



dovetail  
GAMES

# Amtrak P42 Empire Builder



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## 1 Background

### 1.1 P42

The P42DC is the most ubiquitous of Amtrak's passenger locomotives. A total of 2007 were delivered between 1992 and 2001. The P42DC is part of GE's Genesis series, which also includes the P40DC and the P32AC-DM.

The P42DC is notable for its streamlined, low-profile design, making it more fuel efficient than its predecessors and enabling it to run on all Amtrak routes without clearance issues. In order to improve maintainability, Amtrak in recent years has installed bolt-on fiberglass nose covers.

Genesis locomotives can provide head-end power (HEP) of up to 800kW to consists. A separate alternator driven by the prime mover supplies 480 volt, 3-phase power. The engine rpm is limited to 900 which results in a net power of 3,875Hp (2,890kW).

### 1.2 Design & Specification

<b>Builder</b>	GE Transportation
<b>Locomotive Weight</b>	121.7 tonnes
<b>Vehicle Length</b>	69ft (21.03m)
<b>Vehicle Width</b>	10ft (3.05m)
<b>Fuel Capacity</b>	2,200 US Gal
<b>Vehicle Power</b>	4,250hp (3,170kW)
<b>Top Speed</b>	110 MPH (177km/h)
<b>Brake Types</b>	Air
<b>Tractive Effort</b>	88,570 lb (394 kN) starting, 60,000 lb (267 kN) continuous

## 2 Rolling Stock

### 2.1 P42DC Amtrak Phase V

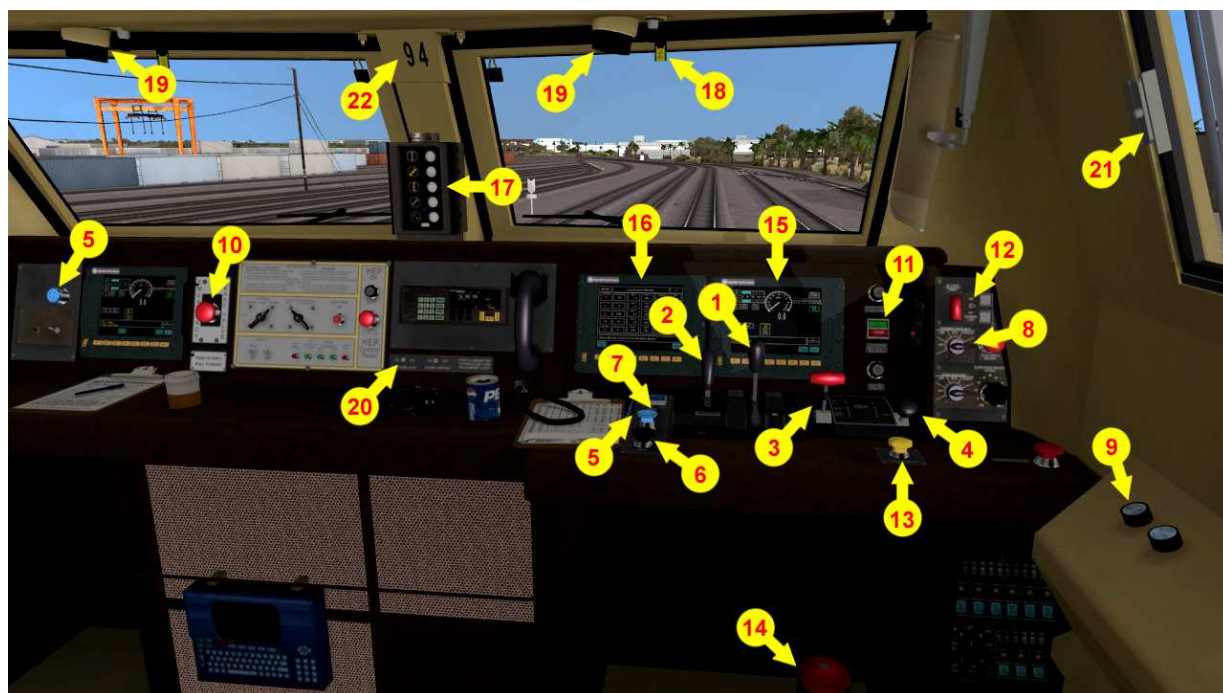


### 2.2 P42DC Amtrak Phase III



## 3 Driving the P42DC

### 3.1 Cab Controls



1	Combined Power Handle	12	Crossing Lights
2	Reverser	13	Alerter Reset
3	Train Brake	14	Horn Sequencer ( C key )
4	Locomotive Brake	15	Main control display
5	Horn	16	Loco Information display
6	Bell	17	Aspect Display Unit
7	Sander	18	Sun Shades ( U key )
8	Headlights	19	Task Light
9	Wipers	20	Dome Light
10	Emergency Stop	21	Windows
11	Emergency Stop/Engine Shutoff	22	Road Number



## 3.2 Cab Control and Information Displays



- |   |                               |    |                                |
|---|-------------------------------|----|--------------------------------|
| 1 | Analog Speedometer            | 6  | Track Speed Limit              |
| 2 | Digital Speedometer           | 7  | Alerter Visual Alarm           |
| 3 | Equalizing Reservoir Pressure | 8  | Combined Power Handle Position |
| 4 | Brake Line Pressure           | 9  | Reverse Lever Position         |
| 5 | Amperes                       | 10 | Road Number                    |

## 4 Scenarios

### 4.1 Simple Controls Training: P42 Empire Builder

Learn to drive the GE P42 using simple controls.

### 4.2 Expert Controls Training: P42 Empire Builder

Learn to drive the GE P42 using expert controls.

### 4.3 Empire Builder: Part 1

Drive the empire builder through Glacier National Park, making a few passenger stops.

- **Duration**                      **60 minutes**

### 4.4 Empire Builder: Part 2

Drive the Empire Builder on a short passenger service to Cut Bank. Expect some yellow and red signals on the way.

- **Duration**                      **45 minutes**

## 5 Acknowledgements

RailSimulator.com would like to thank the following people for their contribution to the development of the P42DC Empire Builder.

Beta Testing Team

