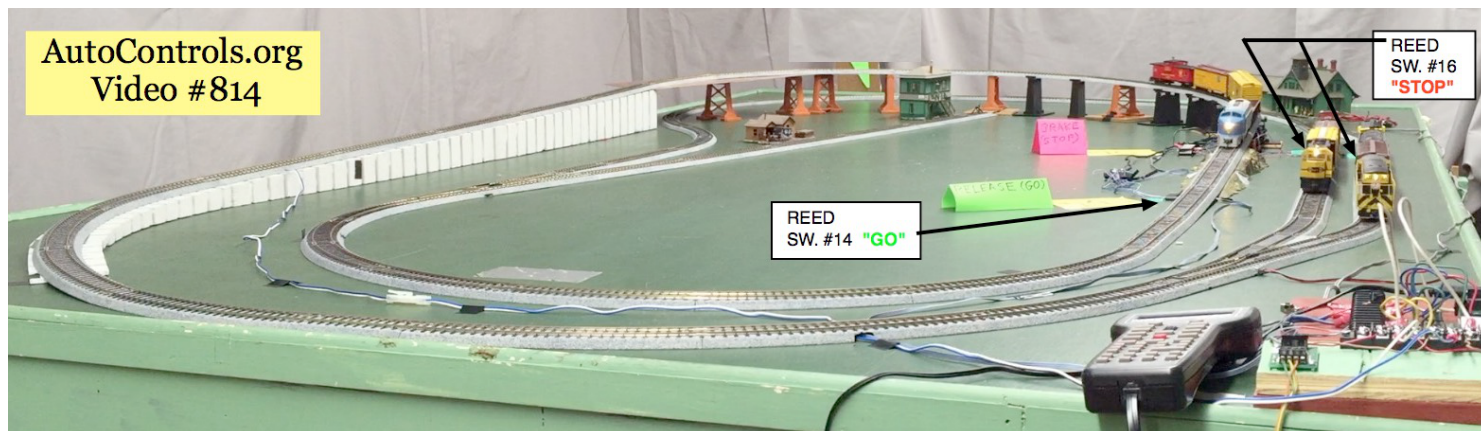
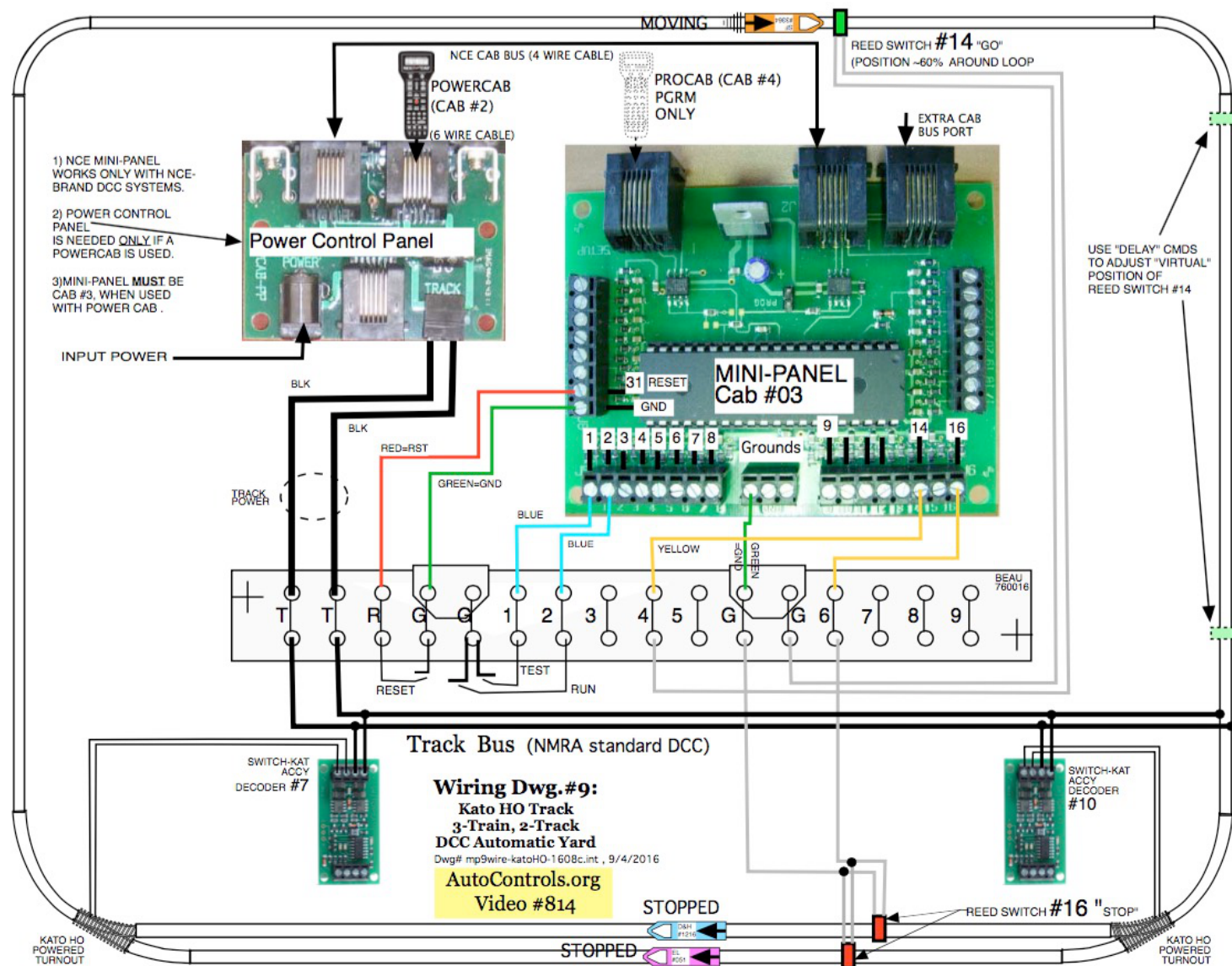


NCE Mini Panel 9: HO 2-Track Auto. Yard 3 Trains 9/5/2016

AutoControls.org
Video #814

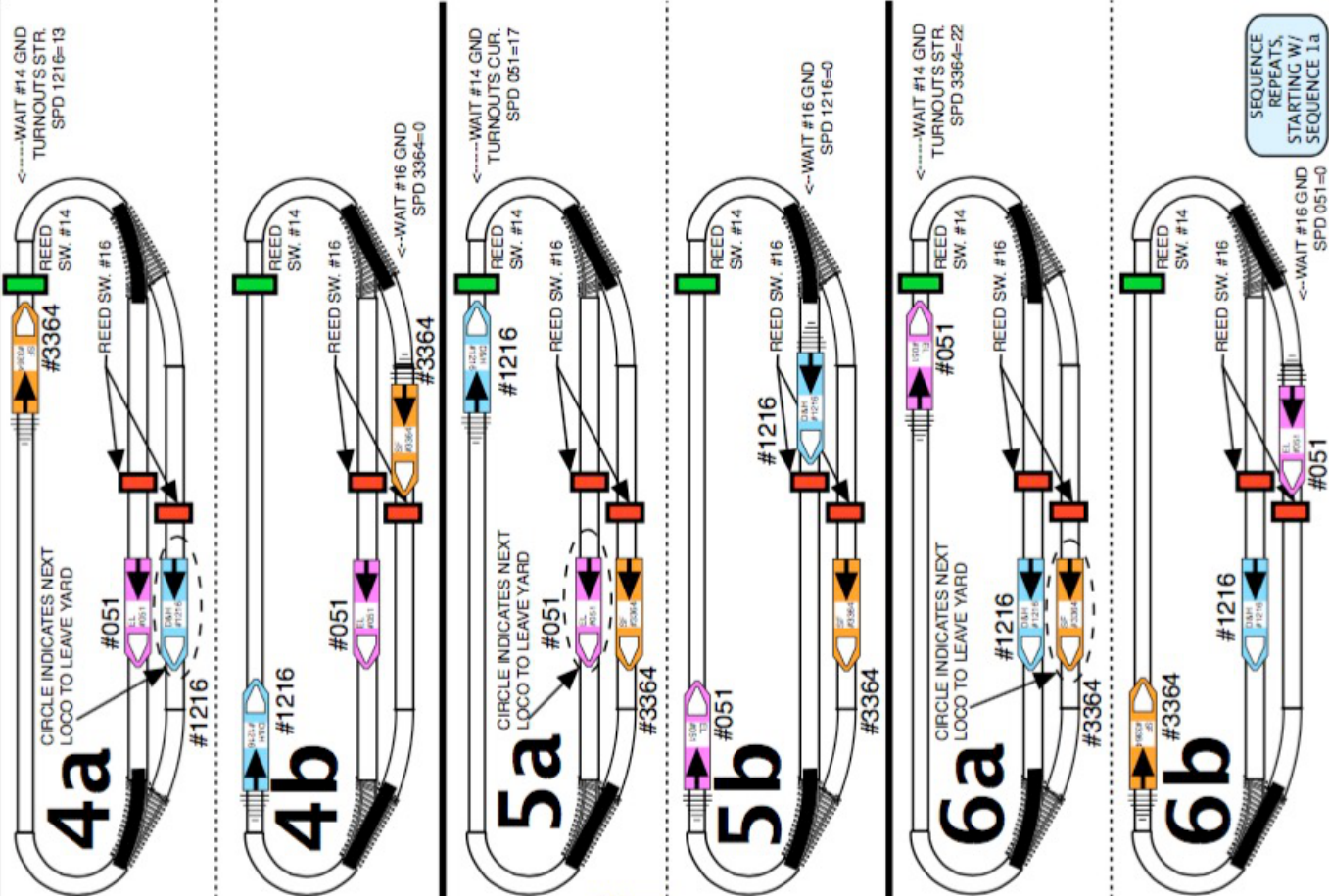
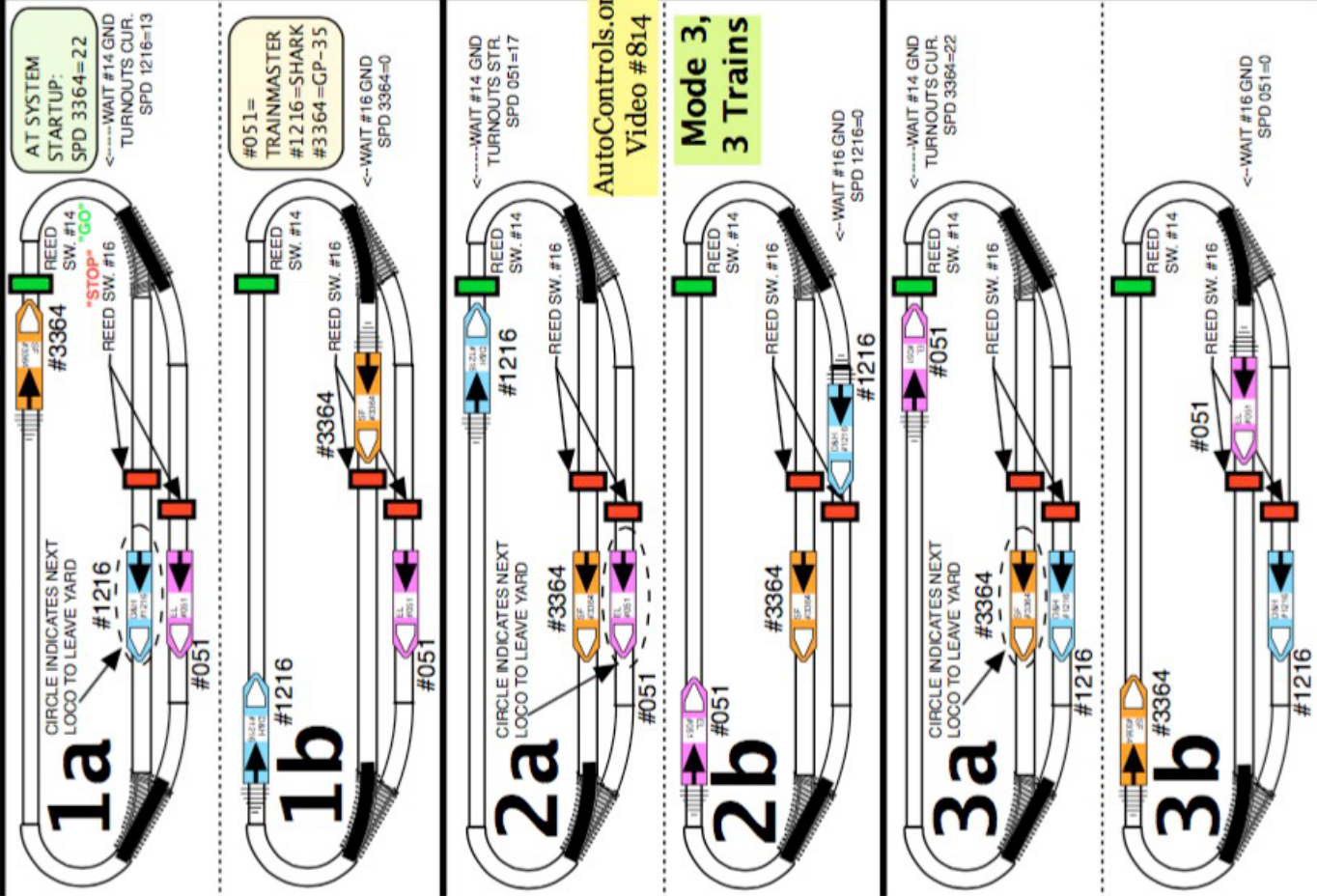


Note: The below Wiring Drawing, and the "Sequence Diagram" on Page 2 -- are also available as SEPARATE PDF files on the AutoControls.org website (link should be with description for Video #814).



Sequence Diagram For 3 Trains – Plan 9 – HO

mp9-seqDiagDb.intaglio – 8/30/2016



NCE Mini Panel 9: HO 2-Track Auto. Yard 3 Trains 9/5/2016

Inp	S	Command	Entry	Action
				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)		
				#1216 ROCO D&H SHARKNOSE
		M=9 (CV3 accel, CV4 decel)		
				#3364 KATO SF GEEP GP-35
		M=7 (CV3 accel, CV4 decel) F5=strobe, F8=sound		
		##===== 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	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 Ground	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 delay) min to 5 min (max delay)		
		Delay after Reed Sw.#14 is 3 sec nominal (15 sec max, 1 sec min)		
		To change the "timing" between trains: Change "Delay" commands at Steps 2-4, 4-4, 6-4, 8-4, 10-4, and 12-4. (Makes train in yard pull out sooner or pull out later.)		
INPUT COMMAND LOCATIONS USED for the following "programs":				
(Pg 4)	• Inputs 2-14: Mode 3A/3B/3C - normal 3-train operation			
(Pg 6)	• Inputs 15-18: Mode 0 - reed switch testing			
(Pg 8)	• Inputs 19-23: Mode 2B & 2C - automatic passing siding (2-train operation)			
(Pg 9)	• Inputs 24-28: Mode 2A - automatic block (2-train operation)			
(Pg 9)	• Inputs 29-30: Mode 1 - automatic station stop (1-train operation)			
			Using Input 14 for mainline reed switch (T2)	
			Using Input 16 for siding reed switch (T1)	

Summary

Spd = 17

Spd = 13

Spd = 22

NCE Mini Panel 9: HO 2-Track Auto. Yard 3 Trains 9/5/2016

Inp	S	Command	Entry	Action
				Button 1: test reed-switches
1	1	Link to Input: 15	5, 3, 15	Go to Step # 15 (magnet/reed switch test)
1	2	end	5,7,1	
1	3	end	5,7,1	
1	4	end	5,7,1	
		##===== BUTTON 2: 3-Trains (Mode 3) ===##		
		To start, position #3364 on mainline, #1216 inside yard trk, #051 outside yard trk		
2	1	>Select Loco: 3364	3, 1, 3364	Select Loco # 3364 : Kato SF gray GP-35 diesel
2	2	Speed Fwd: 22	3, 2, 2, 22 F	START loco Speed 22
				#3364 SF GEEP GP-35 on mainline
2	3	Wait Inp: 14 Ground	5, 2, 1, 14	Wait to reach reed sw. # 14 on mainline
2	4	Delay 1/4 sec: 12	5, 1, 2, 12	Delay 3 seconds before chg turnouts (¼ sec x 12)
-	-			• Set to 4 (1 sec) to have 2 trains running much as possible • Set to 60 (15 sec) to have only 1 train running • Use same delay times at 4-4, 6-4, 8-4, 10-4, & 12-4
3	1	Macro 15	2, 15	Set both turnouts CURVED
3	2	>Select Loco: 1216	3, 1, 1216	Select Loco # 1216 : D&H Sharknose Diesel
3	3	Speed Fwd: 13	3, 2, 2, 13 F	START loco Speed 13
3	4	>Select Loco: 3364	3, 1, 3364	Select Loco # 3364 : Kato SF gray GP-35 diesel
-	-			
4	1	Wait Inp: 16 Ground	5, 2, 1, 16	Wait to reach reed sw. # 16 in yard
4	2	Speed Fwd: 0	3, 2, 2, 0 F	STOP loco (Speed 0)
				# 1216 SHARK on mainline
4	3	Wait Inp: 14 Ground	5, 2, 1, 14	Wait to reach reed sw. # 14 on mainline
4	4	Delay 1/4 sec: 12	5, 1, 2, 12	Delay 3 seconds before chg turnouts (¼ sec x 12)
-	-			• Use same delay here as used at Input 2-4 above
5	1	Macro 14	2, 14	Set both turnouts STRAIGHT
5	2	>Select Loco: 051	3, 1, 051	Select Loco # 051 : Virginian Trainmaster(long adr)
5	3	Speed Fwd: 17	3, 2, 2, 17 F	START loco Speed 17
5	4	>Select Loco: 1216	3, 1, 1216	Select Loco # 1216 : D&H Sharknose Diesel
-	-			
6	1	Wait Inp: 16 Ground	5, 2, 1, 16	Wait to reach reed sw. # 16 in yard
6	2	Speed Fwd: 0	3, 2, 2, 0 F	STOP loco (Speed 0)
				# 51 TRAINMASTER on mainline
6	3	Wait Inp: 14 Ground	5, 2, 1, 14	Wait to reach reed sw. # 14 on mainline
6	4	Delay 1/4 sec: 12	5, 1, 2, 12	Delay 3 seconds before chg turnouts (¼ sec x 12)
-	-			• Use same delay here as used at Input 2-4 above
7	1	Macro 15	2, 15	Set both turnouts CURVED
7	2	>Select Loco: 3364	3, 1, 3364	Select Loco # 3364 : Kato SF gray GP-35 diesel
7	3	Speed Fwd: 22	3, 2, 2, 22 F	START loco Speed 22
7	4	>Select Loco: 051	3, 1, 051	Select Loco # 051 : Virginian Trainmaster(long adr)
-	-			
8	1	Wait Inp: 16 Ground	5, 2, 1, 16	Wait to reach reed sw. # 16 in yard
8	2	Speed Fwd: 0	3, 2, 2, 0 F	STOP loco (Speed 0)
				#3364 SF GEEP GP-35 on mainline
8	3	Wait Inp: 14 Ground	5, 2, 1, 14	Wait to reach reed sw. # 14 on mainline
8	4	Delay 1/4 sec: 12	5, 1, 2, 12	Delay 3 seconds before chg turnouts (¼ sec x 12)
				• Use same delay here as used at Input 2-4 above

Summary

SEQ #1a

1216 Exits Yard

SEQ #1b

3364 Stops in Yard

SEQ #2a

051 Exits Yard

SEQ #2b

1216 Stops in Yard

SEQ #3a

3364 Exits Yard

SEQ #3b

051 Stop in Yard

SEQ #4a

NCE Mini Panel 9: HO 2-Track Auto. Yard 3 Trains 9/5/2016

[illegible]

Summary

1216 Exits Yard

SEQ #4b

3364 Stops in Yard

SEQ #5a

051 Exits Yard

SEQ #5b

1216 Stops in Yard

SEQ #6a

3364 Exits Yard

SEQ #6b

051 Stops in Yard

NCE Mini Panel 9: HO 2-Track Auto. Yard 3 Trains 9/5/2016

[illegible]

Summary

Chk Reed Sw's

Chk mainline switch

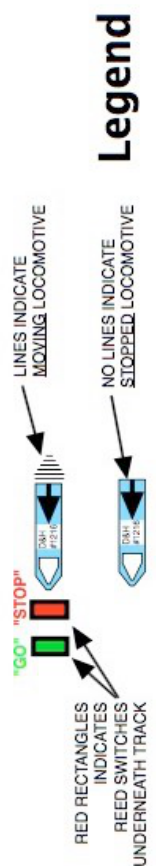
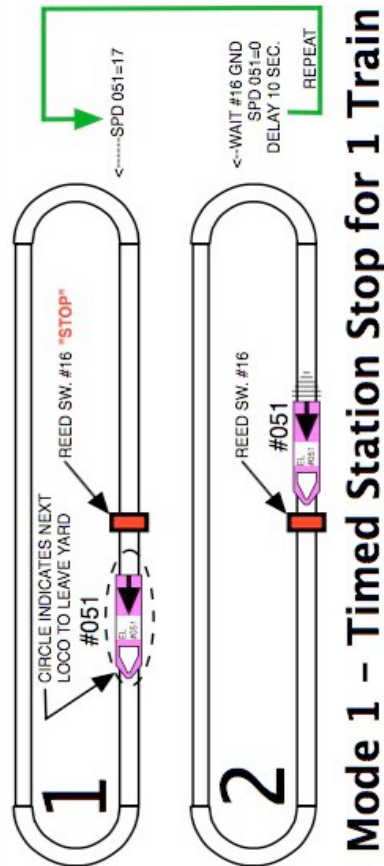
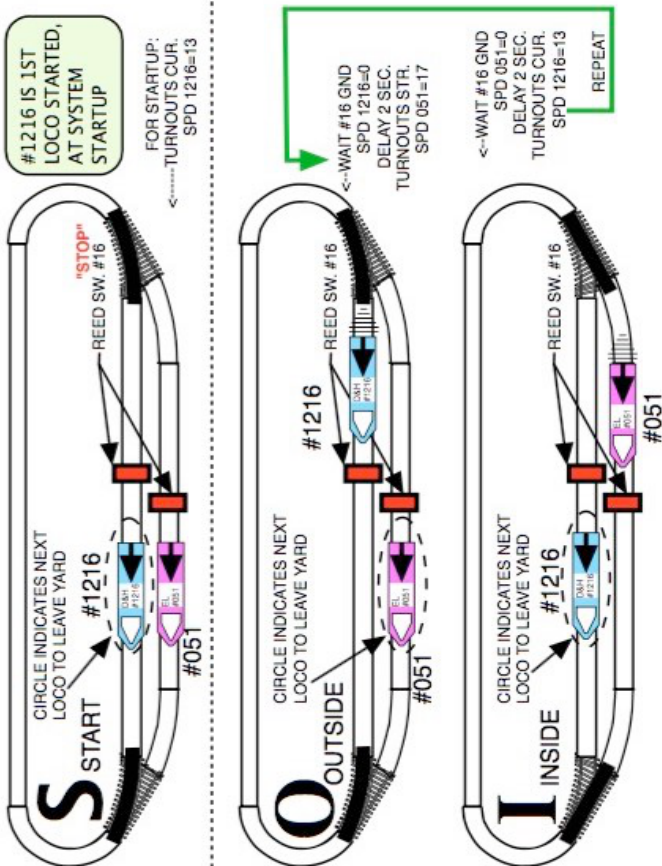
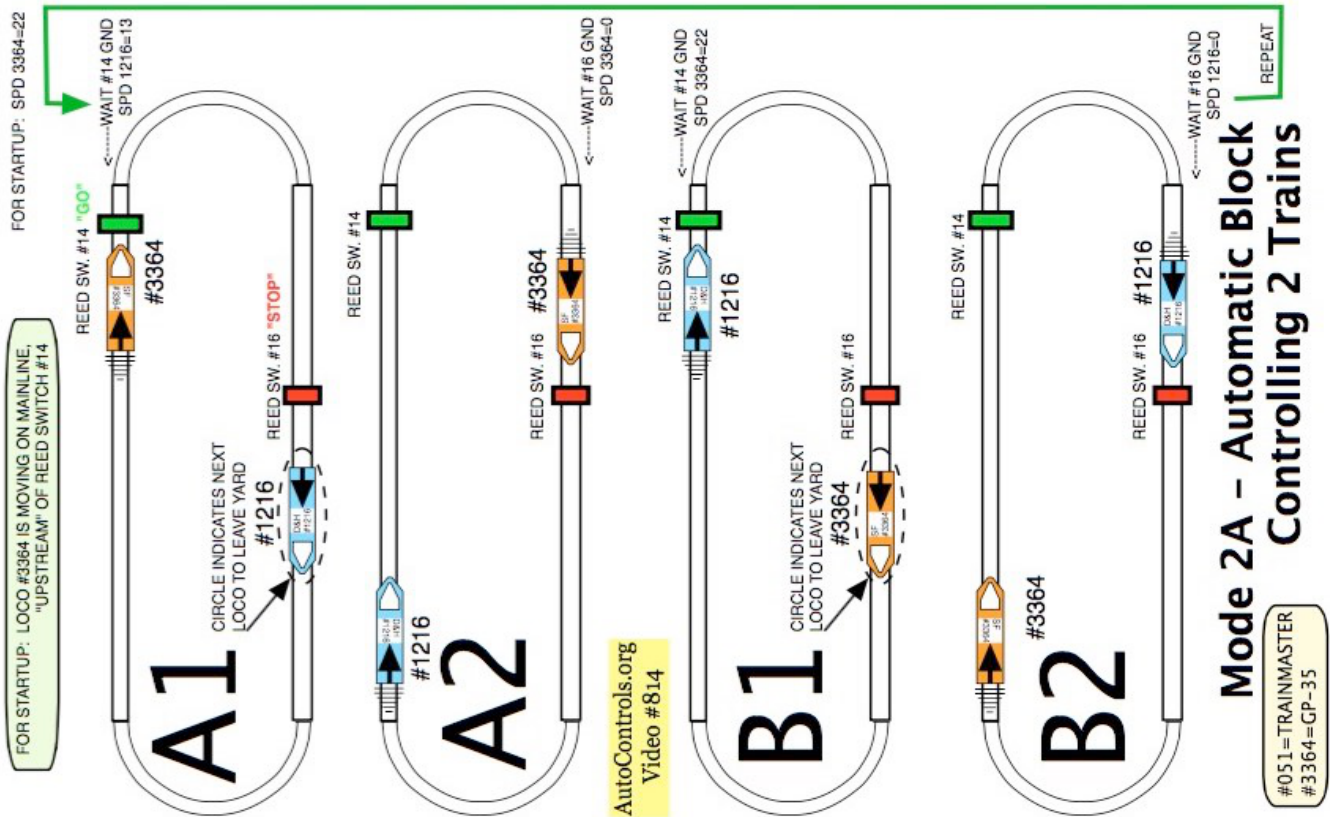
Chk yard switches

Inp	S	Command	Entry	Action
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Summary

Sequence Diagrams For 2 Trains – Plan 9 – HO

mp9-seqDiagDb.intaglio – 8/30/2016



NCE Mini Panel 9: HO 2-Track Auto. Yard 3 Trains 9/5/2016

[illegible]

Summary

SEQ #S

(40 sec 1 lap)

SEQ #0

(40 sec 1 lap)

SEQ #1

NCE Mini Panel 9: HO 2-Track Auto. Yard 3 Trains 9/5/2016

Inp	S	Command	Entry	Action
##===== Input 24: 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)
24	1	Macro 15	2, 15	Set both turnouts CURVED
24	2	>Select Loco: 3364	3, 1, 3364	Select Loco # 3364 : Kato SF gray GP-35 diesel
24	3	Speed Fwd: 22	3, 2, 2, 22 F	START loco Speed 22
24	4	Wait Inp: 14 Ground	5, 2, 1, 14	Wait to reach reed sw. # 14 on mainline
-	-			
25	1	Accy: 2000 Norm	1, 2000 , 1	Turnout # 2000 straight (dummy cmd to blink LED)
25	2	Delay 1/4 sec: 16	5, 1, 2, 16	Delay 4 seconds before starting other loco
25	3	>Select Loco: 1216	3, 1, 1216	Select Loco # 1216 : D&H Sharknose Diesel
25	4	Speed Fwd: 13	3, 2, 2, 13 F	START loco Speed 13
-	-			
26	1	>Select Loco: 3364	3, 1, 3364	Select Loco # 3364 : Kato SF gray GP-35 diesel
26	2	Wait Inp: 16 Ground	5, 2, 1, 16	Wait to reach reed sw. # 16 in yard
26	3	Speed Fwd: 0	3, 2, 2, 0 F	STOP loco (Speed 0)
				# 1216 SHARK now on mainline
26	4	Wait Inp: 14 Ground	5, 2, 1, 14	Wait to reach reed sw. # 14 on mainline
-	-			
27	1	Accy: 2000 Norm	1, 2000 , 1	Turnout # 2000 straight (dummy cmd to blink LED)
27	2	Delay 1/4 sec: 16	5, 1, 2, 16	Delay 4 seconds before starting other loco
27	3	>Select Loco: 3364	3, 1, 3364	Select Loco # 3364 : Kato SF gray GP-35 diesel
27	4	Speed Fwd: 22	3, 2, 2, 22 F	START loco Speed 22
-	-			
28	1	>Select Loco: 1216	3, 1, 1216	Select Loco # 1216 : D&H Sharknose Diesel
28	2	Wait Inp: 16 Ground	5, 2, 1, 16	Wait to reach reed sw. # 16 in yard
28	3	Speed Fwd: 0	3, 2, 2, 0 F	STOP loco (Speed 0)
28	4	Link to Input: 24	5, 3, 24	Go back to Input # 24 and REPEAT sequence
-	-			
##===== Input 29 = 1 Train (Mode 1B) =====##				
		(Automatic Station Stop)		
-	-	Runs 051 outside yard track. (Park #3364 on siding, #1216 stays parked inside yard trk)		
29	1	Macro 14	2, 14	Set both turnouts STRAIGHT
29	2	>Select Loco: *051	3, 1, *051	Select Loco # 051 : Virginian Trainmaster(long adr)
29	3	Speed Fwd: 17	3, 2, 2, 17 F	START loco Speed 17
29	4	Delay 4 sec: 15 (2)	5, 1, 1, 15	Delay 60 seconds after train starts (1-1/2 laps)
-	-			
30	1	Wait Inp: 16 Ground	5, 2, 1, 16	Wait to reach reed sw. # 16 in yard
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 (1/4 sec x 20)
30	4	Link to Input: 29	5, 3, 29	Go back to Input # 28 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)

Summary

SEQ #A1

3364 init start

SEQ #A2

1216 Exit Yard

3364 Stop in Yard

SEQ #B1

3364 Exit Yard

SEQ #B2

1216 Stop in Yard

SEQ #1

(40 sec 1 lap)

SEQ #2

NCE Mini Panel 9: HO 2-Track Auto. Yard 3 Trains 9/5/2016

Summary

Inp	S	Command	Entry	Action
-	-			
		##===== BUTTON 2 = 3-Trains =====## To start, position #3364 on mainline, #1216 inside yard trk, #051 outside yard trk - ##===== INPUT 15 = Reed Switch Test =====## - ##== INPUT 19 = Auto. Passing Siding, 2 Trains ==## Runs #1216 inside yard, #051 outside yard (Park #3364 on siding) - ##===== INPUT 24 = Auto. Block, 2 Trains =====## To start: #3364 is on mainline, #1216 in yard (#051 stays parked on outside siding) - ##===== INPUT 29 = 1 Train =====## Runs 051 outside yard track. (Park #3364 on siding, #1216 stays parked inside yard trk) -		
		ANOMALIES: * Gondola going fwd. causes frt. turnout to chg to str. * Engine 051 was ignoring MP start command. * Engine 1216: Needs 3 pushes of "8" key to turn off sound. * PowerCab: 3 presses Emer. Stop only stops loco selected * PowerCab: changes engine number, # of locos in recall		