NCE Mini Panel 9Fi: HO 2-Track Auto. Yard 3 Trains 9/23/2016

NOTE: This is "Part 3" of Video #814 -- the "**enhanced**" version. Refer to the first version dated 9/5/2016 for the "basic" version as demonstrated in "Part 1" of the video.

This version has 3 "enhancements":

(1) It allows "on-the-fly" modification of the delay between trains (see Input 2 Step 1 and 5 other places) – controlled by addition of a SPST switch connected between Input 9 and ground.
    This allows changing between Mode 3B (busy, 2 trains running) and Mode 3C (casual, 1 train running) without stopping the trains or having to reprogram the Mini-Panel.

(2) It has a modified routine for Mode 2B, the "Automatic Passing Siding" (see Input 25 Step 1). Connecting a wire (or switch) between Input 21 and ground will allow operation of either one of the two trains on the siding <u>without running the other train</u>. (This is used for "momentum testing" where we want to run just 1 train to make sure it stops in the right place on the siding.)

(3) <u>Only one "Stop" reed switch #16 is used</u> instead of 2 reed switches. A "delay" command is used to send the "Set Speed 0" command after the train has entered the siding – so the effect is the same as having 2 reed switches.

Note that these 3 enhancements are independent of each other. Any 1 or any 2 of them can be made without making the other enhancements. The DISADVANTAGE of these enhancements, is that more commands are required -- which uses up more space in the Mini-Panel, which is already "out of space".

Pushbutton #1 starts the normal 3-train operation. The other 3 routines can be accessed only by using the programming "test" modes, because we are out of programming space to use any more pushbuttons.
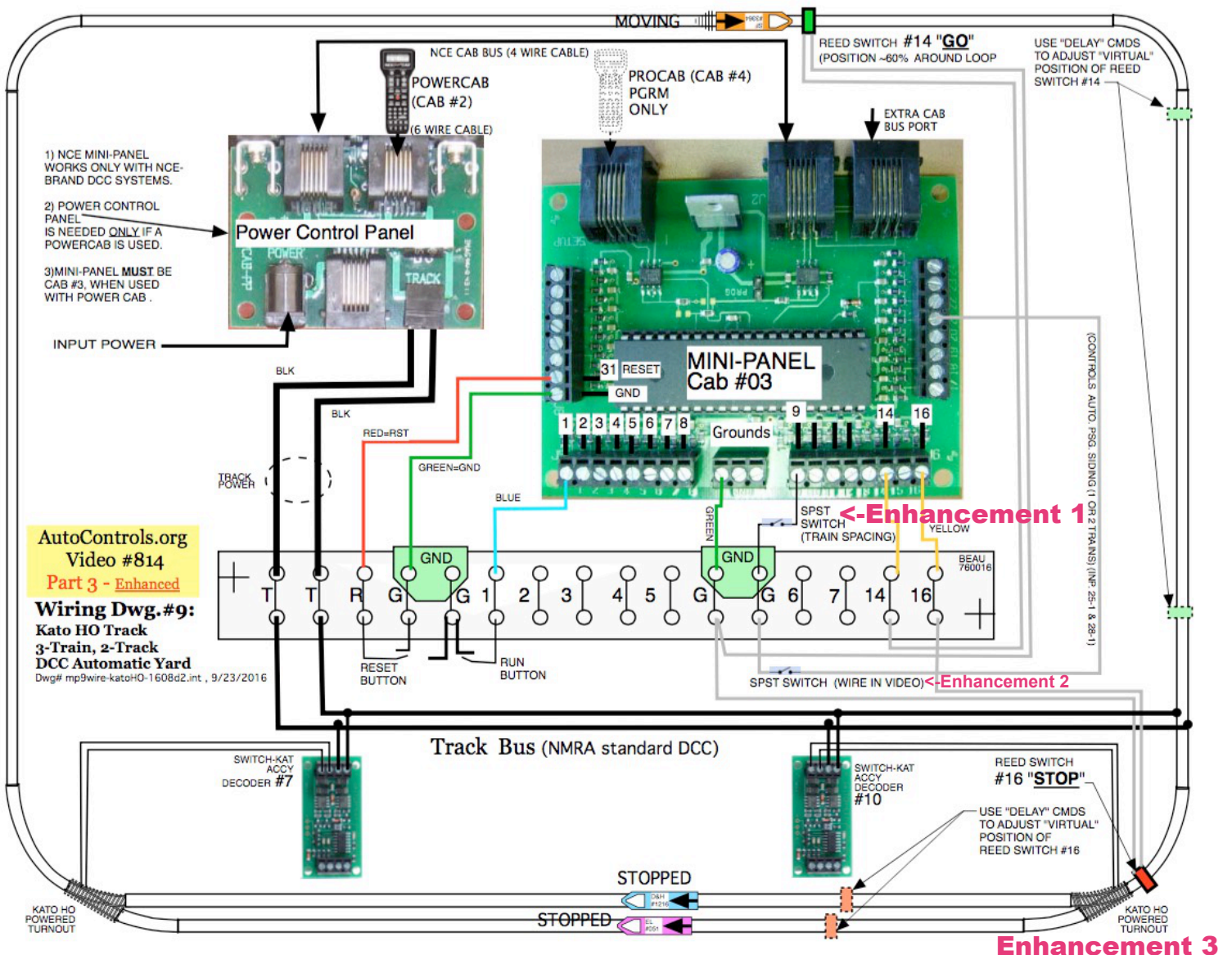
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Inp	S	Command	Entry	Action	Summary
				Configuration Memory	
		Default=3, keep		Mem addr 0 = 3 (Cab bus address)	
		Default=5 keep		Mem addr 1 = 5 (Debounce timer)	
		Default=0, keep		Mem addr 2 = 0 (Format display unknown commds)	
		Default=0, chg. To **1**		Mem addr 3 = **1** (Continuous memory **1** and above)	
		Default=0, chg. To **3**		Mem addr 4 = **3** (Disabled inputs **3** and above)	
		Default=0, keep		Mem addr 5 = 0 (Interrupting wait commands)	
		##=========== ENGINE SETTINGS ===========##			
				Cab: Momentum Multiplier = 1, deaccl = 1 x acc	
				#051 ATLAS VIRGINIAN TRAINMASTER	
		M=0 (CV3 accel, CV4 decel) (use 2.5 sec after crossing RS#16 (instead of default 3))			Spd = 17
				#1216 ROCO D&H SHARKNOSE	
		M=9 (CV3 accel, CV4 decel)			Spd = 13
				#3364 KATO SF GEEP GP-35	
		M=7 (CV3 accel, CV4 decel) F5=strobe, F8=sound			Spd = 22
		##========= COMMAND LIBRARY =========##			
1		Delay 1/4 sec: **4**	5, 1, 2, **4**	Delay 1 second (¼ sec x **4**)	
2		Delay 4 sec: **2**	5, 1, 1, **2**	Delay 8 seconds (4 sec x **2**)	
3		Link to Input: **9**	5, 3, **9**	Go to Step **9** (magnet/reed switch test)	
4		End (Terminate)	5,7,1	Terminate (stop executing commands)	
5		nop	5,5,1	No Operation (do nothing, go to next step)	
6		>Select Loco: **003**	3, 1, **003**	Select Loco #3: (need "*" to indicate long adr)	
7		Speed Fwd: **10**	3, 2, 2, **10** F	START loco	
8		Skip if Inp: **16** Open	5, 6, 2, **16**	Skip next command if reed sw. #**16** is open	
9		Wait Inp: **16** Ground	5, 2, 1, **16**	wait for reed sw. #**16** to be closed (resistance decr)	
10		Macro **14**	2, **14**	Set both turnouts STRAIGHT (macro is in Cmmd. Stn.)	
11		Macro **15**	2, **15**	Set both turnouts CURVED (macro is in Cmmd. Stn.)	
		Accy: **7** Norm	1, **7**, 1	Set turnout # **7** STRAIGHT (**1** = straight)	
		Accy: **10** Rev	1, **10**, 2	Set turnout # **10** CURVED (**2** = curved)	
		Skip if Inp:**16** Grnd	5, 6, 1, **16**	Skip next command if reed sw. #**16** is closed	
		CYCLE TIMES: Complete 6-part cycle takes approx. 3-1/4 min (minimum delay) to 5 min (max delay).			
		INPUT COMMAND LOCATIONS – USED for the following "programs":			
(Pg 3)		• Inputs 2-18: Mode 3A/3B/3C – normal 3-train operation			
(Pg 5)		• Inputs 19-22: Mode 0 – reed switch testing			
(Pg 6)		• Inputs 23-28: Mode 2B & 2C – auto. passing siding (2-train operation)			
(Pg 6)		(with Input 21 grounded, 23 runs inside tracke, 26 runs outside track)			
(Pg7)		• Inputs 29-30: Mode 1 – automatic station stop (1-train operation)			
(Pg7)		• Inputs (no room): Mode 2A – automatic block (2-train operation) NO SPACE FOR THIS			
				Using Input 14 for mainline reed switch (T2)	
				Using Input 16 for siding reed switch (T1)	

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Inp	S	Command	Entry	Action	Summary
		Command	**Entry**	**Action**	**Summary**
		You can change the "Delay" commands at Steps 1-4, 4-3, 7-2, 10-1, 12-4, & 15-3 to make the trains stopped in the yard start sooner, or start later. • A 1 sec delay runs 2 trains as much as possible. • A 15 sec total delay keeps 2 trains parked as much as possible. • In this version, grounding Input 9 skips the long 14 sec. delay; and uses only the short 1 sec. delay.			
		##========= BUTTON 1: 3-Trains (Mode 3) ===##			
		To start, position #3364 on mainline, #1216 inside yard trk, #051 outside yard trk			
1	1	>Select Loco: **3364**	3, 1, **3364**	Select Loco #**3364**: Kato SF gray GP-35 diesel	
1	2	Speed Fwd: **22**	3, 2, 2, **22** F	START loco Speed **22**	
				#3364 SF GEEP GP-35 on mainline	**SEQ #1a**
1	3	Wait Inp: **14** Ground	5, 2, 1, **14**	Wait to reach "GO" reed sw. #**14** on mainline	
1	4	Delay 1/4 sec: **4**	5, 1, 2, **4**	Delay **1** seconds before starting train out of yard	
–	–				**Enhancement 1**
2	1	Skip if Inp: **9** Grnd	5, 6, 1, **9**	Skip next command if SPST switch. #**9** is closed (grnd)	**<==SKIP**
2	2	Delay 1/4 sec: **56**	5, 1, 2, **56**	Delay another **14** seconds before starting train in yard	
2	3	Macro **15**	2, **15**	Set both turnouts CURVED	
2	4	>Select Loco: **1216**	3, 1, **1216**	Select Loco #**1216**: D&H Sharknose Diesel	
–	–				
3	1	Speed Fwd: **13**	3, 2, 2, **13** F	START loco Speed **13**	1216 Exits Yard
3	2	>Select Loco: **3364**	3, 1, **3364**	Select Loco #**3364**: Kato SF gray GP-35 diesel	**SEQ #1b**
–	–				
3	3	Wait Inp: **16** Ground	5, 2, 1, **16**	Wait to reach "STOP" reed sw. #**16** in yard	**Enhancement 3**
3	4	Delay 1/4 sec: **12**	5, 1, 2, **12**	Delay **3** seconds to get loco past turnout entering yrd	**<--**
–	–				
4	1	Speed Fwd: **0**	3, 2, 2, **0** F	STOP loco (Speed 0)	3364 Stop in Yard
				# 1216 SHARK on mainline	**SEQ #2a**
4	2	Wait Inp: **14** Ground	5, 2, 1, **14**	Wait to reach "GO" reed sw. #**14** on mainline	
4	3	Delay 1/4 sec: **4**	5, 1, 2, **4**	Delay **1** seconds before starting train out of yard	
4	4	Skip if Inp: **9** Grnd	5, 6, 1, **9**	Skip next command if SPST switch. #**9** is closed (grnd)	**<==SKIP**
–	–				
5	1	Delay 1/4 sec: **56**	5, 1, 2, **56**	Delay another **14** seconds before starting train in yard	
5	2	Macro **14**	2, **14**	Set both turnouts STRAIGHT	
5	3	>Select Loco: **051**	3, 1, **051**	Select Loco #**051**: Virginian Trainmaster(long adr)	
5	4	Speed Fwd: **17**	3, 2, 2, **17** F	START loco Speed 17	051 Exits Yard
6	1	>Select Loco: **1216**	3, 1, **1216**	Select Loco #**1216**: D&H Sharknose Diesel	**SEQ #2b**
6	2	Wait Inp: **16** Ground	5, 2, 1, **16**	Wait to reach "STOP" reed sw. #**16** in yard	
6	3	Delay 1/4 sec: **12**	5, 1, 2, **12**	Delay **3** seconds to get loco past turnout entering yrd	**<--**
6	4	Speed Fwd: **0**	3, 2, 2, **0** F	STOP loco (Speed 0)	1216 Stop in Yard
				# 51 TRAINMASTER on mainline	**SEQ #3a**
7	1	Wait Inp: **14** Ground	5, 2, 1, **14**	Wait to reach "GO" reed sw. #**14** on mainline	
7	2	Delay 1/4 sec: **4**	5, 1, 2, **4**	Delay **1** seconds before starting train out of yard	
7	3	Skip if Inp: **9** Grnd	5, 6, 1, **9**	Skip next command if SPST switch. #**9** is closed (grnd)	**<==SKIP**
7	4	Delay 1/4 sec: **56**	5, 1, 2, **56**	Delay another **14** seconds before starting train in yard	
–	–				
8	1	Macro **15**	2, **15**	Set both turnouts CURVED	
8	2	>Select Loco: **3364**	3, 1, **3364**	Select Loco #**3364**: Kato SF gray GP-35 diesel	
8	3	Speed Fwd: **22**	3, 2, 2, **22** F	START loco Speed **22**	3364 Exits Yard
8	4	>Select Loco: **051**	3, 1, **051**	Select Loco #**051**: Virginian Trainmaster(long adr)	**SEQ #3b**

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Inp	S	Command	Entry	Action	Summary
–	–				
9	1	Wait Inp: **16** Ground	5, 2, 1, **16**	Wait to reach "STOP" reed sw. #**16** in yard	
9	2	Delay 1/4 sec: **12**	5, 1, 2, **12**	Delay **3** seconds to get loco past turnout entering yrd	**<--**
9	3	Speed Fwd: **0**	3, 2, 2, **0** F	STOP loco (Speed 0)	051 Stop in Yard
				#3364 SF GEEP GP-35 on mainline	**SEQ #4a**
9	4	Wait Inp: **14** Ground	5, 2, 1, **14**	Wait to reach "GO" reed sw. #**14** on mainline	
–	–				
10	1	Delay 1/4 sec: **4**	5, 1, 2, **4**	Delay **1** seconds before starting train out of yard	
10	2	Skip if Inp: **9** Grnd	5, 6, 1, **9**	Skip next command if SPST switch. #**9** is closed (grnd)	**<==SKIP**
10	3	Delay 1/4 sec: **56**	5, 1, 2, **56**	Delay another **14** seconds before starting train in yard	
10	4	Macro **14**	2, **14**	Set both turnouts STRAIGHT	
–	–				
11	1	>Select Loco: **1216**	3, 1, **1216**	Select Loco #**1216**: D&H Sharknose Diesel	
11	2	Speed Fwd: **13**	3, 2, 2, **13** F	START loco Speed **13**	1216 Exits Yard
11	3	>Select Loco: **3364**	3, 1, **3364**	Select Loco #**3364**: Kato SF gray GP-35 diesel	**SEQ #4b**
11	4	Wait Inp: **16** Ground	5, 2, 1, **16**	Wait to reach "STOP" reed sw. #**16** in yard	
–	–				
12	1	Delay 1/4 sec: **12**	5, 1, 2, **12**	Delay **3** seconds to get loco past turnout entering yrd	**<--**
12	2	Speed Fwd: **0**	3, 2, 2, **0** F	STOP loco (Speed 0)	3364 Stops in Yard
				# 1216 SHARK on mainline	**SEQ #5a**
12	3	Wait Inp: **14** Ground	5, 2, 1, **14**	Wait to reach "GO" reed sw. #**14** on mainline	
12	4	Delay 1/4 sec: **4**	5, 1, 2, **4**	Delay **1** seconds before starting train out of yard	
–	–				
13	1	Skip if Inp: **9** Grnd	5, 6, 1, **9**	Skip next command if SPST switch. #**9** is closed (grnd)	**<==SKIP**
13	2	Delay 1/4 sec: **56**	5, 1, 2, **56**	Delay another **14** seconds before starting train in yard	
13	3	Macro **15**	2, **15**	Set both turnouts CURVED	
13	4	>Select Loco: **051**	3, 1, **051**	Select Loco #**051**: Virginian Trainmaster(long adr)	
–	–				
14	1	Speed Fwd: **17**	3, 2, 2, **17** F	START loco Speed 17	051 Exits Yard
14	2	>Select Loco: **1216**	3, 1, **1216**	Select Loco #**1216**: D&H Sharknose Diesel	**SEQ #5b**
14	3	Wait Inp: **16** Ground	5, 2, 1, **16**	Wait to reach "STOP" reed sw. #**16** in yard	
14	4	Delay 1/4 sec: **12**	5, 1, 2, **12**	Delay **3** seconds to get loco past turnout entering yrd	**<--**
–	–				
15	1	Speed Fwd: **0**	3, 2, 2, **0** F	STOP loco (Speed 0)	1216 Stops in Yard
				# 51 TRAINMASTER on mainline	**SEQ #6a**
15	2	Wait Inp: **14** Ground	5, 2, 1, **14**	Wait to reach "GO" reed sw. #**14** on mainline	
15	3	Delay 1/4 sec: **4**	5, 1, 2, **4**	Delay **1** seconds before starting train out of yard	
15	4	Skip if Inp: **9** Grnd	5, 6, 1, **9**	Skip next command if SPST switch. #**9** is closed (grnd)	**<==SKIP**
–	–				
16	1	Delay 1/4 sec: **56**	5, 1, 2, **56**	Delay another **14** seconds before starting train in yard	
16	2	Macro **14**	2, **14**	Set both turnouts STRAIGHT	
16	3	>Select Loco: **3364**	3, 1, **3364**	Select Loco #**3364**: Kato SF gray GP-35 diesel	
16	4	Speed Fwd: **22**	3, 2, 2, **22** F	START loco Speed **22**	3364 Exits Yard
–	–				
17	1	>Select Loco: **051**	3, 1, **051**	Select Loco #**051**: Virginian Trainmaster(long adr)	**SEQ #6b**
17	2	Wait Inp: **16** Ground	5, 2, 1, **16**	Wait to reach "STOP" reed sw. #**16** in yard	
17	3	Delay 1/4 sec: **12**	5, 1, 2, **12**	Delay **3** seconds to get loco past turnout entering yrd	**<--**
17	4	Speed Fwd: **0**	3, 2, 2, **0** F	STOP loco (Speed 0)	051 Stops in Yard

Inp	S	Command	Entry	Action	Summary
18	1	Link to Input: **1**	5, 3, **1**	Go back to Input #**1** and REPEAT Sequence #1a	
18	2	nop	5,5,1	No Operation (do nothing, go to next step)	
18	3	nop	5,5,1	No Operation (do nothing, go to next step)	
18	4	nop	5,5,1	No Operation (do nothing, go to next step)	
				(no change in reed switch test routine from Part 1)	

##==== Input 19: Reed Switch Test (Mode 0) ==##

Inp	S	Command	Entry	Action	Summary
				== TEST IF MAGNETS ARE CLOSING REED SWITCHES =	
19	1	Skip if Inp: **14** Open	5, 6, 2, **14**	Skip next command if reed sw. #**14** is open	Chk mainline switch
19	2	Link to Input: **21**	5, 3, **21**	Goto Inp #**21** & cycle turnouts if reed sw.#**14** closed	
19	3	Skip if Inp: **16** Open	5, 6, 2, **16**	Skip next command if reed sw. #**16** is open	Chk yard switches
19	4	Link to Input: **21**	5, 3, **21**	Goto Inp #**21** & cycle turnouts if reed sw.#**16** closed	
20	1	Link to Input: **19**	5, 3, **19**	Go to Input #**19** and repeat scanning of reed switches	
20	2	nop	5,5,1		
20	3	nop	5,5,1		
20	4	nop	5,5,1		
–	–			=============== CHANGE TURNOUTS =====	
21	1	Accy: **10** Norm	1, **10**, 1	Rear turnout # **10** STRAIGHT	
21	2	Delay 1/4 sec: **1**	5, 1, 2, **1**	Delay 1/4 second (¼ sec x **1**)	
21	3	Accy: **7** Norm	1, **7**, 1	Front turnout # **7** STRAIGHT	
21	4	Delay 1/4 sec: **3**	5, 1, 2, **3**	Delay 3/4 second (¼ sec x **3**)	
–	–				
22	1	Accy: **10** Rev	1, **10**, 2	Rear turnout # **10** CURVED	
22	2	Accy: **7** Rev	1, **7**, 2	Front turnout # **7** CURVED	
22	3	Delay 1/4 sec: **4**	5, 1, 2, **4**	Delay 1 second (¼ sec x **4**)	
22	4	Link to Input: **19**	5, 3, **19**	Go to Input #**19** and repeat scanning of reed switches	
–	–				

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Inp	S	Command	Entry	Action	Summary
		# Input 23: Auto. Passing Siding, 2 Trains (Mode 2B/2C) #			
		Runs #1216 inside yard, #051 outside yard (Park #3364 on siding)			
				== RUN INSIDE TRACK - 1216 SHARK==	
23	1	Macro **15**	2, **15**	Set both turnouts CURVED	**SEQ #S**
23	2	>Select Loco: **1216**	3, 1, **1216**	Select Loco #**1216**: D&H Sharknose Diesel	
23	3	Speed Fwd: **13**	3, 2, 2, **13** F	**START Inside Track Loco**	
23	4	Delay 4 sec: **2** **(20)**	5, 1, 1, **2**	Delay 80 seconds after train starts (1-1/2 laps)	(40 sec 1 lap)
				• (should have min. 10 sec. to exit reed sw. area	
				• 80 sec. results in 2 laps (use 8 sec for 1 lap)	
	–				
24	1	Wait Inp: **16** Ground	5, 2, 1, **16**	Wait to reach "STOP" reed sw. #**16** in yard	
24	2	Delay 1/4 sec: **12**	5, 1, 2, **12**	Delay **3** seconds to get loco past turnout entering yrd	**<--**
24	3	Speed Fwd: **0**	3, 2, 2, **0** F	**STOP Inside Track Loco**	
24	4	Delay 4 sec: **2** **(20)**	5, 1, 1, **2**	Delay 8 seconds between trains (4 sec x **2**)	
					Enhancement 2
25	1	Skip if Inp: **21** Open	5, 6, 2, **21**	Skip next command if input # **21** is open	**<==SKIP**
25	2	Link to Input: **23**	5, 3, **23**	Go to Input #**23** and repeat running loco #1216	
				• normal 2 train operation is open. Connect wire to ground input #21 for testing to run just 1 train	
25	3	nop	5,5,1		
25	4	nop	5,5,1		
–	–				
				=== RUN OUTSIDE TRACK-#51 EL TM ==	
26	1	Macro **14**	2, **14**	Set both turnouts STRAIGHT	
26	2	>Select Loco: ***051**	3, 1, ***051**	Select Loco #**051**: Virginian Trainmaster(long adr)	
26	3	Speed Fwd: **17**	3, 2, 2, **17** F	**START Outside Track Loco**	
26	4	Delay 4 sec: **2** **(20)**	5, 1, 1, **2**	Delay 80 seconds after train starts (1-1/2 laps)	(40 sec 1 lap)
				• 80 sec. results in 2 laps (use 8 sec for 1 lap)	
–	–				
27	1	Wait Inp: **16** Ground	5, 2, 1, **16**	Wait to reach "STOP" reed sw. #**16** in yard	**SEQ #I**
27	2	Delay 1/4 sec: **12**	5, 1, 2, **12**	Delay **3** seconds to get loco past turnout entering yrd	**<--**
27	3	Speed Fwd: **0**	3, 2, 2, **0** F	**STOP Outside Track Loco**	
27	4	Delay 4 sec: **2** **(20)**	5, 1, 1, **2**	Delay 8 seconds between trains (4 sec x **2**)	
–	–				
28	1	Skip if Inp: **21** Open	5, 6, 2, **21**	Skip next command if input # **21** is open	**<==SKIP**
28	2	Link to Input: **26**	5, 3, **26**	Go to Input #**26** and repeat running loco #51	
				• normal 2 train operation is open. Connect wire to ground input #21 for testing to run just 1 train	
28	3	Link to Input: **23**	5, 3, **23**	Go back to Input #**23** and REPEAT sequence–	
28	4	nop	5,5,1		

Inp	S	Command	Entry	Action	Summary
		##====== Input 29 = 1 Train (Mode 1B) =====##			
			(Automatic Station Stop) (no turnout command because no room for it)		
			Runs 3364 outside yard track. (Park # 051 on siding, #1216 stays parked inside yard trk)		
29	1	>Select Loco: **3364**	3, 1, **3364**	Select Loco #**3364**: Kato SF gray GP–35 diesel	**SEQ #1**
29	2	Speed Fwd: **22**	3, 2, 2, **22** F	START loco Speed 22	
29	3	Delay 4 sec: **2** **(15)**	5, 1, 1, **2**	Delay 8 seconds after train starts (1–1/2 laps)	(40 sec 1 lap)
29	4	Wait Inp: **16** Ground	5, 2, 1, **16**	Wait to reach reed sw. #**16** in yard	**SEQ #2**
–	–				
30	1	Delay 1/4 sec: **12**	5, 1, 2, **12**	Delay **3** seconds to get loco past turnout entering yrd	**<--**
30	2	Speed Fwd: **0**	3, 2, 2, **0** F	STOP loco (Speed 0)	
30	3	Delay 1/4 sec: **20**	5, 1, 2, **20**	Delay **5** seconds before starting up again (¼ sec x **20**)	
30	4	Link to Input: **29**	5, 3, **29**	Go back to Input #**29** and REPEAT sequence	
–	–				
31	1	nop	5,5,1	(don't use, will be executed upon startup)	
31	2	nop	5,5,1	(don't use, will be executed upon startup)	
31	3	nop	5,5,1	(don't use, will be executed upon startup)	
31	4	nop	5,5,1	(don't use, will be executed upon startup)	
–	–				
		(NO ROOM LEFT FOR FOLLOWING ROUTINE)			
		##==== Input xx: Auto. Block, 2 Trains (Mode 2A)==##			
			To start: #3364 is on mainline, #1216 in yard (#051 stays parked on outside siding)		
–	–			**# 3364 SF GP-35 (start on mainline)**	**SEQ #A1**
	1	Macro **15**	2, **15**	Set both turnouts CURVED	
	2	>Select Loco: **3364**	3, 1, **3364**	Select Loco #**3364**: Kato SF gray GP–35 diesel	
	3	Speed Fwd: **22**	3, 2, 2, **22** F	START loco Speed 22	3364 init start
	4	Wait Inp: **14** Ground	5, 2, 1, **14**	Wait to reach reed sw. #**14** on mainline	
	–				
	1	Accy: **2000** Norm	1, **2000**, 1	Turnout # **2000** straight (dummy cmd to blink LED)	
	2	Delay 1/4 sec: **16**	5, 1, 2, **16**	Delay **4** seconds before starting other loco	
	3	>Select Loco: **1216**	3, 1, **1216**	Select Loco #**1216**: D&H Sharknose Diesel	**SEQ #A2**
	4	Speed Fwd: **13**	3, 2, 2, **13** F	START loco Speed 13	1216 Exit Yard
	–				
	1	>Select Loco: **3364**	3, 1, **3364**	Select Loco #**3364**: Kato SF gray GP–35 diesel	
	2	Wait Inp: **16** Ground	5, 2, 1, **16**	Wait to reach reed sw. #**16** in yard	
	3	Speed Fwd: **0**	3, 2, 2, **0** F	STOP loco (Speed 0)	3364 Stop in Yard
				# 1216 SHARK now on mainline	**SEQ #B1**
	4	Wait Inp: **14** Ground	5, 2, 1, **14**	Wait to reach reed sw. #**14** on mainline	
	–				
	1	Accy: **2000** Norm	1, **2000**, 1	Turnout # **2000** straight (dummy cmd to blink LED)	
	2	Delay 1/4 sec: **16**	5, 1, 2, **16**	Delay **4** seconds before starting other loco	
	3	>Select Loco: **3364**	3, 1, **3364**	Select Loco #**3364**: Kato SF gray GP–35 diesel	
	4	Speed Fwd: **22**	3, 2, 2, **22** F	START loco Speed 22	3364 Exit Yard
–	–				
	1	>Select Loco: **1216**	3, 1, **1216**	Select Loco #**1216**: D&H Sharknose Diesel	**SEQ #B2**
	2	Wait Inp: **16** Ground	5, 2, 1, **16**	Wait to reach reed sw. #**16** in yard	
	3	Speed Fwd: **0**	3, 2, 2, **0** F	STOP loco (Speed 0)	1216 Stop in Yard
	4	Link to Input: **xx**	5, 3, **xx**	Go back to Input #**xx** and REPEAT sequence	

Inp	S	Command	Entry	Action	Summary
–	–				

#

##============ BUTTON 2 = 3-Trains ========##

To start, position #3364 on mainline, #1216 inside yard trk, #051 outside yard trk

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##====== INPUT 19 = Reed Switch Test =====##

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##== INPUT 19 = Auto. Passing Siding, 2 Trains =##

Runs #1216 inside yard, #051 outside yard (Park #3364 on siding)

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##====== INPUT 29 = 1 Train =====##

Runs 051 outside yard track. (Park #3364 on siding, #1216 stays parked inside yard trk)

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There is no space for the following routine:

##====== INPUT xx = Auto. Block, 2 Trains =====##

To start: #3364 is on mainline, #1216 in yard (#051 stays parked on outside siding)