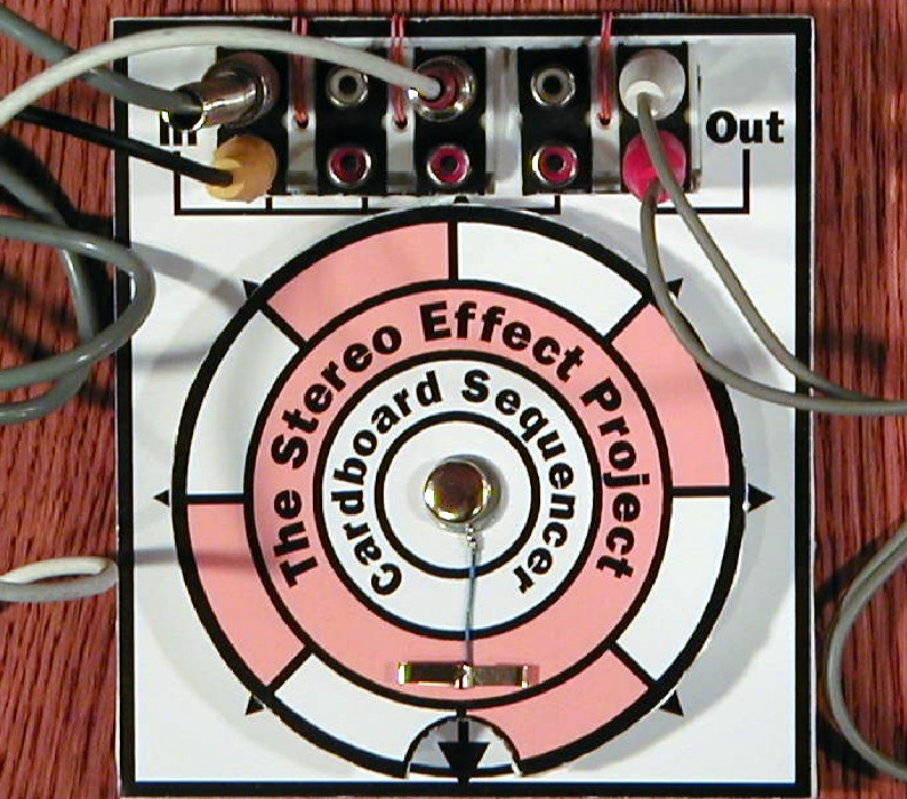
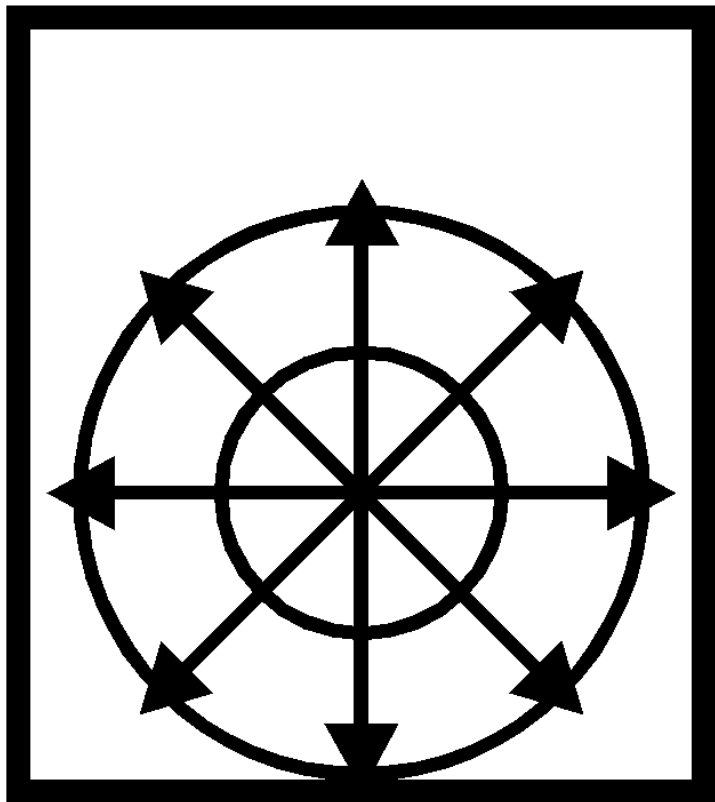


The Stereo Effect Project



Cardboard Sequencer Base Template

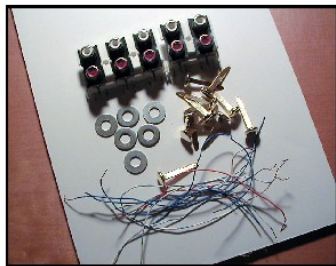


Cardboard Sequencer Construction

Parts Required

To construct a Cardboard Sequencer you will need:

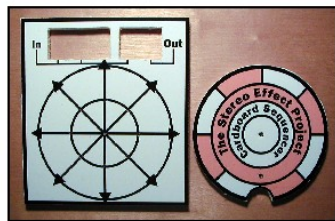
- 1 piece of thick cardboard
- 10 brass fasteners (also called split pins)
- 6 washers
- 10 phono jacks (or 5 pairs)
- 11 pieces of hookup wire, each about 10 cm to 15 cm long each



You should be able to find all of these parts at your local office supply store and Radio Shack. You may notice that in the photos the wires have been soldered in place. If you don't know how to solder, or you don't know someone that can do it for you, you can simply wrap the bare wires around the various pieces.

Step 1 - The Cardboard Pieces

Make a photocopy of the base template and the spinning disc template (from the inside covers of the CD booklet) and paste them to the thick cardboard. Enlarge the templates (about 40% to 50%) so that the final sequencer will fit better in your hand. Make sure that you enlarge both templates by the same amount. Draw some holes on the base where you want to mount the phono jacks. The best way to do this is to put the jacks directly on the base, and trace around them. Next, cut out the base and disc. Cut out the holes for the phono jacks. Punch holes for the brass fasteners in the disc (where the dots are) and on the base (where the inner circle and the lines intersect, and in the centre).



Step 2 - Install The Phono Jacks

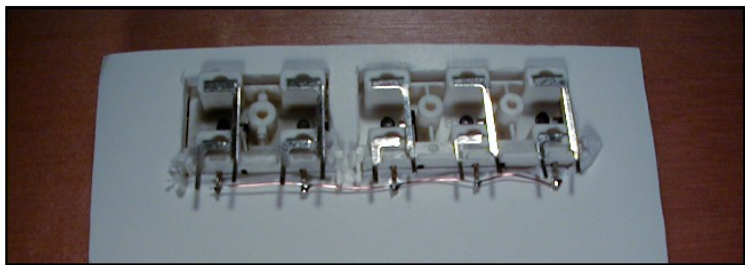
Insert the phono jacks into the base, with the jacks pointing up. Glue or tape them in place so they don't move around. This is a good time to look at the electrical connections (terminals) on the phono jacks. There will be two per jack. One of the terminals will connect to the outer metal sleeve on the jack. This is called the 'ground'. The other terminal will connect to the inner metal sleeve on the jack. This is called the 'tip'.

Eight of the phono jacks will be the 'inputs'. This is where your playback devices will be attached. The other two phono jacks will be the 'outputs'. This is where your recorder will be attached. Usually you would choose the input jacks to be on the left, and the output jacks to be on the right.



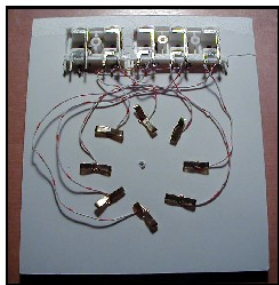
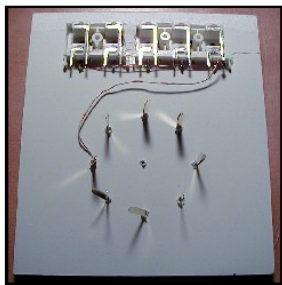
Step 3 - Wire The Phono Jacks (ground)

Strip all of the plastic insulation off one piece of hookup wire. Wire strippers or a knife will be handy. Connect all 10 of the ground terminals together. Just wrap the wire around each terminal, going from left to right.



Step 4 - Wire The Phono Jacks (tip)

Push 8 of the brass fasteners into the holes in the base, with the heads on the top of the base, and the legs pointing down. Flip the base over, so the legs of the brass fasteners and the terminals on the phono jacks are pointing up. Strip about 2 cm of insulation off each end of a piece of hookup wire. Wrap one end around the tip terminal of an input jack, and the other end around the legs of a brass fastener. Bend the legs of the brass fastener over so that the wire doesn't become loose. It doesn't matter which terminals or legs you choose, but it is best to go from right to left for the terminals, and counter-clockwise for the legs. Connect the other 7 tip terminals with the 7 remaining brass fasteners in the same manner.



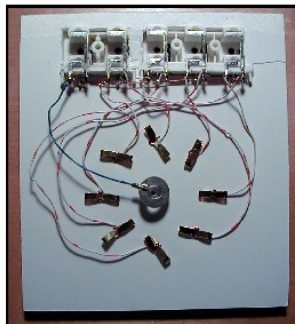
Step 5 - The Washer Assemblies

Strip both ends of a piece of hookup wire. Attach one end of the wire to a washer by making a small loop with the wire. Do the same thing with a second wire, and a second washer.



Step 6 - Complete The Base Unit

Wrap the wire on the free end of the one of the washer assemblies around both of the output tip terminals. Bend the wire so that the washer is over the centre hole in the base. This completes the base unit.



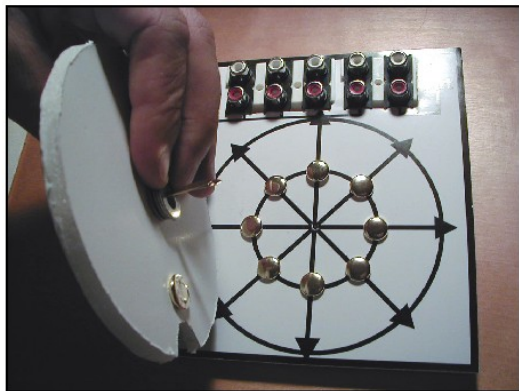
Step 7 - Complete The Disc Unit

Push a brass fastener through the outer hole in the disc, with the legs pointing up. Wrap the free end of the second washer/wire assembly around the legs of the brass fastener, and bend the legs over so that the wire doesn't become loose. Bend the wire so that the washer is over the centre hole in the disc. This completes the disc unit.



Step 8 - Complete The Cardboard Sequencer

Now you will be connecting the disc to the base with the last brass fastener. Push the brass fastener through the washer in the disc, and through the centre hole in the disc itself. Then put the last 4 washers on the brass fastener, and push it through the centre hole on the top of the base. It should go through the base, and through the washer on the bottom of the base. Bend the legs of the brass fastener over, securing the washer to the base.



How To Use The Cardboard Sequencer

Listen to the spoken word instructional track on the CD (track 6). It describes how to make copies of the sound samples (tracks 7 to 53), connect playback devices to the sequencer, and start making your own tracks.

Theory Of Operation

You don't need to know how the Cardboard Sequencer works in order to have fun with it, but there are many experimental possibilities available if you know a little bit more about it.

The Cardboard Sequencer is a simple rotary switch. As you spin the disc, the brass fastener in the disc makes contact with the 8 brass fasteners in the base, one at a time. This connects one, and only one, of the input jacks to the output jacks. This can be confirmed, working backwards, tracing the wires from the tip of one of the output jacks. Both of the output jacks are connected together, so it doesn't matter which one you consider...

The tip of the output jack connects to the centre brass fastener on the bottom of the base via a wire and washer. This brass fastener goes through the base and disc, and then to the washer on the top of the disc. The wire attached to this washer goes across to the brass fastener on the edge of the disc, which is in contact with one and only one of the brass fasteners in the base (peer between the disc and base to see this). The brass fastener in the base connects to one and only one tip terminal on an input jack, via a wire.

As you spin the disc, each input jack is connected to the output jacks, one at a time in sequence.

SOUND ON SOUND TWO

Handwritten musical notation for four staves (A, B, C, D) in treble clef. The notation includes notes, rests, and fingerings. Red annotations include "BANK 1" and "BANK 2" with brackets, and various circled notes and numbers.

Staff A: Notes with fingerings 1, 2, 3, 4. A circled 'A' is above the first measure.

Staff B: Notes with fingerings 5, 6, 7. A circled 'B' is above the first measure.

Staff C: Notes with fingerings 1, 2, 3, 4. A circled 'C' is above the first measure. A circled 'A' is below the second measure.

Staff D: Notes with fingerings 3, 4, 5, 6, 7, 8. A circled 'D' is above the first measure. A circled 'E' is below the first measure. A circled 'F' is below the third measure. A circled 'A' is below the second measure.

Red numbers 100-200 and 300 are written below the staves.

TAPE SPEED = $3\frac{3}{4}$ in/s HEAD DIST = 1in

$\frac{15}{A}$ $\frac{4}{15}$ OR $\frac{1}{4}$ S 60 120

TAPE 1 35:00 → 38:30
TAPE 2 35:00 → 36:27

TAPE 3 40:00 → 45:30

BANK 1 8 TRACK 20:00 → 25:00
BANK 2 26:00 → 31:00

TAPE 4

Sound Samples

Track	Timbre	Pitch
7	Mellow	C
8	Mellow	D
9	Mellow	E
10	Mellow	F
11	Mellow	G
12	Mellow	A
13	Mellow	B
14	Mellow	C
15	Sharp	C#
16	Sharp	F#
17	Sharp	A#
18	Sharp	C#
19	Sharp	D
20	Sharp	A
21	Sharp	D
22	Sharp	C
23	Sharp	F
24	Sharp	E
25	Sharp	A
26	Sharp	G
27	Resonant	A
28	Resonant	F
29	Resonant	D
30	Resonant	B

Track	Timbre	Pitch
31	Resonant	G
32	Resonant	C
33	Resonant	F
34	Resonant	C
35	Resonant	E
36	Resonant	C
37	Resonant	A
38	Resonant	G
39	Resonant	D
40	Resonant	F#
41	Resonant	D
42	Resonant	D
43	Resonant	A
44	Resonant	F#
45	Resonant	D
46	Resonant	C
47	Resonant	G
48	Resonant	E
49	Resonant	C
50	Noise	Sweep
51	Noise	Low
52	Noise	Mid
53	Noise	High

Cardboard Sequencer Disc Template





Tracks

1.	Sound On Sound One	2:19
2.	Power Poles And Crickets	1:19
3.	Sound On Sound Two	3:07
4.	Pause For Ten Seconds	0:10
5.	Sound On Sound Three	4:54
6.	Spoken Word Instruction	2:55
7. to 53.	Sound Samples	47:00

LISTEN TO THIS CD, CONSTRUCT A CARDBOARD SEQUENCER, AND PRODUCE TRACKS.

FOR INCLUSION IN A COMPILATION, SEND YOUR MP3s AND CONTACT INFO TO:
tsep@keithrobertmurray.com

ALL TRACKS WRITTEN, PERFORMED, AND PRODUCED BY KEITH ROBERT MURRAY. VOICE FOR SPOKEN WORD INSTRUCTION BY DvL.

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