on the Solo thus gives the player an incredibly rich resource. Taking the three loud reeds as an example. They could be used (at 16/8/4) as Posaune / Tuba / Bombarde, or Bombarde / Tuba / Posaune, or Posaune / Bombarde / Posaune, or as Bombarde / Tuba+Bombarde / Posaune, as any of those, minus the 16ft or 4ft, or, of course, in other less 'pure' combinations such as Bombarde 16/8/4 or Tuba 16/8/4 for an arresting fanfare.

The point is – as many organists/readers will understand – that 'extension' is not a dirty word, redolent of the cinema organs of 90 to 100 years ago. No: it is a tool in the organist's toolkit, a tool for discovering and enjoying far more tonal resources that are available when certain stops appear only at single pitches. And don't let anyone tell you that a stop scaled for a certain pitch cannot successfully be used at other pitches: in the mid-twentieth century, John Compton and J. W. Walker built hundreds of the most musically and

commercially successful small entirely unified church organs ever made in these isles – the Compton *Miniatura* and (starting a little later) the Walker *Positif*). By intelligent scaling and careful pipe regulation (along with selective registration by the player) these have always been popular and effective, in many cases keeping the electronic organ sales team at bay.

I must be brief. The Gloucester organ has a particularly handsome oak console (on a wheeled plinth), with much beautiful detailing and facetted stop jambs. Fitted with Nicholson's own advanced note/stop/piston switching system, it is stained to match the dark oak of the 1666 main case, all of which glows afresh after much Nicholsonian elbow-grease was expended on it. Skilled paint conservator Michelle Pepper has worked her magic with the famous decorated front pipes, and the figures on the Chaire case have regained gilded wooden fanfare trumpets, after a century or two without them. The complex layout of the organ was planned – down to the placement of the last screw – by Michael Lane, the scaling and voicing of every pipe undertaken by Head Voicer James Atherton. The 25 skilled workers at Nicholson & Co. Ltd are directed by Managing Director Andrew Caskie. All deserve the plaudits heaped on them during the Gloucester Three Choirs Festival this summer, where the organ shone in all that was expected of it – and a very great deal was. Festival Recitalist Thomas Ospital (for example), in an incredibly colourful programme, said "It has every sound I could possibly have wished for".

Time will tell whether it is the success that it looks like being, but – happily – I cannot imagine Gloucester's new instrument being described as a 'Marmite' organ. 'Marvellous', perhaps.

Readers wishing to know the full story may care to buy my 72-page full-colour new book, *The Organs of Gloucester Cathedral*, available from the Cathedral's Gift Shop for £12 (plus £3 p&p).

Specification of the 2026 Nicholson & Co. organ

Great Organ (East facing)			**Rank**
1	Double Stopped Diapason	16	A
2	Open Diapason	8	
3	Keraulophon	8	
4	Clarabel Flute	8	B; bass A
5	Stopped Diapason	8	A
6	Principal	4	
7	Open Flute	4	B
8	Stopped Flute	4	A
9	Twelfth	$2^2/_3$	
10	Fifteenth	2	
11	Seventeenth	$1^3/_5$	
12	Fourniture 19.22.26.29	IVrks	
13	Contra Posaune	16	C
14	Posaune	8	C
15	Clarion	4	C

Nave Organ (West facing)			
16	Double Open Diapason	16	1-6 A, 7-12 D
17	Grand Diapason	8	1-12 D
18	Open Diapason	8	
19	Octave	4	
20	Super Octave	2	
21	Grand Chorus 12.15.19.22	IV-VIrks	
	i Swell Octave to Great		
	ii Swell to Great		
	iii Swell Sub Octave to Great		
	iv Chaire to Great		
	v Solo to Great		
Swell Organ (shutters both East and West, with separate pedals)			
22	Bourdon	16	E
23	Contre Viole	16	F, 1-12 E, plus Dulciane helpers
24	Diapason Conique	8	1-5 from 25 & 27
25	Cor de Nuit	8	E
26	Viole de Gambe	8	F
27	Dulciane	8	
28	Unda Maris (from A^{10})	8	
29	Prestant	4	
30	Flûte à Biberon	4	
31	Violette	4	F
32	Nasard	$2^2/_3$	
33	Doublette	2	
34	Octavin	2	
35	Tierce	$1^3/_5$	
36	Progression Harmonique 19.22	II-Vrks	
37	Contre Trompette	16	G; 1-12 H
38	Basson	16	H
39	Trompette	8	G
40	Basson et Hautbois	8	H
41	Clarinette	8	I
42	Voix Humaine	8	
43	Clairon	4	G
	vi Tremulant		
	vii Octave		
	viii Unison Off		
	ix Sub Octave		
	x Solo to Swell		
Chaire Organ (East facing)			
44	Open Diapason	8	1-7 from Stop Diapason
45	Stop Diapason	8	
46	Principal	4	
47	Nason	4	
48	Fifteenth	2	
49	Nineteenth	$1^1/_3$	
50	Two & Twenty	1	
	xi Tremulant		
	xii Swell to Chaire		
	xiii Solo to Chaire		
	xiv Great Reeds on Chaire		
	xv Nave on Chair		
	xvi Flûte Harmonique on Chaire		
	xvii Tuba Mirabilis on Chaire		

Solo Organ			Rank
51	Flûte Harmonique	8	J; bass A
52	Flûte Harmonique	4	J
53	Piccolo Harmonique	2	J
54	Trompette	8	G
55	Hautbois	8	H
56	Clarinette	8	I
57	Contra Posaune	16	C
58	Posaune	8	C
59	Clarion	4	C
60	Bombardon	16	K; 1-12 C
61	Bombarde	8	K
62	Bombarde Clairon	4	K
63	Tuba Magna	16	L; 1-12 K
64	Tuba Mirabilis	8	L
65	Tuba Clarion	4	L
Pedal Organ			
66	Contra Bass	32	M; Polyphone bass
67	Sub Bass	32	N; ditto, plus B^{12} pipe
68	Open Wood	16	M
69	Open Diapason	16	D
70	Sub Bass	16	N
71	Double Stopped Diapason	16	A
72	Bourdon	16	E
73	Quint	$10^2/_3$	N
74	Octave Wood	8	M
75	Principal	8	D
76	Bass Flute	8	N & O
77	Stopped Diapason	8	A
78	Fifteenth	4	D
79	Flute	4	O
80	Octave	2	D
81	Piccolo	2	O
82	Aliquot 5.8.10.12.^{b}14.15.16	VIIrks	A (32ft harmonics)
83	Bombardon	32	K
84	Bombarde	16	K
85	Contra Posaune	16	C
86	Basson	16	H
87	Bombarde	8	K
88	Posaune	8	C
89	Basson et Hautbois	8	H
90	Clarion	4	C
91	Hautbois	4	H
	xviii Solo to Pedal		
	xix Swell to Pedal		
	xx Great to Pedal		
	xxi Nave on Pedal		
	xxii Chaire to Pedal		
	xxiii Great & Pedal Combinations Coupled		
	xxiv Generals on Swell toe pistons		
	xxv Pedal Divide (adjustable)		
	xxvi Manuals I & II exchange		

Accessories	
8 thumb pistons to each of Great / Nave, Swell, Chaire, Solo	Reversible toe pistons to Great to Pedal, Swell to Great, Sub Bass 32ft, Bombardon 32ft
8 toe pistons to each of Pedal and Swell (duplicating thumb pistons)	6 Stepper Advance thumb pistons and 1 Retard
2 pistons to couplers	6 Stepper Advance toe pistons and 1 Retard
8 general thumb pistons	Divisional Cancel thumb pistons on all manuals
Reversible thumb pistons to Solo to Pedal, Swell to Pedal, Great to Pedal, Choir to Pedal, Swell to Great, Chaire to Great, Solo to Great, Swell to Chaire, Solo to Chaire, Sub Bass 32ft	General Cancel thumb piston
	Setter thumb piston
	Balanced crescendo pedal to East Swell shutters
	Balanced crescendo pedal to West Swell shutters

ABOUT THE AUTHOR



Paul Hale is a professional organ consultant, recitalist and choral conductor.

Whilst Organ Scholar of New College Oxford (1971–4), Paul Hale began to write about the organ – his first published piece was in *Organists' Review*, of which he was later to become Reviews Editor and then Editor (1990–2005). A noted recitalist, lecturer and choir trainer, Paul is well-known in the UK, in Europe and in the USA.

As well as being an Organ Adviser for the Dioceses of Southwell and Lincoln, Paul is an accredited member of the AIOA and has designed many new and restored organs throughout the UK.

He has been a diploma examiner for the RCO, and has been awarded honorary fellowships by the GCM and the RSCM, and the Archbishop of Canterbury's Lambeth 'Thomas Cranmer Award' for his contribution to church music.

More information is available at **www.paulhale.org**