

Summary



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1. Remerciements / Thanks

Merci beaucoup à pml3 (Patrick Millerieux) pour ses conseils sur les scripts.

Merci beaucoup à Erakis et pml3 pour le script de gestion de la VA.

Merci beaucoup à Zvince pour la fourniture de l'attelage Scharfenberg de la motrice.

Merci beaucoup à jibeh pour ces suggestions de modification (v1.1).

Merci beaucoup à gondel pour la description des principes la VI, la fourniture de l'avertisseur 2 tons et ses tests détaillés.

2. Installation

Unzip the downloaded file and install the *.rwp file package.
This installs for each car both versions, azerty and qwerty.

From the route editor, insert the cars in a scenario following the operations shown in the image on the next page.
A typical consist is made of 1 engine car at each end surrounding 2 simple cars.



In route editor:



On step 2, click on the blue box



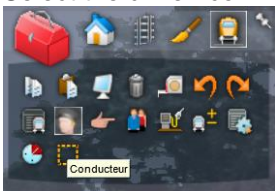
On step 3, **check both** indicated boxes.

Select at step 4 each element of the consist (window A and B) or **select one of the proposed consists** (window C). These consists are also available in quick drive.

For the engine, select Z6400m_qw instead of Z6400m (step 4 in above image) to use the qwerty version.

Don't forget to add a driver:

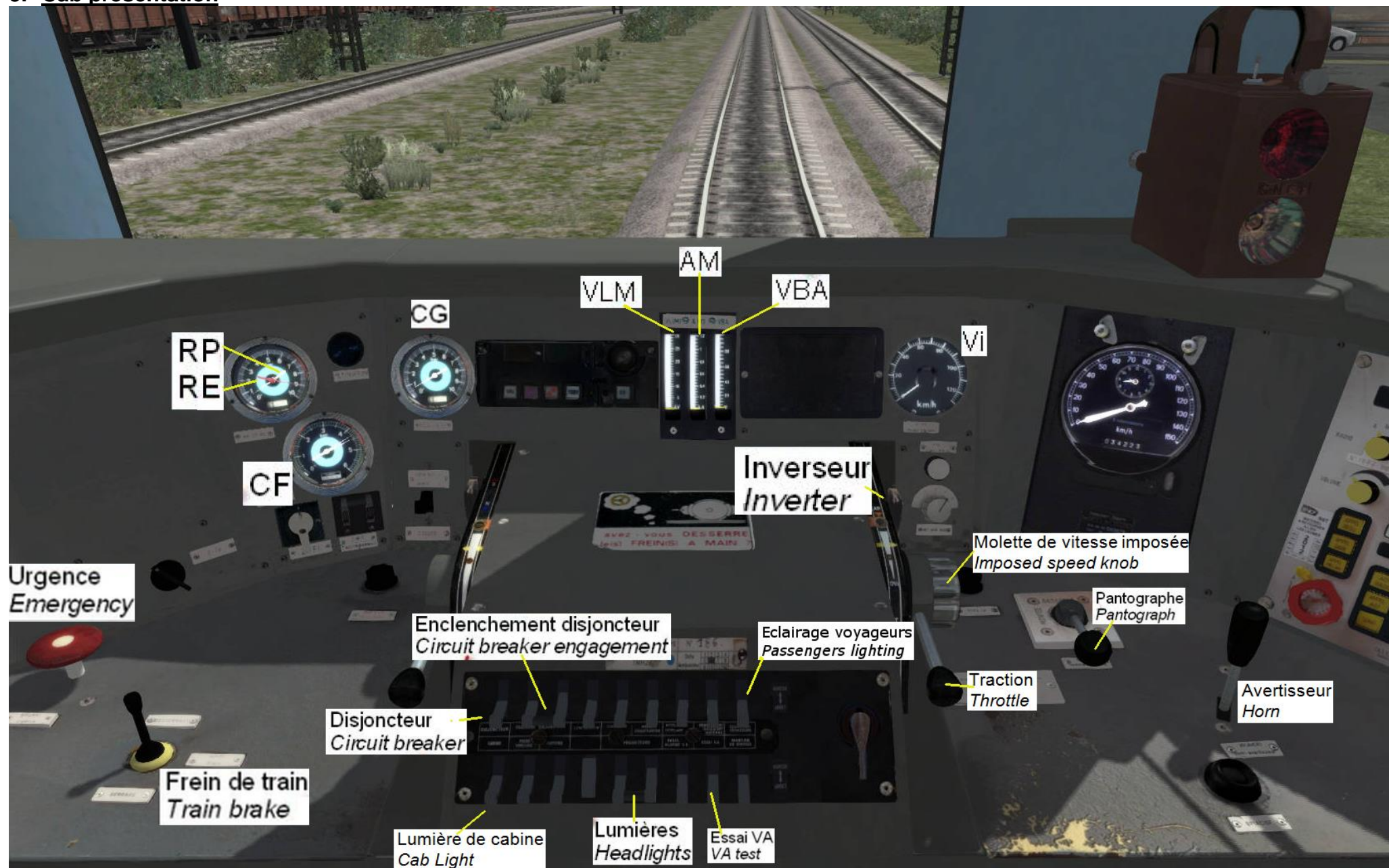
- Select the driver icon

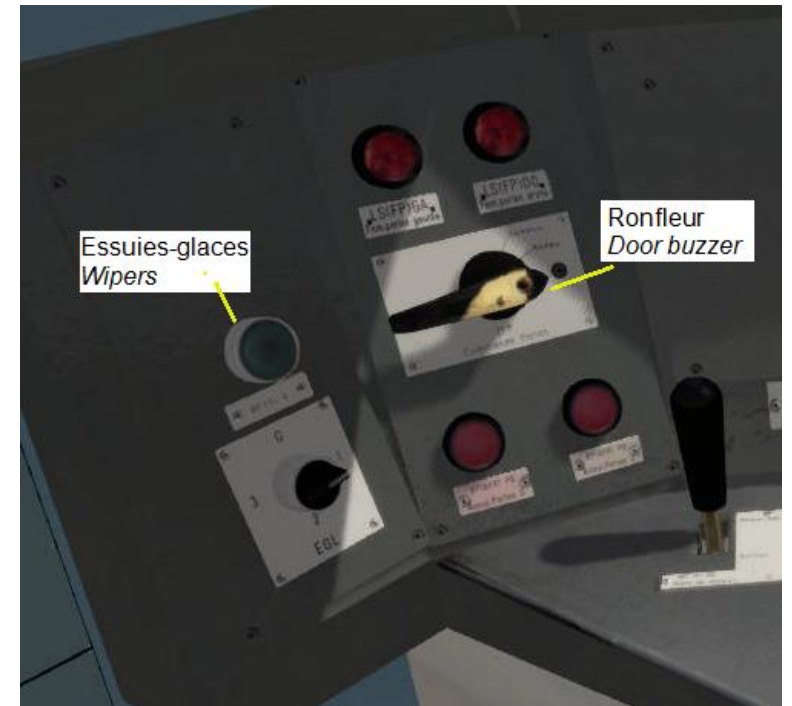
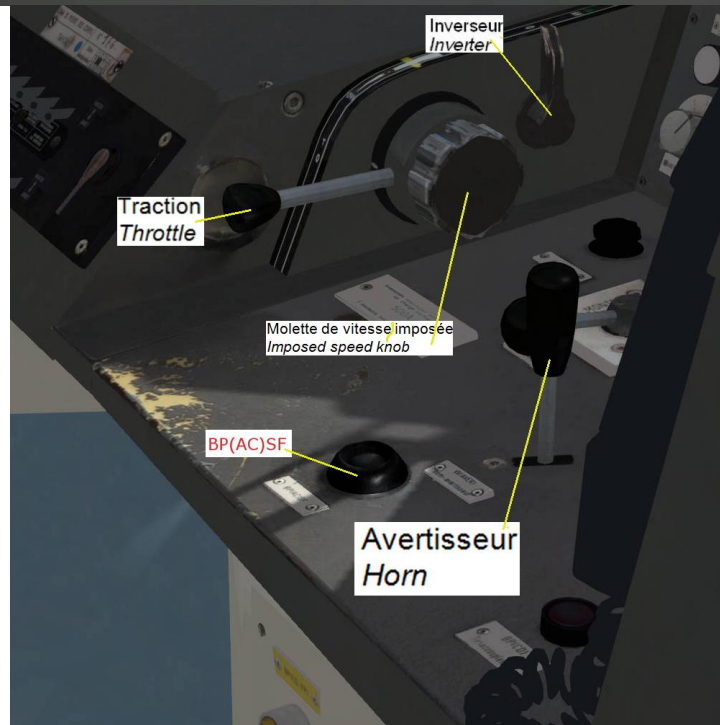
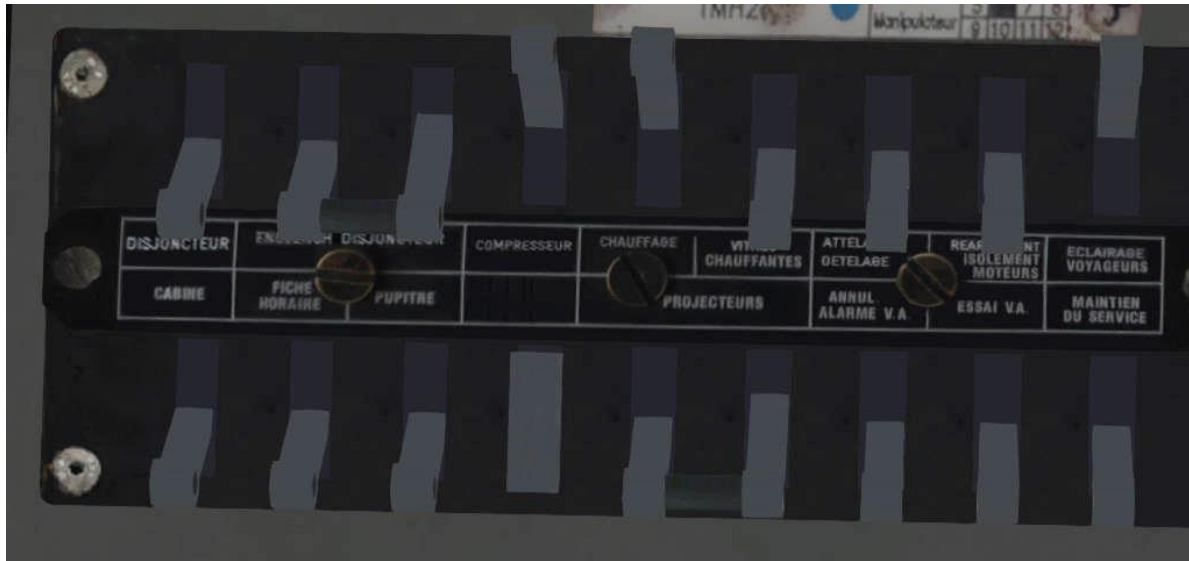


- Click on the engine



3. Cab presentation





4. Operating modes

4 operating modes are available:

- Simple
- Intermediate
- Expert without VA (Expert mode without activating VA ("**Veille Automatique à contrôle de maintien d'appui**" = *Driver's Safety Device* or "*Dead Man's Switch*" i.e. a safety device to ensure that the train automatically stops if the driver doesn't acknowledge a signal to check the driver's state of awareness.)
- Expert with VA

	Simple mode	Intermediate mode	Expert mode
Automatic engine startup after pantograph rise	Yes	Yes	No
Separate power / brake	No	Yes	Yes
Imposed speed (VI)	No	Yes	No
VA	No	No	Option
AWS	No	Automatic	Yes
Doors closing with buzzer	No	Yes	Yes

Click on the paragraph number for a direct access:

Simple mode operation: paragraph 9

Intermediate mode operation: paragraph 11

Expert mode operation: paragraph 10



5. Operating VA (Expert mode)

The VA control is enabled above 10 Km/h.

The driver must regularly press the VA command using a foot pedal or by pressing on the right side of the console. This action is simulated by the space key.

An emergency stop is triggered in 2 cases:

- Command released for more than 5 seconds, with warning sound after 2.5 seconds (horn sound).
- Command pressed for more than 60 seconds, with warning sound after 55 seconds (ring!).

So you need to press the command for less than 60 seconds then release it for less than 5 seconds and start a new cycle if you don't want to hear a warning sound. According to the sound heard, you must release the command (ring! heard) or press the command (horn sound heard) before the emergency brake is triggered.

The VA test function allows to check that the VA system works properly and, for the game, to activate it. It works as the train is stopped and triggers an actual emergency stop. Once the VA test function is enabled, let the test go to emergency brake trigger before starting the train. As soon as the emergency stop is triggered, the test automatically stops.

VA can be disabled anytime.

6. Operation of VI (Expert and intermediate mode)

The Z6400 management of the imposed speed (VI = “vitesse imposée” = imposed speed) acts as a speed limiter.

To adjust the **imposed speed**, the driver has a rotary knob to the right of the console to fix the value of the target speed. The VI management is enabled beyond a value (target speed) of 10 Km/h.

When the target speed is reached, the management of the imposed speed acts on traction and braking, the position of the throttle influencing the maximum tractive effort.

Below the target speed, the management of the imposed speed does nothing.

If the VI is not reset by the driver, the target speed is always displayed even at stops.

Resetting the imposed speed to 0 does not cancel the action of the VI. This causes the train to brake, the imposed speed being equal to 0.

If you brake while VI is enabled, the throttle must return to zero before it can act on the tractive effort again even if the train does not stop.

To cancel the action of the VI, the imposed speed must be reset to 0 with the rotary knob (or its keyboard equivalent) and the throttle must also be reset to 0. At this point, the throttle resumes direct traction control.

7. Cab signaling operation (AWS in intermediate mode and in expert mode)

It's the game AWS system, enabled in intermediate and expert mode.

When an AWS inductor in the middle of the track ("crocodile") is reached, the locomotive enables the warning signal. If the signal is in "waiting" or "closed" status, AWS will sound a beep followed by the flashing of the LSSF lamp ("Lampe de Signalisation Signal Fermé" = Closed signal signaling lamp).

The signal must quickly be acknowledged by pushing button BP(AC)SF ("Bouton-Poussoir Acquittement Signal Fermé" = Closed signal acknowledgment push button) which triggers LSSF to stay on without flashing.



In expert mode, the driver acknowledges pushing key "q". In intermediate mode, the acknowledgment is done automatically.


The LSSF lamp is then switched off when crossing the next open signal.





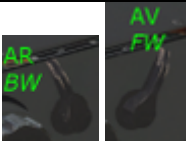
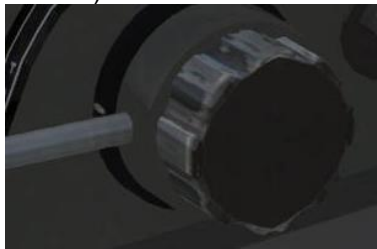


The lack of acknowledgment within 5 seconds after the beep triggers an emergency stop.




If an emergency stop occurs, you must push key "q" to be able to release the brakes before starting up again.






8. Commands list

It is assumed that the qwerty model is used.

Command	SIMPLE mode	Intermediate mode	Expert mode
Expert mode			u key (if not pressed at scenario start before the first pantograph raise, the mode is intermediate). The alarm light is temporarily switched on to acknowledge the request.
<div>Pantograph</div> <div></div>	p key or mouse selection of lever	p key or mouse selection of lever	p key or mouse selection of lever
Circuit breakers ("Disjoncteurs")	Automatic after pantograph is raised or manual, after	Automatic after pantograph is raised or manual, after	n key then m key

Command	SIMPLE mode	Intermediate mode	Expert mode
	emergency brake, with key n alone. This switch can be mouse selected.	emergency brake, with key n alone. This switch can be mouse selected.	These switches can be mouse selected.
Throttle (cab traction lever) 	a key and d key ⁽¹⁾ or throttle selection with the mouse.	a key and d key ⁽¹⁾ or throttle selection with the mouse.	a key and d key ⁽¹⁾ or throttle selection with the mouse.
		 Don't use the red lever. It's the cab traction lever and VI which determine the level of tractive effort matching the red lever	 Don't use the red lever. It's the cab traction lever and VI which determine the level of tractive effort matching the red lever
Inverter 	s key	w key and s key	w key and s key
Turn the imposed speed knob (« molette de vitesse imposée » = MPVI) 		e key: quickly increase imposed speed r key: quickly lower imposed speed Fine tune the speed value rotating the knob with the mouse or with shift E» (+ 1 Km/h for a quick push and slow increase for a continuous push) and shift R (- 1 Km/h for a quick push and slow decrease for a continuous push).	e key: quickly increase imposed speed r key: quickly lower imposed speed Fine tune the speed value rotating the knob with the mouse or with shift E» (+ 1 Km/h for a quick push and slow increase for a continuous push) and shift R (- 1 Km/h for a quick push and slow decrease for a continuous push).
		The selected speed is displayed on this counter: 	
Train brake (release / increase)	See throttle	; key and ' key The longer the key is pressed, the faster the brake is released or increased. Brake increase by 2%: shift ' key Brake release by 2%: shift ; key	; key and ' key The longer the key is pressed, the faster the brake is released or increased. Brake increase by 2%: shift ' key Brake release by 2%: shift ; key
Train brake : increase, using the mouse 	Select the brake lever	Select the brake lever	Select the brake lever

Command	SIMPLE mode	Intermediate mode	Expert mode
Emergency brake 	backspace key or mouse selection	backspace key or mouse selection	backspace key or mouse selection
Signal warning sound acknowledgement (AWS) 		Automatic	q key or mouse selection
Loading / unloading passengers	t key It's the game that will decide when to apply the request to close the doors.	t key It's the game that will decide when to apply the request to close the doors. If the buzzer is enabled, it is turned off when the doors close.	t key It's the game that will decide when to apply the request to close the doors. If the buzzer is enabled, it is turned off when the doors close.
Doors closing button 		I key to go from the neutral position to the buzzer ("ronfleur") position and then to the doors closing position or position selection with the mouse. In the buzzer in position, the buzzer sound is enabled until the button position is not changed. Warning: closing the doors with this button might be considered premature in a scenario where the loading / unloading of passengers is taken into account. Shift I keys to go one notch back.	I key to go from the neutral position to the buzzer ("ronfleur") position and then to the doors closing position or position selection with the mouse. In the buzzer in position, the buzzer sound is enabled until the button position is not changed. Warning: closing the doors with this button might be considered premature in a scenario where the loading / unloading of passengers is taken into account. Shift I keys to go one notch back.

Command	SIMPLE mode	Intermediate mode	Expert mode
Horn 	enter key (quick push: one tone. Long push: 2 tones) or mouse selection at the base of the lever.	enter key (quick push: one tone. Long push: 2 tones) or mouse selection at the base of the lever.	enter key (quick push: one tone. Long push: 2 tones) or mouse selection at the base of the lever.
Headlights 	h key and shift+h keys or mouse selection	h key and shift+h keys or mouse selection	h key and shift+h keys or mouse selection
Cab light 	l key and shift+l keys or mouse selection	Touches « l » et « maj+l » or mouse selection	l key and shift+l keys or mouse selection
Wipers 	v key or mouse selection	v key or mouse selection	v key or mouse selection
Passengers lighting 	o key or mouse selection	o key or mouse selection	o key or mouse selection

(1) During throttle changes, the intensity is updated:



Optional in expert mode (see paragraph 5):

COMMAND		Expert mode
Press the VA command		Space key
VA test and activation or end of VA test		k key
Disable VA		Shift + k key


9. Simple mode operation

9.1. Configuration

This mode is configured when selecting "Simple Controls" in the simulation options window:



9.2. Startup

One mandatory action, raising the pantograph : "p" key or mouse selection of pantograph lever or click on  from the driver interface displayed with F4.

This action enables the circuit breaker and starts the engine.

9.3. Driving

Key a increases the engine power and simultaneously releases the brakes.

Key d lowers the engine power and simultaneously increases the brakes.

Key s allows to change the direction of movement.

Key n to restart the engine after an emergency stop.

You can also use the mouse on the matching commands from the driver interface displayed with F4 :




9.4. Stop procedures

Stop using normal brakes or emergency stop (backspace key).

10. Expert mode operation

10.1. Startup

	Command	Remark
Expert mode setting	u key	Once the u key is pressed, expert mode is set until the exit from the scenario.
Pantograph	p key	
Enable circuit breaker ("Disjoncteur")	n key	Wait for the pantograph to be fully raised, i.e. when VLM voltmeter displays 27 KV and VBA battery voltmeter displays 85V). For safety reasons, the startup is implemented with 2 switches : this one stays upwards ...
Engage circuit breaker ("Enclenchement disjoncteur")	m key	... and this one is reset to its original position. The enable circuit breaker can be switched on before the pantograph is in high position but the circuit braker won't be engaged before the pantograph reaches its high position.
Compressor		No action required. The compressor is automatically enabled at regular intervals (look at the movement of the red needle on RE meter).
VA test	k key	Not mandatory. It's possible to drive in a simpler mode without VA. When activated see paragraph 5 for required actions. The command must be regularly pressed when the engine starts moving (space key).
Enable circuit breaker ("Disjoncteur")	n key	To do again after emergency stop triggered by the VA test.
Engage circuit breaker ("Enclenchement disjoncteur")	m key	
Inverter to forward	w key	Note that there is only one position forward and one backward (no intermediate positions).
Release brake 	; key	Hold the key down until pressure on CF meter is 0. The longer the key is pressed, the faster the brake is released.

You can also use the mouse for the available commands from the driver interface displayed with F4



, except the red lever. It's the cab lever



and VI which determine the level of


tractive effort matching the red lever.

10.2. Stop

	Command	Remark
Full brake	' key	Until meter CF shows around 3.5.
Inverter to neutral	s key	
Switch off circuits	n key	
Lower pantograph	p key	

11. Intermediate mode operation

11.1. Startup

	Command	Remark
Pantograph	p key	The engine is automatically started.
Compressor		No action required. The compressor is automatically enabled at regular intervals (look at the movement of the red needle on RE meter).
Inverter to forward	w key	Note that there is only one position forward and one backward (no intermediate positions).
Release brake 	; key	Hold the key down until pressure on CF meter is 0. The longer the key is pressed, the faster the brake is released.

You can also use the mouse for the available commands from the driver interface displayed with F4



, except the red lever. It's the cab lever



and VI which determine the level of tractive effort matching the red lever.

11.2. Stop

See expert mode.