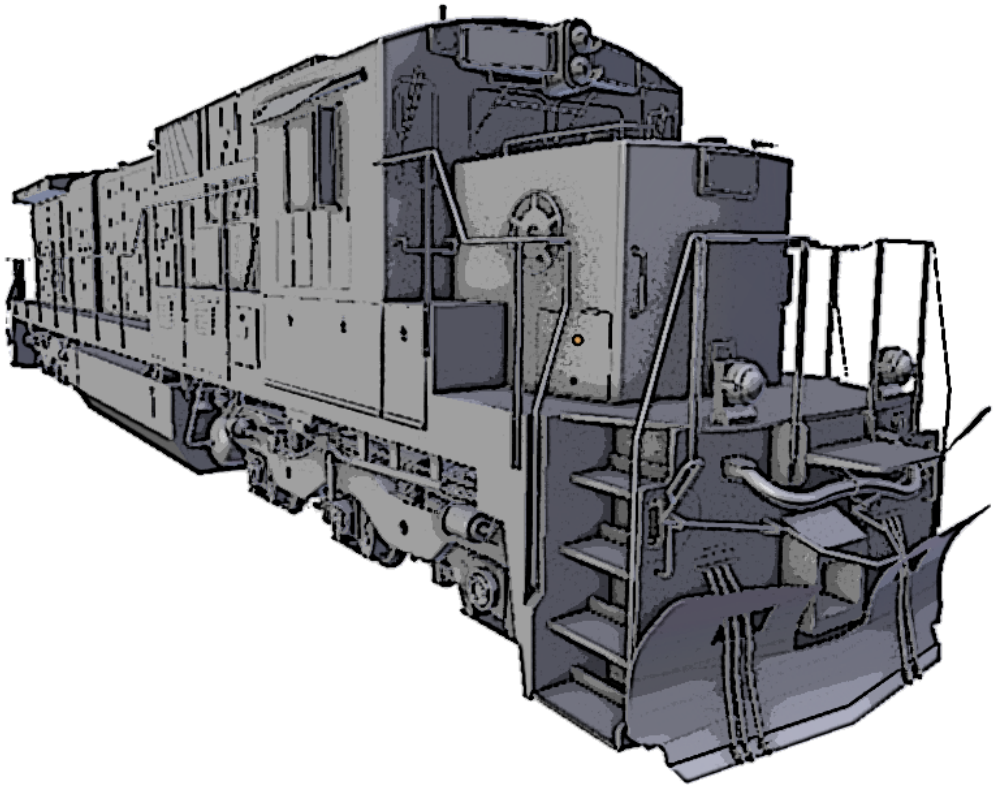
SERIES - 8 HANDBOOK



GENERAL ELECTRIC C39-8 FOR TRAINSIMULATOR 2017

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

CONTENTS

GENERAL DATA **3**

OPERATING CONTROLS **5**

EXTERNAL LOCATIONS OF APPARATUS

MASTER CONTROLLER

REAR CONTROL PANEL

OVERHEAD CONTROLS

START COMPARTMENT

HEAD OF TRAIN DEVICE

CONTROL DESCRIPTIONS AND METHODS **11**

OPERATING THE LOCOMOTIVE **17**

LOCOMOTIVE HISTORY **25**

THE LOCOMOTIVE FOR TRAIN SIMULATOR **26**

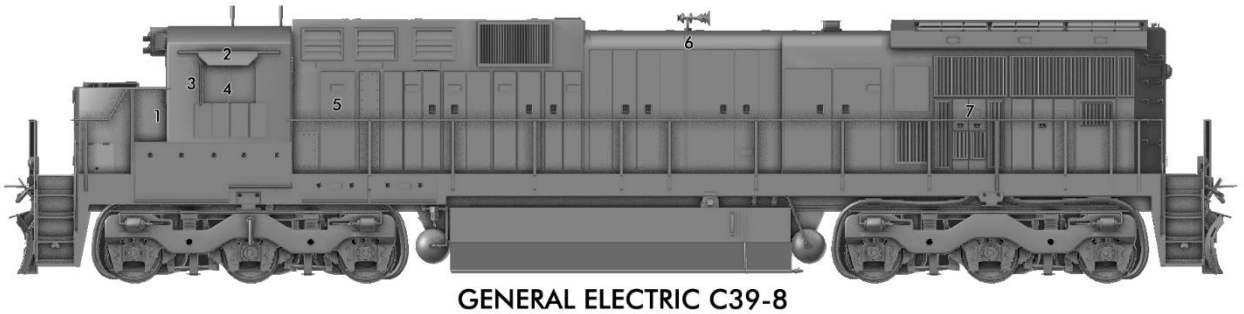
SCENARIO CHEAT SHEETS **33**

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

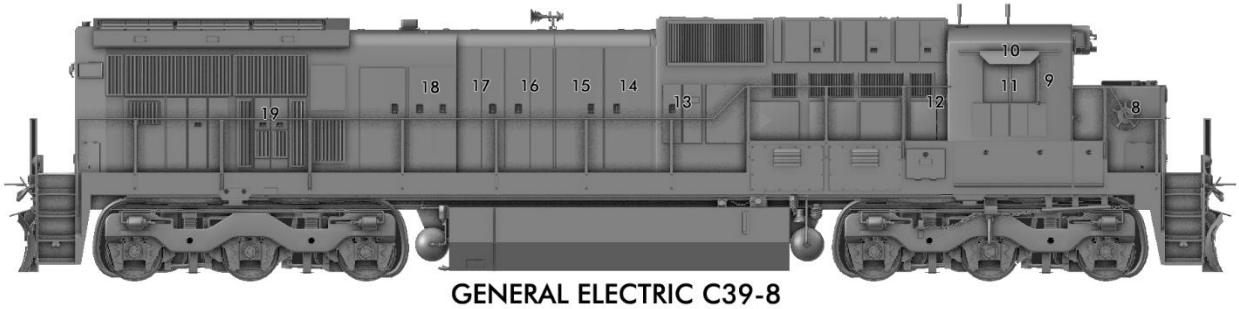
GENERAL DATA

Model	**C39-8**
Horsepower	3900
Type (AAR Symbol)	C – C
Engine	GE-FDL16
MAJOR DIMENSIONS	
Length	70 ft-8 in.
Width	10 ft-1-3/4 in.
Height	15 ft-4-1/2 in.
Length Between Bolster Centers	43 ft-4 in.
Truck Wheel Base	13 ft-7 in.
MINIMUM CURVE	
Locomotive Alone	273’ or 21 degrees
Coupled to Train	273’ or 21 degrees
DRIVE	
Traction Motors	Six GE-752
Wheel Diameter	40 in.
WEIGHT	
Minimum	365,100 lbs.
Maximum	420,000 lbs.
SUPPLIES	
Fuel Min/Max	4600 gal.
Cooling Water	410 gal.
Lubricating Oil	400 gal.
Sand	60 cu. ft.

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.



GENERAL ELECTRIC C39-8
Engineer Side Controls (NS Only)



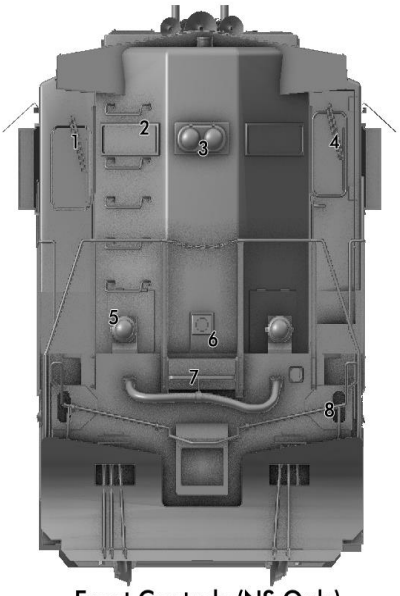
GENERAL ELECTRIC C39-8
Engineer Side Controls (NS Only)

	DESCRIPTION	CONTROL
1.	ENGINEER DOOR	Shift + N
2.	CAB SHADE	CTRL + Shift + S
3.	MIRROR	CTRL + N
4.	SLIDING WINDOWS	CTRL + Shift_N (Unlock) / N
5.	ELECTRICAL ROOM	Shift + X
6.	HORN	Spacebar
7.	COMPRESSOR ACCESS	CTRL + B
8.	HANDBRAKE	Backslash / Shift + Backslash
9.	MIRROR	CTRL +M
10.	CAB SHADE	Shift + S
11.	SLIDING WINDOWS	CTRL + Shift_M (Unlock) / M
12.	CONDUCTOR DOOR	Shift + M
13.	STARTER COMPARTMENT	C
14.	ENGINE ACCESS 1-2	Shift + C
15.	ENGINE ACCESS 3-4	CTRL + C
16.	ENGINE ACCESS 5-6	Shift + V
17.	ENGINE ACCESS 7-8	CTRL + V
18.	ENGINE ACCESS 9-10	CTRL + Shift + V
19.	COMPRESSOR ACCESS	Shift + B

FIG. 1. LOCATION OF APPRATUS C39-8

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

GENERAL ELECTRIC C39-8



Front Controls (NS Only)

GENERAL ELECTRIC C39-8



Rear Controls (NS Only)

REF.	DESCRIPTION	CONTROL
1	ENGINEER FRONT WIPER	V (External All)
2	NUMBER LIGHT	K
3	HEADLIGHTS	H / Shift + H
4	CONDUCTOR FRNT WIPER	V (External All)
5	AUXILLIARY LIGHTS	CTRL + D
6	DECK LIGHTS	Shift + D
7	KICKSTEP	CTRL + K
8	UNCOUPLING LEVER	Shift + U
9	CONDUCTOR REAR WIPER	V (External All)
10	NUMBER LIGHT	Shift + K
11	HEADLIGHT	CTRL + H / Shift + CTRL + H
12	MIDDLE WIPERS	Shift + M
13	ENGINEER REAR WIPER	V (External All)
14	AUXILLIARY LIGHT	CTRL + Shift + D
15	DECK LIGHT	CTRL + D
16	KICKSTEP	CTRL + Shift + K
17	UNCOUPLING LEVER	CTRL + U

FIG. 2. LOCATION OF APPRATUS C39-8

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.



FIG. 3. MASTER CONTROLLER

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

REF.	DESCRIPTION	CONTROL
1	HEAD OF TRAIN DEVICE	CAB
2	RADIO	CAB
3	ANALOG SPEEDOMETER	NON-INTERACTIVE
4	HORN	CAB / SPACEBAR
5	INSTRUMENT GAUGES	NON-INTERACTIVE
6	MANUAL DITCH LIGHT ACTIVATION	CAB
7	INDICATOR LIGHTS	NON-INTERACTIVE
8	GENERATOR FIELD SWITCH	CAB
9	FUEL PUMP SWITCH	CAB
10	ENGINE CONTROL SWITCH	CAB
11	LEAD AXLE SAND SWTICH	CAB
12	SAND HANDLE	CAB / X
13	PANEL LIGHTS	CAB / I
14	FRONT AUXILLIARY LIGHTS	CAB / CTRL + D
15	REAR AUXILLIARY LIGHTS	CTRL + SHIFT + D
16	DYNAMIC BRAKE	CAB / PERIOD / COMMA
17	HOTD UNIT POWER	CAB
18	NOTCH 7 POWER LIMIT	CAB
19	TRAIN BRAKE	CAB /APOSTROPHE /SEMICOLON
20	TRAIN BRAKE CUTOUT	CAB
21	LOCOMOTIVE BRAKE	CAB / RIGHT-LEFT BRACKET
22	BELL	CAB / B
23	CREW CALL TOGGLE	CAB
24	THROTTLE	CAB / A / D
25	REAR HEADLIGHTS	CAB / CTRL+H / SHIFT+CTRL+H
26	REVERSER	W / S
27	FRONT HEADLIGHTS	CAB / H / SHIFT + H

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.



FIG. 4. REAR CONTROL PANEL

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

REF.	DESCRIPTION	CONTROL
1	BREAKERS	
	- PACE SETTER	
	- WINDOW HEATER	
	- OVERSPEED	CAB
	- LOCOTROL	
	- CAB SIGNAL	CAB
	- ALERTER	
	- WARNING LIGHTS	
	- SIGNAL LIGHTS	
	- RADIO	CAB
	- WATER COOLER	
	- HEADLIGHTS	CAB
	- AUTO WATER DRAIN	
	- RESERVED	
	- TOILET TANK HEATER	
	- RESERVED	
	- RESERVED	
	- RUNNING LIGHTS	CAB
	- COMPRESSOR	
	- FUEL PUMP	CAB
	- LOCAL CONTROL	CAB
2	EMERGENCY STOP	CAB
3	DIAGNOSTIC DISPLAY	
4	ISOLATE SWITCH	CAB
5	SWITCHES	
	- CROSSWALK LIGHTS	CAB
	- SWITCH CONTROL	
	- FRONT NUMBER BOARD	CAB
	- REAR NUMBER BOARD	CAB
	- NO.1 TRACTION MOTOR CO	CAB
	- NO.2 TRACTION MOTOR CO	CAB
	- NO.3 TRACTION MOTOR CO	CAB
	- NO.4 TRACTION MOTOR CO	CAB
	- NO.5 TRACTION MOTOR CO	CAB
	- NO.6 TRACTION MOTOR CO	CAB
	- SPEED SENSOR	
	- LEAD AXLE CUTOUT	
	- DYANAMIC BRAKE CUTOUT	CAB

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.



FIG. 5. OVERHEAD CONTROLS

REF.	DESCRIPTION	CONTROL
1	FRONT WINDOW WIPER	CAB / V (FOR ALL)
2	CENTER WINDOW WIPER	CAB / V (FOR ALL)
3	REAR WINDOW WIPER	CAB / V (FOR ALL)
4	LIGHT	
5	LIGHT SWITCH	L (ENG) / CTRL + L (COND)

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.



FIG. 6. STARTUP CONTROLS

REF.	DESCRIPTION	CONTROL
1	PRIME / START SWITCH	CAB
2	ENGINE STOP BUTTON	CAB
3	LAYSHAFT (NOT SHOWN)	CAB

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.



FIG. 7. HEAD OF TRAIN DEVICE

REF.	DESCRIPTION	CONTROL
1	FUNCTION / STATUS INDICATORS	
2	TRAINLINE PRESSURE INDICATOR	
3	KEYPAD	CAB
4	ACCELERATION/ODOMETER/LENGTH	CAB
6	EMERGENCY SWITCH	CAB

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

MASTER CONTROLLER / BRAKE STAND CONTROLS

1. **Head of Train Device**

Displays functions related to operation of the brake train line and rear end device.

Controls: Cab

2. **Radio**

Cab radio.

Controls: Non –interactive

3. **Analog Speedometer**

Displays locomotive / train speed.

Controls: Non-interactive

4. **Horn Handle**

Activates the locomotive horn.

Controls: Cab; Keystroke (Spacebar); HUD; Controller – Left Stick Push

5. **Instrument Gauges**

Air pressure and RPM displays.

Controls: Non-interactive

6. **Crossing Lights**

Triggers flashing ditch lights for a pre-determined amount of time.

Controls: Cab

7. **Indicator Lights**

Gives the operator information concerning locomotive alarms and other functions.

Controls: Cab

8. **Field Generator Switch**

This switch must be enabled for the locomotive to start and run. This switch will also disable power loading after the locomotive has started.

Controls: Cab

9. **Fuel Pump Switch**

Enables control of the fuel pump from the control stand. This must be enabled for locomotive start and run operations.

Controls: Cab

10. **Control Switch**

Enables control from the operator’s position. Must be enabled for locomotive start and run operations.

Controls: Cab

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

11. Lead Axle Sand

Switch turns on sanding for the unit lead axle only.

Controls: Cab

12. Sander

Turns on sanding for both trucks.

Controls: Cab; Keystroke (X); HUD

13. Console Lights

Turns on the lights panels and gauges on the Master Controller.

Controls: Cab; Keystroke (L)

14. Front Auxiliary Light Switch

Turns on the front-facing “ditch” lights.

Controls: Cab; Keystroke (CTRL+D)

15. Rear Auxiliary Light Switch

Turns on the rear-facing “ditch” lights.

Controls: Cab; Keystroke (SHIFT+CTRL+D)

16. Dynamic Brake

Provides braking through engine power resistance.

Controls: Cab; Keystroke (Period / Comma); HUD

17. HTD Switch

Turns on the Head of Train Device.

Controls: Cab

18. Notch 7 Power Limit

Limits the locomotive to Notch 7 power for compatibility with older locomotives and wheel slip control.

Controls: Cab

19. Train Brake Handle

Discharges and recharges the train air pipe, allow the train to slow down or stop.

Controls: Cab; Keystroke (; Apply / ‘ Release); HUD; Controller – Left Trigger and Left Bumper

20. Train Brake Cutout

Disables the train brake control.

Controls: Cab

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

21. Independent Brake

Brake for the locomotive only.

Controls: Cab; Keystroke ([Apply /] Release); HUD

22. Bell

Activates the bell.

Controls: Cab; Keystroke (B); HUD; Controller – (A) then Left/Right directional pad to select.

23. Crew Call Wand

Activates the bell to alert the crew to locomotive power or movement.

Controls: Cab

24. Throttle Control

In conjunction with the Reverser, the Throttle controls speed of the locomotive and consist.

Controls: Cab; Keystroke (A Increase / D Decrease); HUD; Controller

25. Rear Headlight Knob

3 – position switch that operates the rear headlight.

Controls: Cab; Keystroke (Shift + A Increase / Shift + D Decrease); HUD; Controller

26. Reverser Handle

Determines direction of movement. Handle points to direction the locomotive will be moving to.

Controls: Cab; Keystroke (W Forward / S Reverse); HUD; Controller

27. Front Headlight Knob

3 – position switch that operates the Front Headlight.

Controls: Cab; Keystroke (H Increase / Shift+H Decrease); HUD; Controller.

HEAD OF TRAIN DEVICE CONTROLS

1. Function / Status Indicators

Displays certain device status, such as movement and power.

Controls: Non-interactive

2. Trainline Pressure Indicator

Shows how much pressure is currently being held in the brake pipe.

Controls: Non-interactive

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

3. Keypad

Use to enter data into the unit to sync the HOTD with the EOTD.

Controls: Cab. Default unit operating number is 65289, otherwise it is the number displayed in the EOTD.

4. Information Display

Displays information pertaining to the status to of the train and unit – Accelerometer, train length, distance counter, Emergency and unit status.

Controls: Cab (Push Button)

5. Emergency Switch

Dumps air from the brake pipe beginning with the EOTD.

Controls: Cab

REAR PANEL CONTROLS

NOTE: ONLY INTERACTIVE CONTROLS ARE LISTED HERE.

Overspeed Breaker

Turns on the alerter light engine overspeed.

Controls: Cab

Cab Signal Breaker

Turns on the cab signal lights for routes that are equipped with this feature.

Controls: Cab

Radio Breaker

Turns on the radio.

Controls: Cab

Headlights Breaker

This breaker must be on in order to operate the front and rear headlights and auxiliary lights.

Controls: Cab

Running Lights Breaker

This breaker must be on in order to operate all secondary lights.

Controls: Cab, Keystroke (Shift+L);

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

Fuel Pump Breaker

Turns on the pump that provides fuel to the prime mover. Must be on for locomotive operation.

Controls: Cab

Local Control Breaker

Enable control of the locomotive.

Controls: Cab

Emergency Stop

Shuts down the locomotive.

Controls: Cab

Diagnostic Display

Shows current status of faults and other information relayed from the locomotive's computers.

Controls: Cab

Isolate Switch

Allows the locomotive to generate power. If the unit is starting or trailing, the switch is to be placed in Isolate. If the unit is lead, then it is to placed in Run after startup.

Controls: Cab

Crosswalk Lights

Switches on the deck and step lighting.

Controls: Cab, Keystroke (Shift+D);

Front Numberboards

Turns on lighting for the front number plates.

Controls: Cab, Keystroke (K);

Rear Numberboards

Turns on lighting for the rear number plates.

Controls: Cab, Keystroke (Shift-K);

Traction Motor Cutouts, 1-6

Cutoffs for individual traction motors. To prevent damage to the remaining traction motors, they should be cut off in pairs – 1-3, 2-4, 3-5. Cutting out all motors will prevent the locomotive from generating power.

Controls: Cab

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

STARTING ENGINE

Simple Mode

In simple mode, the locomotive will already be started and all necessary controls switched on to allow for immediate control. This control mode is best for using a game-pad type controller. However, in this mode you will lose some of the advanced functions and physics this locomotive has to offer.

Intermediate Mode

For quick start-up in Intermediate Mode, press the “Z key” on the keyboard. This will throw all necessary switches into their “On” positions. However, you will need to check your auxiliary switches (Lights, Headlights, etc.) to be sure they are on. Wait until the engine has attained 400 RPM before operating the unit.

Expert Mode

The addition of microprocessor controls has made starting this locomotive easier than startups for previous units. Before attempting to start the locomotive:

1). Move the Engine Control switch to the “Start/Isolate” position.

2). Close the following breakers on the rear control panel:

a. Fuel Pump
b. Local Control

3). Close the Gen Field, Fuel Pump, and Control breakers on upper right side of the Master Controller.

4). Once these controls are active, move to the first set of doors at the engine compartment. Open them and locate the Prime/Start switch.

5). Turn the switch over to Prime. This will move fuel into the prime mover. The prime will take about 10-12 seconds.

6). Once the Prime has finished, turn the switch to “Start” and wait until the engine begins generating RPM.

7). Back inside the cab, turn the isolate switch to run before operating engine.

NOTE: On the prototype, the Layshaft (the handle to the left of the Prime/Start switch), is used to provide extra fuel to the injectors during cold startup. It is interlocked with the Throttle and Reverser handle so that the Layshaft cannot be used to control locomotive movement. This would be very undesirable being that the person operating the Layshaft would not have access to the locomotive brakes.

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

Expert Mode – Troubleshooting Start-up issues.

The engine will fail to start up if the switch is held in Prime for longer than necessary. A two-minute cool-down period is required before trying to start the engine again.

Note to Scenario Developers:

By default, the C30-7 locomotive is unpowered at the start of a scenario. If you wish to have the locomotives start automatically at the beginning of a scenario without user input, then you need to insert the following code into your scenario script and link it to the scenario through the Timetable Editor:

```
if event == "boarding" then

SysCall ( "PlayerEngine:SetControlValue", "ShortcutStartup", 0, 1 );

return TRUE;

end
```

In the first line, “boarding” is a name that links the script command to the Timetable Editor. A simple message trigger with this name placed in it is usually enough to start the locomotive. You could also use the timestamp to trigger the startup later, or include a message to the player.

SETTING UP THE END OF / HEAD OF TRAIN DEVICES

The HTD (Head-of-Train-Device) supplements the information that is already available to train personnel via the console controls. Using the HTD, the train crew can monitor conditions throughout the entire train and act accordingly. Please note that even if the HTD is not synced to the EOT, it will still monitor brake pipe pressure and alert accordingly if the pressure in the brake pipe begins to fall.

Setting up the End of Train device

An End of Train device is provided to mark the end of the train. On the prototype, this device marks the end of the train for visibility to other railroad crews, and also monitors train length and air-pipe pressure. Of note, this model replicates a battery powered prototype. To conserve battery power, the EOT does not flash in daytime conditions.

To set up the EOT that is provided for TrainSimulator, use the following procedure:

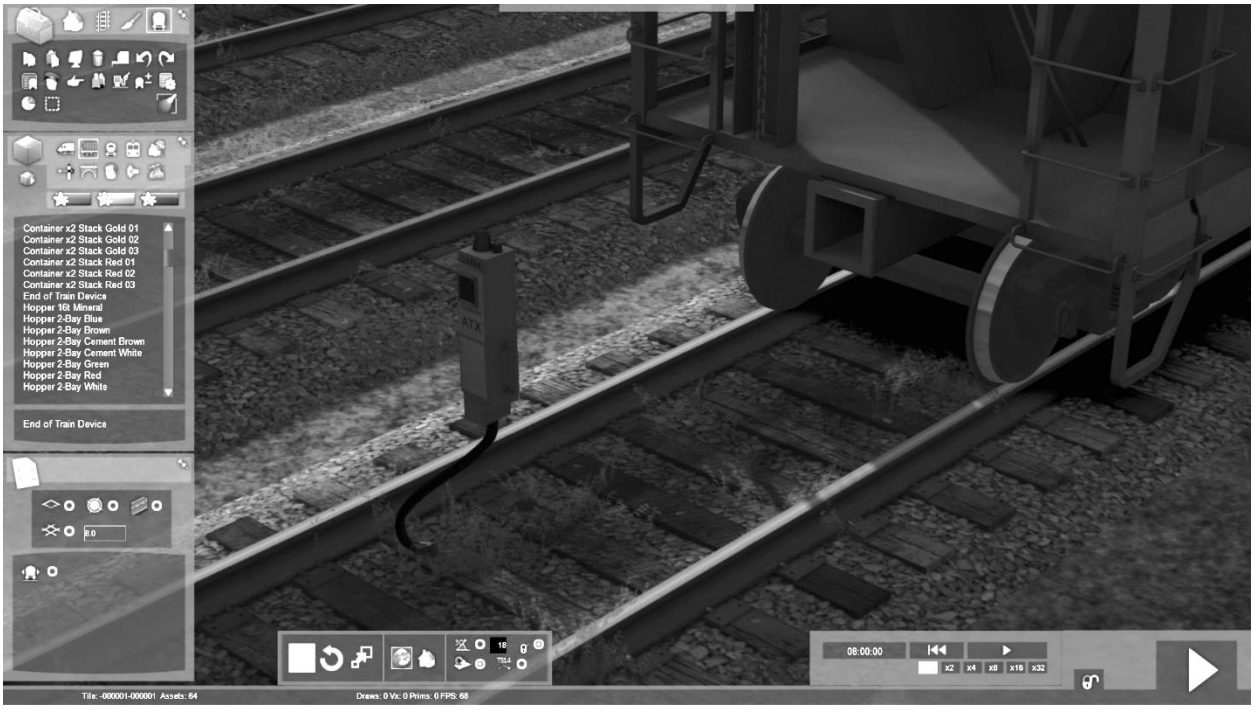
1.) If the train does not already have an EOT, switch to the Scenario Editor.

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

2.) From the Freight Car filter, select End of Train Device v2. There is also a version available for the Road Railer trailers.



3.) Place the EOT on the tracks. In actuality, this is an invisible freight car with an EOT on the end. Manipulate the EOT just as you would a freight car. Grab the EOT to move along the track or to turn the EOT to the correct end for use.



©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

4.) After making sure the EOT is pointing the correct way, push the unit to the end of the freight car until it couples. If the coupling is successful, click F2 to save or the Save button in the Scenario editor and exit to the game.

5.) Once the EOT is placed, note the number displayed on the unit. Press 1 to enter the cab. After the locomotive have started up, switch on the HOTD using the HOTD/Speedo switch on the console. Now, enter the numbers that are displayed on the EOT unit into the keypad (3) and press YES/ENTER. Press the menu button (4) three times. If the correct code is entered, then the HOTD will sync its signals with the EOT and will begin receiving telemetry.
6.) If no EOT is available, or the cars that you are using with this locomotive cannot pass consist messages between them, you can activate the EOT by entering the following code: 65289



During normal operation, the synced HTD/EOT will provide acceleration, distance travelled, train length, and brake pipe pressure information. The unit will also give a periodic alarm in the form of three beeps when the pressure in the brake pipe falls. If for some reason the EOT is disconnected from the end of the train, the display will go blank until the EOT is connected again.

To display the different functions, use the following procedure:

1.) Turn on the unit using the switch provided on the Master Controller console.
2.) After setting up the EOT to sync with the HOT, by default, the Length of Train of train will be displayed, in feet.
3.) Press the Menu Button (4) once to show the Accelerometer.
4.) Press the Menu Button (4) again to show the Distance Counter.

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

5.) The Distance Counter will be set at zero. Moving the locomotive forward or backward from this point will cause the counter to count up or down, up to 18,888 feet in either direction. Please note that since these locomotives are set up to run long-hood forward, on scenarios where the locomotive is leading the train with the short-hood, the counter will show in the negative while the train is moving forward.

6.) To stop the Distance Counter, press the Count/Hold/Off button again. This will stop the counter, and the number displayed will begin to flash.

ENGINEERING

Simple / Intermediate Modes

1. Place the Reverser in the forward or reverse position.
2. Move the Train and Independent braking lever to release.
3. Move the Power Lever to the desired position to begin moving the locomotive.

Expert Mode

1. Move the Engine Control switch on the rear control panel to “Run”.
2. Place the Reverser in the forward or reverse position.
3. Move the Train and Independent braking lever to release.
4. Move the Throttle to the desired position to begin moving the locomotive.

Dynamic Braking

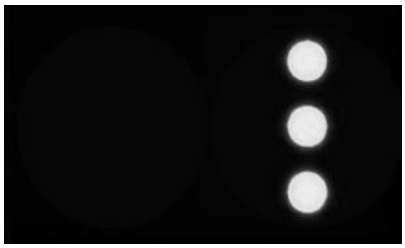
1. Move the Throttle to the “Idle” position.
2. Move the Reverser lever to either the forward or reverse position.
3. Grab the Dynamic Brake portion of the Power Lever and move it to Setup. Wait for 10 seconds for the brakes to activate, then move to the desired position.

CAB SIGNALS

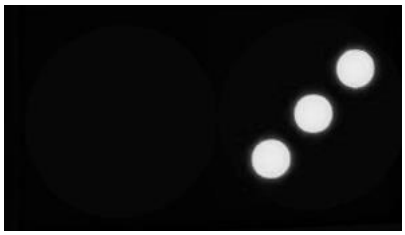
These units are equipped with PRR style cab signals. These signals work only with routes that are cab-signal enabled. They can be accessed by engaging the Cab Signal breaker on the rear control panel. Once this breaker is engaged, cab signals will begin working starting with the next block that the locomotive enters.

NOTE: The signals may not display the same aspects as the lineside signals do. The following is a reference to in-cab signals. For Restricted/Stop signals, be sure to key “TAB” to check with dispatch as to whether the signal is absolute or stop and roll.

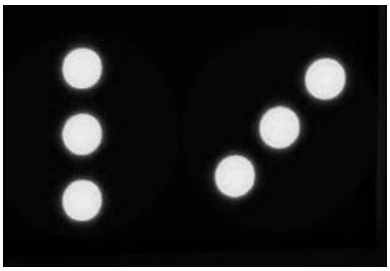
©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.



Clear



Approach



Advanced Approach



Restricted / Stop

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

The Prototype Locomotive

In 1984, General Electric's Transportation Division introduced a new diesel locomotive model to the American railroad market. The third-generation Dash 8 was a radical departure from the "U-Boats" and "New Series" locomotives that had come before it. It was revolutionary for its looks. Gone were the gentle curves of the previous GE offerings, replaced by angular edges and boxy protuberances. This change gave the locomotive a Spartan mechanical look. Rail fans quickly coined the term "toaster" to describe GE's cubic locomotive.

The biggest change though to this locomotive was the implementation of microprocessors and simple computers. These electronics increased the locomotives reliability and fault tolerance, allowing the train crews to work around problems that would normally have sidelined other units. Computer diagnostics also made troubleshooting problems easier for mechanical crews, resulting in less downtime for these locomotives. Most importantly though, the ability of these units to reliably achieve higher horsepower than their EMD counterparts - up to 3900 hp vs. the 3500 hp SD50 - allowed 3-to-2 replacement of older road units, resulting in higher efficiencies for managing railroad locomotive fleets.

Unfortunately though, all of hype and promise of new technology didn't result in higher sales numbers. The original unimproved six-axle C39-8 sold only 146 total units to two railroads in the U.S. - 114 to Norfolk Southern, and 22 to Consolidated Rail Corporation. Of the 114 units that went to Norfolk Southern, all but two were built with bi-directional controls, allowing for long-hood forward operation.

In 1999, Conrail was sold and its assets divided between Norfolk Southern and its close competitor CSX Transportation. 13 of the Conrail C39-8's went to NS, while the rest were sent to CSX and were subsequently scrapped. NS retired its last C39-8s in 2009. Over the years a handful were sold to other railroads, including the Pennsylvania Northern Railroad, and the FCCA railroad in Peru, which converted some of its C39-8s to run on natural gas. These units still operate today.

Even though the Dash 8's got off to rocky start sales wise, all was not lost. The four axle variant of the 39-8 sold slightly better, and many of those are still used by short-line and regional railroads. The upgraded version, the 39-8E, made several more improvements which eventually led to the 40-8, which was the locomotive that knocked EMD off its perch as the number one locomotive maker. As ugly as it was, and as much as train crews disliked it, the C39-8 turned out to be a king-slayer for General Electric.

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

THE GENERAL ELECTRIC C39-8 FOR TRAIN SIMULATOR

This package features the C30-7 locomotive in Norfolk Southern licensed paint liveries, and contains the following downloadable content for use with Dovetail Game's Trains Simulator PC and video game:

C39-8: Norfolk Southern



C39-8: Norfolk Southern Weathered



©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

40' Southern Two-Bay covered hopper, clean and weathered.



40' Norfolk and Western Two-Bay covered hopper, clean and weathered.



©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

45’ Norfolk Southern Three-Bay 100 Ton coal hopper.



53’ Road Railer trailers, ribbed and smooth sided.



End of Train Device

Quick Drive scenario for each locomotive.

Career Scenarios

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

SCENARIOS

C39-8 01. The Hostler – Get locomotives from the maintenance shop and attach them to a waiting train.

C39-8 02. The Grinder – Take a train up and over Horseshoe Curve, using the least amount of power and all of your wits.

C39-8 03. Dynamic Help – Play as the helper crew assisting trains from Cresson to Altoona.

C39-8 04. Road Railed – Tour the route as a hotshot RoadRailer pig train.

Quick Drive Scenarios

Each locomotive is enabled for Quick Drive. Simply click on the Quick Drive tile in Train Simulator and select one of the locomotives and a route to run it on.

Creating Your Own Scenario

These instructions are for creating a simple free-roam scenario using the C30-7 and freight cars. If you want to create a more sophisticated scenario or add special instructions you should consult the TS user manual.

- After opening the Scenario Editor for the scenario and route of your choosing, click on the Object Filter pane (left middle pull-out).

- Click on the Provider Filter (box with arrow on it) to bring up the filter box (right-side pullout).

- Scroll down through the list of providers and make sure that "VRC" is checked, as well as Dash8_00.

- Return to the object filter and click the Locomotive icon.

- Scroll through the list and choose one of the available C39-8 locomotives.

- Place the locomotive on the tracks as many times as desired.

- Add freight cars to the consist.

- Place a driver icon on the lead locomotive.

- Press F2 to save the scenario, then close it out.

- Once in the actual game, click on the locomotive to select it as your player avatar.

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

CONTROL NOTES – ALL UNITS

WARNING LIGHTS. Warning lights are defined as any light that has been added to the unit for the sole purpose of enhancing the safety of the train crew and general public by calling attention to the fact that a train is approaching.

On this unit, the HEADLIGHTS breaker must be in the closed position before operating warning lights.

RUNNING LIGHTS. Running lights on these locomotives include step lights, number boards, engine compartment lights, toilet lights, and any other light that provides access for crew-related functions.

In order to operate these lights, the RUNNING LIGHTS breaker on the rear control panel must be in the closed position.

EMERGENCY BRAKE RECOVERY. If the emergency brake is applied, from either the engineer or conductor stations, a penalty time is enacted to allow the brake system to recharge. In order to recover from an E-brake application, you must hold the train brake handle in Emergency for at least 1 minute. Afterwards, hold the train brake in "Suppression" until the PCS light goes off. The unit will not generate power again until the Pneumatic Control Switch resets.

OVERSPEED. The maximum powered speed for this locomotive is 70 mph. Operation of the unit above the maximum speed can result in damage to engine or traction components. The locomotive is equipped with over speed control to prevent this. Once the unit has reached 70 mph, the PCS Relay will be tripped in an automatic attempt to reduce unit speed.

PCS RELAY AND RESET. These units are equipped with a PCS (pneumatic control switch) relay that, in the event the train exceeds the maximum locomotive speed, will dump the brake pipe and reset the throttle to zero, no matter its current position. If the PCS relay is tripped, you must place the throttle to Notch 0, place the Reverser handle in neutral, and place the Train Brake in Suppression. Once the speed of the train has dropped below the maximum tolerable limit, the PCS relay will be reset.

The PCS reset can also be triggered if an electrical fault causes the AC Control breaker to disengage. You will need to make sure that this breaker is engaged before attempting a reset.

WIPERS. The window wipers are equipped with individual controls. You can turn them on or off via the overhead consoles located above the Engineer and Conductor positions. To get them all on at the same time, or to use them from outside of the unit, use the "V" key.

WHEELSLIP CONTROL. This unit is equipped with rudimentary wheel slip control. If the wheels begin to slip, the on board computers will sense this and automatically cut power to the traction motors until the wheels regain stability. This control can be turned off via the breakers on the rear control panel.

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

CONTROLS FOR MULTIPLE UNITS. These units are set up so that control of an entire MU consist can be done from the primary (front) locomotive. If you try to control the train from any of the trailing units in the consist after the primary unit has been started, the locomotives will shut down and restart with the cab of the locomotive that you are currently in becoming the primary unit.

It has been noted that in some cases it may be desirable to have lights or other accessories in the trailing units to be in the on position. If this is the case, then use the following manual procedure to activate them without switching the primary unit off.

Before Startup:

If in the beginning of the scenario the locomotives have not been started, then use CTRL + or CTRL - to move between the cabs of the engines. You may turn on whatever accessories are necessary. Be sure that the Battery Disconnect for each unit is engaged and that the proper circuit breakers are in the “on” position. For example, if you want to run the Dim Lights on a trailing unit, then the Headlights Breaker must be on.

After Startup:

If you have already started the consist, or it is auto-started at the beginning of the scenario, moving into the cab of a trailing unit will shut down the consist. Instead, wait until after the train has started moving to move between trailing cabs and turn on any desired accessories. However, if you touch or move any primary controls (brake, throttle, selector, reverser) while the train is running, the game will assume you are taking control of the train from the cab of the selected unit and will shut down the engines.

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

SUPPLIED SCENARIOS CHEAT SHEET

WARNING: SPOILERS AHEAD. If you want to play these scenarios without knowing the outcome, stop reading now!

Scenario 01: C39-8 01: The Hostler. In this scenario, you will be taking freshly inspected locomotives from the roundhouse and lashing them up to a westbound train of coal loads. .

Tips:

- There is nothing really out of the ordinary for this scenario. Get to know the C39-8 as you go along.

Scenario 02: C39-8 02: The Grinder. Now that fresh power has been applied to your train, you are ready to tackle the Alleghenies and get this load of coal to the power plants and steel mills in Pittsburgh.

Tips:

- For bulk commodities such as coal, most railroads do not consider velocity important, as long as the load is moving. The minimum number of locomotives required to get the job done are used, so you are not going to be winning any races with this train.
- On the 1.8-2.4 grades up to Cresson, every tenth of a mile of per hour is important. Pay close attention to your speedometer and wheelslip, and don't be afraid to use the Sander.
- Don't forget to drop off your helpers at Cresson. Eastbound trains will need helpers as they descend the curve.

Scenario 03: C39-8 03: Dynamic Help. An empty coal train, on its way back to the mines, has just arrived at Cresson. It is going to need some braking help on the way down to Altoona, so you will be lashing up your two helper locomotives to the end of the consist.

Tips:

- When you lash up your locomotives to the end of the waiting coal train, you will get some backlash due to the fact that the train is stretched over a hill. Minimize this by putting your Train Brake into Suppression just as you couple up to the emtpy coal cars.
- For most trains, Dynamic Brakes are the first line of defense when braking in downhill situations. The key is to apply them before things get out of control.

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.

You should start the Dynamic Brake as the front of the train is exiting the east side of Galatin Tunnel.

- You will need some assistance from the Train Brake. The best way to work this is to set the Train Brake at about 12%, or minimal application. Then, use your Dynamic Brake to control your rate of descent.

Scenario 04: C39-8 04: Road Railed. A standard router tour scenario, starting at Johnstown and ending at Altoona. These pig trains are pretty light, so you should make good time.

- Make sure that you pay attention to ALL dispatch warnings and pop-ups. They are there for a reason, and if you don't read the instructions that are given to you, you can't really blame anyone else if you fail the scenario.
- There is a slow order near MP 257, which is given to you near South Fork, that requires you to stop and proceed after the Foreman gives you permission.
- Most of the switches in the yard at Altoona are hand-operated, so you will need to plan your routing to make sure that you are on the right track at the end of the scenario.

©2017 Virtual Rail Creations, in partnership with Dovetail Games, LLC.