

HXD1 Manual



This manual is only applicable to HXD1 operations within Train Simulator Classic and should not be used for practical purposes

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1A Introduction

1A1 The HXD1

1A1.1 Brief introduction

HXD1 "Harmony" electric locomotive is one of the electric locomotive models of China's railway. It is jointly developed by Siemens and CRRC Zhuzhou electric locomotive Co., Ltd. It is an eight axle high-power AC drive electric locomotive for trunk freight transportation, which is based on the Siemens "EuroSprinter" locomotive platform, ES64F4 electric locomotive as the prototype, and DJ1 electric locomotive's application experience in the Daqin Railway, Continuous power of 9600 kW, with a maximum operating speed of 120 km/h

1A1.2 Technical data

Maximum speed of 120 km/h	Maximum speed of 120 km/h
Continuous speed 70 (65) km/h	Continuous speed 70 (65) km/h
Traction power 9600 kW (continuous)	Traction power 9600 kW (continuous)
10000 kW (maximum)	10000 kW (maximum)

1A1.3 **In game feature directory**

1A1.3.1 **Security System**

- Anti drowsiness system(ADVS)
- Automatic train protection(ATP)
- Parking brake
- Handle anti slip

1A1.3.2 **Operating system**

- Cruise System
- Dynamic pantograph

1A1.3.3 **Operation supervision system**

- ▶ Distance display indicator
- ▶ Brake dial
- ▶ Signal indicator
- ▶ Speed dial (including mechanical watch)
- ▶ LKJ-2000 Operation supervision system
- ▶ Power dial
- ▶ Equipment monitoring display

1A2 The C62 & P64

1A2.1 C62 freight wagon

The C62 series gondola is a multi-purpose gondola designed and manufactured in China to meet various transportation requirements and increase the speed of truck transportation. It can carry cargo such as containers, timber, coal mines, and solid bulk materials. The C62 series gondola has been the main force of freight vehicles in China for a long time in the past. Among the gondola series, the C62 gondola and its series have the largest number of gondolas.

The C62 in this game expansion pack is based on a real-life C62B gondola as a prototype.



1A2.2 P64 freight wagon

Box cars are general vehicles in railway freight cars, used to transport goods that are afraid of sunlight, rain, and snow, including various grains, daily industrial products, and valuable instruments and equipment. Some box cars can also transport people and horses. By the end of 2002, China Railway had 91835 box cars, accounting for approximately 20% of the total number of freight cars.

The box car in this game expansion package is based on a real-life P64 box car as a prototype.



1A2.3

NX70A freight wagon

The NX70A flat wagon is a 13m long shared flat wagon developed by Erqi Vehicle Factory to improve container transportation capacity and meet the requirements of 100m and 500m long steel rails.

The NX70A type shared flat wagon adopts a modular design on the chassis. When the locking mechanism is assembled on the chassis, it is the NX70A type container shared flat wagon, and when the locking device is not assembled, it is the N70 type universal flat wagon.

This game expansion pack includes three types of NX70A flat wagon, namely "empty" and "loaded". There are two different types of "wagons", as shown in the following figure (only "loading wagon"):



1A2.4

G60K freight wagon

The G60 light oil tanker is the largest tank wagon in China in terms of cumulative production quantity. It mainly transports light oil products such as gasoline, kerosene, diesel, and can also be used to transport viscous oil, lubricating oil, water, ammonia, etc.

The G60K light oil tanker is an improved model equipped with a K2 type bogie.

This game expansion pack contains three different types of G60K light oil tankers with different coatings ("幻城石化石油" is a virtual setting, and if there are any similarities, it is purely coincidental), as shown in the following figure:



1A3 Train formation

1A3.1 Introduction

Group Introduction: This game expansion pack includes the following types of groups:

- ▶ 3000 ton coal transport special train
- ▶ 3000 ton sand and gravel dedicated train
- ▶ 2000 ton container dedicated train
- ▶ 3000 tons of sand, stone, and coal mixed formation
- ▶ 1000 ton box car special train
- ▶ 3000 ton mixed formation (including P64 and C62)
- ▶ 3000 ton mixed formation(including NX70A and G60K)
- ▶ 3000 ton oil tank dedicated train
- ▶ 1000 ton flat wagon container dedicated train
- ▶ Special train for empty oil tanker return

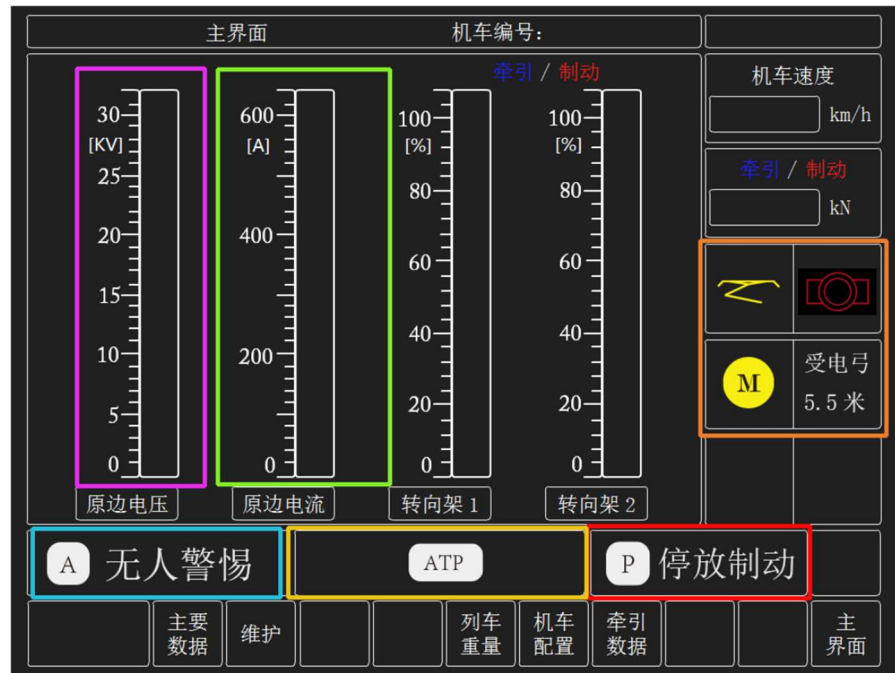
1A3.2 Activate

HXD1 Package has **TWO** package folder which one called “**HXD1Pack**” and another one called “**Wagons**”. Please activate those to assets folder to make sure all locomotives and wagons can work normally.

2A Train System

2A1 System Interface

2A1.1 Equipment monitoring display



Equipment monitoring area:

- ▶ Purple box: contact network voltage
- ▶ Green box: throttle valve power
- ▶ Orange box: equipment monitoring (pantograph status, main circuit breaker status, pantograph height and air compressor status)

Status indicator area:

- ▶ Blue box: unmanned alert status
- ▶ Yellow box: ATP, cruise control, and other system states
- ▶ Red box: Parking brake status

2A2 Security System

2A2.1 Anti drowsiness system (ADVS)

Driver fatigue is a major issue and so an Anti-Drowsiness Vigilance System (ADVS) is in use on the HXD1.

In the simulation the ADVS alarm will sound **every 45 seconds**. If the alarm is not cancelled by you within 15 seconds, the train will automatically apply emergency braking and the train will come to a complete stop.

When you hear the ADVS alarm you can either press the “Q” key on your PC keyboard or the appropriate button on the train desk which will cancel the alarm.

If you fail to cancel the alarm and the train comes to a full stop then, please refer to the instructions further down in this manual in the “SPECIAL CASE HANDLING” section.



When the ADVS is activated, this icon will appear in your **Equipment monitoring display - status indicator area (blue box)** continuously flashing inside, accompanied by an alarm sound.

If you want to turn off the ADVS, please refer to the instructions further down in this manual in the “**2A2.7 Security system Offline**” section.

2A2.2

Parking Brake

In order to prevent the driver from misoperating the train while starting or stopping at the platform, resulting in general accidents caused by motor vehicles or departure at the wrong time, HXD1 is equipped with a parking brake system.

In the game, when your parking brake is turned on, you will not be able to operate the throttle valve. Any operation you make to the throttle valve will be considered invalid, whether it is to increase power or use regenerative braking.

When you need to start the train, please turn off the parking brake. Shotcut Keys:

- ▶ O (Off)
- ▶ I (On)

When you activate the parking brake, the train status monitoring display will display the parking brake icon to indicate that you have activated the parking brake.



When the parking brake is activated, this icon will be displayed on the **Equipment monitoring display - status indicator area (red box)**.

2A2.4

Auto Train Protection

Automatic Train Protection (ATP), also known as the Train Overspeed Protection System, its function is to automatically brake the train when it exceeds the specified speed.

In the game, if "your speed">"current speed limit"+1 kilometer per hour), the monitoring system will play a voice prompt to remind you to pay attention to the speed.

The ATP triggers an emergency stop condition of "your speed">"track limit"+5 (kilometers per hour) and lasts for 15 seconds.

If ATP emergency braking is triggered, please refer to "Special situation handling" for a solution.



The automatic train protection system is activated by default, and this icon will be displayed in your **Equipment monitoring display - status indicator area (yellow box)**. This icon is only used to inform players that the ATP system is running without accompanying an alarm sound



If you trigger an ATP alarm, you will see this alarm on the LKJ-2000 Operation supervision system display.

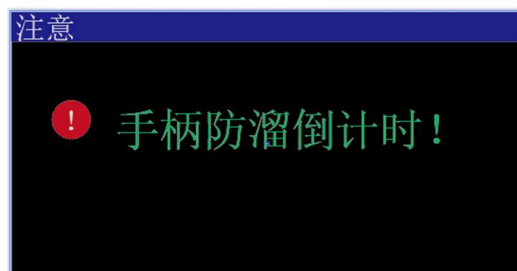
If you want to turn off the ADVS, please refer to the instructions further down in this manual in the “**2A2.7 Security system Offline**” section.

2A2.5 **Handle anti slip system**

In order to prevent the train from moving or rolling without fully starting, HXD1 is equipped with a handle anti rolling system.

When you have not released the parking brake and the handle is in the 0 position, if the train movement speed is greater than 3km/h, this system will broadcast a voice prompt;

If the player still fails to stop the train in a timely manner at this time, the system will trigger an emergency braking stop after ten seconds.



When you trigger this alarm, you will see this prompt on the LKJ-2000 Operation supervision system display, accompanied by a 10 second countdown.

2A2.6

Description of degraded operation

When the ATP system or handle anti slip system triggers the emergency parking brake, you will see this alarm prompt on the LKJ-2000 Operation supervision system display:



2A2.7

Security system Offline

If you do not want to receive any alerts from the **ADVS** and **ATP** systems, simply take this running monitoring system offline.

Offline method:

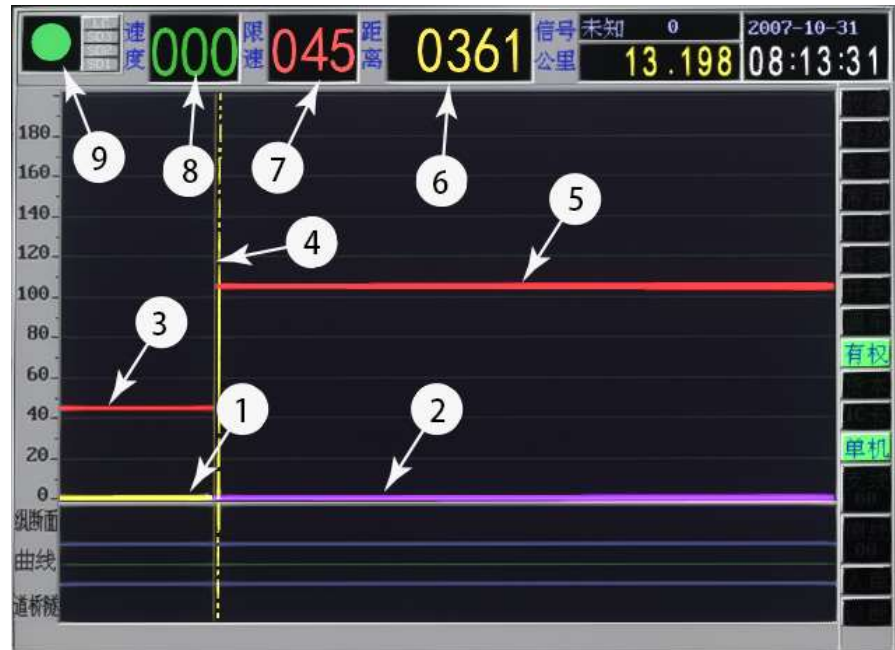
Press the monitoring unlock [**X**] button for 5 seconds.



If you want to reconnect the security system, simply press this button again for 3 seconds.

2A3 Operation supervision system

2A3.1 Operation supervision system interface



illustration

#	Name	Introduce
1	Current speed	Display current speed
2	Cruise speed value	Display the cruise speed you have set
3	Current speed limit	Display the current speed limit
4	Next speed limit distance	Display the next speed limit distance
5	Next speed limit	Display the speed value for the next speed limit
6	Next speed limit/signal distance indicator	Display the distance of the next signal or speed limit
7	Current speed limit indicator	Display the current speed limit in numerical form
8	Current speed indicator	Display the current speed in numerical form
9	Signal indicator	Display current signal

2A4 Operating system

2A4.1 Cruise Control System

The cruise control mode will accurately control the speed of your train at the speed value you set. Whether it is going uphill or downhill, the train computer can accurately control the speed of the train.

Attention: Cruise control is not affected by line signals, so please turn off this mode in a timely manner when the train is about to enter the station.



The switch for cruise control mode is located at the front of the power/brake lever, as shown in the figure. You can manually turn it on or use Shortcut Keys (see Shortcut Keys section for details)

Please note: Before turning on cruise control mode, please ensure that you have set the correct speed value, which should be less than or equal to the current speed limit. The speed setting handle is located on the right side of the throttle valve.



When you turn on cruise control, you will see this icon displayed in the status indicator area (red box) of your device monitoring display.

2A4.1

Dynamic pantograph

Due to the influence of some lines, the height of the overhead contact network of most lines is uneven. Some lines have a network height of 5.5 meters, while others have a network height of 6 meters. In order to solve this problem, we have specially developed the function of switchable height pantograph (dynamic pantograph). Players can manually switch the height of the pantograph through the knob.

The default pantograph height is 5.5 meters.



The pantograph height switch is located at the lower right of the speed dial (mechanical meter) (as shown in the figure).

2B Signal System

2B1 Signal Indicator

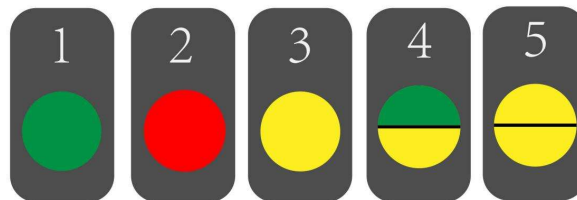
2B1.1 On board signal display



This signal display is located in the middle of the cab. When the locomotive reads a signal, this indicator will light up the corresponding color light and be accompanied by a voice prompt.

2B2 Chinese Railway Standard System Signal

2B2.1 CTCS – 3 Chinese Railway Standard System Signal



Green light - allows passing through this signal and entering the next section, with unlimited speed limit.

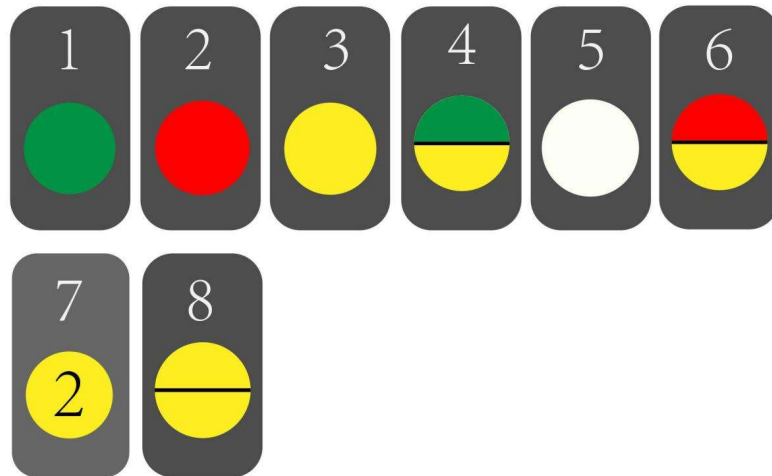
Red light - stop, not allowed to enter the next section.

Yellow light - slow down or follow the speed limit.

Green yellow light - indicates that the next signal is yellow.

Double yellow light - entering the siding.

2B2.2

Common Chinese Railway Standard System Signal

Green signal light - the track is clear and allows you to move forward at the speed of the line.

Red signal light - This signal indicates a stop. If the dispatcher allows you to pass the red light, please stop the train and use visual driving rules.

Yellow signal light - This indicates that there are vehicles driving on the second section of the road ahead of this section, please slow down.

Green yellow signal light - indicates that there are vehicles on the third section of the line ahead of the section, or the next signal is in a yellow state. In general, it means that it is allowed to pass through the speed limit on the route, but the driver should pay attention to the lookout.

White signal light - This signal indicates that the current signal cannot be read. Please drive according to the line speed limit.

Red and yellow signal light - This signal indicates that the driver needs to stop immediately.

A yellow signal light with the number "2" - this signal indicates that the train is about to enter the station or is approaching the parking

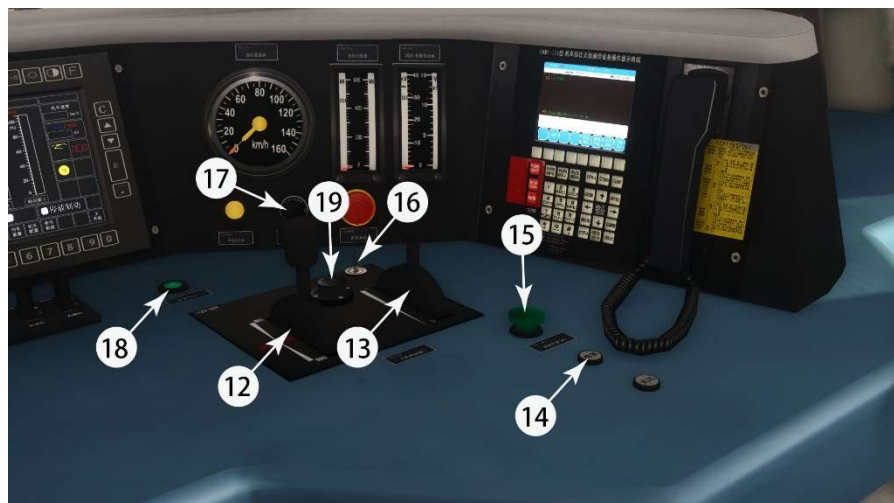
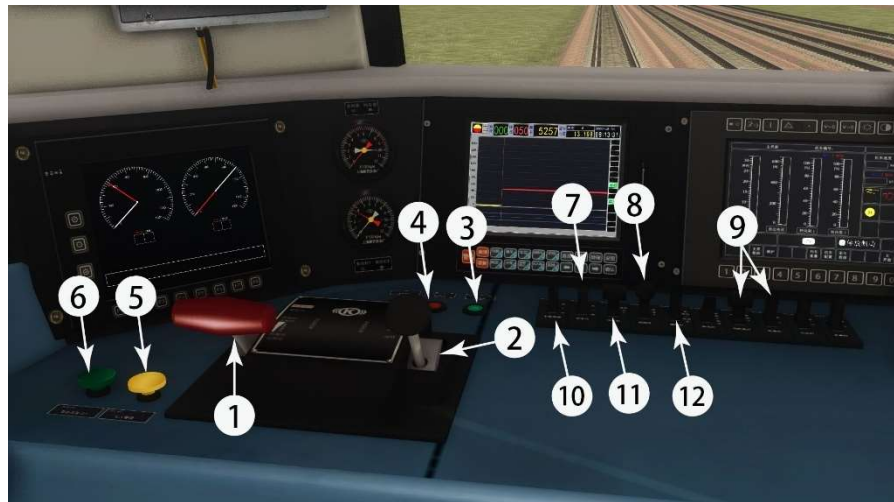
position. This signal function is the same as the yellow light. Usually indicates that the train needs to slow down.

Double yellow signal light - indicating that the line will lead to the siding

3A The Cab

3A1 Driver's cab diagram

3A1.1 Functional Key Legend





3A1.3

illustration

Function Shortcut Keys					
#	Name	Shortcut Keys			
1	Train Brake Control	Up	;	Down	'
2	Engine Brake Control	N/A			
3	Parking Brake OFF	Press		O	
4	Parking Brake ON	Press		I	
5	ADVS Button	Press		Q	
6	High Horn	Press		Space	
7	Pantograph	On	P	Off	Shift P
8	Head-Light	On	H	Off	Shift H
N/A	Auxiliary Light	On	Ctrl H	Off	Shift Ctrl H
9	Cab Light	On	J	Off	Ctrl J
	Desk Light	On	K	Off	Ctrl K
10	MCB	On	M	Off	Shift M
11	Air Compressor	On	N	Off	Shift N
12	Throttle	Up	A	Down	D
13	Target Speed Handle	Up	Y	Down	U
14	Ele-Horn	Press		PageUp	
15	Bell	Press		B	
16	Marster Key	On		F	
17	Pantograph Height Knob	On	L	Off	Shift L
18	Cruise Controller	On	C	Off	Shift C
19	Reverser	Up	W	Down	S
20	Wiper	On	V	Off	Shift V
N/A	Sander	On	Z	Off	Shift Z
Function Shortcut Keys (not in cab diagram)					
#	Name	Shortcut Keys			
N/A	ADVS Offline	Press		X	

3B Train Starting

3B1 Starting

3B1.1 Train Starting

Please follow the following sequence to start the train

1. **【 F 】** Turn on the main control key.
2. Wait for the locomotive system to load, approximately 10 seconds.
3. **【 P 】** Lift the pantograph and wait for power on.
4. **【 M 】** Press the MCB button to "close".
5. **【 N 】** Turn on the air compressor, otherwise the brake cannot be released.
6. Check the Equipment monitoring display, is it all icon is update display to green.

From now on, complete Train Starting. be careful! If you do not follow this sequence to start, it may cause the train to not start correctly

4A Special situation handling

4A1 EMERGENCY STOP TRIGGERED BY ADVS

4A1.1 Release ADVS emergency stop

Please follow the following steps to release the emergency stop

1. Wait for the train to stop.
2. Zero the power.
3. Push the power/brake lever between 0% and -20%.
4. Zero the inverter.
5. Press and hold the ADVS reset button [Q], and the emergency braking will be released after 20 seconds.

Since then, you have successfully lifted the EMERGENCY STOP TRIGGERED BY ADVS.

4A2 EMERGENCY STOP TRIGGERED BY ATP

4A2.1 Release ATP emergency stop

Please follow the following steps to release the emergency stop

1. Wait for the train to stop.
2. Move the train brake handle again.
3. Wait for the train pipe to be refilled with air.

Since then, you have successfully lifted the emergency stop triggered by ATP.

5A Others

5A1 Scenarios

Introduction The expansion of the HXD1 series includes a set of eight scenarios, aiming to be used in conjunction with the Southwest China high-speed rail network <https://www.justtrains.net/product/southwest-china-high-speed-rail-network> and [LongHai Railway](#) on steam store (HXD1 does not provide this software, but can be purchased from the Just Trains website and Steam store).

South West China High-Speed

5A1.1 **[Standard] HXD1-(01).75038-Short haul freight**

Freight train from Guang'an South to Hechuan

5A1.2 **[Standard] HXD1-(02).55361-Suining Special Train**

The freight train from Nanchong to Suining undergoes a reversing operation in Suining

5A1.3 **[Standard] HXD1-(03).26415-Express freight**

Today, you will drive this train directly to Suining from one station.

LongHai Railway : LingBao to MianChi

5A1.4 **[Standard] HXD1-(01).25671-Train rescue**

Today, you will take on the rescue train to Sanmenxiayi. First, go to Lingbao to add the faulty train, and then go to Sanmenxiayi

5A1.5 **[Standard] HXD1-(02).25173-Morning Express**

The first heavy haul train to Mianchi in the morning follows the timetable. This train has a capacity of 3000 tons. Pay attention to the timing of braking, strengthen observation, and drive carefully

5A1.6 **[Standard] HXD1-(03).65318-Snow freight**

Freight train under snowstorm This train is going from Sanmenxia to Lingbao

5A1.7 **[Standard] HXD1-(04).25889-Evening freight**

You will be driving a night freight train today. The weather is not very good, please drive carefully!

5A1.8 **[Standard] HXD1-(05).31558-Heavy freight**

Today you will be driving this [heavy freight train] to Sanmenxia West Freight Yard.

5A2 Manual Description

5A2.1 Illustrate

contributor:

PhantomGroup

Just Trains (www.justtrains.net)

All testing personnel.

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