TS2018 DLC

Longhai Railway: Lingbao - Mianchi

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ROUTE INFORMATION

THE ROUTE

The Longhai railway, formerly romanized as the Lunghai railway, is a major arterial east–west railway in China. It runs from Lianyungang, Jiangsu on the Yellow Sea to Lanzhou, Gansu through the provinces of Jiangsu, Anhui, Henan, Shaanxi, and Gansu, covering a total length of 1,759 kilometres. The line is named after Gansu, also known as Long in Chinese and Lianyungang's previous name, Haizhou. The Longhai Line is one of the busiest Chinese railways. It has dual tracks throughout the whole line, and the lines between Xuzhou and Lanzhou has been electrified.
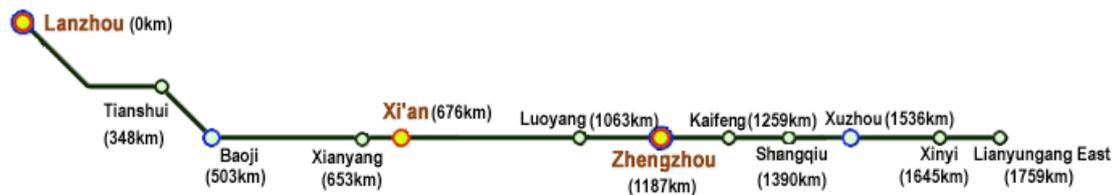
We've created the 106 km long Lingbao to Mianchi section in the Henan province in-game. This section features beautiful scenery of Loess Plateau, which is now recovering from massively destructive floods. Nature is finally taking her rights back, and nearby areas are being converted to forests and farmlands.

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HISTORY

The Longhai railway was built over the course of half a century by four different Chinese governments: the Qing Dynasty, the Beiyang Government, the National Government of the Republic of China and the communist government of the People's Republic.

The first section of the railway from Kaifeng to Luoyang, located entirely within the Henan province, was built from 1905 to 1909 from a business arrangement between the Qing Dynasty and a Belgian joint-stock company backed by France and Russia. This line, known as the Bianliang–Luoyang railway, began operation on January 1, 1910.

The line was extended eastward to Xuzhou in 1916 and to Haizhou in 1923 with Dutch financing. In the west, the line was extended to Lingbao, Henan in 1927 with Belgian financing. After the Northern Expedition, the Nanjing-based Republican government took control of construction and extended the line further west to Tongguan, Shaanxi in 1931, to Xi'an in 1934, to Baoji, Shaanxi in 1936 and Tianshui, Gansu in 1945.

Construction of the Tianshui to Lanzhou section, entirely within Gansu, broke ground in May 1946 but was halted by the Chinese Civil War, then resumed under the People's Republic in April 1950 and was completed in July 1953. At this time, the entire Longhai railway entered into operation.

In the late 1950s through early 1960s, new railways were built from Lanzhou to the west: the Lanxin railway to Xinjiang (later connected to Kazakhstan) and the Lanqing railway to Qinghai (later extended to Tibet).

From 1956 to 1970, the section between Zhengzhou, Henan to Baoji, Shaanxi was upgraded to the dual-track line. At the same time, in Henan the line near Sanmenxia was re-routed due to the Sanmenxia Reservoir Project. The Zhengzhou to Shangqiu section was converted to dual-track in 1980.

The railway is a central section in the New Eurasian Land Bridge.

FEATURES

1. An accurate recreation of Lingbao to Mianchi section.

2. Detailed beautiful Chinese scenery.

3. The LKJ signalling system.

4. HXD1 and HXD1C locomotives included.

5. KD25G, YZ25G and XL25G passenger rolling stock included.

6. P70, C70, P65, G70K and NX17B freight rolling stock included.

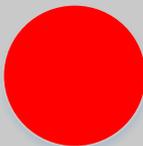7. Career, Quick Drive and Free Roam scenarios contained.

LKJ SIGNALLING SYSTEM

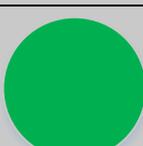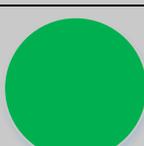The LKJ signalling system is used on lines when the speed limit is slower than or equal to 160 km/h in China. It is using differently coloured signals to provide information to the train drivers. The LKJ signalling system contains track data including track mileposts, track speed,stations, gradients, signals etc. Unlike the CTCS signaling system(used on high speed lines), all of these data with the exception of

signals, is stored in the locomotive's computer. The state of the signals are the only thing to be transmitted and updated in real time.

The table below gives the corresponding meaning for each of the different colour configurations for the signals.

Ground Signals	Cab Signals	Description
Block Signals		
🔴	🟡🔴	Stop before the signal.
🔴	🔴	The train has passed the signal, stop immediately.
🟡	🟡	The next signal block straight ahead is clear, be prepared to stop at the next signal.
🟡	🟡 2	The next signal is home signal and the side direction of junction is open, be prepared to stop in the station
🟢🟡	🟢🟡	The two next signal blocks straight ahead are clear, expect a fully yellow signal next.
🟢	🟢	The signal is clear, proceed following the speed restrictions.
Home Signals (present when arriving at a station)		

(red)	(yellow/red)	Stop before the signal.
(red)	(red)	The train has passed the signal, stop immediately.
(yellow)	(yellow)	At the junction, go straight ahead and be prepared to stop before the next signal.
(yellow/yellow)	(yellow/yellow)	Take a turn at the junction and be prepared to stop before the next signal.
Flash (yellow/yellow)	(yellow/yellow)	Take a turn at the junction and proceed following the speed restrictions. (This signal aspect is not used in this route.)
(green/yellow)	(green/yellow)	The two next signal blocks are clear, at the junction go straight ahead and expect a fully yellow signal next.
(green)	(green)	The signal is clear, the track straight ahead at the junction is clear, proceed following speed restrictions.

Exit Signal

(red)	(yellow/red)	Stop before the signal.

(red circle)	(red circle)	The train has passed the signal, stop immediately.
(yellow circle)	(yellow circle)	The signal block straight ahead is clear, be prepared to stop at the next signal.
(green circle above yellow circle)	(green/yellow split circle)	The two next signal block straight ahead are clear, expect a fully yellow signal next.
(green circle)	(green circle)	The signal is clear, the track straight ahead at the junction is clear, proceed following speed restrictions.

Shunt Signal

(white circle)	(white circle)	The signal is clear, you may proceed following speed restrictions. (Note: The signal shown in-cab is white, which means you need to pay attention to the ground signal.)
(blue circle)	(white circle)	The signal is not clear, you should stop before the signal. (Note: The cab signal is white, which means you need yo pay attention to the ground signal.)

Repeating Signal Indicating Home Signal
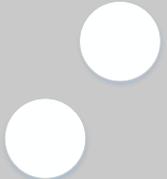
(two white circles, diagonal)	Displays the state of the home signal	The home signal is clear, the track straight ahead at the junction is clear.
(two white circles, horizontal)	Displays the state of the home signal	The home signal is displaying double yellow. The track leading to the side at the junction is clear, be prepared to stop before the next signal.

No display	Displays the state of the home signal	The home signal is not clear. Stop before the home signal.
Repeating Signal For Exit Signal		
⬤	Displays the state of the exit signal	The exit signal is clear, proceed following speed restrictions.
No display	Displays the state of the exit signal	The exit signal is not clear, the train should stop before the exit signal.

ROLLING STOCK

HXD1 DOUBLE ELECTRIC LOCOMOTIVE

The HXD1 locomotive, a new heavy load freight locomotive is available to use on the mainline.

It was designed and manufactured by CRRC ZELC, using the data collected from the DJ1 locomotive on the Datong-Qinhuangdao line, especially in regards to the line's environment. It was designed not only with the intent of improving the transport

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capacity of the Datong-Qinhuangdao coal line, but also to promote the modernisation of railway equipment technology. This locomotive is suitable for taking heavy-hauled and long marshalling freight trains over long distances and uphill. The locomotive is fitted with a pantograph and the CCB II air brake system, which control the disc brakes, which greatly improve the locomotive's reliability. The electric brake uses regenerative braking, allowing for eco-conscious energy savings. The locomotive also features a remote control function, as it is equipped with Locotrol's remote control system. This allows the driver to carry out control remotely of two connected locomotives from a single cab.

Type：	HX_D1
Usage：	Freight Locomotive used on the mainline
Axle arrangement:	2（B_0-B_0）
Current system:	Single phase AC/25 kV/50Hz
Track gauge:	1435 mm
Total weight:	184 t/200 t
Maximum operation speed:	120 km/h
Traction power:	9600 kW
Braking power:	9600 kW
Starting traction force:	700 kN/760 kN
Electric braking mode:	Regenerative braking
Maximum electric braking force:	461 kN

HXD1C ELECTRIC LOCOMOTIVE

The HXD1C locomotive is a high-power AC drive six-axle electric locomotive with a power of 7200 kW. It was designed with its own set of fully independent intellectual property rights. 90% of its components are made in China. The locomotive's design makes use of nine main technology patents, being the locomotive's assembly, carbody, bogie, traction transformer, traction converter, network control system, traction motor, driving device and brake system.

It also makes use of ten other supporting technology patents: its pantograph, main vacuum circuit breaker, high voltage (voltage/current) transformer, cab console, auxiliary equipment/traction motor fan, air compressor, air conditioning, composite cooling tower, coupler buffer and hygiene device. The locomotive's independently developed design is part of a contribution towards breaking the monopoly of multinational companies over the core technology of heavy-duty freight electric locomotives. It aims to end the ongoing situation whereby domestic high-power AC electric locomotives are heavily reliant on foreign designs.

Type：	HX$_D$1C
Usage：	Freight electric locomotive used on the mainline

Axle arrangement:	C_0-C_0
Current system:	Single-Phase AC 25 kV/50 Hz
Track gauge:	1435 mm
Total weight:	138 t（23 t Axle load） 150 t（25 t Axle load）
Maximum operation speed:	120 km/h
Traction power:	7200 kW
Braking power:	7200 kW
Starting traction force:	520 kN（23 t）or 570 kN（25 t）
Electric braking mode:	Re-generative braking
Maximum electric braking force:	370 kN（23 t）or 400 kN（25 t）

PASSENGER COACHES

We've made available 3 different types of passenger coaches in-game: the YZ25G, the KD25G and the XL25G.

The YZ25G is a kind of semi-cushioned seat coach, the KD25G is a generator car supplying power for the air conditioners along the length of the whole train, and the XL25G is a luggage car. All of the coaches can run up to 120 km/h.

YZ25G

KD25G

XL25G

FREIGHT WAGONS

5 types of freight wagons are made available with this route, the C70, the P70, the NX17BK, the G70K, and the P65. These wagons can run up to 120 km/h.

C70

P70
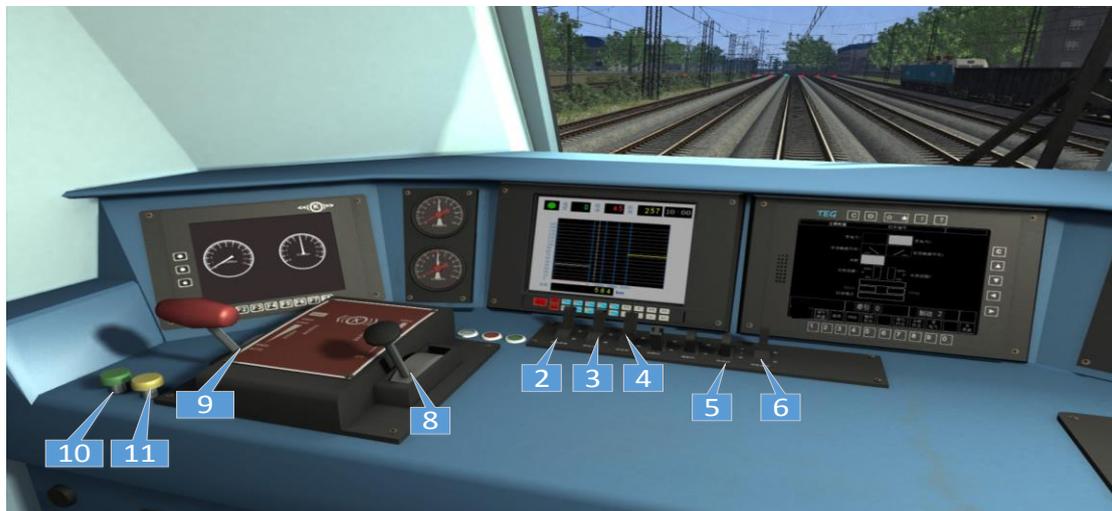
NX17BK

G70K

P65

DRIVING

HXD1 CAB CONTROLS

No.	Control	Hot Key	NO.	Control	Hot Key
1	Master Key	M	11	Horn Low	B
2	Main Breaker	C	12	Emergency Brake	Backspace
3	Pantograph	P	13	Throttle/Brake	A and D
4	Air Compressor	Y	14	Reverser	W and S
5	Headlights	H	15	Sander	X

6	Cab Light	L	16	Signal Monitor	J
7	Meters Light	O	17	Left Window Blind	R and Shift R
8	Engine Brake	] and [	18	Right Window Blind	U and Shift U
9	Train Brake	; and '	19	Wipers	V
10	Horn High	Space	20	Train Brake 2	Q and E

HXD1C CAB CONTROLS

No.	Control	Hot Key	NO.	Control	Hot Key
1	Master Key	M	11	Horn Low	B
2	Main Breaker	C	12	Emergency Brake	Backspace
3	Pantograph	P	13	Throttle/Brake	A and D
4	Air Compressor	Y	14	Reverser	W and S
5	Headlights	H	15	Sander	X
6	Cab Light	L	16	Signal Monitor	J
7	Meters Light	O	17	Left Window Blind	R and Shift R
8	Engine Brake	] and [	18	Right Window Blind	U and Shift U
9	Train Brake	; and '	19	Wipers	V
10	Horn High	Space			

HXD1/1C DRIVING

To start the HXD1/1C locomotive, follow the steps below:

1. Turn on the master key [M]

2. Raise the pantograph [P]

3. Turn on the main breaker [C]

4. Turn on the air compressor [Y]

5. Set the reverser into the right position. [W/S]

6. Set the throttle/brake lever to a traction position such as P1,P2...P12.   [A]

7. Release the train brake [;]

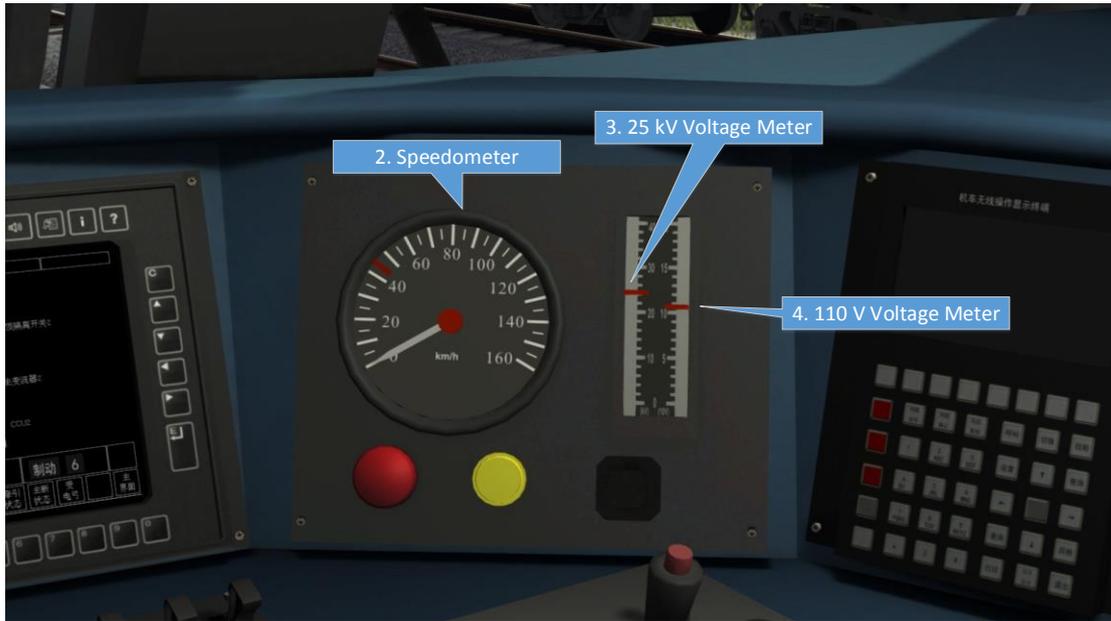8. Now the locomotive should start to move.

Note 1: The HXD series locomotives have something similar to a cruise mode. When the throttle/brake lever is set to a traction position, the locomotive will stick to the corresponding speed. For example, if set to the P2 position, the locomotive will run
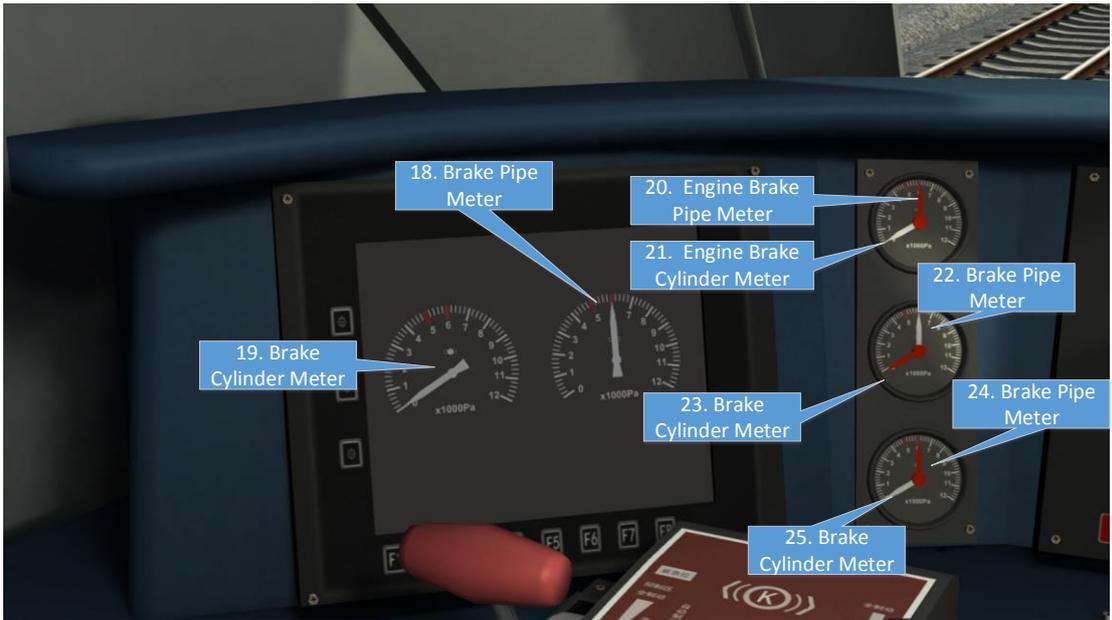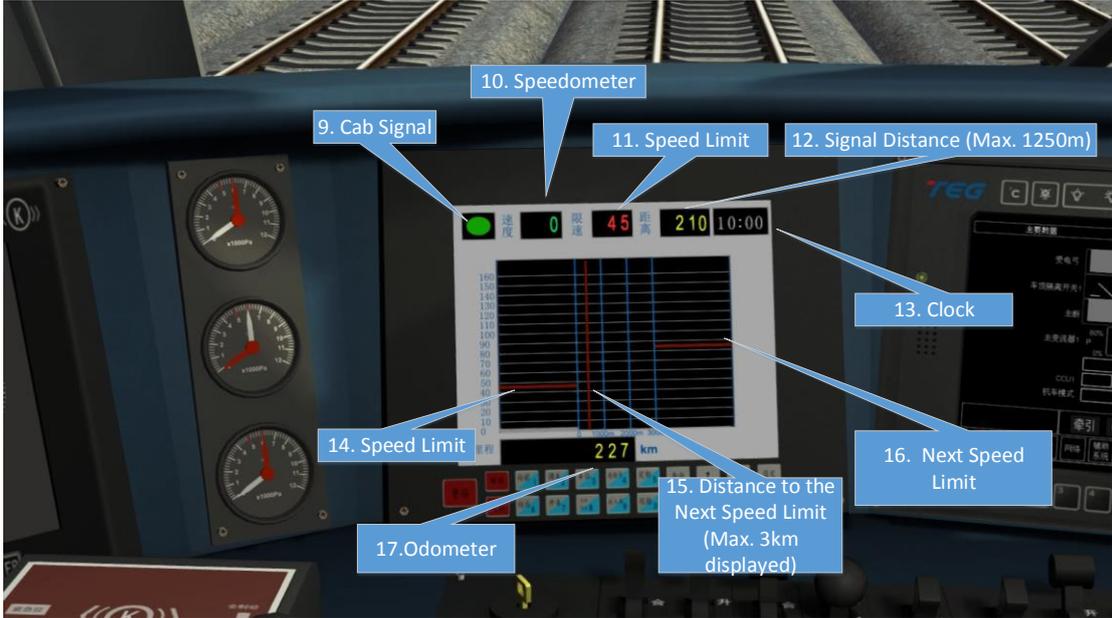
at 20 km/h. However, if it is hauling heavy freight wagons, the traction force may not prove to be enough to keep the train running at 20 km/h. Similarly, if the train is going downhill, the brake will not apply automatically, in which case the speed may exceed 20 km/h.

Note 2: The throttle/brake handle brake settings correspond to the dynamic brake.
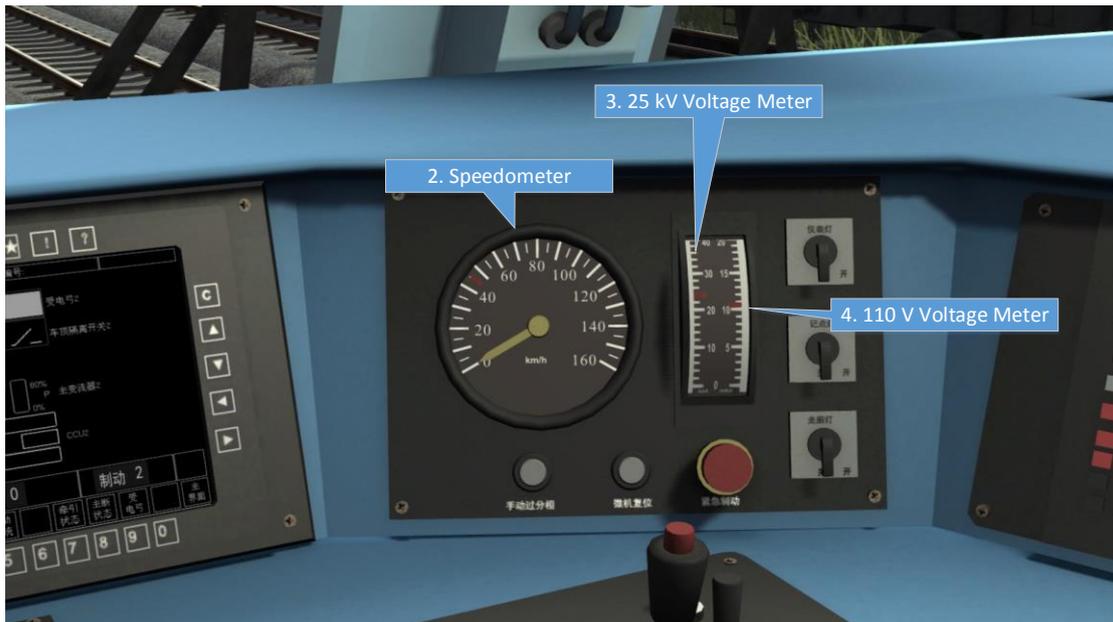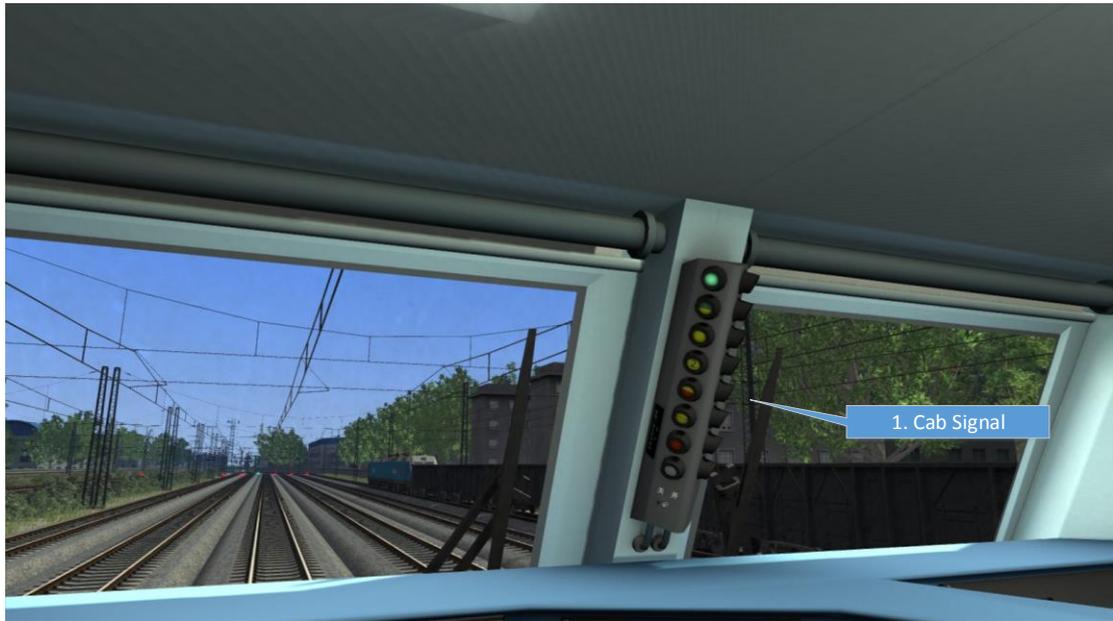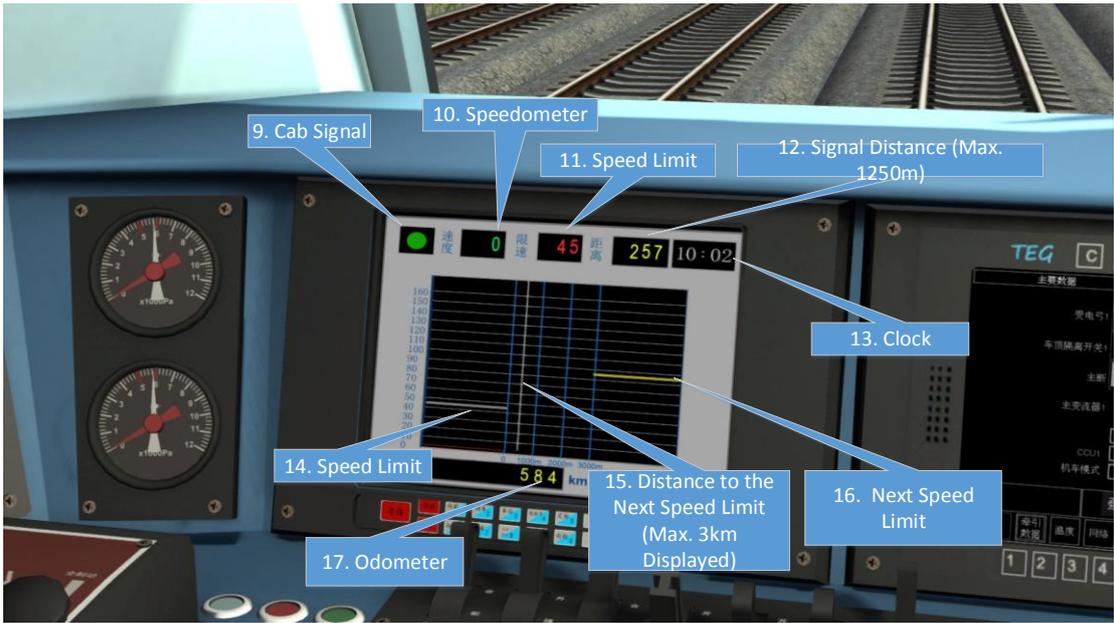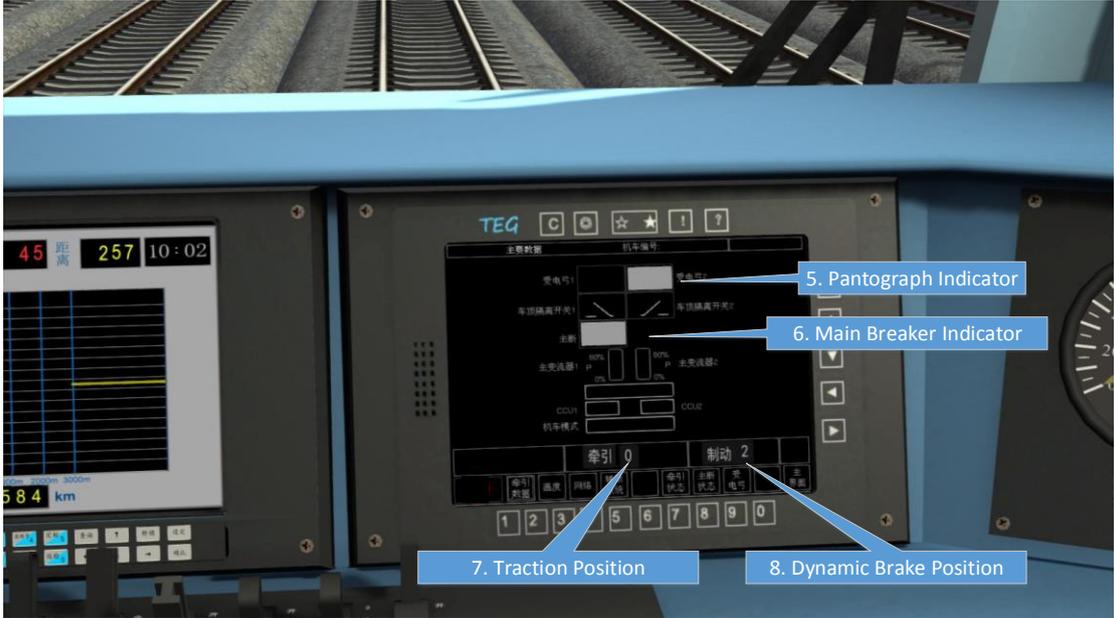
HXD1 CAB DISPLAY

HXD1C CAB DISPLAY

1. Cab Signal

3. 25 kV Voltage Meter

2. Speedometer

4. 110 V Voltage Meter

5. Pantograph Indicator

6. Main Breaker Indicator

7. Traction Position

8. Dynamic Brake Position

9. Cab Signal

10. Speedometer

11. Speed Limit

12. Signal Distance (Max. 1250m)

13. Clock

14. Speed Limit

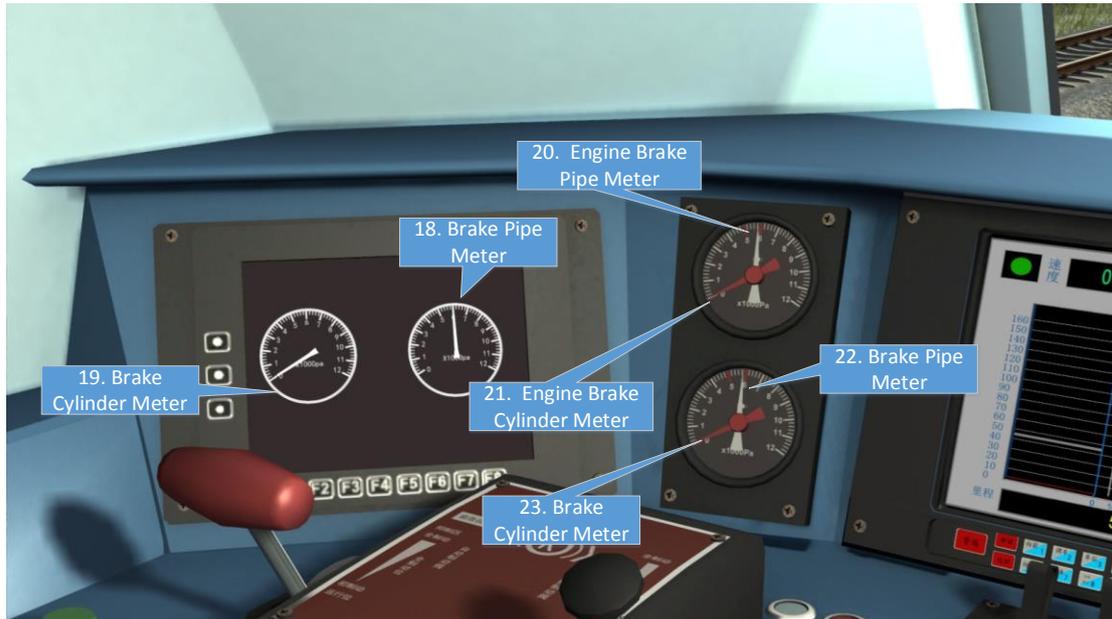15. Distance to the Next Speed Limit (Max. 3km Displayed)

16. Next Speed Limit

17. Odometer

Note: The odometer (control No.17) records the HXD1/1C's running distance as used in-game. If you want to reset this value to 0, you may find the relevant files with the following path file:

<Path to the drive or folder your Steam client is installed on>\Steam\SteamApps\common\RailWorks\Assets\SimtechVision\HXD1CPack\RailVehicles\Electric\HXD1C\Engine

Find hxd1cmiles.txt, open it in a .txt editor and set the value to 0. The value you see here is defined in metres.

SCENARIOS

This route features 8 Career scenarios and 3 Free Roam scenarios. Quick Drive is also made available for the route.

CAREER SCENARIOS

1. [HXD1] How to drive the HXD series locomotives

In this scenario, you will learn how to drive the new HXD series locomotives. Let's start with the HXD1.

2.   [HXD1C] Freight express

Dirve the P65 express freight train from Sanmenxiaxi to Miaogou.

3.   [HXD1] Heavy freight service and passenger train rescue

You will drive a HXD1 4500 t mixed freight train from Mianchi to Miaogou, then assist a HXD1C passenger train and bring them back to Mianchi.

4.   [HXD1] L5666 passenger service

You will drive the L5666 train from Lingbao Station to Sanmenxia Station.

5.   [HXD1C] 35665 freight service

You will drive the 35665 train from Mianchi Station to Sanmenxiaxi Station.

6.   [HXD1C] K870 passenger service

Drive the K870 Chengdu-Zhengzhou passenger train from Lingbao to Mianchi.

CREATING SCENARIOS WITH HXD1/1C, 25G AND FREIGHT WAGONS

After you create a new scenario, please select the SimtechVision assets and tick "CN25G", "Cargo", "HXD1CPack", and "HXD1_Iron8Pack".

Several consists are now available for you to use.