

# PROGRAM TO MAKE AN ALTAIR 8800 PLAY MUSIC

```
000 LXI H    041
001 b2      xxx -   ADDRESS OF FIRST
002 b3      xxx   DATA ENTRY
003 MOV A,M 176
004 CPI     376
005 b2      377 -   START OVER DATA
006 JZ      312
007 b2      000
010 b3      000

011 MVI D    026
012 b2      xxx -   TEMPO DATA
013 DCR B    005
014 JNZ     302
015 b2      020
016 b3      000
017 MOV B,M 106 TO RUN THE PROGRAM:
                -----
020 DCR C    015 To run the program, push the 'RESET' switch,
021 JNZ     302 then push the 'RUN' switch.
022 b2      013 To stop the program, push the 'STOP' switch.
023 b3      000
024 DCR D    025 TO MAKE YOUR OWN MUSIC:
025 JNZ     302 -----
026 b2      013 Begin loading your music data anyplace after
027 b3      000 address 034. Be sure to load the starting address

030 INR L    054 into H&L at address 002, 003.
031 JMP     303 Each data entry will be one beat of music.
032 b2      003
033 b3      000
```

## OCTAL CODES FOR NOTES

```
-----
C    252
C#   240 LOW OCTAVE
D    230
D#   220
E    211
F    200
F#   172
G    162
G#   154
A    146
A#   140
B    132

C    125
C#   120 MIDDLE OCTAVE
D    114
D#   110
E    105
F    100
F#   075
```

G 071  
 G# 066  
 A 063  
 A# 060  
 B 055  
  
 C 053  
 C# 050 HIGH OCTAVE  
 D 046  
 D# 044  
 E 042  
 F 040  
 F# 036  
 G 034  
 G# 033  
 A 031  
 A# 030  
 B 026  
 C 025

Q 002 Note; This is the quietest of the data notes.  
 It can be used for spaces and rests.  
 You may also like to put a number of  
 these quiet 'notes' at teh end of the  
 music data, to give a space between playings.

## Data For "THE FOOL ON THE HILL" Beatles

Address	Data	Address	Data
-----	-----	-----	-----
040	105	120	055
041	105	121	053
042	125	122	071
043	100	123	066
044	071	124	100
045	063	125	071
046	063	126	071
047	063	127	100
050	071	130	071
051	063	131	066
052	055	132	066
053	053	133	071
054	053	134	100
055	055	135	100
056	071	136	100
057	063	137	071
060	046	140	066
061	046	141	060
062	046	142	060
063	071	143	066
064	063	144	071
065	046	145	066

066	046	146	066
067	053	147	060
070	042	150	053
071	046	151	046
072	046	152	046
073	063	153	046
074	071	154	046
075	063	155	044
076	053	156	046
077	053	157	053
100	063	160	053
101	053	161	053
102	071	162	053
103	063	163	053
104	063	164	002
105	071	165	002
106	063	166	002
107	046	167	377
110	046		
111	046		
112	053		
113	042		
114	053		
115	046		
116	046		
117	053		

## Data for "DAISY"

Address	Data	Address	Data
-----	-----	-----	-----
170	034	250	040
171	034	251	042
172	034	252	046
173	042	253	034
174	042	254	034
175	042	255	042
176	053	256	046
177	053	257	053
200	053	260	053
201	071	261	053
202	071	262	053
203	071	263	046
204	063	264	042
205	055	265	042
206	053	266	053
207	063	267	063
210	063	270	063
211	053	271	053

212	071	272	063
213	071	273	071
214	071	274	071
215	071	275	071
216	071	276	071
217	071	277	071
220	046	300	053
221	046	301	053
222	046	302	042
223	034	303	046
224	034	304	046
225	034	305	071
226	042	306	053
227	042	307	053
230	042	310	042
231	053	311	046
232	053	312	042
233	053	313	040
234	063	314	034
235	055	315	042
236	053	316	053
237	046	317	046
240	046	320	046
241	042	321	071
242	046	322	053
243	046	323	053
244	046	324	053
245	046	325	053
246	046	326	002
247	042	327	377

## **NOTES:**

### **TEMPO;**

The tempo is controlled by the value in address 012. Start out by trying 040.

### **TO PLAY BACKWARDS:**

Put 377 in front of all music data.(to cause looping)

Change address 001 to read the END of the music data.

Change address 030 to DCR L (055).

### **TO PLAY ALL OF THE MEMORY:**

Change address 001 data to a NOP (000)

Change address 004, 005, 006 to NOP (000)

This will cause program to read all of the memory, including the program instructions themselves.

### **RADIO INFORMATION:**

A low frequency radio around 330 KC works best, but any AM radio will pick up the music at quiet places on the dial.

Set the radio on or very close to the computer, start the program, and turn the dial on the radio until you get good sound. Some places will be much better than others, and some will pick up different sounds from the computer. Also, try moving the radio to different positions on or around the computer. Just rotating the radio 90 degrees can make a lot of difference in the sound you will get.

With a little experimentation, you can make all kinds of interesting sounds. ie; sirens, ray-guns, etc.

Steven Dompier