

## ***EFFECT PROGRAMMING***



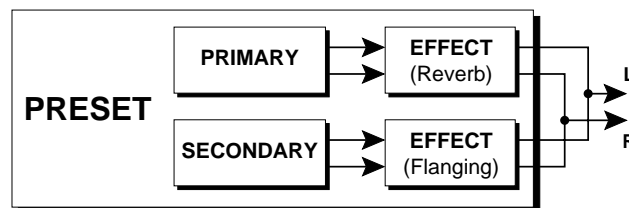
## EFFECT PROGRAMMING

### BACKGROUND: EFFECT ROUTING MODES

The Proteus Master Performance System contains two separate effects processors which may be applied to the final sound. The effect processors can be a part of the individual preset when single presets are being used, or they can be connected via an effects buss system when multiple presets are in use. The main point is that there are **two and only two effect processors**.

#### Single Preset Mode

When using single presets, it is desirable to have the type of effect linked with the preset. Proteus goes a little further by allowing you to assign a separate effect to the primary and secondary instruments.



#### Single Preset

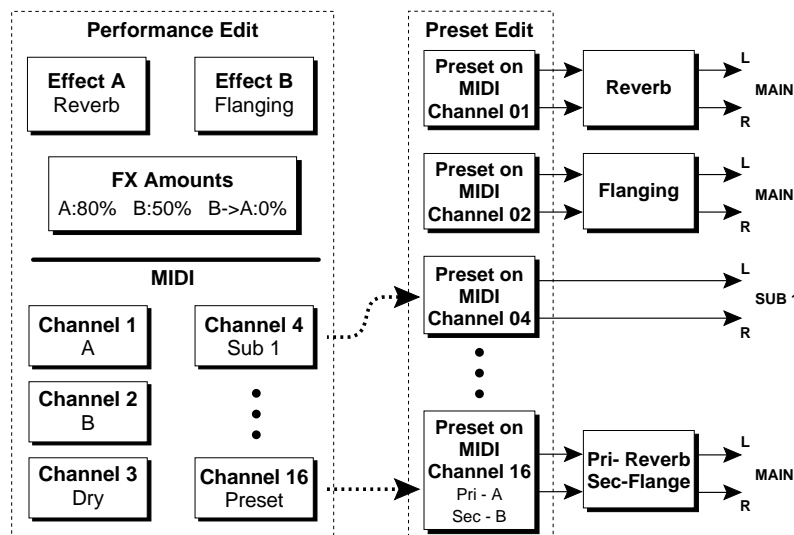
*Effect programmed in the Preset is used.*

#### Multiple Presets

*Effect programmed in the Performance Map is used.*

#### Multiple Preset Mode

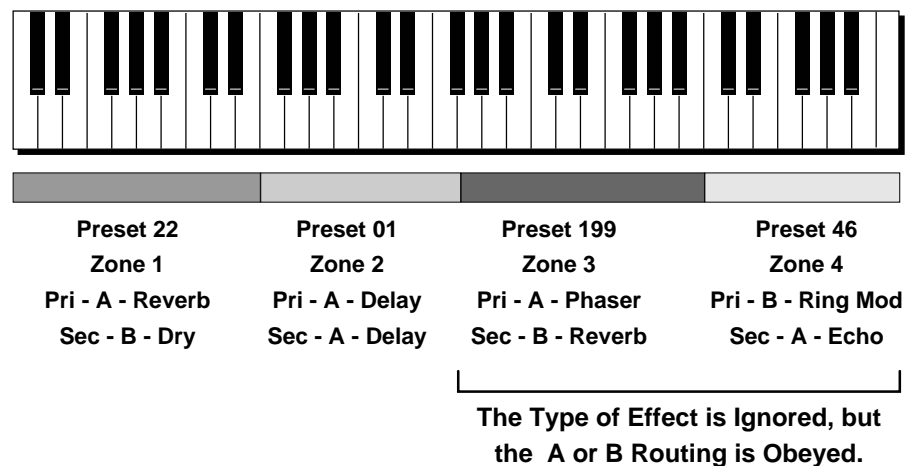
When using multi-mode, where up to 16 presets can be accessed at once, the effect buss (A, B or None) may be programmed as part of the Preset or a Performance Map, but the type of effects and their amounts are always programmed in the Performance Edit menu. The effects selected in the preset are ignored. These two assignment schemes give you the best of both worlds whether you are playing single or multiple presets.



## EFFECT PROGRAMMING

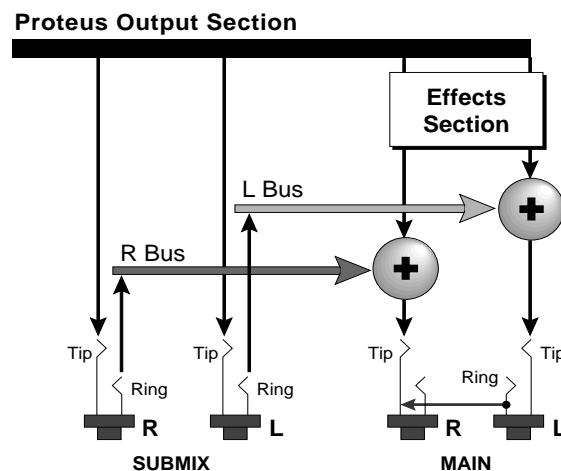
### SPLIT KEYBOARD EFFECTS

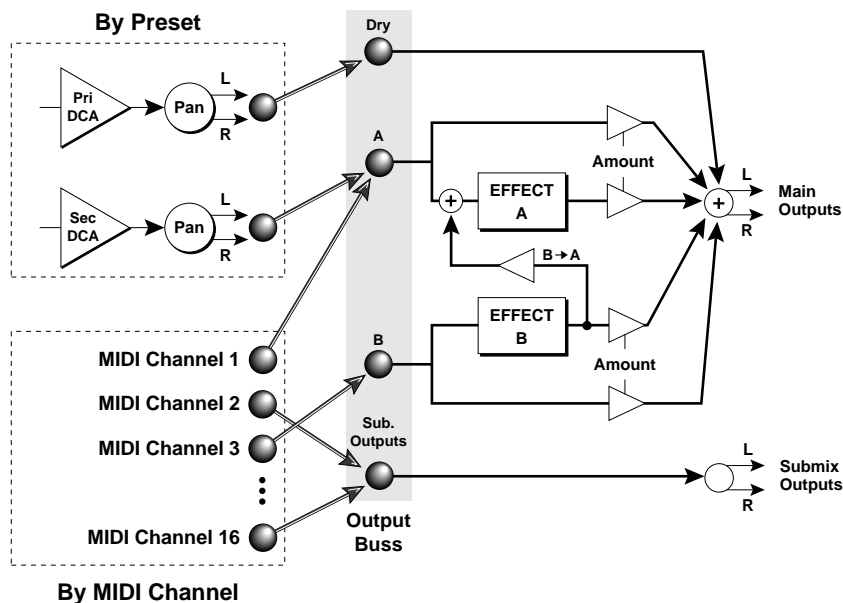
A special case arises when the Proteus keyboard is split using a Quick Key program (see the Performance Edit menu). There are only two effect processors, but up to eight possible assignments. Effects are still assigned according to the preset assignment as long as no more than two effects are used. If more than two effects *are* used (see diagram below), the effects will be assigned normally beginning with Zone 1 (then Zone 2, 3, 4). When the two effects are used up, the remaining zones will follow the preset effect buss routing (A, B, Dry, or Sub), but the type of effect will be determined by the first two effects used.



### EFFECTS OUTPUT ROUTING

The diagram below shows the way that the effects section is integrated into the output jack routing scheme.



**EFFECT PROGRAMMING****PROTEUS EFFECT BUSS ARCHITECTURE**

The two stereo effect processors on Proteus are designated as A and B effects. A effects contain Reverb and other miscellaneous effects. The B effects do not include Reverbs, but include a host of other weird and wacky effects.

Each effect has its own set of control parameters which are appropriate to that particular effect. For both the A and B effects there is an amount parameter which determines the relative mix of the processed and unprocessed signals. The output of the B effect can also be routed back through the A. In addition, there are a set of stereo submix outputs which can be used to externally process selected presets.

**COPY EFFECTS**

Effect parameters can be copied back and forth between presets and performance maps. By using a performance map as an intermediate holding area, effects can be copied between presets.

To copy the effects:

- 1) Press SAVE/COPY from within any effects editing screen (either the Performance or Preset Edit menus).
- 2) The display will read: "COPY EFFECTS, Preset -> Map". Use the inc/dec buttons or the data knob to change the source and destination.
- 3) Press Enter to Copy the effect parameters.

## EFFECT PROGRAMMING

### A EFFECTS

**Room, Warm Room**  
**Plates 1 and 2**  
**Chambers 1 and 2**  
**Halls 1 and 2**

Delay, Cross Delay  
 Phaser  
 Stereo Flange  
 Stereo Chorus  
 Echo  
 Stereo EQ

**Small Rooms 1 and 2**  
**Hall 3**  
**Early Reflections 1, 2, 3 and 4**  
**Rain**

### B EFFECTS

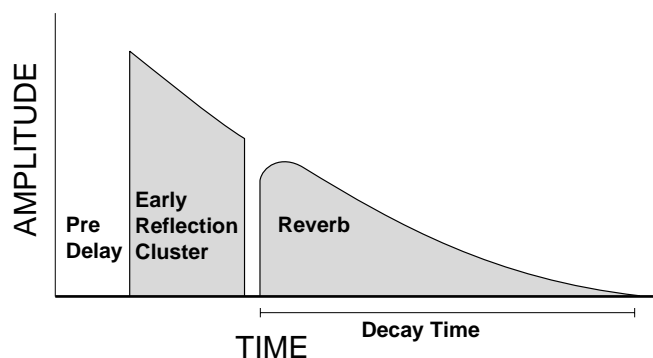
Stereo Flange  
 Stereo Chorus  
 Phaser  
 Fuzz 1  
 Ring Modulator  
 Delay  
 Cross Delay  
 Stereo EQ  
 Fuzz Lite

■ When using single presets, the effect programmed in the Preset Edit menu is used.

When using multiple presets, (Multi-mode), the effects selected in the Performance Edit menu are used.

### REVERB

The A effects are the most commonly used because they include reverb. Reverberation is a simulation of a natural space such as a room or hall. The reverb effects in Proteus simulate various halls, chambers, rooms and reverberation plates. In addition, there are several other reverb effects such as Early Reflections and Rain. There is only one adjustable parameter on the reverb effects - Decay Time. Decay time is the time it takes for the reflected sound from the room to decay or die away. The diagram below shows a generalized reverberation envelope. After an initial pre-delay period, the echos from the closest walls or ceiling are heard. These first echos or the *early reflection cluster*, vary greatly depending on the type of room. Roughly 20 milliseconds after the reflection cluster, the actual reverberation begins and decays according to the time set by the decay time parameter.



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The **Room** programs simulate small rooms with high frequency absorption caused by drapes and furniture. **Plates** simulate plate type reverbs with their tight, dense early reflections and sharp reverb build-up. **Chambers** simulate medium sized rooms with hard reflective surfaces. The **Hall** programs recreate the open, spacious ambience of a large concert hall. The **Early Reflection** programs consist of the reflection cluster only without the reverb decay. These are similar to a multiple tap delay line. **Rain** is a variation of the early reflection programs which consists of a dense group of short echos followed by longer echos.

FXA:Hall 1 Decay Time: 165
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Place the cursor underneath the reverb name and use the data entry control (or the inc/dec buttons) to change the type of reverb. Moving the cursor to the lower line allows you to change the decay time of the reverb. Plate 2 decay times are the shortest and range from 0 - 127. The decay times of the reverb programs range from 100 - 255. The decay time of the Early Reflection programs range from 0-255.

### **ROOM**

Mid-sized room (or gigantic-sized room depending on the decay time).

### **WARM ROOM**

Mid-sized room with more high frequency absorption.

### **PLATE 1**

Nice tight, clean plate reverb.

### **PLATE 2**

Plate reverb with a shorter decay time.

### **CHAMBER 1**

Bright and resonant reverberation chamber.

### **CHAMBER 2**

Less bright and resonant reverberation chamber.

### **HALL 1**

Large concert hall with a very balanced and musical sound.

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### **HALL 2**

A large concert hall with a lighter, more airy atmosphere

### **SMALL ROOM 1**

A petite yet perky room, possibly in a country mansion with hardwood floors.

### **SMALL ROOM 2**

A bolder but still modest room, with a tall slanted ceiling and a ruffled couch at one end.

### **HALL 3**

A small cathedral, with a few hanging tapestries, somewhere in the south of France. (Use Hall 3 with a long decay for an infinite reverb effect.)

### **EARLY REFLECTION GROUP**

The early reflections group are a cross between delay effects and reverb effects. There is no diffusion, so there is no buildup of dense reflections, only the discrete initial reflections of a reverb. This group is useful for those sounds that cannot tolerate the fullness of a reverb, but need a bigger image spread than a delay can provide.

### **EARLY REFLECTION 1**

A plucky early reflection effect, without the diffusion of a standard reverb. Compact reflection spread, similar to a tiled bathroom with a medium sized bath mat, and a full tub.

### **EARLY REFLECTION 2**

A broader reflection cluster, and a slightly different room shape. Again, early reflections only, no diffusion.

### **EARLY REFLECTION 3**

A still broader time domain reflection spread. Useful for nice stutter attacks, and multiplying a percussive attack into a strum-like cluster.

### **EARLY REFLECTION 4**

The longest time spread reflection cluster, with a rising impulse response placing the listener towards the back of an empty non-diffusing concrete outdoor amphitheater, with wooden benches.

### **RAIN**

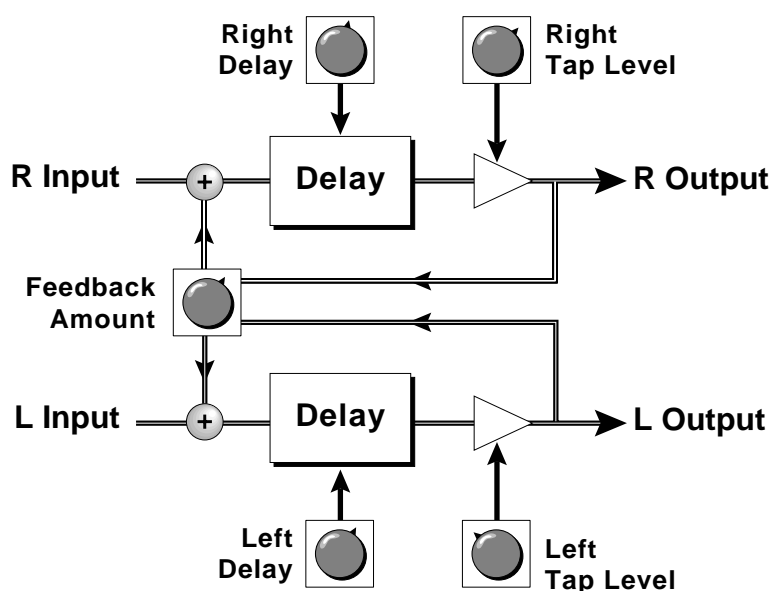
A first-order simulation of rain falling on a metal roof, in a redwood grove on a foggy afternoon.



## EFFECT PROGRAMMING

### STEREO DELAY

The delay line is a stereo effect which can be used for doubling, echos or fixed formant comb filtering with completely independent delay time and tap levels for the left and right sides. The delay is shown in the diagram below.



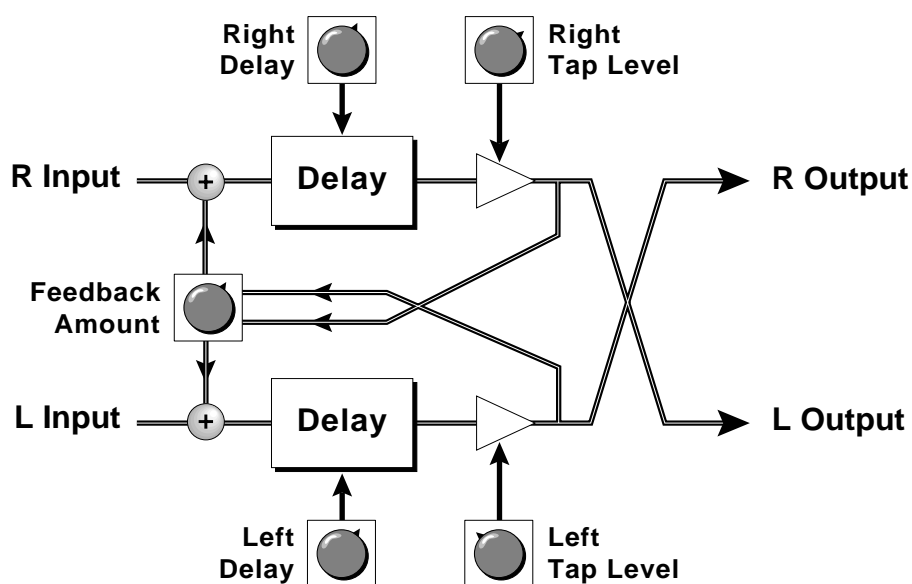
*The stereo delay line can function as two independent digital delays by panning the primary and secondary instruments to opposite sides.*

The **Delay Time** parameter is independently variable from 0 to 209 milliseconds for both the left and right channels. The **Tap Level** parameters control the amount of signal from the left and right delays as well as how much signal from each is supplied to the Feedback control. **Feedback** controls how many echos are produced. A setting of 0 produces only one echo. The Delay line is incredibly stable even with large amounts of feedback. This quality allows the delay line to be used as a resonator, where it acts as a kind of oscillator when excited by an input signal. Infinite delay effects are also possible without the risk of runaway. The stereo delay can function as two independent delay lines by panning the primary and secondary instruments to the extreme left and right.

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### CROSS DELAY

Cross Delay is identical to the normal delay line except that the output paths and the feedback paths cross over to the opposite channel in order to produce a ping-pong type of effect when reproduced in stereo. Delay time is adjustable from 0 to 209 milliseconds. The Cross Delay is shown in the diagram below.



*The outputs and the feedback paths cross over to the opposite channel to produce a ping-pong echo effect.*