

**Simon Emmerson**

# **TIME PAST I**

**1981**

**for double bass and electronics**

for Barry Guy and West Square

SIMON EMMERSON

TIME PAST 1 (1951) for double bass and electronics

Time Past 1 exists in two versions. A full version using live electronic delay systems and a reduced version which replaces the delay systems with pre-recorded tape (2 channel).

Live electronic delay version : circuit diagram 1

Time Past 1 was written for the two channel multiple head tape delay system designed by Barry Anderson and built at the West Square Electronic Music Studio, London. This is represented in the circuit diagram with the delay times indicated in seconds. While the first performances were made using this analogue system, the composer now considers that digital delay lines must be used (see 'The delay system' below). In the circuit diagram, only one of the feedback routes is shown in detail, all the others are identical.

The double bass player controls in addition a small piezo-electric transducer (such as is used in an electronic percussion set) which is driven by a power amplifier capable of delivering adequate voltage to a high impedance. The signal for this (which is used to excite resonances in the bass) is taken from the mixer, as indicated, from Aux 1 which should be pre-fade.

At least two high quality microphones for the amplification of the bass should be available, one positioned as close as possible to the bridge, the other near the f-hole nearest the player's right hand (but not so close as to induce cavity resonance feedback). Other microphones should double up these or be near the other f-hole. A contact microphone may be used in addition but cannot replace the air microphones. The microphones on the bass feed two functions whose levels must be independently controllable: firstly, direct amplification and secondly, input onto the delay system. The main diffusion is via two output groups (3 and 4) which should be routed to loudspeakers at the left and right of the performance space. Hence, for direct amplification, the mics are routed to groups 3 and 4 (but see note 1 below). Spatialisation of this direct amplification across the stereo image is at the discretion of the diffuser. In addition a pre-fade auxiliary send (Aux 2) is used on each of the mic input channels to add the signals together. This is subsequently split and reinserted to two further input channels to give the two independently controllable sends to the Left and Right delay inputs (via output groups 1 and 2 respectively). It is the faders for these which are 'performed' according to graphic indications given in the score (see 'The electronic part'): the Aux 2 levels are set in rehearsal and not altered in performance.

Note 1: the circuit above assumes the use of a mixing desk with a minimum of four group outputs. Should more be available, the live bass sound might best be diffused over a separate set of loudspeakers (fed from group outputs 5 and 6 in the circuit diagram) than those used for diffusion of the delays, adding substantially greater flexibility in balancing the two.

Note 2: If a more substantial multi-loudspeaker diffusion system is available, it would be best to run the diffusion from a second console fed from the first to avoid any interaction with the delay and other level settings.

Version with pre-recorded tape : circuit diagram 2

The pre-recorded tape is an ideal studio realisation of the results of the live electronic delay. Various stereophonic effects have been elaborated but there is no additional material. The live bass part is very slightly altered at two points to overcome particular coordination problems with the tape (see 'The double bass part').

This version is for amplified double bass, two channel tape and piezo-electric transducer system. At least two high quality microphones for the amplification of the bass should be available, one positioned as close as possible to the bridge, the other near the f-hole nearest the player's right hand (but not so close as to induce cavity resonance feedback). Other microphones should double up these or be near the other f-hole. A contact microphone may be used in addition but cannot replace the air microphones.

The double bass player controls in addition a small piezo-electric transducer (such as is used in an electronic percussion set) which is driven by a power amplifier capable of delivering adequate voltage to a high impedance. This is driven from a separate (1 channel) tape upon which drones have been recorded (see note 2 below). Although this may be fed via the same mixer as the main diffusion system there must be no interaction, the drones are not to be heard direct.

The live bass sound should be balanced with the tape such that its presence is clearly perceived as separate but not dominant. The electronic part in the performance score is therefore entirely irrelevant with the exception of the piezo-electric transducer indications: '+PZ()' is to be interpreted as 'fade up the drone tape feed', and conversely with the fade out indication '-PZ()' (the numerals in the brackets are irrelevant). The drones tape plays continuously and must be started synchronously with the main tape (see note 2 below). It does not contain continuous material: the drones have been recorded at the times they occur in the work (with a deliberate 'error' starting early and finishing late).

Note 1. The circuit above assumes the use of a mixing desk with at least two group outputs. Should more be available, the live bass sound might best be diffused over a separate set of loudspeakers than those used for the tape, adding substantially greater flexibility in balancing the two. A larger mixing desk would allow a more substantial multi-loudspeaker diffusion system to be run.


Note 2. The tapes are available in most formats: it may be possible to combine the main material and drones onto one tape eg. PCM (2 channel digital) utilising the audio track for the drones (it does not have to be of extremely high quality): normally, however, a cassette tape of the drones would be available.

### The Double Bass part

This is notated in two ways. A traditional stave indicates the pitches intended to sound all an octave lower than notated, with all duration, dynamic and phrasing indications. All pitches are intended to be natural harmonics or open strings of the instrument. No strings are to be stopped! Indications as to how to obtain these are given on the single line below the stave. The strings are tuned E,A,E flat,F (the top two thus *scordatura*). The Roman numerals I,II,III,IV represent the usual string numbers. The Arabic numerals indicate the number of the harmonic to be obtained. NB! '1' is therefore the open string, eg. for the E flat string (II):

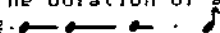


In fact there are alternative positions for the left hand fingers lightly to touch the string to obtain the given harmonics. Harmonic '7', for example, being a prime number harmonic, can be obtained by touching at any of six points along the string. There is, therefore, some flexibility in means of execution although context will limit this. Another five-line stave is added for the performer's convenience to annotate alternative indications to achieve the result (eg. a transposing tablature for I and II).

No 'out-of-tune' harmonics should be 'corrected'. Interplay between different intonations of the same pitch is intended - sometimes in the form of a tremolo between two identically notated pitches (if these are slurred, , a single bow should be used, if not, separate bows). All *glissandi* are harmonic *glissandi*. These often speak more clearly if the bow action moves towards *su ponticello* for the duration of the *glissando*. A clear distinction must be made between, for example, (1), (2) and (3):



In the first case, a harmonic *glissando* with many interpolated harmonics is heard, but in (2) *glissandi* between the individual harmonics should not be made (or should at least be minimised), and each must be separately attacked, though not necessarily separately bowed, which would be indicated as in (3).

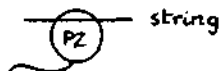
All 'bars' in the work are of 5s duration: most are proportionally notated and a time indication given at the start of each line (with the exception of the final two systems these are all 45s per line, being 9 x 5s). The duration of any note is broadly indicated by its 'extension' eg.  is a note too short to represent with an extended note-head, but not as short as a grace note. Grace notes stand outside this space-time notation and are to be played as fast as possible given clarity and presence (that may not be very fast and can certainly be aperiodic within a group!). The player should attempt to keep the bold notes' attack points at the correct times, but some latitude is inevitable - however, the player must be accurate at the start of every 45s unit indicated.

At 3.00 and 12.00, there are two sections ('chorales') traditionally notated in 4/4 (cancelled by 'X') at  $\text{♩} = 48$  (hence each bar remaining at 5s duration). In these sections the bass should sound like a bowed vibraphone: the note should be bowed fast and the finger removed to let ring. There are two important alterations to the score at these points in this version. It is impossible for the live bass to anticipate the exact tempo and land up synchronised with the delays on tape. Therefore the tape has been made such that at these points the tape *leads* and the live bass enters as one or the echos (the third): the player has a *tacet* of 15" (3 bars) and then enters with the material indicated. Some material is then later omitted to return the timing back to the main one given. Instructions for this version are prefaced with 'T', including the alternative timings for this version given in brackets.

Not too much in the way of phrasing is indicated as the interpreter must be free to derive the expressive rise and fall of the phrases from the layout of the particular harmonic touch positions finally used. A certain amount of vibrato may be added to allow certain harmonics to speak more clearly.

The use of the piezo-electric transducer is indicated in the score by the abbreviation 'PZ'. Its wire should be long and flexible and may be loosely strapped to the right arm and tucked in such that it can be attached to the finger of the right hand quite quickly, or it may be placed near to the player at a convenient height to be picked up. It is used in three ways:

(1): when used to excite the string, the indication is either to slide freely up and down one or two adjacent strings or to press at the nodal points corresponding to the harmonics indicated i.e. the notes written  $\blacklozenge$ . (Sometimes these are reinforced by a left hand pizzicato notated '+'). This is most effective when the transducer is pressed such that the line of the string is towards one edge:



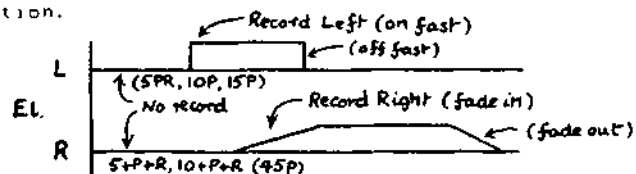
(2): when used *sul ponticello*, a remarkable harmonic 'wa-wa' may be heard as the point of contact of the transducer is varied from centre to edge. The indication "improvisando" implies a slow rotational exploratory movement across the four strings. Though appearing to be notated as a regular pattern this should not be periodic.

(3): "F" indicates the f-hole area where similar variations in resonance tone quality may be produced. The best point to investigate is the relatively free 'tongue' of the f-hole. Notation and direction as for (2).

#### The electronic part (live electronic version)

The two lines indicated 'R' ('Right') and 'L' ('Left') each indicate two types of information to be executed by two separate performers. A third performer would be responsible for the final diffusion and balance of live and delayed sound.

Player (1): follows indications for material to be sent to the delay inputs. As indicated in the circuit diagram, the feeds to the record heads are controlled by two input channel faders. These determine which fragments of the live material are recorded for subsequent delay treatment and on which of the two delay channels. This is indicated in simple graphic form representing fader position.



Player (2): follows indications for routing the material from the delay returns. The returns are indicated '5', '10', '15', '22' (for the 22.5" delay) and '45' (see circuit diagram). As this is a stereo system each may separately appear on the 'L' or 'R' lines. Each return comes in on an individual mixer channel (thus a total of 10, 5 left and 5 right, as indicated). Each may have three statuses in addition to 'not routed':

- 'P' : playback only (ie. output to the diffusion only, no re-recording for further delay).
- 'R' : re-route to delay only (ie. no diffusion).
- 'PR' : both playback and re-route to delay.
- '+' indicates the addition. '-' the removal of one of these functions: brackets round an indication show 'state of play' at that moment and are always given at the start of each line of the score. Some examples:
- 'L' stave : '10+P' : playback send from Left 10 second delay to be activated.
- 'R' stave : '5-R' : re-route to delay send from Right 5 second delay to be de-activated.
- 'L' stave : '(45PR)' : at this time playback and re-route to delay sends from Left 45 second delay are both active.

The system described above requires a mixer in which routing to (a) no group outputs and (b) to more than one pair of group outputs, must be possible. In many mixers routing is in pairs (1/2, 3/4 etc.) with pan facility between the 'left' and 'right' members of each pair. In this case, the left returns and right returns are panned as such and remain unchanged. The 'R' indications represent the depression of the 1/2 group send button, the 'P' indications the depression of the 3/4 group send button. Thus changes in playback and re-route to delay status are instantaneous at the points indicated, except where 'fade' is indicated in which case the fader should be brought down, the routing direction followed and the fader returned to its standard level. The composer envisages the automation of the system and its overall control from MIDI or SMPTE codes in a future version.

The role of the sound diffuser is to balance as nearly as possible the directly amplified bass sound with the first repeated sounds off the delay system. Subsequent repeats should be set to decay (see 'The delay system').

The piezo-electric transducer is fed from a pre-fade auxilliary (Aux 1) of the Right '45', '22', or '15' return channels. This is notated '+PZ(45)', '+PZ(22)' or '+PZ(15)'. Similarly '-' for its fade out.

#### The delay system (live electronic version)

The first performances of Time Fast I were made using a custom built tape delay system based around two analog tape machines between which was 'table' including at least four variably spaced stereo playback tape heads. Detailed notes for the set-up of such a system are available from the composer, but he does not any longer consider it feasible. If a 'single feed/variable tap' delay line were available, the circuit would be extremely simple. Two such delay lines ('L' and 'R') with taps at the times indicated would be sufficient. If these are not available, 5 stereo units (10 independent channels) would be required. Each of the feeds ('L' and 'R') would have to be split 5 ways.

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For the initial setting up of the delays the main diffusion amplification should be down and monitoring should be on headphones. The group outputs to the delays should be set to give a level to the delay lines from the bass well within distortion limits. For each delay return channel in turn the fader should be set to some agreed 'standard' ('0') level, with the 'R' button depressed, the master rotary gain pot should then be adjusted to give a clear repeating decay on a short percussive sound, corresponding to a loss of around -2 to -2.5dB in the loop. Having completed this for each channel, several should be tried in combination. Should distortion levels on the delay inputs be exceeded the group sends to the delay will have to be adjusted and the individual channel line-up repeated. Only when the delay system has been established satisfactorily should the main diffusion be balanced.

PROGRAMME NOTE

Time Past I was written for Barry Guy in response to a commission from the West Square Electronic Music Association with funds made available by the Arts Council of Great Britain.

The complete live electronic version was written for the multiple head tape delay system built by Barry Anderson for the West Square Electronic Music Ensemble. Five separate delay times are used, varying from 5 to 45 seconds. The score defines clearly what material is sent to the delay system and which delay times are active. This creates harmonic combinations of materials heard at various different times in the past, placing the live music in new contexts. A further type of reminiscence - a 'ghost' - is created using a piezo-electric transducer driven by drone material from one of the delays to excite the the strings, bridge and top plate of the instrument.

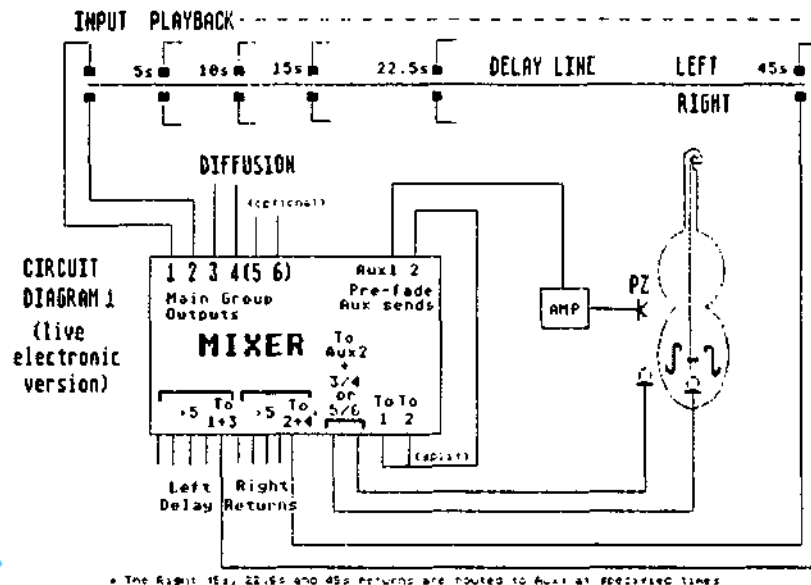
A version in which the delay system is replaced by a pre-recorded tape (which recreates the delay effects demanded) was subsequently made by the composer at the Electroacoustic Music Studio at City University, London.

The work attempts to mirror in musical terms that quality of memory which paradoxically appears both random and arbitrary while being at a deeper level inevitable and significant.

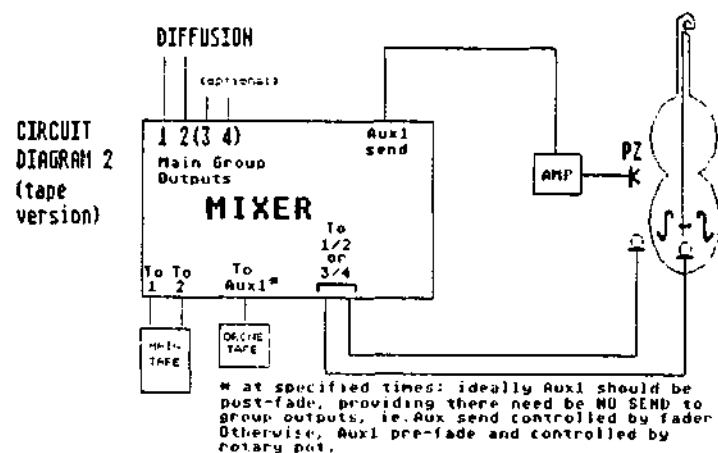
Time Past I was composed between June and October 1981 and first performed on the 31st of October 1981 at St. Johns, Smith Square, London by Barry Guy and the West Square Electronic Music Ensemble, director Barry Anderson.

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rev. 7/85



SIMON EMMERSON : TIME PAST I



# TIME PAST I

Simon Emmerson

0

Db

L

R

(45P, 22P)

.45

Db

L

R

(45P, 22P)

22-P

45-P

1.30

Db

L

R

(10PR)

45+P+R

10-P-R (fade)

2.15

2.15

mp p pp p f mp f ff

accelerando accel.

2 3 4 4 4 2 7 3 4 2 2 7 6 5 4 3 7 5 4 2 3 4 9 6 5 7 8 7 5 alternate 5 7 5 4 5 8 7 6 5 4 1 9 7 4 5 6 5 7 2-7 7 6 7 8 alternate 7 8 7 6

II III III I III IV II 7 5 4 IV 2 3 4 IV I IV III II I II II I IV II I III II I II II

L 5+P

R (45PR) 45-R

T: TACET 3.00-3.15

T3.15 3.00

T3.45

attacca! →

mp

attacca! →

5 3 2 7 2 3 2 9 5 3 5 5 6 6 4 7 4 6 7 9 7 6 5 5 6 8 8 7 8 6 8

IV III IV I II IV II I II IV III IV II I II IV III IV I II

L (5P) 10+P,15+P,45+P+R

R 45P

3.45

3.45

f mp ff mp ff mp ff mp ff mp ff

accel. rit. accel. rit. accel. rit. accel. rit.

8 7 8 7 8 7 5 8 alternate 7 5 alternate 8 7 8 alternate 6 8 alternate 6 6 6 6 6 6 6 6 7 5 alternate 5

I III III II III II III IV III II III II I II I II I III II II

L (5P,10P,15P,45PR) 45-R

R 45-P

4.30

Db

*p dolce*

ATTACH PZ

pp

Fingering: (i), (ii), 4 4 5 6 5 6, 6, 6 6 1, 2, 2 8, 3 5, 3 1

L (5P, 10P, 15P, 45P)

5+R

R 5+P+R, 10+P+R, 22+P+R, 45+R

5-P-R, 10-P-R, 22-P, +PZ(45)

slow crossfade

5.15

Db

sul ponticello (improvvisando)

f

(improvvisando)

Fingering: 9, R, 7, 6, 5, 4, 3, 2, IV, I, II, III, IV, 5, III

L (5PR, 10P, 15P)

22-R, 45-R

R (22R, 45R)

6.00

Db

REMOVE PZ

Fingering: 6 IV, 5, 7, 8, 6 I, 6 II

L (5PR, 10P, 15P)

-PZ(45)

R

Preview File Only



6.45

ATTACH PZ

Db

*p* 7 5 7 5 8 7 3 2 2 | *mp* 5 6 7 9 4 5 | *p*(echo) 5 7 8 8 | *mp* 7 6 8 7

L (5PR,10P,15P)

EI

R 5+P+R,10+P+R,22+P+R,45+R

+PZ (45)

5-P-R,10-P-R 22-P

7.30

*poco a poco sul ponticello* *sul ponticello (improvvisando)* *non-s.p.*

Db

2 3 4 5 6 7 8 9 | I,II,III,IV | to IV

L (5PR,10P,15P)

EI

R (22R,45R)

8.15

*sal ponticello* [s.p.] [s.p.] (improvvisando) REMOVE PZ

Db

5 9 7 8 | IV+III | III+II | 6 |

L (5PR,10P,15P)

EI

R (22R,45R)

15-P,5-P-R,10+R

-PZ (45)

22-R,45-R

9.00

mezzo col legno tratto sul ponticello - poco a poco sul tasto

col legno trattato accelerando - poco a poco sul ponticello

musical notation for Db, including notes, rests, and dynamic markings (f, mf, p, pizz).

fingerings for Db: 8 IV, IV, III II, II IV II I II, 6, 4 3 5 6 4 5 6 7 8 2 3 5 2, 6 4 4 5 1

弓法 (Bowings) for L, EI, R: (10PR), 10-P-R, 5+P, 45+P, fade

9.45

musical notation for Db, including notes, rests, and dynamic markings (mf, f, mp, arco normale, quasi, [s.p.]).

fingerings for Db: 8 5 8 5 8 7 8 5 8 7 8 5 8, 7 5 7 5, 7 6 5 4 5 4 5 8 5 8 7 6 5 4 5 6 7 8, 8 7 8, 8 7 8 7 6 5 4, 7 8, 5 6 7 8

弓法 (Bowings) for L, EI, R: (5P, 45P), 45+R

10.30

musical notation for Db, including notes, rests, and dynamic markings (mf, f).

fingerings for Db: 9 7 9 7 9 7 8 4 5 6 7 6 5 9 7, 4 7 6, 7 8 7 8 7 8 7 6 7 8 7 6 7 6 5, 8 7 6, 9 5 6 5 6 5 6 7 4, 5 6 III IV, 5 6 5 6 5 6 4 IV 1

弓法 (Bowings) for L, EI, R: (45PR) 5-P, 22+P

11.15

Db

mp f mp

IV IV IV IV IV 6 5 6 5 6 5 6 6 6 5 6 5 6 5 IV

L (45PR)

EI

R (22P) 45+P+R 22-P

TTACET 12.00-11.15

T12.15  
12.00

T1300  
12.45

Db

mp

III II IV III IV II IV 1 III IV 1 III II IV II IV II IV 1 II IV 3 7 6 7 6 6 7 5 6 7 9 8 2 2 3 2 3 7 IV IV II IV 1 III IV

L (45PR)

EI

R 45-R, (45P), G+P 10+P 15+P 45-R 45-P

T13.15  
13.00

13.30

Db

attacca!

mp

ATTACH PZ [Very slow Centre-edge rotations]

III II IV II 1 II 6 5 1 IV

L (45P)

EI

R (5P, 10P, 15P) 5+R +PZ(15,22) SLOW FADE OFN. -PZ

fade: 5-P-R, 10-P, 15-P