Section C

Some Pipe Measurements and Survey Notes

Intentionally Blank

1 SOME PIPE MEASUREMENTS, METHOD AND PRESENTATION:

Acknowledgement is due to David Wickens for the measurement techniques he has developed and the general advice he has so freely given.

This is not a technical presentation and such technical information which it presents is largely offered for the record and as a means of comparing Nicholson instruments of different periods. To a lesser extent it may be used for comparison with the work of other contemporary builders.

It was a matter of great regret that during the years this research was carried out, Nicholson pipework was not available for detailed examination and measurement in workshop conditions. It was hoped that this might be so on a number of instruments of different periods.[1]

Time available during surveys was often limited, not because of the surveyor's enthusiasm, but rather because of church service times, the patience of key-holders and the availability of light. Also, unless assistance was available, access to some parts of the instruments, both large and small, reduced sampling opportunities, as one hand or arm was often needed to maintain physical stability. Because of this, dimensions of some pipes, usually basses, could not always be recorded. Where surveys were not timed to precede tuning visits, or where there was no assistance at the keyboard, more consideration than usual was given to minimising the handling of pipework, especially where treble pipes were fitted with tuning slides.

During pipework surveys, the priorities were to record the metric measurement of the circumference of one pipe per octave; then mouth width and height; a count of the nicking and its nature and any points specific to that stop, e.g. the position and diameter of the hole in the Keraulophon. Whenever possible, other information is recorded and presented, but this can never be sufficiently detailed to enable the reconstruction of a post-holocaust organ! Such all-encompassing detail is outside the scope of this document and its use beyond the capacity of all but a few restorers.

For metal pipework, priority was given to recording circumference and from this is derived the diameter in metric, later interpolated into imperial, units. Pipes under, approximately, 100 mm. diameter were measured with draughting paper and larger pipes with a cloth tape. Some large pipes, e.g. prospect pipes, could only be reached with difficulty from within and were sometimes measured with callipers. These offer the advantage of one-handed operation, although the results are less accurate. In this case the diameter then becomes the base measurement and the circumference is calculated. Where mouth width and height were recorded, a mouth ratio was calculated as a percentage of the mouth width to the circumference of the pipe. Similarly, a cut-up ratio of mouth height,

1 Unfortunately it was not! Though I did have sight of some of the Manchester Cathedral and Twyning material.

expressed as a percentage of mouth width, is calculated. If the upper lip of a pipe has a pronounced curve, this is noted and, where possible, the side and apex measurements were taken and the cut-up ratio is calculated on the average mouth height. The approximate number of languid nicks were recorded to the point of resolution of the surveyor's eye-sight, beyond which the comment ‘very fine’ is offered.

Measurements of accessible Cs were taken, starting with the Great Diapason chorus and, when possible, of the Gs as well. This offers samples from both sides of a divided soundboard or chest (and encouraged the visual inspection of a wider area of the soundboard), it also provided a measurement close to the half octave and is especially useful when long-compass instruments (usually GG) are measured. A note on measurements and units is given elsewhere, but it is worth emphasising that although decimalisation of the inch is of limited value (organ builders never did use tenths of an inch as a working unit), it does offer an opportunity for easy comparison. It also demonstrates, surprisingly clearly, the use of plate or diameter measurements by the pipe maker.

As there are no agreed standards, tabulation is set out in a method which, it is hoped, is as clear as possible and should facilitate easy comparison with other publications. All recorded numerical information is offered and from this the technical researcher may be able to deduce further conclusions. Keyboard notation is used in the tables, along with ‘pipe length’ pitch when necessary, this enables easier comparison between chorus ranks of different pitch.

*

2 SOME PIPE MEASUREMENTS:

BAPTIST CHAPEL, PERSHORE, WORCESTERSHIRE

All dimensions are in millimetres, unless otherwise stated. Italics indicate calculated values.

Metal fluework:

60 degree languids.

Great Open Diapason:

Stopped wood bass to F#, spotted metal above b^0, no ears.

	circ.	circ. ins.	diam.	diam. ins.	mouth width %	mouth height %	nicks* approx.	mouth ratio	cut up	foot hole
GG										
C										
G										
c0	276.4	10.88	88.0	3.46	66.1	13.9		23.9	21.0	6.7
	Ears at c0, 38.3 x 7.0. Foot length at c0 191.									
g0	198.0	7.80	63.1	2.48	46.1	11.4	20	23.3	24.7	8.8
c1	159.8	6.29	50.9	2.00	35.4	9.3	20	22.1	26.3	6.9
g1	112.8	4.44	35.9	1.41	24.3	6.7/7.1	19	21.5	28.4	4.9
c2	90.8	3.57	28.9	1.14	20.2	5.6/5.9	16	22.2	28.5	4.2
g2	69.9	2.75	22.3	0.88	15.5	4.2	16	22.2	27.1	3.2
c3	58.9	2.32	18.8	0.74	12.7	3.2/3.6	15	21.6	26.8	3.1
f3	46.8	1.85	14.9	0.59	10.3	2.1	12	22.0	20.4	2.6

Great Dulciana:

Spotted metal and no ears above b1.

	circ.	circ. ins.	diam.	diam. ins.	mouth width %	mouth height %	mouth ratio	cut up
GG								
C								
G								
c0	193.2	7.61	61.5	2.42	31.1	7.7	16.1	24.8
g0	140.0	5.51	44.6	1.75	24.2	6.2/6.5	17.3	26.2
c1	110.3	4.34	35.0	1.38	17.4?	4.9	15.8?	28.2?
g1	78.7	3.10	25.1	0.99	14.0	3.5/4.0	17.8	26.8
c2					10.2	2.7	-	26.5
g2	46.8	1.84	14.9	0.59	8.5	2.1	18.2	24.5
c3	39.5	1.56	12.6	0.50	7.4	1.7	18.7	23.0
f3	21.9	0.86	7.0	0.27				

Great Principal:

Ears below b1, spotted metal above b1.

	circ.	circ. ins.	diam.	diam. ins.
GG				
C	249.1	9.81	79.3	3.12
G	184.0	7.24	58.6	2.31
c0	144.9	5.70	46.1	1.82
g0	103.5	4.07	32.9	1.30
c1	83.9	3.30	26.7	1.05
g1	65.8	2.59	21.0	0.83
c2	52.8	2.08	16.8	0.66
g2	42.1	1.66	13.4	0.53
c3	33.0	1.30	10.5	0.41

Great Twelfth:

Spotted metal above e0.

	circ.	circ. ins.	diam.	diam. ins.
GG				
C	170.0	6.69	54.1	2.13
G	118.9	4.68	37.9	1.49
c0	94.5	3.72	30.1	1.18
g0	72.3	2.85	23.0	0.91
c1	61.2	2.41	19.5	0.77
g1	45.4	1.79	14.5	0.57
c2	37.7	1.48	12.0	0.47
g2	31.0	1.22	9.9	0.39
c3	25.1	0.99	8.0	0.31

Great Fifteenth:

	circ.	circ. ins.	diam.	diam. ins.
GG				
C	138e	5.43	43.9	1.73
G	98.4	3.87	31.2	1.23
c0	84.4	3.32	26.9	1.06
g0	62.3	2.45	19.8	0.78
c1	51.2	2.02	16.3	0.64
g1	39.1	1.54	12.5	0.49
c2	33.0	1.30	10.5	0.41
g2	25.9	1.02	8.3	0.32
c3	21.9	0.86	7.0	0.27

Wooden fluework:

Great Stopped Diapason:

Yellow, unsealed pine. Pine fronts throughout. Turned feet, mahogany e1 up. Stoppers with handles below a#0, perforated stoppers c1 up.

	int. depth	int. width	mouth width	mouth height %	cut up
GG					
C					
G					
c0	63.1	51.5			
g0	46.4	36.5	36.8	10.6	28.8
c1	40.2	29.8	29.1	7.9	27.1
g1	33.1	25.4	25.6	6.9	27.0
c2	29.5	22.1	22.8	5.9	25.9
g2	24.3	17.9	19.0?	5.2	27.4
c3	21.4	15.9	15.7	4.8	30.6

ST JOHN, MOUNT BURES, SUFFOLK:

Metal fluework:

The accuracy of mouth measurements is qualified by the absence of callipers on this visit. All nicking is diagonal, viewed at the pipe mouth, sloping from top right to bottom left, with an emphasis at the bottom creating an inverted V. In general, the nicking hardly marks the lower lips and the upper lip is flatted. All pipes have ears below 1' c and are made from spotted metal from 1' c up.

Great Open Diapason:

	circ.	circ. ins.	diam.	diam. ins.	mouth width	mouth height	nicks* approx.	mouth ratio %	cut up %
C	n.ac.								
c0	n.ac.								
c1	140.5	5.53	44.7	1.76	31.5	7.3	21	22.4	23.2
	Small ears. Good chamfer to the upper lip. Tip hole circa 5mm.								
c2	84.3	3.39	26.8	1.06	18.9	4.8	18	22.4	25.4
	Chamfer 1.2 mm.								
c3	52.4	2.06	16.7	0.66	11.1	2.8	15	21.2	25.2
	Good chamfer, 0.8 mm.								

Great Principal:

	circ.	circ. ins.	diam.	diam. ins.	mouth width	mouth height	nicks* approx.	mouth ratio %	cut up %
C	227.7	8.96	72.5	2.85	56.0	12.5	33	24.6	22.3
	Very light nicking, also on lower lip.								
c0	133.4	5.25	42.5	1.67	29.0	8.0	23	21.7	27.6
	Pipe marked about a quarter of the speaking length from the top. No nicking on lower lip. Languid circa 3mm. thick. Only a faint chamfer to the upper lip. Tip hole circa 5 mm. Ears								

31.5 mm. high, 5.5 mm. deep, long slope to front top edge and short slope at bottom, leaving a vertical of 20.5 mm.

c1	77.9	3.07	24.8	0.98	16.8	4.3	14	21.6	25.6

Spotted metal, no ears. Upper lip moderately chamfered. Languid circa 1.6 mm. thick. Some of these treble Principal pipes have other (later?) markings, full detailed examination was not possible; this pipes is marked ‘15’ and ‘F’.

c2	48.2	1.90	15.4	0.61	9.8	2.7	12	20.3	27.6

Slight arch to upper lip, with a good chamfer.

c3	30.4	1.20	9.7	0.38	5.6	1.5	10	18.4	26.8

As well as ‘C’, may be marked ‘19’ and ‘F sharp’. Very slight arch, chamfered.

Great Fifteenth:

	circ.	circ. ins.	diam.	diam. ins.	mouth width	mouth height	nicks* approx.	mouth ratio %	cut up %
C	125.8	4.95	40.1	1.58	28.0	7.5	22	22.3	26.8

Slight arch to upper lip. Tip hole circa 4 mm.

c0	77.2	3.04	24.6	0.97	17.1	4.7	16	22.2	27.5

Straight upper lip, good chamfer.

c1	47.7	1.88	15.2	0.60	10.1	2.2	11	21.2	21.8

As with the Principal trebles, pipes examined above c1 have other markings.

c2	31.5	1.24	10.0	0.39	5.8	1.6	8	18.4	27.6
c3	21.1	0.83	6.7	0.26	3.9	0.9	very fine	18.5	23.1

Great Keraulophon c0:

	circ.	circ. ins.	diam.	diam. ins.	mouth width	mouth height	nicks* approx.	mouth ratio %	cut up %
c0	187e	7.36	59.6	2.35	n.ac.				
c1	111.4	4.39	35.5	1.40	23.5	6.4	20	21.1	27.2

Tip hole circa 5.8 mm. Ears. Moderate chamfer. High lead composition. Lower lip not nicked, wide flue. Slide is 125 mm. long, with a circa 5.8 mm. diameter hole, centred 69 mm. from the bottom.

c2	67.2	2.65	21.4	0.84	14.7	3.9	14	21.9	26.5

Slide is 70 mm., with a circa 3.5 mm. diameter hole, centred 45.8 mm. from the bottom.

c3	41.3	1.63	13.2	0.52	8.9	2.1	12	21.5	23.6

Slide is 146 mm., with a circa 2.1 mm. diameter hole, centred 34.1mm. from the bottom. The stop name is not marked on the pipes, pitch only. The long slides at the top the pipes are made from the same metal as the pipes and have soldered seams.

ST MICHAEL, GREAT WITLEY, WORCESTERSHIRE

Great Open Diapason:

	circ.	circ. ins.	diam.	diam. ins.	mouth width	mouth height	nicks* approx.	mouth ratio %	cut up %
C	475	18.70	151.3	6.00	113e	29.9	45	23.8	26.5
G	354	13.94	112.7	4.44	82e	22.6	36	23.2	27.6
c0	n.av.								
g0	n.av.								
c1	n.av.								
g1	118.5	4.67	37.7	1.49	26.8	8.1	25	22.6	30.2
c2	99.0	3.90	31.5	1.24	23.2	7.2	25	23.4	31.0
g2	72.0	2.83	22.9	0.90	15.8	4.7	21	21.9	29.7
c3	57.5	2.26	18.3	0.72	12.8	3.6	20	22.3	28.1
g3	43.5	1.71	13.9	0.54	9.3	2.8	13	21.4	30.1

Great Clarabella and Stopped Bass:

	int. depth	int. width	not. diam.	wall thic.	mouth width	mouth height	cut up %
C	116.6	92.9	208.2	14.8	n.acc.		
G	80.6	63.7	143.3	12.4	n.acc.		
c0	64.0	53.5	117.0	10.0	52.0	14.8	28.5
g0	47.9	37.6	84.9	9.8	37.0	11.2	30.3
c1	50e	39.1	88.4	9.1	40.1	11.4	28.4
	Open c1 and above.						
g1	39.1	30.0	68.5	6.6	29.8	9.1	30.5
c2	32.8	22.6	54.5	5.1	23.3	7.2	30.9
g2	24.0	18.3	41.9	3.9	18.4	5.5	29.9
c3	20.6	14.2	34.2	4.0	14.3	4.8	33.6
g3	17.0	11.7	28.2	3.1	11.9	4.1	34.5

THE ORGAN IN HOLY TRINITY, BOLTON, LANCASHIRE, FORMERLY IN MANCHESTER CATHEDRAL (1861)

These are derived from the joint survey and incorporate David Wickens' notes.

Metal fluework:

All with 60 degree languids, estimated.

Great Large Open Diapason:

	circ.	circ. ins.	diam.	diam. ins.	mouth width	mouth height	nicks* approx.	mouth ratio %	cut up %
c1	159.0	6.26	50.6	1.99	36.8	10.5	28	23.1	28.5
	Spotted; ears to b1; ears at c0, 38.3 x 7.0; foot length 191. 2' c1, practically no chamfer on upper lip, 28 nicks, with trace on lower lip. Toe 8.6; flue 0.98.								

Great Small Open Diapason:

	circ.	circ. ins.	diam.	diam. ins.	mouth width	mouth height	mouth ratio %	cut up %
c0	258.2	10.17	79.7	3.14	61.8	18.8	23.9	30.4
	No chamfer on upper lip; 39 nicks, languid only, moderately fine.							
c1	150.4	5.92	47.9	1.89	34.5	10.6	22.9	30.7
	Spotted; practically no chamfer on upper lip; languid 1.3e thick; 28 nicks, trace on lower lip, very slight slant to left. Toe 7.3; flue 1.0.							

Great Principal:

	circ.	cir. ins.	diam. ins.	diam.
C	244.5	9.62	77.8	3.06
C#	235.7	75.0	2.95	
D	225.6		71.8	2.83
D#	216.8		69.0	2.72
E	207.9		66.2	2.61
F	198.0		63.0	2.48
F#	188.7		60.0	2.36
G	182.0	7.17	57.9	2.28
G#	174.0		55.4	2.18
A	166.5		53.0	2.09
A#	158.8		50.5	1.99
B	152.0		48.4	1.91
c0	146.1	5.75	46.5	1.83
c#	139.0		44.3	1.74
d	134.5		42.8	1.69
d#	128.8		41.0	1.61
e	122.9		39.1	1.54
f	118.7		37.8	1.49
f#	122.9		35.7	1.41
g0	108.8	4.28	34.6	1.36
g#	103.3		32.9	1.30
a	99.1		31.5	1.24
a#	94.9		30.2	1.19
b	90.5		28.8	1.13
Ears below b1, spotted metal above.				
c1	87.3	3.43	27.8	1.09
c#	83.4		26.5	1.04
d	79.8		25.4	1.00
d#	74.8		23.8	0.94
e	72.0		22.9	0.90
f	69.1		22.0	0.87
f#	65.5		20.8	0.82
g1	63.2	2.49	20.2	0.80
g#	59.0	18.8	0.74	
a	57.6		18.3	0.72
a#	55.0		17.5	0.69
b	52.9		16.8	0.66
c2	50.9	2.00	16.2	0.64
c#	46.5		14.8	0.58
d	46.5		14.8	0.58
d#	44.3		14.1	0.56
e	42.4		13.5	0.53
f	41.3		13.1	0.52
f#	40.0		12.7	0.50
g2	38.9	1.53	12.4	0.49
g#	37.0		11.8	0.46
a	36.3		11.6	0.46
a#	34.1		10.9	0.43
b	33.7		10.7	0.42
c3	32.3	1.27	10.3	0.41
c#	31.0		9.9	0.39
d	30.7		9.8	0.39
d#	28.2		9.0	0.35
e	28.0		8.9	0.35
f	27.7		8.8	0.35
f#	26.6		8.5	0.33
g3	26.0	1.02	8.3	0.33

Great Twelfth:

Spotted metal f0 up. 2' C, practically no chamfer on upper lip; languid circa 1.3 thick; 28 nicks, trace on lower lip, very slight slant to left. Toe 7.3; flue 1.00.

Great Fifteenth:

	circ.	circ. ins.	diam.	diam. ins.
C	138e	5.43	43.9	1.73
c0	83.0	3.27	26.4	1.04
c1	48.7	1.92	15.5	0.61
c2	31.9	1.26	10.2	0.40
d	29.7			
e	28.3			
f sharp	25.9			
g#	24.2			
a#	22.5			
c3	21.3	0.84	6.8	0.27
d	19.8			
e	18.0			
g3	17.5	0.69	5.6	0.22

Great Dulciana:

	circ.	circ. ins.	diam.	diam. ins.
C	395e	15.55	125.8	4.95
c0	215.8	8.50	68.7	2.71
c1	117.3	4.62	37.4	1.47
c2	69.2	2.72	22.0	0.87

Great Gamba:

	circ.	circ. ins.	diam.	diam. ins.	mouth width	mouth height	mouth ratio %	cut ratio %
C	n.ac.							
c0	180.3	7.10	57.4	2.26				
c1	113.0	4.45	36.0	1.42	26.7	10.6	23.6	39.7
	Cylindrical; 2' c1, toe 5.3; flue 1.00.							
c2	71.6	2.82	22.8	0.90				
c3	48.4	1.91	15.4	0.61				

Great Gemshorn:

Conical, ratio approximately 2:1.

	circ.	diam.	mouth width	mouth height	mouth ratio %	cut up %
c0	142.6 (mouth)	45.4/20.7	31.7	11.0	22.2	34.7
c1	84.5	26.9/13.1				
c2	49.6	15.8/ 8.3				
c3	31.4	10.0/ 5.4				

Swell Gamba:

Conical, ratio approximately 2:1.

	circ.	diam.
c1	154.2	49.1/32.0
c2	91.7	29.2/20.0

Swell Gemshorn:

Conical, ratio approximately 3:2.

	circ.	diam.		mouth width	mouth height	mouth ratio %	cut up %
c0	155.84 (mouth)	49.6/34.0	34.8	10.1	22.3	29.0	

Choir Dulciana:

	circ.	circ. ins.	diam.	diam. ins.
C	395.0	15.55	115.8	4.56
c0	215.8	8.50	68.7	2.43
c1	117.3	4.62	37.36	1.49
c2	69.3	2.73	22.1	0.87

Choir Viol di Gamba:

Conical, ratio approximately 2:1, surmounted by bells, the diameter of the bell top = the diameter at the mouth.

	circ.	diam.		mouth width	mouth height	mouth ratio %	cut up %
c1	148.62 (mouth)	47.3/23.4	34.5	8.8	23.21	25.50	
c2	89.5	28.5/15.1					

Pedal Principal:

	circ.	circ. ins.	diam.	diam. ins.
C	513.0	20.20	163.4	6.43
C#	484e	19.06	154.1	6.07
D	466e	18.35	148.4	5.84
D#	431e	16.97	137.3	5.41
E	418.5	16.48	133.3	5.25
A#	318.8	12.55	101.5	4.00
B	306e	12.05	97.4	3.84
c0	294.0	11.57	93.6	3.69
c1	167.5	6.59	53.3	2.10
f1	134.8	5.31	42.9	1.69

Wooden fluework:

Great Bourdon:

Yellow pine, mahogany caps, mahogany fronts down to f3.

	int. width	int. depth	int. width ins.	int. depth ins.	front wall	side wall	mouth width	mouth height	cap thick.	cut up %
C	158e	195.7	6.22	7.70	n.ac.					
c0	90.7	108.2	3.57	4.26	n.ac.					
c1	50.1	61.7	1.97	2.43	10.7	10.7	49.9	15.5	12.6	31.1
c2	32.0	38.0	1.26	1.50	8.2	8.2	32.2	9.6	7.9	29.8
c3	21.2	28.3	0.83	1.11	5.6	6.1	22.1	6.7	6.3	30.3

Great Stopped Diapason:

The internal widths convert conveniently to Imperial inches: c0 2 1/16’; c1 1 1/4’; c2 7/8’; c3 5/8’, but the internal depth is more variable and indicates planing after partial assembly. Probably back first, then sides, followed by front.

	int. width	int. depth	int. width ins.	int. depth ins.	front wall	side wall	mouth width	mouth height	cap thick.	cut up %
C	n.ac.	n.ac.								
c0	52.2	64.7	2.06	2.55	10.5	10.8	54.1	17.9	12.6	33.1
g0*	38.8	45.7	1.53	1.80	9.4	10.2		13.1/13.8	12.2	34.7e
* A messy upper lip, perhaps caused by a blunt cutting tool against strongly grained wood.										
c1	31.9	39.3	1.26	1.55	8.7	8.2	32.4	9.3	8.8	28.7
g1	25.8	31.9	1.01	1.26	6.1	6.1	25.2	5.9/6.0	7.1	23.6
c2	22.3	27.7	0.88	1.09	5.3	6.0	22.3	4.3/5.2	6.3	21.3
g2	17.8	22.8	0.70	0.90	3.9	4.9	18.0	4.1	5.7	22.8
c3	16.3	20.6	0.64	0.81	3.8	4.3	15.7	4.0/4.1	5.7	25.8
g3	14.2	14.0	0.56	0.55	3.2	3.9	13.9		5.1	-

Great (Stopped) Flute 4':

Yellow pine, mahogany caps, mahogany fronts from f2.

	int. width	int. depth	int. width ins.	int. depth ins.	front wall	side wall	mouth width	mouth height	cap thick.	cut up %
C	55.2	65.1	2.17	2.56	11.1	11.6	55.3	18.0	15.2	32.5
c0	31.8	39.5	1.25	1.56	7.4	8.1	31.8	9.9	7.5	31.1
c1	22.2	27.7	0.87	1.09	5.0	5.8	22.1	6.0	6.3	27.1
c2	15.9	20.1	0.63	0.79	3.7	4.1	15.5	4.0	5.2	25.8

Swell Bourdon:

	int. width	int. depth	int. width ins.	int. depth ins.
c2	30.0	35.7	1.18	1.41

Swell Stopped Diapason:

	int. width	int. depth	int. width ins.	int. depth ins.
c1	30.8	37.9	1.21	1.49

Choir Stopped Diapason:

	int. width	int. depth	int. width ins.	int. depth ins.
c1	31.4	38.1	1.24	1.50
c2	22.1	27.4	0.87	1.08

Choir Stopped Flute 4':

	int. width	int. depth	int. width ins.	int. depth ins.
c0	30.3	35.7	1.19	1.41

Solo Flute 4' c0:

Yellow pine, mahogany fronts from d1. Inverted mouths. Metal tuning flaps.

	int. width	int. depth	front wall	side wall	mouth width	mouth height	cap thick.
c0	58.8	68e	9.2	9.2	59.2	-	11.6
c1	33.1	46.8	6.1	7.3	32.3	7.9	7.9
c2	18.8	21e	4.9	4.7	17.7	4.7	7.2
c3	11.3	13.8	3.9	3.2	11.2	3.1	5.8

Reed:

Clarinet:

	Resonator top circ.	top circ.	Resonator top diam. ins.	Resonator top diam. ins.	Resonator
c0	92.9		3.66	29.6	1.17

Mixture compositions:

	Great III*	Great II**	Swell III
C	15.19.22	26.29	17.19.22
c#0	12.15.19	22.29	
c1			12.15.17
c#1	8.12.15	12.22	
f#2		12.19	8.12.17

May be to 12.15 in top half octave.

* Rank I, same scale as Fifteenth; rank II, same scale as Twelfth; rank III, same scale as Fifteenth.

** Both ranks smaller than III.

*

3 Whissonsett, St Mary the Virgin (18??),
an extended version of the main entry (chapter 4):

One outstanding survival of Richard Nicholson's work can be found in the church of St Mary the Virgin, Whissonsett, Norfolk, which possesses the most complete of all his instruments – a small six-stop instrument, contained in a handsome mahogany case and obviously made for a domestic setting. An examination was made prior to restoration.

In 1825, a year after he turned 'organ builder' Richard briefly advertised himself as a pianoforte maker[1] and, fine case apart, the striking visual feature of the Whissonsett instrument is the double-curved, keyboard fall, which suggests that this organ dates from an early period. Certainly, it must be a consequence of it, perhaps using a stock trade item to hand, from a specialist supplier. The standard of finish of the case-work is matched by the high-quality joinery of the internal structure and wooden pipes, it shows the hand of a skilled cabinet maker. It also points to a possible link with John Laycock (1808-89), another émigré from the woollen trade who, *circa* 1839, entered the craft from weaving and work as a wheelwright in West Yorkshire.[2] His first (undated) organ was for the Wesleyan Chapel, Crosshills,[3] and features a case identical to Richard's 'classical' pattern, but with one exception – the central flat was flanked, not by two modest towers, but by a pair of Corinthian columns.[4] Given that these appear in a Laycock organ elsewhere (the Baptist Chapel, Cowling), he may have bought a job lot from a trade supplier. Laycock's Cowling organ also utilises a piano-style fall for the keyboard, though the instrument dates from 1869.[5]

At Whissonsett, the maker's name is engraved on an inset brass plate above the keyboard, 'R Nicholson / Organ Builder / Rochdale'. Much of the general design and construction, particularly of the console and pedals and the crude pedal provision, suggest a date early in Richard's career. As an aid to understanding the design of the organ and subsequent alterations, the specification is set out as the stops are arranged on the jambs. The number indicates the location of the stop on the soundboard, reading from the front.

Compass: GG/AA-g^3, pedals GG/AA-G, permanently coupled (no pipes).
Pitch, pre-restoration, was about three beats sharp of A = 440 Hz (*i.e.* modern) and all pipes were coned out slightly, indicating raised pitch. Stops are full compass unless otherwise stated.

Left:		Right:	
6	Op[en] Diapason G*	1	Hautboy [ex-Stopped Flute 4′] c^0
5	Dulciana c^0	2	Fifteenth
4	St[opped] Diapason	3	Principal C

* The bottom eleven notes shared with the Stop Diapason.

[1] Baines 1825, II: 542.
[2] Hughes: 16-17.
[3] Later moved to the Meeting House Chapel, Bingley.
[4] Hughes 2002: 17-18.
[5] Hughes 2002: 21.

The console is central to the front of the case and the upholstered stool appears to be original and is an unusual survival, with four, turned, mahogany legs and a pine shelf, pulls out from one end, to provide support for books and music.

The interior of the console is made from, or veneered with, walnut. Unusually for this period, the key-cheeks are square-ended, without any of the usual curvilinear ornamentation. The front of the keys are veneered with horizontally-moulded, satin-wood. Three stop-knobs, with square shanks and fine copperplate script (black on ivory inserts) are situated on either side of the keyframe. The naturals are 21.5 mm. wide and 134 mm. long; the sharps are 12.1 mm. wide and 83 mm. long, with octave centres at *circa* 163 mm. The wooden manual-thumper bar is weighted by lead, poured into seven, *circa* 36 mm. diameter, counter-bored holes.

The pedalboard frame is of mahogany, with a dovetailed construction, 695 mm. wide and 572 mm. deep. The keys are of oak and the tops of the naturals are below the level of the frame and returned by pallet-type springs. The design is crude and innocent of practical performance requirements, for instance the sharps are very short (70 mm.) and the key fronts are under-cut in Z-fashion. The naturals are 387 mm. long and *circa* 22-4 mm. wide.

The swell pedal can be un-plugged and a cast-iron horizontal roller has a matching slot behind one of the square holes. It is presumed that this allowed the swell to be operated with the left foot, when a foot-operated blowing pedal is plugged into the empty semi-circular hole. This would allow operation by the right foot (as with the surviving John Nicholson instrument at Chetwode (1842). Unusually, the trigger lever is hinged to swing from front to back and not the more conventional side to side.

The instrument is internally supported on side and lateral, mortice-and-tenon frames, they are more substantial than is normal for the size and period. A sample measurement of a rail (rear upper) was 30.2 mm. wide and 95.3 mm. deep. Most of the screws examined were machine-made, but the large screws holding the backfall beam under the soundboard are original and hand cut. Much of the internal construction is finished with substantial chamfers. No *graffiti* was found.

Immediately behind the case-front are seven horizontal swell shutters. Space is limited and the bottom, leading edge, of the shutters are chamfered in order to allow maximum opening behind the central flat. Rather than describe the instrument as fully *enclosed*, it would be more accurate to say that it was constructed *behind* a swell-front. Because of the depth provided between the back of the façade and the soundboard (90 mm. at its maximum), it is presumed that the swell enclosure is original and the construction and materials of the swell pedal and its mechanism support this notion.

Access for simple tuning is difficult. The upper-side panels can be removed and are retained with wooden buttons, this aids access to the mechanism, but does little for tuning, as the C and C# basses block the smaller pipes on the soundboard. The interior, from the back of the case, is blocked by the basses of the Open and Stopped Diapason and their length, and the roof of the case, make it difficult to remove them.

From c^0 the soundboard is chromatic, with eight bass notes (from B down) alternating on the C# side (but not GG, which is on the C side). The action is operated through oak backfalls and the stickers pass from the top of the keys through a register. The pedal pull-downs are connected to iron arms set in the rear of the keys.

The vertical stop rollers and arms are of iron, with wooden (oak?) trundles. The square-section iron-work used in the swell and blowing mechanism was probably of wrought manufacture. The rollerboards are manufactured from large solid planks and the wooden rollers are bushed and slightly curved, top and bottom.

The reservoir is double rise, *non*-compensating, with a solid top and central relief valve, operated by a dowel fixed to the building frame above. The weights are simple iron slabs of unknown provenance. The vertical building frame has been cut in places, perhaps to remove the reservoir for re-leathering. Note that the early John Nicholson organs have similar reservoirs. The wind pressure is 60 mm. (*circa* $2^{3}/_{8}$″), this coincides with *John* Nicholson organs, which rarely used pressures above $2^{5}/_{8}$″. (Shown during restoration.)

The soundboard is of pine construction, with thin cheeks, veneered with mahogany. The table and upperboards are of mahogany and the slides and bearers of oak. Seven basses of the Open Diapason and fifteen(?) of the Stopped Diapason pipes are conveyed to off-note blocks, between therear of the case and the soundboard. Three crude slots have been cut in the rear panels to allow these

to speak adequately. The associated conveyances run down from the upper-board, across the faceboard, blocking access for maintenance. The holes in the rackboard, originally intended for a small (Hautboy?) stop and later replaced by a Flute 4′, were felted and there is an adjacent support-post hole, evidence of the original provision of a reed stop. The turned rackboard pillars are 4½″ long. The pull-downs pass through a brass strip, which has a distinctive, exterior, *convex* surface. Until restoration, the bars were covered with (original?) leather. (Shown is a portion of neat grooving in the upperboard, during restoration.)

The metal pipework pitch markings and stop identification are scribed about $^{2}/_{5}^{\text{ths}}$ from the top of the pipe and pitch markings only are applied to the feet. The reasonably hard metal is planed. Forty-five degree languids are used, the ears chamfered and almost all are turned in to a greater or lesser degree, thus making mouth-width measurement approximate. One-fifth mouths appear to be the rule (perhaps one quarter for the Open Diapason). Soldered seams are of satisfactory quality and most upper lips have minimal flatting. The most distinctive feature of these pipes is the nature of the nicking. This tends to be square on, into the lower edge of the languid only and with little slope. Although, where this exists, it is usually from bottom left to upper right. The tool was probably a file edge, rather than a knife and looks rather inexpertly applied. For instance, the depth and eveness are irregular, with small patches of languid missed, but these are usually compensated for by a sequence of smaller cuts, spaced closer together. Despite these details, the pipes are very stable and difficult to over-blow. Tip holes were generally irregular in shape.

The use of identical Principal scales at 8′, 4′ and 2′ is noteworthy. The obvious starting point of one-inch diameter pipes at 1′ C indicates the use of diameters rather than plate widths for manufacture at this stage of the builder's development. The Fifteenth scales correspond to the John Nicholson organs originally provided for Pershore Baptist Chapel (1849?) and Manchester Cathedral (1861).

The wooden pipework is constructed of pine, with the exception of the large mahogany capsand blocks glued in place, and mahogany feet in the treble. All feet are turned. The nicking is boldbut sparing and into the block only. Smudges of whitening provide a ground for inked pitch markings, a distinctive feature of a few other builders, including George Holdich, Samuel Rennand John Nicholson. The capital letters have exaggerated serifs. Side walls are thicker in the treble than later work from the family. The turnedstopper handles have a domed top, with a horizontal chisel mark in the front of the flared stem. Turned handles are used for the 8′ octave. The bottom octave of the (Open) Flute 4′ is stopped.

In conclusion, Whissonsett survives in near-original state, but dating is difficult, without documentary evidence. It would be reasonable to suppose that it was built for its first home in the early 1830s, though whether for a local patron is not known.[6] However, John Nicholson's organ now in Mount Bures, Suffolk (1840s), like Whissonsett, features a fine mahogany case, also designed for a secular setting and their present locations could suggest links to a common East Anglian patron. Although the work uses high-quality materials and is well constructed, the size of rollers, structure, pedals and the design and access for tuning, characterise an inexperienced organ builder, still finding his feet in a new medium. It is an important, perhaps unique, survival and, whatever its design peculiarities, is a satisfying musical instrument.

Subsequent alterations at Whissonsett were the addition of an electric blower and the substitution of the reed stop with a Flute 4′. Richard Bower undertook an historic restoration in 2005[7] and a new, characteristic, Hautboy replaces the Flute. Due to miscalculation, the insertion of the instrument into the earlier chancel location prepared for it, meant that sections of the outer cornice were removed. Again, these have been appropriately replaced and the organ moved to a nave location, where it can be better seen and heard.

*

[6] Considerable research has proved fruitless.
[7] Mrs Janet Stangroom, a Whissonett churchwarden, deserves much praise for ensuring the restoration.

4 A NOTE ON THREE SURVIVING EARLY ORGANS

Few of John Nicholson's early instruments survive and even fewer remain substantially untouched. Almost all of his larger organs have suffered from the despoiler's hand and some have been broken up for parts (a common and continuing fate). Others have suffered gross rebuilding or, more often, the destruction, change of use, or re-ordering of the buildings which originally contained them. Changing demographic patterns have played their part, Holy Trinity, Worcester, with its large Ouseley-designed organ, surrounded by industrial premises was a great loss and the changing face of Birmingham has had similar consequences. Some of Nicholson's instruments have provided pipework quarries, as at the cathedrals of Portsmouth (Manchester Cathedral / Holy Trinity, Bolton) and Southwell (St Peter, Malvern Wells, Worcestershire) and the quality of these sources still shines through.

Three modest instruments are noted here, all survivors from John Nicholson's early career – the Baptist Chapel, Pershore (1849), Salem Baptist Chapel, Cheltenham (1849) and St John, Mount Bures (184?), all now removed from their original locations. (See chapter 9 for information on the earliest survivor, St Mary and St Nicholas, Chetwode (1842).) The Pershore instrument was enlarged and subsequently moved to the hall of Beaudesert Park School, Minchinhampton, before purchase and storage by Nicholson and Co. The Cheltenham instrument is now in its third home, having been moved to Croxton Kerrial from the Methodist Chapel, Barton Street, Gloucester and the provenance of the Mount Bures instrument is unknown. This chapter presents information about these three organs, which were inspected in more detail than the relevant book chapter pages could accommodate. Similarly, most of the detail measurements will be of limited interest to most readers.

Dimensions are given in the original maker's imperial units.

THE ORGAN FORMERLY IN THE BAPTIST CHAPEL, PERSHORE, WORCESTERSHIRE (1849) AND THEN IN BEAUDESERT SCHOOL, MINCHINHAMPTON, NEAR STROUD, GLOUCESTERSHIRE:[1]

Original location:

Owen Chadwick records that,

> Independent church music improved markedly in the early Victorian period. Organs and choirs grew steadily, and without controversy. Gothic architecture was adopted from 1847 or 1848. The barn-chapel of the side-streets was becoming the church of the market-square.[2]

He might have been writing of the Baptist Chapel, Pershore. According to Pevsner, its location in Broad Street, 'is really a market square...' and the free-Gothic of the 1843 Baptist Chapel, fits the general facade of 1888.[3] In the improving spirit of the time, the chapel was provided with an organ, housed in a gothick case. A plate on the treble side of the case, states that it was built in 1849, with a Swell organ added at a later date and moved from the chapel in 1984. No other evidence has been found, despite an examination of the chapel records. When erected at Minchinhampton, the Swell was not accessible unless many pipes from the Great soundboard were removed. This modest survey is therefore of the earlier Great organ and case only.

[1] In the hall of Beaudesert Park Preparatory School. Visited 30 October 1992, by kind permission of Mr Michael Anderson.
[2] Chadwick 1987, I: 409.
[3] Pevsner 1968: 242.

Existing specification:

The number in the left-hand column, below, indicates the order of the stops on the soundboard, counting from the front of the organ. Wind pressure 2½″.

Great:

1	Open Diapason	8	m and w
2	Dulciana c^0	8	m
7	Gamba c^0	8	m
3	Stop Diapason Bass GG-B		w
3	Stop Diapason Treble c^0	8	w
4	Principal	4	m
5	Twelfth	$2^2/_3$	m
6	Fifteenth	2	m

Swell to Great

Swell (c^0-f^3, but keyboard full GG compass):

4?	Open Diapason	8	m
	grooved bass to lowest octave of Stop Diapason		
3?	Stop Diapason	8	?
2?	Principal	4	m
1	Oboe now replaced by a mild, string stop	8	m

Pedal pull-downs only.

Trigger swell pedal.
Two composition pedals. Left, Great Principal, Twelfth and Fifteenth on; right, same stops off.

Original specification:

Compass, GG/AA-Pedal c^0-f^3.

Great:

Open Diapason	8	m and w
Dulciana c^0	8	m
Stop Diapason Bass		w
Stop Diapason Treble c^0	8	w
Principal	4	m
Twelfth	$2^2/_3$	m
Fifteenth	2	m

Unknown c^0 probably prepared-for only.

Pedal pull-downs only.

Two composition pedals.

Case and external layout:

The case is an elegant gothick design of constructed decoration, with a non-functional front, probably derived from one of the published pattern books of the turn of the century.

Construction is of competently carved pine, with bountiful crockets rising up to a central finial. Originally, it would have been grained or painted, but is now stripped and un-sealed (probably 1984). The case is rectangular in plan, panelled at the sides and open at the back. The front facade has five bays of non-speaking pipes, made in traditional, plain metal, arranged, 5.7.5.7.5 and mounted on a moulded impost, set at the same height as the top of the open music desk. The pipe mouths of the inner flats on each side are at the same level; the outer and central flats have the mouths arranged in a V formation (i.e. the centre pipes have the shortest feet). Dimensions:

Overall width (including mouldings) 7′ 11¼″.
Depth of side 3′ 2 $^{7}/_{8}$″, but an original skirting extends beyond the truncated side panels to a total depth of 3′ 11″. The reservoir extends back a further 10½″.
Overall height (to top of central finial) 11′ 8$^{1}/_{8}$″,

Unless the side skirting has since been modified, it can be assumed that the instrument originally stood, partly recessed, in an alcove.

Console:

The console projects centrally from the front of the organ and because the stopknob jambs do not rise above the two keyboard cheeks, is of modest height. It is protected by a simple, pine, double-hinged fall. The addition of a later Swell keyboard has meant that a small wedge of pine has been added to the upper, front console cheeks, this ensures that the fall does not foul the key cheeks of the upper manual. A small notch has been cut out of the bass end of the fall interior, to accommodate the later Swell to Great coupler stopknob, placed centrally at the top of the left hand jamb. This indicates that the fall was original to the single-manual iteration. Inside, the music desk has an empty, shallow recess which would have contained the name-plate. The console interior is of English oak, the top of the key-bench covered with oak veneer. The keys are covered with ivory. The keyboards stand on a substantial, pine frame which appears to be original and this was not brought forward to accommodate the later Swell manual, indicating a degree of preparation. The wood of the Swell key-cheeks is of slightly different colour and texture to the Great, another indicator that it was added at a later date although, as noted above, space may have been provided for it within the depth and height of the console. The front of the Great keys are faced with a continuous, simple, moulding of three horizontal grooves. The swell keys overhang the Great. The naturals of the Great keys are 5½″ long, the sharps 3½″ and the average distance between Cs is 6$^{3}/_{8}$″.

The existing stopknobs are set in raised, slightly round-headed jambs of oak which are a later addition. They are parallel with the front of the manuals and disposed:

Left jamb:		Right jamb:	
Swell to Great			
Oboe	Principal	Gamba	Fifteenth
Stopped Diapason	Open Diapason	Twelfth	Principal
[Great]		Stopped Diapason	Stopped Diapason
Open Diapason	Dulciana	Treble	Bass

A (recent?) pine escutcheon surrounds the entry of the iron Swell pedal into the front of the case. From interior inspection, this does not appear to cover any signs of previous mechanism, such as a socket for a blower pedal.

The knee board is panelled and is a continuation of the front of the case. The small pedalboard has narrow, almost parallel keys, the compass is GG-c^0, no GG# and the seventeen keys are $^{19}/_{32}$″ (15mm) wide and 2½″ long. The width across the keys at the toe is 2′ 6¾″, at the heel 2′ $6^3/_8$″. The raised portion of the sharps is $5^7/_8$″ long and the octave measures 1′ $5^1/_8$″. The complete frame is 2′ 5½″ wide, overall. Internal layout:

The original building frame is of light construction, made up from simple frames which combine, at the corners, into an L-shaped plan. The reservoir support and the key bench are a single unit and the soundboard is supported on a similar, separate construction which rises from key-bench level. The whole combines into a sturdy structure.

The Swell soundboard has been added slightly above and behind the Great soundboard. There is no passage board between the Great soundboard and the front of the swell box, which makes tuning and maintenance to the Swell very difficult.

The Great key action is of minimal height and comprises stickers, rising through the upper manual, to a rollerboard just under the front of the soundboard. This connects to backfalls, which rise to the soundboard pull-downs. The Swell action has long horizontal trackers, rising to the Swell through aluminium squares and a rollerboard.

The Great stopknobs are connected to the slider through vertical mahogany levers, situated on the same side as the knobs, *i.e*. the Open Diapason and the Dulciana are operated from the bass end, the remaining stops from the treble.

The composition pedals are simply constructed and each of the two pedals connect to rollers which are positioned horizontally between the back and front of the Great soundboard. They incorporate small leather tipped arms which act directly on the end of the sliders and are returned to rest by coil springs, just behind the prospect pipes.

Soundboards and chests:

The soundboards appear to be in good condition and the sliders move easily. The overall dimensions of the Great soundboard are, 5′ $10^5/_8$″ wide, 2′ 6″ front to back, $9^7/_8$″ vertically at the front (i.e. behind the prospect pipes), $4^{11}/_{16}$″ vertically at the back, with a faceboard height of $5^3/_{16}$″, set back $9^9/_{16}$″ and fitted between the bottom board and the bottom of the bars. Only four screws are used, two horizontally at each end and two vertically, up through the bottom board, about a third in from each end. (The faceboard was not removed.) The Great is chromatic from c^0 up. The pallets are hinged at the front of the soundboard (i.e. behind the prospect pipes and under the Open Diapason) and therefore open about half-way down the bar, with the ‘open’ end towards the higher pitched stops. The oak upper boards are $^7/_8$″ thick and the sliders $^1/_8$″ thick. Construction below the table is of pine.

The turned rack pillars are not threaded at the top and vertical support boards for the rack board at the ends of the soundboard are not used. As presently erected, the rack pillars are unable to support the metal basses, which are not upright.

The Great Gamba occupies the rear slider, next to the Fifteenth. The slider is narrow and would be more suited to a single rank mutation (a Seventeenth?). The four, bottom, stopped-bass pipes of the Great Open Diapason are tubed off to small chests on each side, with circular, external primary motors. Depending on the proportions and size of the original chamber, these pipes were probably once conveyed from the soundboard.

Pipework:

The trebles are still cone-tuned, mostly outwards, indicating that the pitch has been raised within the physical limits of most of the metal pipes. This is corroborated by the stopped wooden pipes, which are pushed in rather more than would be expected. However, slides have been added to the lower, open metal pipes, which indicates that they could not accommodate the pitch change and were over-cut, with slides added for swifter tuning. Scales are generous, presumably to cope with robust, non-conformist singing.

Metal pipework:

The open basses have a high lead content, are well made and have very fine seams. Tip holes and pipe feet show some signs of damage (and repair), but this is probably the result of the unstable rack board, rather than vertical collapse under their own weight. Trebles are in rather thin, brittle, spotted metal, with small spots, cast with a spiral pattern on the smooth outer surface.

The Gamba is very narrow-scaled and heavily slotted and does not appear to be original.

Wooden pipework:

The only original wooden stop is the Stop Diapason, made from unsealed pine; the trebles do not have mahogany fronts. Stoppers are made up from the blocks and are therefore faced with a mahogany veneer throughout. The bass feet are turned from pine, with mahogany provided from e^1 up. The rear and front walls run the full width of the pipes, the side walls sitting between, with the cap placed over the sides. Middle C (c^1) has an indecipherable paper label attached to the bottom of the pipe, partly obscured by the pipe foot.

The pitch markings are stencilled, with the sharp signs marked in ink.

Swell box:

The box has seven horizontal shutters. It is constructed from two thicknesses of tongued and grooved boards, $1^3/_{16}$″ thick, the internal boards are vertical and the external horizontal. There is no seal between the bottom of the box and the soundboard.

Winding and blower:

The double rise reservoir measures 6′ 5½″ x 3′ 9¾″ and has three access panels in the top and two feeders, now disconnected. The blowing lever / handle would have extended from one of the sides to the rear. There is no sign of a foot blowing facility. A relief valve is fitted in the central panel of the top of the reservoir, operated by an external, vertical peg, fixed above the valve. The wind pressure is 2½″ water gauge, but the slightly uneasy speech of the Great pipework may indicate that this has been raised. The reservoir is weighted with stone. The Great soundboard is fed by a substantial, rectangular trunk, $10^7/_8$″ x 4½″ externally, fitted at the bass end.

Wind is now provided by an electric blower, sited outside the room, with trunking feeding into the rear of the reservoir.

THE ORGAN NOW IN ST. BOTOLPH, CROXTON KERRIAL AND FORMERLY IN SALEM BAPTIST CHAPEL, CHELTENHAM (1849) AND BARTON STREET METHODIST CHAPEL, GLOUCESTER (1884):[4]

This is the most altered of the early survivals, but remains in substantially original condition. Williamson records that the new organ for Salem Chapel, Cheltenham, was opened on 22 November 1849 and gives the following specification.[5]
Compass, GG/AA-Pedal and Swell c^0-f^3.

Great:

Open Diapason	8
Dulciana c^0	8
Stop Diapason Bass	8
Stop Diapason Treble	8
Principal	4
Twelfth	$2^2/_3$
Fifteenth	2
Sesquialtera 19.22 was 17.19.22	III

Swell:

Bourdon	16
Open Diapason	8
Stop Diapason	8
Principal	4
Oboe	8
Cornopean	8

Pedal:

Pedal Pipes?

Swell to Great
Great to Pedal

SB2: WP, records Cheltenham 'old', 1856 $2^5/_8$″.

In 1884 the organ was sold to the Methodist Chapel, Barton Street, Gloucester, where a 'renovation' by Nicholson and Company took place in 1953/4, when the new pedalboard was added 'but the original Pedal chest was re-used but converted to tubular-pneumatic action'. One rank of the Mixture was removed (the 22nd) and the present stopknobs substituted. It was moved to Croxton Kerrial in 1987 and placed facing south, across the west end of the nave. The east facing (treble) side of the organ is masked by panelling, with a plain inverted V flat of painted pipes above, which belonged to a previous instrument in the building. At the time of the move, the Mixture regained its 22nd rank and the case was returned to its original dimensions.[6]

[4] Visit, April 1994, but essentially an external examination.
[5] Williamson 1989: 127.
[6] Williamson 1991: 14-15, including a line drawing of the case. The Mixture was not sounding a seventeenth rank when visited.

Console:

Of the three early surviving organs (and also Chetwode), this is the only instrument with a surviving *en fenêtre* console. The stops are presumed to be arranged as originally built:

Right jamb (Great):

Dulciana c^0	8
Stopped Bass	
Stop Diapason	8
Principal	4
Twelfth	$2^2/_3$
Fifteenth	2
Mixture 17.19.22	III

Left jamb, outside row (Great, Swell and coupler):

[Great] Open Diapason	8
[Swell] Bourdon metal above $c\#^0$	16
Open Diapason	8
Stop Diapason	8
Principal	4
Oboe	8
Cornopean	8

Swell to Great

Left jamb, inside row (Pedal and coupler):

Pedal Bourdon

Great to Pedal

Three composition pedals to Great

Case:

The prospect pipes have embossed mouths and are disposed 3.5.7.5.3. The case has two, castellated outer towers, framing two, small castellated flats and a large central flat, surmounted by a crocketted, ogee arch. The case panels and doors of the built-in console incorporate cusped, gothic arches and, above the impost but below the pipe flats, three plain rectangular panels.

Internal:

The back of the Great soundboard, nearest to the passage board, may have possessed a (presumably later) clamp, for an additional rank to the Mixture and some pipes of the existing stop are obviously not original. The Great action is by a splayed backfall beam. The single reservoir does not have a frame and panel top, but there is a relief valve in the centre and weights are a twentieth-century miscellany. In plan, the reservoir extends under the passage board, behind the Great soundboard, but not under the c^0 compass swell box, which stands on an auxiliary building frame. Swell action is by squares and the general *ad hoc* arrangement indicates two floor-levels in the original chamber. The tone of the fluework is bright, un-forced and gently transparent.

ST JOHN, MOUNT BURES, SUFFOLK (184?):

Visits were made on 11 October 1992 and 25 January 1995. The instrument is in a fragile state and no internal inspection was thought advisable, without the immediate attentions of the tuner.

Original location:

The John Nicholson nameplate locates the builder at 'Palace Yard', so the instrument must be post-August 1845, but not long after. Stylistically, the case belongs to the 1840s.

There is a local tradition that the organ came from Melford Hall, Long Melford, Suffolk, the home of Sir Richard Hyde-Parker.[7] However, the local National Trust representative suggests that it might have come from the church or nearby Kentwell Hall, often confused with Melford Hall. He doubts there is a relevant entry in the house inventory during the nineteenth-century.[8] The present owner of Kentwell Hall, J. Patrick Phillips, Q.C., notes that the house was restored by Thomas Hopper in the 1820s and was sold around 1838-9. An organ does not appear in the inventory or the subsequent sale details and it is unlikely that anything was provided after that period, as the house was then sold to a minor.[9] There is no known record of the instrument coming from Melford parish church,[10] where Hill made three unsuccessful estimates of between £200 and £300 in 1877.[11] The John Nicholson gazetteer, does not point to another obvious source, as there is no reference to an instrument which matches the individual specification or compass of this organ.

Present location:

The church is an ancient, transeptal structure, with a raised chancel, somewhat remote from the rest of the building. The organ is placed on a wooden floor, against the east wall of the north transept, facing west.

The available Mount Bures records do not mention the acquisition of the organ,[12] which suggests that it was provided by a private donor, but the instrument was dedicated on 16 January 1902.[13] In 1936, J. Rayson & Son of Ipswich, were responsible for cleaning and repairing the instrument. Work included, the 'Swell to have new metal squares, new trackers, new wirework... two new metal thumpers to be provided... New Stopknock [*sic*] to be supplied for Bourdon.... The centre front pipes to be replaced with one as near match as possible... [*sic*]'.[14] Since then, other than routine maintenance, nothing appears to have been done and the organ is in a very dirty and fragile condition, most recently having suffered from the results of thawing snow.[15] Compass C-Swell c^0-c^1-g^3.

Existing specification:

Great:

Open Diapason	8
Keraulophon c^0	8
Stopped Diapason Bass	
Stopped Diapason Treble c^0	8

[7] Conversation, Mrs Higgleton, churchwarden, 2 St John's Cottages, Mount Bures, 1992.
[8] Conversation, Mr Adshead, October 1993.
[9] Conversation, Mr Phillips of Kentwell Hall, Long Melford, October 1993.
[10] Conversation, the Revd Chris Gansbury, The New Rectory, Long Melford, October 1993.
[11] MS B2/2, III: 5, estimate 1,632.
[12] The Mount Bures P.C.C. minute book, for the period in question, is kept in the church vestry.
[13] Mount Bures service book, kept in the church vestry.
[14] A quotation for the work, dated 19 March 1936, and kept in the church vestry. A wooden plate on the treble side of the case records the 1936 funder, when the organ was 'rebuilt'.
[15] Late 1994.

Principal	4
Wald Flute c^0	4*
Fifteenth	2

* Wooden open, with metal tuning flaps. Now transposed to $2^2/_3$ pitch. The remaining bass pipes are on top of the Swell box. The top five pipes are metal.

Swell to Great

Swell (c^0-g^3 keyboard down to C):

Dulciana	8
Diapason Stopped	8
Viol di Gamba	8
Dulciana Octave	4
Oboe	8

When drawn, the Pedal Bourdon can be played from the bottom octave of the Swell keyboard.

Pedal (C-c^1, 12 pedal pipes C-B, the remainder operating through the coupler):

Bourdon	16

Great to Pedals

Two composition pedals to Great
Trigger Swell pedal

Case and external layout:

The case is a richly carved gothic design, made of high quality, polished mahogany, with gilt, metal, dummy pipes (which have never been voiced) arranged 3.7.7.7.3. Signs of an earlier, secular location are the very high-quality materials and finish of the mahogany case and console, including the sliding pedalboard. The rear, side panels may have been placed where a wall once surrounded the organ, with the blower and the panelling situated out of sight.

The most prominent, visual feature is the central gothick flat, which contains seven pipes. The two buttressed posts extend up to crocketted finials and the arch frames a pierced quatrefoil, with a crocketted cornice, surmounted by a finial. There is a small flat on either side, containing seven pipes each and two outside towers, with three pipes each and these stand on the lower panelling, which breaks out to support them, through to ground level (a feature of early Nicholson cases). The pipe mouths are level, with the exception of the two largest pipes in each of the towers, which have shorter feet. All mahogany panels are topped with cusped, gothic arches. The cornices around the top of the case are crenellated. Access to the Great pipework is gained by removing the dummy pipes of the central flat. The prospect pipe feet are backed by black, wooden shades. Two of the prospect pipes, in the centre of the middle flat, have crescent-shaped cutaways down their speaking length, probably the replacements of 1936. Happily, the case decoration does not look out of place in this medieval church.

There is a curtained gap of about 1′ 3″ at the back of the instrument, which allows access for maintenance. The rear of the case is composed of grained painted panels. There are four large single panels in the centre rear, two (formerly hinged) to allow access to the back of the swell box and two identical panels below which stand on a skirting board running the width of the instrument. Two tall, narrow panels, cover the space between the sides of the swell box and the sides of the organ.

Dimensions are as follows:

Overall width (including impost mouldings) 7′ 10″.
Depth of side (three arched mahogany) panels 3′ $5^{3}/_{8}$″ (including impost moulding).
Depth of side (rear deal) panel 1′ 3″.
Overall depth of side 4′ $8^{3}/_{8}$″ (not including towers).
The towers project 4″ from the front panelling.
Height to top of impost rail 4′ 3½″.
Overall height (to top of central finial) 10′ 9½″.
Overall height at sides circa 9′ 10″.
Console cheeks project 1′ 3¾″.
Console width (over cheeks) 3′ $9^{1}/_{8}$″.

Console:

The handsome console is conventionally placed and secured by an ornately carved, hinged fall, which folds up to impost level to form a music desk. It is furnished in mahogany throughout. The instrument is identified by a paper label, mounted behind glass, over the Swell keyboard. The maker's name, 'John Nicholson / Organ Builder / Palace Yard / Worcester' is printed on paper and mounted in a glazed aperture, 6¾″ X 1¾″.

The two manuals have ivory covered naturals (in good condition) and do not overhang. The front of the keys are veneered with plain satin-wood. The naturals are $^{7}/_{8}$″ wide and $5^{7}/_{8}$″ long and the sharps are $^{15}/_{32}$″ wide and $3^{3}/_{4}$″ long. The shaped keyboard cheeks are $^{7}/_{8}$″ wide.

The front of the key bench is moulded to match the edge of the console cheeks. The drawstops have ¾″ square shanks (apart from the Bourdon, which is circular) and a draw of *circa* $1^{7}/_{8}$″; the shanks disappear when the stop is in the off position. They are compactly positioned, parallel to the keyboards and only just rise above the top of the Swell manual. The heads are $1^{3}/_{16}$″ in diameter and the ivory insets 1″ diameter. They are neatly engraved in copper-plate and the Swell stops are all prefixed with the word 'Swell'. Pitches are not given and the stops are disposed:

Left-hand jamb:

Bourdon
Swell to Great
Swell Oboe
Swell Dulciana Octave
Swell Viol di Gamba
Swell Diapason Stopped
Swell Dulciana
Great to Pedals

Right-hand jamb:

Fifteenth
Wald Flute
Principal
Stopped Diapason Treble
Stopped Diapason Bass
Keraulophon
Open Diapason

There are two composition pedals to the Great; left, Open Diapason, Keraulophon and Stopped Diapason Treble; right, full Great, with the exception of the Stopped Diapason Bass. To the left of the composition pedals is an empty, matching slot, but its purpose is not obvious, without internal examination. An irregular circular hole, to the left of the knee board, and just above the pedalboard, has no obvious purpose, as it opens onto the pedal rollerboard.

The Bourdon stopknob was added later, probably to allow the pedals to operate independently through the Great to Pedal coupler. As mentioned earlier and common to many of John Nicholson's early tenor C Swell keyboards, it allows the performer to play the Bourdon from the bottom octave of the Swell keys, although the pedal coupler operates over the full two-octave range of the pedalboard,

The cast-iron, trigger swell pedal is held down by the usual pivoted vertical rod and rotates a square-shanked rod which projects from the knee board. This panel is constructed of mahogany and is divided into four gothic-framed panels which match the case. The quality of this usually unseen detail, supports the notion that the organ was built for a domestic, rather than a church setting.

The straight and flat pedalboard was originally made to pull out for performance. There is an inset brass, military chest handle, set centrally in the back of the frame. The manual e^1 is over the pedal c^0, with the B-c^1 space under the manual c^1. The pedalboard projects 2′ $5\frac{3}{8}$″ from the moulding at the bottom of the knee board. There is a moulding on the top of the toe end of the frame, which is ¾″ deep. At the heel end, there is a $\frac{7}{8}$″ thick heel board, $5\frac{1}{8}$″ deep. The side frame is $\frac{15}{16}$″ wide and 4¾″ high at toe and heel, this is reduced to 4″ high along the majority of the central part of the 'playing' part of the frame. The keys are all of mahogany, 1′ 11½″ overall length and $\frac{5}{8}$″ (bare) in width; naturals are 2″ vertically; sharps are 6½″ long and $2\frac{7}{8}$″ deep at the toe overall, with the remainder of the key ½″ below the naturals. The lateral dimensions start with a space of 1¾″ between the inside of the side frame and the external side of the bottom and top keys. Thereafter, the key centres are as follows:

C - D	$2\frac{3}{8}$″	c - d	$2\frac{7}{16}$″
D - E	$2\frac{9}{16}$″	d - e	$2\frac{5}{16}$″
E - F	2½″	e - f	$2\frac{7}{16}$″
F - G	$2\frac{7}{16}$″	f - g	$2\frac{9}{16}$″
G - A	$2\frac{3}{8}$″	g - a	2½″
A - B	$2\frac{5}{8}$″	a - b	2½″
B - c^0	$2\frac{3}{8}$″	b - c^1	$2\frac{7}{16}$″

The soft-wood stool does not match the case, in style or materials. It is presumed that the original would have been of mahogany and has been lost.

Internal layout:

The Great soundboard is at impost height, immediately behind the console. There is no internal passage board and only just enough room is provided between the Great and Swell soundboards for the shutters to open.

The pedal pipes are divided on either side of the Great soundboard, along with larger pipes conveyed off the soundboard.

Action:

The Great action has a splayed backfall beam, with the bottom nine notes of the C# side operated through a rollerboard (with wooden rollers). The rear of the Swell keys operate directly on to the bottom of the horizontal mahogany squares, but the vertical (lower) part of the square is a metal pin. (Perhaps used to repair some damage in 1936.) The Swell action is then connected to horizontal trackers, a square beam at the back of the organ and then a rollerboard.

The tracker and stickers are slimly proportioned, with fine trackers in some places almost square in section. There is no bushing on the swell pull-downs.

Soundboards and chests:

The Great soundboard is chromatic above $f\#^0$. The faceboard is placed at the rear (under the front of the Swell soundboard) and this makes access difficult.

The Swell soundboard is (unusually for Nicholson) arranged with the basses in the centre, but the

swell box is not shaped to take advantage of this layout, perhaps an alteration during the move to the church. The visible woodwork is of mahogany, including the rack pillars, excepting the faceboard and rack board.

Pipework:

The materials and workmanship are of a high order. The pipework is very dirty, but remains mostly cone tuned, though with some damage. The wooden pipework is marked in the usual way.

Great:

The Open Diapason is metal throughout and the basses stand at the rear of the case, just inside the rear side panels, which are pierced to allow the mouths to speak.

The Stopped Diapason stoppers are pierced down to c^1.

The Wald Flute has metal tuning flaps, but is now transposed to $2^2/_3'$ pitch. The remaining bass pipes are on top of the Swell box and the top five pipes are metal.

Swell:

The Oboe, at the back of the box, is of thin scale. The basses of the Stopped Diapason are on long feet, positioned between the Oboe and the (Bell) Gamba, thus allowing access to the long ears of the Gamba for tuning. This stop has very wide, low mouths, with very fine nicking. The Dulciana is at the front. The Dulcianas 8′ and 4′ are voiced as very small Diapasons.

Swell box:

The rectangular swell box has nine, narrow, horizontal shutters and the top of the box rests on the sides, and slightly overhangs (see above, regarding the soundboard design). Access for tuning is through the rear of the case. Two of the framed panels which make up the back of the organ, comprise the back of the swell box. They were once hinged on the outer sides. As the space now available behind the organ is considerably less than the width of these doors, the hinges were presumably removed and the panels held by screws, in order to make the treble pipes, at the outer extremities of the box, easier to tune.

Winding and blower:

Hand blowing was provided at the rear, bass side of the case, but is now dis-connected. Immediately to the right of the swell pedal, an identical shank projects (about ½″ square), presumably, for a cast-iron blowing pedal. It may have been the designer's intention to use the same pedal for both purposes. Certainly, both could not have been used together.

The electric blower is inappropriately sited in front of the organ, to the left of the console, and is in very poor condition.

5 SURVEY NOTE:

THE ORGAN IN ST JOHN THE BAPTIST, FLADBURY, WORCESTERSHIRE

Although the existing organ in Fladbury parish church now presents as a post-Nicholson family instrument (1900), it retains the case and much of the pipework of a one-manual organ by Richard and, probably, John Nicholson (1838). As with so much of the work and patronage associated with the family, there are elusive links, possibly through clergy, between this parish and John Nicholson's future home in Worcester.

At the end of the eighteenth-century, the parish agreed 'to erect and build a New and substantial Gallery at the West end of the said Church...' but an organ was not mentioned.[1] In 1824, two further galleries were put up and then taken down again in 1871.[2] The west gallery was the site of a new one-manual organ built in 1838 and the *Musical World* recorded that,

> By the generous contributions of the rector, the Rev. Mr. Gauntlett, assisted by the subscriptions of some of his parishioners, a new organ, built by Nicholson of Rochdale, has been erected in the parish church of Fladbury, Worcester. It was opened by Mr. Done, assistant organist of Worcester Cathedral, when a selection of sacred music was performed in the course of the service by some of the members of the cathedral choir. Prayers were read by the Rev. W.A. Pruen, and an eloquent sermon was preached by the Rev Matthew Lunn, from the text 'Glory to God in the highest,' in which the reverend preacher described the office of giving glory to God as one of the highest privileges Christians could enjoy. By what means could this office of religion be more efficiently promoted than by the adoption of good parochial psalmody? In the conclusion of his impassioned address, the reverend gentleman exhorted his hearers to do their utmost to rescue the pure apostolical church of England from the danger with which it was now threatened, by contributing to the solemnity and attractiveness of its perfect form of prayer and praise. The collections after the service were exceeding liberal.[3]

The Revd Frederick Gauntlett was the son of Frederick Gauntlett of Easton, Hampshire. Frederick junior (circa 1789-1863) was an Oxford man,[4] and rector of Fladbury, with Stock and Bradley, from 1833 until his death. The living provided a generous income of £750 a year, plus a house and served a population of 1,549.[5] Were these Gauntletts relatives of Dr Henry J. Gauntlett (1805-76)? Such a link would explain why a report about this modest, village organ appeared in the pages of the *Musical World*, for Dr Gauntlett was editor by 1838.

Frederick Gauntlett's predecessor at Fladbury was the Revd Martin Stafford Smith (rector 1793-1834),

1 *MS* W3/20, 23 February 1782, but the declaration is confusingly dated 24 February 1792. A wooden panel at the west end of the church, gives the date as 1783.
2 Vial 1984: 13.
3 *MW* 16 February 1838: 109.
4 Oxon 1715-1886, I: Frederick Gauntlett.
5 Crockford 1860: Gauntlett. Wadham College, Oxford. B.A. 1810, M.A. 1813, deacon 1811, priest 1812.

> For much of this time the parish was in the charge of William Ashmead Pruen who worked for twenty-seven years as curate for the absentee Rector. The Pruen family often entertained John Keble, the celebrated Oxford divine, who was Stafford Smith's godson... It is known that Keble composed some of his 'Miscellaneous Poems' at Fladbury and possibly also some of the hymns which make up 'The Christian Year'.[6]

It could reasonably be presumed that the liturgy of Fladbury was more advanced than its rustic location suggested. Significantly, the Revd Mr Pruen was later rector of St Helen's, Worcester[7] and another connection between Fladbury and St Helen, Worcester, appeared later, when the Revd James Henry Wilding, rector of St Helen and St Alban's (1840-1862)[8] was buried at Fladbury.'[9] No obvious connections have been discovered to link the livings or their patronage, but there is a distant link with the later house of Nicholson. Between 1891 and 1893 and, after an intermission, from 1900 to 1902, the Revd Herbert Edward Whinfield was a curate of Fladbury.[10] So there is the possibility of a Whinfield family connection prior to this time. Certainly, during his tenure, the organ was rebuilt in 1900.

In the early nineteenth-century, Fladbury became the family home of Frederick Preedy (1820-98),[11] the competent and sometimes exciting Worcestershire architect, building in the approved ecclesiological style. He restored the church in 1865 and 1871.[12]

In 1870, a public meeting was held at Fladbury to consider two schemes, submitted by Preedy. He offered, either, a complete restoration of the church for £1,700 or, for £600, 're-seating, repaving, removing the galleries, building an Organ Chamber, throwing open the Tower, and other alterations.' The latter, with the addition of consideration of warming by hot water pipes, was agreed.[13] The subsequent faculty application of 22 September 1870 desired to, 'remove all the Galleries in the s[aid]. Church[,] the Organ and the Pews in the Nave... Rebuild the Chancel Arch and the pier on the South side and also to build an Organ Chamber on the South side of the Chancel...' The drawings were supplied by 'Fredk. Preedy Archt. 13 York Place, Portman Square, London W.' and showed that the church then had 383 places and the organ was in the spacious west gallery, which could accommodate forty-six souls. It was not placed centrally, but the 'south' side of the case was aligned with the inside south pier of the west arch, leading into the tower. The restored church had 422 seats.[14]

---

6 Vial 1984: 20.

7 *WC* 28 June 1838: 3b, (his son?) the Revd Henry Pruen, was curate of Ashchurch, Gloucestershire, when an anonymous organ was opened in 1838.

8 Cantab part 2, VI: 468, son of Revd James Wilding, who was vicar of Chirbury, Shropshire (1840-63).

9 Worcester Diocesan Architectural Society' (report of annual meeting), *Ecclesiologist*, 1863, XXIV (new series XXI), (367-74): 370, he was a Vice-President of the Worcester Diocesan Architectural Society.

10 Arthur Henry Whinfield bought the company at the turn of the century and Herbert was his elder brother, who was also curate of St Peter, Worcester (1897-9), which possessed a John Nicholson organ (Crockford 1905: 1,482).

11 Barnes 1984: 8 and a memorial tablet in the church.

12 Vial 1984: 13.

13 *MS* 3/25, minutes of a public meeting held at Fladbury 8 September 1870.

14 *MS* W3/20, faculty application of 22 September 1870.

The organ now stands in a chamber to the south of the chancel and was enlarged in 1900 by Nicholson and Company. Records from that time suggest that the wind pressure (3') and pitch were not altered, 'Rather high[,] E.E.'. Other changes included new pedals, C-c^1, twenty-five notes; a new fall and jambs; the Great pallets were to re-covered, implying the retention of the original soundboard and a new French feeder 6' 4" long x 4' wide was supplied. The Great compass was altered to 'CC compass (54 notes)',

presumably losing a long compass; the Great Open was carried down to C [in metal?], 'five new lowest pipes'; a Dulciana c^0 replaced the Twelfth. The Great specification can be deduced – Open Diapason, Stopped Diapason, Principal, Twelfth, Fifteenth. A later, loose, notebook page reports that the bottom octave of the Great Principal was of wood.[15]

The present specification is,[16] compass, C-c^1-f^3:

Great (right hand jamb):

Open Diapason	8
Stopped Diapason	8
Dulciana c^0 grooved bass	8
Principal	4
Flute	4

Swell (outer left jamb):

Open Diapason c^0 grooved bass to Gedact	8
Salicional c^0	8
Lieblich Gedact	8
Harmonic Flute	4

Pedal (inner left jamb):

Ped. Bourdon [*sic*]	16

Couplers (inner left jamb):

Great to Pedal
Swell to Pedal
Swell to Great

Two composition pedals to Great (1), Dulciana and Stopped Diapason; (2) full, without Flute.
Two composition pedals to Swell (1), Gedact and Salicional; (2) full.

Trigger swell pedal.

The nicely proportioned Gothick case is decorated in (original?) dark, grained-oak finish. The gilt metal prospect pipes, disposed 3.5.5.5.3, are all nicked and there is no reason to suppose they did not belong to the original organ. There are three central flats, framed by two, outer towers with pendant decorations around the pipe tops. The centre flat is divided from the outer two by slim, double buttresses, capped with two, crocketed

15 SB2: 43, June 1900.
16 From a visit, 1993. Vial 1984: 15. It was overhauled in 1977.

finials. The outer towers are not corbelled, but are supported, below impost level, through to ground level (see also the Baptist Chapel, Pershore (1849) and Salem Baptist Chapel, Cheltenham (1849)). Three panels extend below each of the flats, the outer two, on either side of the console, have two narrow gothic topped panels within and the centre panel has four, now truncated by the top of the adhérente console. It is not possible to decide from external evidence, how the old console was arranged, but was probably similarly disposed.

The side panels of the original, smaller instrument, run the full height of the case and the impost and cornice are carried around the sides. The later Swell organ is screened by rather scrappy panelling at sides and rear. There are black shades behind the prospect pipe feet. The console, of 1900, is typical of the period, with a three- piece hinged fall, between two shaped cheeks.

It was not possible to inspect the interior of the instrument, save to note that the Great pipe stoppers and some of the pipework visible through the front pipes were relatively modern. As the manual compass is C-f^3, it is assumed that the old Great soundboard was retained. The sound of the Great Open Diapason and Principal suggest that the wind pressure was raised at the rebuild.

The organ benefitted from a historic restoration in 2009.

Intentionally Blank