

# ***Locomotive Operation***

## **EMD GP-35 Operating**

**Course Objective:** Study the steps needed to start, run, operate and troubleshoot the EMD Locomotive. Also, gain an understanding of the mechanical and electrical equipment and systems.

**Who this is for:** Operators of heavy machinery and specifically the 2,500 horsepower General Motors Model GP35 turbocharged diesel-electric locomotive.

<b>Item Code</b>	<b>Lesson Description</b>
GP35.1	Study outline, general
GP35.2	Cab controls
GP35.3	Operation
GP35.4	Mechanical equipment and systems
GP35.5	Electrical equipment
GP35.6	Electrical systems
GP35.7	Troubleshooting

<b>Item Code</b>	<b>Required Textbook</b>
BKLOM	<i>GP35 Operating Manual</i>

<b>Item Code</b>	<b>Full Course Title (Includes Textbook)</b>	<b>Price</b>
GP351FC	EMD GP-35	\$173.75

Enrolled students may take individual lessons.  
Please contact student services for individual lesson and textbook pricing.

## Basic Locomotive Operation

**Course Objective:** The student will use this book as an aid in learning the operation and proper management of intermediate and high horse-power locomotives. Also be familiar with the cab controls and air brake equipment, those locomotive devices and systems with which operating personnel should be most familiar.

**Who this is for:** Locomotive engineers and personnel needing to operate the models listed below.

■ EMD (Electro-Motive Division of General Motors Corp.): GP30, GP35, GP38, GP39, and GP40; SD35, SD38, SD39, SD40, SD45, GP15, GP38-2, GP39-2, GP40-2, SD38-2, SD39-2, SD40-2, SD45-2, GP49, GP50, SD50, GP59, GP60, SD60, GP69, GP70, SD70

■ GE (General Electric Co.) B and C models of the U23, U25, U28, U30, U33, U36, B18-7, B28-7, B30-7, B36-7, C23-7, C28-7, C30-7, C36-7, -8 32B (B32-8), -8 40B (B39-8), -8 32C (C32-8), -8 40C (C39-8)

Item Code	Lesson Description
L.11B	Introduction, EMD locomotives
L.12B	General Electric locomotives
L.13B	General Electric locomotives - general information, arrangement, cab controls and systems (Part I)
L.14B	General Electric locomotives - general information, arrangement, cab controls and systems (Part II)
L.15B	Air brakes
L.16B	Locomotive operation

Item Code	Required Textbook
BKMLH	<i>The Modern Locomotive Handbook</i>

Item Code	Full Course Title (Includes Textbook)	Price
L11BFC	Basic Locomotive Operation	\$151.75

# Locomotive Operation

## 600 & 1200 Horsepower Switching Locomotive

**Course Objective:** The student should be able to recognize 600 & 1200 HP Switching Locomotives and any difference between models. Also, be familiar with the various controls, gauges, their location, function and how to read; Steps to putting the locomotive into operation; and Troubleshooting—where or what to look at for various conditions.

**Who this is for:** Anyone operating heavy equipment or a train engine can familiarize themselves with the operation of 600 & 1200 HP Switching locomotives.

Item Code	Lesson Description
SL.1	General description
SL.2	Description
SL.3	Instruments and controls
SL.4	Operation
SL.5	Location of difficulties

Item Code	Required Textbook
BKSLOM	<i>EMD Operating Manual—600 and 1,200 HP Switching Locomotives</i>

Item Code	Full Course Title (Includes Textbook)	Price
SL1FC	600 and 1,200 HP Switching Locomotives	\$129.75

Enrolled students may take individual lessons.  
Please contact student services for individual lesson and textbook pricing.

## GP38 Operating

**Course Objective:** Learn the general description of principle equipment components, the functions of cab control equipment used in operating the locomotive, operation of the locomotive, and, cause, location and correction of possible troubles occurring during operation of the locomotive.

**Who this is for:** Operators of heavy machinery or railroad personnel engaged in the operation of the 2000 horsepower General Motors Model GP38 diesel-electric locomotive equipped with a static system for main generator excitation.

Item Code	Lesson Description
GP38.1	General data and description
GP38.2	Engine starting and cab controls
GP38.3	Engine starting and cab controls
GP38.4	Operation
GP38.5	Operation and troubleshooting

Item Code	Required Textbook
BK38LOM	<i>GP38 Operator's Manual — Static Excitation</i>

Item Code	Full Course Title (Includes Textbook)	Price
GP381FC	GP38 Operating	\$129.75

Enrolled students may take individual lessons.  
Please contact student services for individual lesson and textbook pricing.

# *Locomotive Operation*

## **Fuel Conservation from an Operating Viewpoint**

**Course Objective:** Study fuel savings and its usage rate through use of its braking systems, operations and conditions.

**Who this is for:** Engineers, dispatchers, and anyone dealing with the operation of a train and its fuel consumption.

Item Code	Lesson Description
FCON.1	Fuel savings, determining fuel-use rate, engine low idle system, initial charging of train brake system, dynamic braking
FCON.2	Fuel saver operations, train dispatcher and fuel conservation, locomotive operating conditions

Item Code	Required Textbook
BKFCON	<i>Fuel Conservation from an Operating Viewpoint</i>

Item Code	Full Course Title (Includes Textbook)	Price
FCON1FC	Fuel Conservation from an Operating Viewpoint	\$51.00

# Locomotive Operation

## EMD GP-9 Locomotives

**Course Objective:** The student will learn the necessary information to enable the engineman to successfully operate the locomotive “over the road”. Know the general description and location of the component parts, possible causes, location, and correction of difficulties that may be encountered while “on the road”.

**Who this is for:** Operators of heavy machinery and specifically the Electro-Motive 1750 HP GP9 locomotive.

Item Code	Lesson Description
GP90	General description
GP91	Locomotive operation, location and correction of difficulties on the road
GP92	Cooling, lubricating oil, fuel oil, and air system
GP93	Electrical power, controls, switches used to run the GP9 locomotive (Part I)
GP94	Electrical power, controls, switches used to run the GP9 locomotive (Part II)
GP95	Schematic wiring diagram, electric symbols and general data portions of the book

Item Code	Required Textbook
BKGP9 B	<i>EMD Operating Manual (GP9 Locomotives)</i>

Item Code	Full Course Title (Includes Textbook)	Price
GP90FC	EMD GP-9 Locomotives	\$151.75

Enrolled students may take individual lessons.  
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# Locomotive Operation

## SD40-2 Operating

**Course Objective:** This course will provide a student an aid in the explanation of locomotive equipment used by the operator. Generally the information is applicable to basic locomotive equipment. Some frequently requested optional equipment is also discussed.

**Who this is for:** Anyone interested in learning the basic operation and equipment used in running the SD40-2.

Item Code	Lesson Description
SDOM.1	General data, general description
SDOM.2	Controls and indicating devices
SDOM.3	Controls and indicating devices
SDOM.4	Operation
SDOM.5	Troubleshooting

Item Code	Required Textbook
BKSDOM	<i>SD40-2 Operator's Manual</i>
<b>NOTE: Students must contact EMD for the textbook</b>	

Item Code	Full Course Title	Price
SDOM1FC	SD40-2 Operating	\$110.00

Enrolled students may take individual lessons.  
Please contact student services for individual lesson and textbook pricing.

## Fuel Conservation

**Course Objective:** Become familiar with the definitions and terminology of railroad terms ie., tractive effort, drawbar force etc. Explains the relationship between track and equipment engineering; geographical and physical constraints faced by engineers in relation to fuel efficiency. Then, using the examples provided, test your understanding and ability to apply the principles discussed for fuel efficiency.

**Who this is for:** Locomotive assignment dispatchers, train dispatchers, operating officers, train engineers (operators) servicing and maintenance personnel.

Item Code	Lesson Description
FU.1	Fuel, price, and the diesel engine
FU.2	The locomotive and train
FU.3	Work, power, and efficiency
FU.4	Efficient Trains to Operate
FU.5	Operating trains efficiently

Item Code	Required Textbook
BKFUEL	<i>Locomotive Engineering Guide to Fuel Conservation</i>

Item Code	Full Course Title (Includes Textbook)	Price
FU1FC	Fuel Conservation	\$124.95

Enrolled students may take individual lessons.  
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# Locomotive Operation

## Railroad Operating Rules and Practices

**Course Objective:** Use the FRA Railroad Operating Rules and Practices booklet as a resource and guideline in determining the purpose, application, penalties and filing of operating rules. Also, the program of operational tests and inspections; record keeping, program of instruction on operating rules, annual report and information collection.

**Who this is for:** Owners, operators, inspectors and other personnel responsible for the operation of trains or other rolling equipment on standard gage track which is part of the general railroad system of transportation.

Item Code	Lesson Description
RO.1B	Instruction, record keeping, penalties and definitions
RO.2B	Protection of workmen, trains, and locomotives

Item Code	Required Textbook
BKROR	<i>Railroad Operating Rules and Practices (Code of Federal Regulations)</i>

Item Code	Full Course Title (Includes Textbook)	Price
RO1BFC	Railroad Operating Rules and Practices	\$50.95

Enrolled students may take individual lessons.  
Please contact student services for individual lesson and textbook pricing.