



dovetail
GAMES

Metro-North P32AC-DM



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1 Background

1.1 Loco

The P32AC-DM was developed for both Amtrak and Metro-North. They can operate on either an on-board diesel engine or from third rail, albeit only for short spans of time, approximately 10 minutes. The P32AC-DM is unique in having third-rail capabilities, a necessity for operating from New York City owing to diesel emissions being prohibited in the main terminal stations. It also features AC traction motors rather than DC traction motors as used by P42s and other sub-types.

1.2 Design & Specification

Builder	GE Transportation Systems
Locomotive Weight	124.466 tonnes
Vehicle Length	69 ft 0 in (21.03m)
Vehicle Width	10ft 0 in(3.05m)
Top Speed	110 MPH (177km/h) or 60 MPH (96.6km/h) in electric mode
Brake Types	Dynamic/Regenerative/Electropneumatic
Tractive Effort	63,000 lb (280.25 kN) DC Starting 38,000 lb (169kN) DC Continuous

2 Rolling Stock

2.1 P32AC-DM



2.2 Metro-North Shoreliner III



2.3 Metro-North Shoreliner III Cabcar



3 Driving the Metro-North P32AC-DM

3.1 Cab Controls and image



Train Simulator – Metro–North P32AC–DM

1	Combined Power Handle (A / D)	12	Loco Information Display
2	Reverser (W / S)	13	Main Control Display
3	Train Brake (; / ')	14	Crossing Lights
4	Locomotive Brake ([/])	15	Task Lights
5	Horn (Spacebar)	16	Sun Shades (U)
6	Bell (B)	17	Aspect Display Unit
7	Sander (X)	18	Emergency Stop
8	Headlights (H)	19	Dome Light
9	Emergency Stop/Engine Shutoff		
10	Alerter Reset (Q)		
11	Mode Select Switch		

3.2 In Cab Signaling

Locomotives on the New York to New Haven route feature in-cab signalling systems. The image below shows the in-cab display. Visually the display may vary for other locomotives but the principle remains the same.



Alerter: Alerts the user to react if they don't touch controls for 60 seconds. Cancel the alarm by pressing Q or the "!" icon on the HUD.

Cab Signal Aspect: The aspect of the section you are in now.

Signal Speed: Displays the speed associated with the cab signal aspect.

When running the P32AC-DM, if the signal aspect is "N" (Normal) then the speed indicator will be blank and you should adhere to the current speed limit on the line. If the signal aspect is anything lower than "N" then a speed signal aspect will be displayed and you should run at either the signal speed as indicated OR the current track speed limit – whichever is lowest.

For the Shoreliner III Cab Car the display is slightly different to the P32AC-DM. The current speed of the train is displayed in a digital readout in the center of the display while the N/L/M/R signal indicators are located around the outside. Note that each one has a line pointing to the speedometer – this line points to the speed limit you should adhere to if that signal is active. For example, in the screenshot above, the train is not moving (0mph displayed in the center) and the R light is illuminated – this points to 15mph on the speedometer and therefore tells us out signal speed limit.

If you enter a new block and it has a reduced aspect (e.g. going from Normal to Limited) then the following happens and must be done by the engineer:

1. An alarm will go off in the cab.
2. The cab signalling will update to reflect the new signal speed and confirm what the new aspect is.

3. If the train is within the MAS (Maximum Allowed Speed) then the engineer must simply press the ACKNOWLEDGE button (Q key) within 8 seconds.
4. If the train is above MAS then the engineer must zero the throttle, move the brakes into 40% application or greater, and then press ACKNOWLEDGE within 8 seconds.

(Note: It is not required to be within the speed limit during the 8 seconds, it is only required that the engineer has confirmed to the ATC system that they acknowledge the reduction in aspect and have taken appropriate action to comply with it.)

If the brakes fall below 40% while still being above MAS then the alarm will sound again and the same procedure must be followed.

Failure to acknowledge correctly within 8 seconds means the brakes will go to full service application - however, the engineer can apply the same procedure as above and they will be able to regain control of the train without having to stop.

Once the train is under the new MAS the engineer can simply release the brakes and apply throttle as required.

Speed increase alert - This alarm is a small audio ping as a notification that your signal speed limit has increased. Note - this only applies to SIGNAL speed limits, not track speed limits. Currently you can only see this working if you have the control state dialog visible, there's nothing on the cab to indicate it.

Disabling the Alerts –

If the player does not want ALERTER functionality, they can press CTRL-F to toggle this.

If the player does not want ALERTER OR ATC alarm and penalty brake functionality then they can press CTRL-D to toggle ATC Cut-out. In this case the cab signalling will still function, it just won't pester you with alarms or brake applications.

3.3 Power

The New York New Haven route runs both overhead and third rail power lines. The P32AC-DM operates between this crossover and has the required functionality to switch between them. This crossover occurs between Mount Vernon East and Pelham station where it switches from third rail to diesel travelling from West to East.



- 1 | Switches power between DC Mode and Diesel Mode
- 2 | Illuminates when DC power is available

When you enter a crossover between the two power types there will be a period of overlap in which the power will need to be switched over. To do this the following must be done by the engineer:

1. Zero the throttle.
2. Change the mode of operation to the new power type.
3. Apply the throttle.

The power will be switched automatically if the engineer does not change the power type. Use CTRL-SHIFT A to disable the automatic switch over and turn on the advanced power mode.

4 Scenarios

4.1 Simple Controls Tutorial: P32 Simple Controls

Learn how to drive the P32 by driving from Harlem to Fordham.

4.2 Expert Controls Tutorial: P32 Expert Controls

Learn how to drive the P32 by driving from Harlem to Fordham.

4.3 Stamford to the Grand

To Grand Central we head! Take control of a 4-car P32 passenger service, from the cab-car. Help is with you in the form of a P32 diesel, pushing from behind.

- **Duration** **50 minutes**

4.4 Danbury Express

Operate this P32, hauling the train from Grand Central, finishing at South Norwalk. Another engineer will take over to continue this service from the Danbury branch line.

- **Duration** **55 minutes**

5 Acknowledgements

Dovetail Games would like to thank the following people for their contribution to the development of the P32AC-DM.

Beta Testing Team
Gary Dolzall

