Commands for Video #804, NCE Mini Panel Demo-v31b, 12/14/2010

A. Comments:

Technical assistance – Many THANKS to **FRED CUPP** (http://DelawareAndHudson.net) of Williamsport, Pa, for technical assistance and EDUCATING-ME, how to use DCC, and how to use the Mini Panel

The following Pages 2 thru 5 show the commands used in the NCE Mini Panel for the video "AutoControls #804: Demo of NCE DCC Mini Panel for Auto. Train Control".

Note that this word processing document is just DOCUMENTATION for my own REFERENCE, so I can remember what instructions are entered in which location . I had to enter all these commands into the Mini Panel, line-by-line, using the NCE ProCab throttle.

A person with a photographic memory could SKIP this whole documention part of the process.

I'm not claiming these programming sequences are either good or efficient; it's just how I BLUNDERED my way through the project.

The Normal Operating Sequence

For the last iteration of this display (modified slightly after the video was recorded), I used "button 9" (the pushbutton connected to Input 9). This caused the Mini Panel to start executing the instructions in memory location for Input 9.

Startup: Input 9 – Turn on lights and rooftop strobe light on stationary HO D&H diesel, then link to Input 14.

S Gauge: Inputs 14-20 (page 3) – Operate the S gauge train (small loop with electric eye to position stopping train in front of station).

LargeScale: Inputs 21-26 (page 4) – Operate the LargeScale train (point-to-point with reed switches at each end of the track).

N gauge: Inputs 27-30 (page 5) – Operate the N gauge train (small loop, simple sequence, just start up, run, and slow down; no sensors in track).

At this point, I was out of instruction space (you don't want to use Input 31 unless you want the Mini Panel to start executing automatically, which I did not), so I "Linked to" Input 8 which had available space, and entered an additional 3 instructions to turn off the sound on the MRC sound decoder used for the N gauge.

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About The Sequences:

Continuous Memory – Starting at Input 14, memory is set to "continuous". Below Input 14, the code in each input only executes the 4 steps for that input, unless the 4th step is a "Link" statement. This is explained BETTER in the NCE Technical Reference manual on Page 3.

Spagetti Code – This looks somewhat like what programmers would disdainfully call "spagetti code" if it were in a computer program. I "jumped around" with the code somewhat, to fit it in the available memory locations.

If this was in code in a computer program, I would have used the Editor to "clean it up". But since you have to re-enter each line of instruction to move it to another location, I just "improvised" as best as possible.

Special Stopping Sequence

Although I didn't normally use this sequence, if I wanted to stop the trains and shut off their sound units without turning off the whole command station, I could use the RESET button (connected to the Mini Panel's "reset" terminals) to cause it to stop executing instructions, then use Pushbutton 4 to initiate the "all stop" sequence in Input 4 through 7.

Note that execution would stop at Input 7 Step 4, since there is no "Link" instruction, and "continuous memory" is not set below Input 14.

B. The Instructions:

The instructions programmed into the Mini Panel are shown on the following Pages 3 thru 6 .

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Changes: v30: add C628 HO, v29: Link S to N, to run without G, combine stop sequences.

((use cont. memory, starting input 14)) (set mem loc 3 = 14) To generate "end", use Selection 7 "Terminate" under "5 other" Cv3=acc=30, Cv4=dec=30 (1/8" drill bit for eye)	S ga used inp 11, G ga uses inp's 12+13 Eng. 228=FEC, 302=Atlantic, 305=Frisco, 452=EL 16=D&H N ga, 760= SF G ga.

		Command	Action	Summary
-	-	**N strt**		
1	1	Link to Input: 27	jump to Loco 16, D&H N ga. PA	**N strt**
1	2	nop		
1	3	nop		
1	4	nop		
-	-	**-S strt**		
2	1	Link to Input: 14	jump to Loco 452, S ga. Erie Lackawanna	**-S strt**
2	2	nop		
2	3	nop		
2	4	nop		
-	-	**G strt**		
3	1	Link to Input: 21	jump to G ga.Loco 760, Sante Fe GP-9	**G strt**
3	2	nop	sound off	
3	3	nop	sound off	
3	4	nop		
-	-	**All Stop**		
4	1	~~~~~> Select Loco: 16	Select Loco: 16, D&H N ga. PA	**N off**
4	2	Speed Fwd: 0	STOP speed 00	~~STOP
4	3	nop		
4	4	Link to Input: 5		
		~(stop N ga)		
5	1	F5-F8: ---8	sound off (like pushing button 3 times)	
5	2	F5-F8: ----	sound off	
5	3	F5-F8: ---8	sound off	
5	4	Link to Input: 6		
-	-	**~(stop S ga)**		
6	1	~~~~~> Select Loco: 452	Select Loco: 452 Erie Lackawanna SW-9	**S off**
6	2	Speed Fwd: 0	STOP speed 00	~~STOP
6	3	F5-F8: ---8	F6=strobe OFF, F8 also (sb F5-F8: -6-8)	turn sound off
6	4	Link to Input: 7		
		~(stop G ga)		off
7	1	~~~~~> Select Loco: 760	Select G ga.Sante Fe GP-9	**G off**
7	2	Speed Fwd: 0	STOP speed 00	~~STOP
7	3	F5-F8: ----	sound off	
7	4	nop		
		N cont	Turn off MRC Sound, end of RUN Loco 16 N ga.	N snd off (part of operating sequence)
8	1	F5-F8: ---	(cont. from inp 30, ran out of space for commands)	
8	2	F5-F8: ---8		
8	3	F5-F8: ----		
8	4	Link to Input: 14	start up S gauge	**Link to S gauge**
-	-	==========	==========	==========
		HO lights & strobe		**HO light**
9	1	~~~~~> Select Loco: 610	Select HO ga.D&H C628	G off
9	2	F5-F8: 6--8	turn on strobe (will turn sound off)	~~STOP
9	3	F0-F4: 0----	headlights on	
9	4	Link to Input: 14	jump to Loco 452, S ga. Erie Lackawanna	**Link to S gauge**

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Input 10 - memory location not used
Inputs 11 (S gauge eye), 12, & 13 (largescale reed switches) are hooked up the layout

button 1 > N ga. 27-30 +8 snd
button 2 > S ga. 14-20 -> 27 N ga
button 4 > all stop
button 9 > HO ga. lights -> 14 S ga
(button 6 > G ga. 21-26 -> 27 N g)

		1 S	lights F0 / bell F1 / horn F2 — 012---6-8 — F8=sound / F6=rooftop strobe — Functions, S ga. #452	**1 S gauge**
14	1	~~~~~> Select Loco: 452	Select Loco: 452 Erie Lackawanna	Button 3 start, __ stop
14	2	F5-F8: -6--	F6=strobe ON, F8 also (sb F5-F8: -6-8)	
14	3	Delay 4 sec: 002	delay 8 second	let sound settle
14	4	F0-F4: 01---	headlights on, bell ON	bell
-				
15	1	Speed Rev: 10	**←--Reverse**	**←--Reverse**
15	2	Delay 4 sec: 2	delay 8 second to ring bell	
15	3	F0-F4: 0----	headlights on, bell OFF	
15	4	Delay 4 sec: 8	delay 32 second between bell & horn	delay bell -> horn
-				
16	1	F0-F4: 0-2--	headlights on, horn ON	horn
16	2	Delay 4 sec: 001	delay 4 second (blow HORN 4 sec)	
16	3	F0-F4: 0----	headlights on, horn OFF (F0 lights, F2 horn)	
16	4	Wait Inp: 11 Open	wait for eye #11 to be crossed (resistance incr)	wait
-				
17	1	Speed Fwd: 0	STOP speed 00	
17	2	Delay 4 sec: 004	stop at end for ___ sec	coast to STOP
17	3	F0-F4: 01---	headlights on, bell ON	bell
17	4	Speed Fwdv: 10	**Forward - - →**	**Forward →**
-	-			
18	1	Delay 4 sec: 2	delay 8 second to ring bell	
18	2	F0-F4: 0----	headlights on, bell OFF	
18	3	Delay 4 sec: 8	delay 32 second between bell & horn	delay bell -> horn
18	4	F0-F4: 0-2--	headlights on, horn ON	horn
-				
19	1	Delay 4 sec: 001	delay 4 second (blow HORN 4 sec)	
19	2	F0-F4: 0----	headlights on, horn OFF (F0 lights, F2 horn)	
19	3	Wait Inp: 11 Open	wait for eye #11 to be crossed (resistance incr)	wait
19	4	Speed Fwd: 0	STOP speed 00	
-	-			
20	1	Delay 4 sec: 004 (6)	stop at end for 24 sec	coast to STOP
20	2	nop		
20	3	F5-F8: ---8	F6=strobe OFF, F8 also (sb F5-F8: -6-8)	turn sound off
20	4	nop		
			(21 thru 26 is g scale commands	**Continue to LargeScale**

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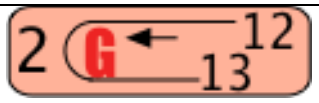
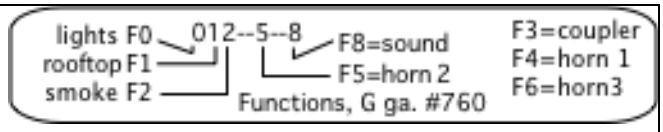
-	-			2 LargeScale
21	1	~~~~~> Select Loco: 760	Select G ga.Sante Fe GP-9	
21	2	F0-F4: 01---	headlights on, strobe light on	
21	3	F5-F8: ---8	sound on	
21	4	Delay 4 sec: 004	delay for sound to ramp up	
-	-			
22	1	Speed Fwd: 18	**Forward - - →**	**Forward →**
22	2	Delay 4 sec: 004	delay __ sec to get moving	
22	3	F5-F8: 5--8	horn 2 ON, keep sound on	horn
22	4	Delay 1/4 sec: 008	delay to force horn on	
-	-			
23	1	F5-F8: ---8	horn off	
23	2	Wait Inp: 13 Ground	wait for reed sw. to be crossed (resistance decr)	
23	3	Speed Fwd: 0	STOP speed 00	coast to STOP
23	4	Delay 4 sec: 003	delay	delay for de-accel
-	-			
24	1	Speed Rev: 18	**←--Reverse**	**←--Reverse**
24	2	Delay 4 sec: 004	delay __ sec to get moving	
24	3	F0-F4: 0--4	headlights on, horn 1 ON	horn
24	4	Delay 1/4 sec: 008	delay to force horn on	
-	-			
25	1	F0-F4: 0---	horn off	
25	2	Wait Inp: 12 Ground	wait for reed sw. to be crossed (resistance decr)	
25	3	Speed Fwd: 0	STOP speed 00	coast to STOP
25	4	Delay 4 sec: 004	delay	delay for de-accel
-	-			
26	1	nop		
26	2	F5-F8: ----	sound off	**Continue to N gauge**
26	3	nop		
26	4	nop		

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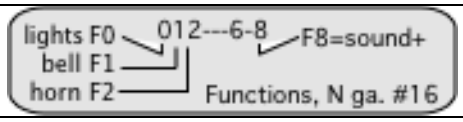
-	-	3 N		**3 N gauge**
27	1	~~~~~> Select Loco: 16	Select Loco: 16, N ga. D&H PA	
27	2	F5-F8: --8	F8=sound ON)	
27	3	Delay 4 sec: 002	delay 8 second	let sound settle
27	4	F0-F4: 01---	headlights on, bell ON	bell
-	-			
28	1	Speed Fwd: 12	Forward - - →	Forward →
28	2	Delay 4 sec: 2	delay 8 second to ring bell	
28	3	F0-F4: 0----	headlights on, bell OFF	
28	4	Delay 4 sec: 8	delay ____ second between bell & horn	delay bell -> horn
-	-			
29	1	F0-F4: 0-2--	headlights on, horn ON	horn
29	2	Delay 4 sec: 001	delay 4 second (blow HORN 4 sec)	
29	3	F0-F4: 0----	headlights on, horn OFF (F0 lights, F2 horn)	
29	4	Speed Fwd: 0	STOP speed 00	coast to STOP
-	-			
30	1	Delay 4 sec: 6	delay ____ second to get stopped	
30	2	Link to Input: 8	go to input 8, to turn off sound	**Go To more N gauge**
30	3	nop		
30	4	nop		

Notes 1

Summary: This "sequence" is being written to control an S-gauge, Sountraxx-equipped diesel in forward and reverse directions on a point-to-point layout. Technical assistance courtesy of FRED CUPP	

Note Eng. #452: F5-F8: -6—turns strobe & sound on; F5-F8: ---8 turns strobe & sound off