

ORGANS USING SYNTHESIZED SAMPLES

EARLWOOD ORGAN No. 1 <#>
1b <#>
1c <#>
2 <#>
3a <#>
3b <#>
4 <#>

NOTE: Developments in jOrgan and in the Windows Operating Systems since Models 1 to 4 were constructed mean that some of the details in Paragraph 4 of the lengthy READ_ME or INSTRUCTIONS file included in the downloads may need some revision. If you are experiencing any difficulties in setting up one of these dispositions, you should consult the short Instructions Amendment found on the Earlwood Organ No. 4 page <#>.

In fact an INSTRUCTIONS file has been revised and should be consulted in preference to all the above files. (Ignore the fact that it has the BALMAIN VPO in mind). Click [HERE](#).

New users of jOrgan are advised to consult also the jORGAN DISCOVERY website (especially the STARTING page), which is particularly aimed at guiding them safely through all the necessary steps. Click [HERE](#).

NOTE RE jORGAN UPGRADES

VPO's designed for particular versions of jOrgan will work with later versions. However, when a VPO is opened in a later version of jOrgan, upon saving it will have been converted for use with that later version, and will no longer be able to be used with the earlier version. If you wish to avoid this, you should firstly copy the VPO folder to the Desktop, rename it to signify the new version of jOrgan it will be used with, and then move that folder back to where the original VPO folder is located. Proceed by opening the newly-named VPO, using the later version of jOrgan.

However, it is normally not necessary to rename dispositions which have been saved when using later versions, unless the user has a particular wish to avoid

any confusion arising from the fact that the original disposition name (which refers to the original jOrgan version) has not undergone any change.

EARLWOOD ORGAN No. 1

This is my first Virtual Pipe Organ, which has been made in order to add to the variety available to jOrgan users. It is a small organ, similar in size to Bruce Miles' Village Organ, with an additional couple of stops, and is based, with his kind permission, on that disposition as a starting point. Broadly speaking, there are two samples per octave, and they are based on recordings I have made of actual pipe ranks, but put together using Klangsynth, and processed with the program Audacity. Most of the flue sounds have very quiet chiffs, and quiet air noise. I would call the voicing "Refined British", but the reeds and the strings are definitely in the Cavaille-Coll direction. There is also a flute based on a Silbermann rank. I have been very concerned to add "liveliness" to the individual sounds and to the main chorus, and have done this using the LFO (Low Frequency Oscillator) Vibrato facility of the soundfont protocol, along with a little bit of detuning. I am grateful to Paul Stratman for making up the nameplate of the organ and incorporating it into a new version of the Classic Skin.

Here is the specification:

GREAT	SWELL	PEDAL
Principal 8'	Rohrflute 8'	Principal 16'
Stopped Diapason 8'	Viole de Gambe 8'	Bourdon 16'
Dulciana 8'	Voix Celestes 8'	Trombone 16'
Octave 4'	Nason Flute 4'	GREAT TO PEDAL
Twelfth 2 2/3'	Piccolo 2'	SWELL TO PEDAL
Fifteenth 2'	Trompette 8'	
Mixture IV	VIBRATO	Four combination
Trumpet 8'	OCTAVE COUPLER	pistons per manual
SWELL TO GREAT	SUB-OCTAVE COUPLER	General Cancel
	UNISON-OFF COUPLER	Setter

This organ is really a house-organ, voiced very mildly, and users will find it easy to increase the level of the upperwork if they feel so inclined. Two zones (splits) per octave means ample provision for regulating each stop according to the

loudspeakers/room characteristics and according to personal preferences. The bottom octave has four zones provided, as mentioned below. Obviously a soundfont editor is needed in order to do this regulating, should it be desired. I recommend the free [Vienna](#) soundfont editor from the maker of SynthFont.

I have made a sfz version of this organ, and also a Fluidsynth version. (These are both software synthesizers designed to be used with soundfonts, and to respond to MIDI instructions). I prefer sfz to Fluidsynth, simply because when used with a computer of only average resources, it gives better latency performance. If you intend to use this virtual organ with a computer and some sort of soundcard, then the Fluidsynth soundfont should be used rather than the sfz one, as its attenuation settings will be more correct for that usage, and the soundfont should be loaded into Bank 19. If you wish to change this to another bank, you will need to alter the disposition appropriately.

Here are some general details:

All the Principal ranks (Gt 8,8,4, 2 2/3, 2, Mix IV and Sw 4 and Pd 16) are based closely on an actual principal rank I recorded, but were done with Klangsynth. I actually adjusted the 2nd Harmonics over the range to follow some kind of pattern. All the stopped flute ranks (Gt 8, Sw 4,2 and Pd 16) are based closely on a Stopped Diapason I recorded, and were done with Klangsynth. All the reeds (Gt 8, Sw 8, Pd 16) are based loosely on recordings of samples of a C-C rank I had access to, but although done with Klangsynth, do not attempt to "reproduce" the harmonic spectra in the same way the other stops do. The same could be said of the Swell Viole de Gambe 8', which I tried to make like a C-C string. The Swell Rohrflute 8 is based on recordings I accessed of a Silbermann rank, and was done with Klangsynth.

Because Klangsynth was used to make all the soundfont samples, these sounds are not copies of original pipe sounds such as might be claimed for samples derived from actual recordings. However, one reason I made this virtual organ was that it might emphasize how satisfying synthesized samples can be.

As mentioned above, liveliness has been imparted with some slight detuning in the soundfont, and mainly in the Trumpet. Otherwise (and more importantly) I have used discrete LFO vibrato in the Gt Principal 8', the Gt Stopped Diapason 8' and the Sw Rohrflute 8' in such a way that it is perceived as random variation rather than as a pitch out-of-tuneness.

The Swell Department has an Octave Coupler, a Sub-Octave Coupler and a Unison-Off Coupler. These greatly increase the usefulness of this part of the organ. By adjustments to the soundfont, without actually making additional samples, I have provided extra octaves of sounds to all Swell stops except for the top octave of the Piccolo 2', so that the couplers do not run out of notes. As a further refinement, in the 16' octave of every relevant stop (including the Pedal stops) I have provided four zones (or splits) instead of the usual two, so that any sound level discrepancies due to the loudspeakers or the room can be compensated for to some extent by due adjustment of the soundfont attenuation settings.

Two zip files have been provided below for downloading - a sfz version and a Fluidsynth version, each suitable for jOrgan 3.7. Each zip file contains the disposition file which jOrgan will open, the soundfont which you need to load into whichever synthesizer you are using, a MIDI file created by Paul Stratman playing this organ, and the classic-earlwood.zip skin file which you should place, still zipped, into the "skins" directory of your jOrgan directory. This will need to be loaded into the "Earlwood Organ No.1" Properties "Skin" location in the normal way (after selecting the Construct mode). If you choose to use the classic.zip skin instead, the organ will still work normally, but you will not see the Nameplate.

This jOrgan disposition/soundfont may be downloaded under the terms of a Creative Commons Share-Alike Licence:

<http://creativecommons.org/licenses/by-sa/3.0/au/deed.en>

Download links:

EARLWOOD_No_1_FS.zip Click [HERE](#)

EARLWOOD_No_1_SFZ.zip Click [HERE](#)

EARLWOOD ORGAN No. 1b

This is an upgrade of the EARLWOOD ORGAN No.1, and the notes above regarding that organ should be consulted. This upgrade is to make the organ suitable for jOrgan 3.8.2, utilising its new features, such as improved Recorder and Combination Memory. It also has an additional Swell stop, the Violin Diapason 8', based closely on a stop of that name found in the Swell Department of the Hill, Norman and Beard pipe organ in the Anglican Church at Lithgow, New South Wales. The Swell Gemshorn 4' has been replaced by a stop based closely on the stop of that name in the same organ. Quite some adjustment of the levels of the various stops has been made, especially in the Great chorus, giving a brighter sound.

Here is the specification:

GREAT	SWELL	PEDAL
Principal 8'	Violin Diapason 8'	Principal 16'
Stopped Diapason 8'	Rohrflute 8'	Bourdon 16'
Dulciana 8'	Viole de Gambe 8'	Trombone 16'
Octave 4'	Voix Celestes 8'	GREAT TO PEDAL
Twelfth 2 2/3'	Gemshorn 4'	SWELL TO PEDAL
Fifteenth 2'	Nason Flute 4'	
Mixture IV	Piccolo 2'	Four combination
Trumpet 8'	Trompette 8'	pistons per manual
SWELL TO GREAT	TREMULANT	General Cancel
	OCTAVE COUPLER	Setter
	SUB-OCTAVE COUPLER	
	UNISON-OFF COUPLER	

This organ is really a house-organ, voiced mildly, and users will find it easy to adjust the level of the upperwork if they feel so inclined. Two zones (splits) per octave means ample provision for regulating each stop according to the loudspeakers/room

characteristics and according to personal preferences. The bottom octave has four zones provided, as mentioned below. Obviously a soundfont editor is needed in order to do this regulating, should it be desired. I recommend the free [Viena](#) soundfont editor from the maker of SynthFont.

I have made a sfz version of this organ, and also a Fluidsynth version. (These are both software synthesizers designed to be used with soundfonts, and to respond to MIDI instructions). I prefer sfz to Fluidsynth, simply because when used with a computer of only average resources, it gives better latency performance. If you intend to use this virtual organ with a computer and a Creative soundcard, then the Fluidsynth soundfont should be used rather than the sfz one, as its attenuation settings will be more correct for that usage, and the soundfont should be loaded into Bank 19. If you wish to change this to another bank, you will need to alter the disposition appropriately.

Two zip files have been provided below for downloading - a sfz version and a Fluidsynth version, each suitable for jOrgan 3.8. Each zip file contains the disposition file which jOrgan will open, the soundfont which you need to load into whichever synthesizer you are using, and the classic-earwood-1b.zip skin file which you should place, still zipped, into the "skins" directory of your jOrgan directory. This will need to be loaded into the "Earwood Organ No.1b" Properties "Skin" location in the normal way (after selecting the Construct mode).

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Download links:

EARLWOOD_No_1b_FS.zip Click [HERE](#)

EARLWOOD_No_1b_SFZ.zip Click [HERE](#)

EARLWOOD ORGAN No. 1c

This virtual organ is a significant upgrade of the Earlwood Organ No.1b, and is suitable for use with jOrgan 3.11 and 3.12. There is also a version for 3.13. It follows the lead of the No.2, in having 30 zones per stop. What is more, for three main stops on the Great (Open Diapason 8', Stopped Diapason 8', Principal 4'), it uses 30 recorded samples per stop (mainly hybrid, as explained below), replacing the corresponding stops of the No.1b. These three stops are all part of the Great department of the small tracker pipe organ in the Uniting Church in Katoomba, New South Wales, built by Charles Richardson in 1915. The pipes were probably made in his father's pipe organ factory in England.

As indicated, the "new" stops use hybrid samples, where recorded attacks have been wedded to synthesized small loops, resulting in samples of total length of 0.5 seconds each. The harmonic structure of each looped section is a very accurate representation of the steady-state tone being portrayed. Such loops produce an unvarying sound, but this handicap is overcome (at least in the two new 8' stops) through the use of a refinement of the Earlwood Tremulant. To my ears, it does this very successfully. It is very adjustable, and there is ample scope for tweaking the effect. My initial settings were very conservative. Details of this refinement will be placed into the article on the Earlwood Tremulant which is found elsewhere on this website. I have also added air noise to the sound of the two 8' stops. The Stopped Diapason 8' stop contains action noise in the attack phase of some notes. It was not possible to remove this without falsifying the actual attacks.

Strictly speaking, the looped sections of the samples for the Open Diapason 8' are actually recorded, but are quite short. In a few instances I felt the need to replace these loops with fully synthesized ones. Because the Open Diapason samples were "sanitized" using SPEAR and are very short, they operate no differently to synthesized small loops, and so I refer to all the samples as hybrid. I have come to the conclusion that hybrid samples offer much promise for those who wish to provide sounds of high quality but with minimum soundfont size, provided other steps are

taken, at least for the foundation stops, to provide some degree of liveliness to the sound. During the process of making the three new stops, I found that SPEAR, although very useful in removing certain types of unwanted noise from the samples, also degrades them to some extent. So for the third stop I made (Stopped Diapason 8'), I used High Pass filtering to remove the motor/blower noise, and found this very successful.

One other feature of the No.1c is that tuning differences have been introduced. This was not present in No's 1 and 2. An inevitable result is that the beating between sounds of related pitch will be much more obvious. We have to accept the fact that not all hearers will appreciate this to the same degree, but in this effect we do come closer to what happens with pipe organs that have not been recently tuned. It certainly gives a more pleasing sound than what is provided by a perfectly-locked system.

For the specification, please refer to the page for the Earlwood Organ No.1b. There is one change: in the 1c a Swell Cornopean 8' replaces the Swell Trompette 8' stop, and is based on 30 hybrid samples made from recordings of the stop of that name found in the Hill, Norman and Beard pipe organ of St. Paul's Anglican Church, Lithgow, N.S.W.

This jOrgan disposition is intended to be used with Fluidsynth, which currently is the jOrgan preferred sound engine.

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Click [HERE](#) to download the 11 MB zip file.

Late in the development of this disposition I raised the loudness of the Great Octave 2' and Great Mixture IV by about 4 dB. If this is not to your liking, you can easily alter it yourself by modifying the disposition. Advice on how to do this, and how to do other things, is included in the READ_ME text file which is contained within the zip download file.

jOrgan 3.13 UPDATE

In May 2011 the 1c, 3a and 3b were upgraded for use with jOrgan 3.13. All three Earlwood Organ versions share the one 26 MB zip file for download. Click [HERE](#) to download.

EARLWOOD ORGAN No. 2

This very small organ is based mainly on recordings made of a small German tracker pipe organ imported to Sydney, Australia during the late 1950's. Although I was under the impression that the instrument could be called "neobaroque", the sounds are quite mild, and the resulting virtual organ is very suitable for home use. I have added a Krummhorn 8' stop to the original five manual stops, and all six stops are available on both manuals, with Anglicized names used for the Great department. A Pedal department which borrows somewhat from the manual stops or from stops on the EARLWOOD ORGAN No.1 has been added.

A Fluidsynth version of this organ, intended for use with jOrgan versions 3.13, was released in May 2011, and it becomes the recommended version. For all the flue stops except the Mixtures, it uses 30 hybrid samples for each stop (six per octave), resulting in a much more authentic and pleasing sound, as the initial sounds are "recordings" rather than synthesized attempts to reproduce the original sound.

Here is the specification:

GREAT	POSITIVE (Under	PEDAL
Gedackt 8'	Expression)	Prinzipalbass 16'
Principal 4'	Gedacht 8'	Subbass 16'
Wald Flute 4'	Rohrflute 4'	Gedachtbass 8'
Octave 2'	Oktave 2'	Oktavebass 8'
Mixture II	Mixtur II	GREAT TO PEDAL
Cremona 8'	Krummhorn 8'	POSITIVE TO PEDAL
POSITIVE TO GREAT	TREMULANT	

Four combination pistons per manual
Four general combination pistons
General Cancel
Setter

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Download link:

EARLWOOD_2_313.zip Click [HERE](#)

EARLWOOD ORGAN No. 3a

This virtual organ is meant to be used with a console of three manuals. It can be played on a console of two manuals, but in that case one department, the Positive, will be playable* only by coupling through from the Great, or by customizing the installation so that the Positive stops are accessed along with the Swell stops. The disposition is suitable for use with jOrgan 3.11 and 3.12, and assumes the use of the Fluidsynth sound engine. A version for jOrgan 3.13 is also available (see below). The organ is a development of Earlwood Organ No.1c and Earlwood Organ No.2, using the latter's Positive stops, along with some of its Pedal stops added to those already used in the Earlwood Organ No.1c. For some information of the source of the various sounds, consult the pages above relating to the 1c and the 2.

Here is the specification:

GREAT	SWELL	POSITIVE
Open Diapason 8'	Violin Diapason 8'	Gedacht 8'
Stopped Diapason 8'	Rohrflute 8'	Prinzipal 4'
Dulciana 8'	Viole de Gambe 8'	Rohr Flute 4'
Principal 4'	Voix Celestes 8'	Oktave 2'
Twelfth 2 2/3'	Gemshorn 4'	Mixtur II
Fifteenth 2'	Nason Flute 4'	Krummhorn 8'
Mixture IV	Piccolo 2'	
Trumpet 8'	Trompette 8'	
SWELL TO GREAT	TREMULANT	
POSITIVE TO GREAT	OCTAVE COUPLER	
	SUB-OCTAVE COUPLER	
	UNISON-OFF COUPLER	
PEDAL	Four combination pistons per manual	
Principal 16'	Five general combination pistons	
Bourdon 16'	General Cancel	
Principal 8'	Setter	
Bass Flute 8'	Numerous memory levels	
Rohr Schalmey 4'	Recorder	
Trombone 16'		
GREAT TO PEDAL		

POSITIVE TO PEDAL
SWELL TO PEDAL

Lengthy instructions are available in the READ_ME text file included in the zip file.

* When using it this way, the Positive department should be given an unused MIDI channel number by means of the jOrgan Customizer.

To download the 12 MB zip file, click [HERE](#).

Lengthy instructions are available in the READ_ME text file included in the zip file.

jOrgan 3.13 UPDATE

In May 2011 the 1c, 3a and 3b were upgraded for use with jOrgan 3.13. In this update a Swell Cornopean 8' replaces the Swell Trompette 8' stop, and is based on 30 hybrid samples made from recordings of the stop of that name found in the Hill, Norman and Beard pipe organ of St. Paul's Anglican Church, Lithgow, N.S.W. These three Earlwood Organ versions share the one 26 MB zip file for download. Click to [HERE](#) to download.

Created December 2010

Updated May 2011

EARLWOOD ORGAN No. 3b

This is a modification of the Earlwood Organ No. 3a, making it more convenient for those users who wish to play it on a two-manual console. Two special Positive Transfer Pistons have been provided, one for each keyboard. When pressed these have the effect of transferring their keyboard over to the Positive stops. Pressing them again reverts the keyboards to their normal use. The couplers already existing are not affected by this addition.

Instructions are given in the lengthy INSTRUCTIONS.pdf file (included within the zip download file) on how to make these pistons controllable from pistons on a physical console. If the user's console lacks such pistons, there are instructions outlining how the control of the Transfer pistons can be allocated to the top playing key of each keyboard, if the user is prepared to sacrifice access to those two notes.

For the specification, see the Earlwood Organ No.3a above.

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JUNE 2013 UPGRADE

The following stops have been upgraded:

GREAT: Stopped Diapason 8, Principal 4, Trumpet 8

SWELL: Violin Diapason 8, Chimney Flute 8 (previously called "Rohrflute"), Gemshorn 4

CHANGES TO THE GREAT: The previous Open Diapason 8 has been replaced by a stop of that name based on the Great No.2 Open Diapason on the Pitt Street Uniting Church (Sydney) organ built by the English firm of Hill. A Harmonic Flute 4 from that same organ (also from the Great) has been added. The previous Fifteenth 2 has been replaced by a stop of that name based on the Swell Fifteenth 2 of the Richardson organ in the Katoomba Uniting Church. (The Great Stopped Diapason 8

and the Principal 4 are both based on the stops of those names found on that same Katoomba organ).

I have added to the disposition Paul Stratman's Wind Destabilizer, which I have modified to produce slight pitch changes over a much longer period of time, to give something of the effect of hand-pumped operation.

The zip file is about 37 MB in size. Click [HERE](#).

EARLWOOD ORGAN No. 4

The soundfont for this computer organ contains mainly hybrid samples (recorded attack section joined to a synthesized short loop section) produced from recordings made of a small tracker pipe organ in St Mary's Anglican Church, Kelmscott, a suburb of Perth, Western Australia. This is the oldest pipe organ in Western Australia, and one of the oldest in the whole of Australia. It was imported to Kelmscott in about 1960, and came from a redundant church: St Mark's, in Eccles, Kent (United Kingdom). Its origins are obscure, but it is believed to have been built about 1815 as a one-manual house organ, after which it was used in a church in the Oxford area, and later moved to Eccles, where it was enlarged to two manuals. At Kelmscott it was returned to its one-manual configuration. The manual pipework is believed to be original, except for the Twelfth 2 2/3 stop, and probably also the Open Diapason 8 stop.

30 samples per stop were made (6 per octave). All are true hybrid samples except for those of the Principal 4, which has synthesized attacks. The stops have been configured as a two-manual organ with identical stops on both manuals, except that the two 8-foot flue stops on the Swell have each been reduced in volume by 4 dB. A Trumpet 8 has been added to each manual, and a Trombone 16 placed on the Pedals. The hybrid samples for these three stops are a "revoiced" version of the Cornopean 8 samples used in the Earlwood Organ No.3. The other pedal stops have come from the Earlwood Organ No.3, and are not hybrid samples, nor do they follow the 6 samples per octave pattern.

The "Earlwood Wobble", a subtle and pseudo-random modulation, has been applied in various ways to the Open Diapason 8, Stopped Diapason 8, Trumpet 8, Fifteenth 2 and Trombone 16, as a means of avoiding a sterile sound from the looped sections of the samples.

Here is the specification:

GREAT	SWELL	PEDAL
Open Diapason 8	Open Diapason 8	Open Wood 16
Stopped Diapason 8	Stopped Diapason 8	Bourdon 16
Principal 4	Principal 4	Principal 8

Nason Flute 4
Twelfth 2 2/3
Fifteenth 2
Trumpet 8
Tremulant

Nason Flute 4
Twelfth 2 2/3
Fifteenth 2
Trumpet 8
Tremulant

Bass Flute 8
Trombone 16

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Lengthy instructions are available in the INSTRUCTIONS MODEL 4.pdf file included in the zip file.

To download the 10 MB zip file, click [HERE](#).

**AMENDMENT TO PARA. 4 OF THE INSTRUCTIONS (or READ_ME) PDF
(Applies to all of the EARLWOOD ORGANS)**

The following paragraph should be added after the reference in Para. 4 to “trouble-shooting”.

It is possible that you have no sound because of a conflict in 32/64 bit operation. So close down jOrgan (you can Save it as prompted), and this time click on the jorgan.jar file in the jOrgan folder (found within one of the Program Files folders in C:), instead of clicking on the jOrgan.exe file shortcut on your Desktop. If you have success now in achieving sounds, then you should create a shortcut from jorgan.jar and place it on your Desktop to replace the existing shortcut, and use it to run jOrgan subsequently. This is certainly what I had to do with my Windows 7 computer. (There may exist further 32/64 bit conflicts which the details just mentioned will not correct. I believe that if you are using 32-bit operation, then the version of Java you are using also needs to be 32-bit. Also, the version of jOrgan you have installed should also be 32-bit. However, if you are using 64-bit, then make sure that the Java version and the jOrgan version are both 64-bit).