

**WARNING** If using a Raildriver Cab Controller from PI Engineering.  
Please make sure Macroworks is not running or it will fight for control with this program.  
It's best to uninstall it completely.

Although this is called TS2017 Raildriver and Joystick Interface V3, it is actually the fifth version of a program that started out as four smaller programs in Nov 2014 and was designed for use with the Raildriver controller and Train Simulator 2017. see here:  
<http://forums.uktrainsim.com/viewtopic.php?f=361&t=139830>

I then decided to extend its capabilities to also allow a joystick to be used either instead of or alongside the Raildriver controller so that you can control more of the levers and valves in a loco using a joystick lever rather than a button. The controls you can use with a lever are:- Reverser, Throttle, ThrottleAndBrake, Dynamic Brake, Train Brake, Loco Brake, Wiper, Lights, Blower, Cruise Control, Cylinder Cock, Dampers, Exhaust Injector Steam, Exhaust Injector Water, Firebox Door Gears, Large Ejector, Live Injector Steam, Live Injector Water, Small Ejector and Stoking plus others that you can add manually via the "ControlNames.txt" file..

Finally I extended the software to allow you to send the data from TS2020 out through serial ports to an Arduino to control lights, LCD displays and servo's etc.

If you are going to use a joystick then it is best if the joystick has either levers such as those used on a flight simulator throttle quadrant or rotary knobs as used on Hands on Throttle and Stick joysticks such as the Saitek X55/56. You can use joysticks/gamepads that self-centre so long as they are assigned to cab levers that also self-centres such as the brakes on a class 66 diesel loco.

You can also make your own Cab if you can do some simple soldering.

There are two modes of operation for the software, Standard and Advanced

### **Standard mode**

In this mode you can control all the levers and buttons in a cab using the Raildriver or a Joystick. You can also have visual and audio warning on screen for AWS/DSD/Sifa etc. This data can also be sent to a serial port(s) to enable you to light led's place information such as current speed, doors open, Sifa warning light etc. on lcd displays, even control stepper motors or servos to drive gauges.

This mode does not alter any of the TS2020 files.

### **Advanced mode**

The Advanced version does all that the Standard version does and can even display an overlay on top of the TS window that can display the current speed, current speed limit, next speed limit, distance to next speed limit, position of the levers, total distance travelled, trip distance which can be reset whenever you want and finally all the information needed regarding the boiler, brakes, fuel, water, firebox and injectors as well as a few more.

This mode can also be sent this extra data to a serial port(s). In order for this to happen, the program has to edit some of the loco files. This is done automatically and can be undone by switching back to Standard mode (see the TS 2017 Raildriver and Joystick Interface Manual) located in the Manuals folder.

### **Important:**

It is best to unzip the file and then place the “**TS2017 Raildriver and Joystick Interface**” folder from inside the extracted folder in the root of any disk drive such as C:\ this is because windows has a path name limit off 255 characters and some of the paths to the files in TS2020 are quite deep and can cause errors when extracting the data if you don't do this.

If you wish to use the "Advanced" mode or you wish to display the warnings for Sifa/DSD/AWS/Doors/EmergencyBrake in the middle of the screen using the Standard mode then you will need to run TS2020 in either Windowed or Borderless mode by going to Settings\Graphics\Full Screen.

**If you are going to use a Joystick or have the overlay enable (enabled by default) then you need to install the DirectX June 2010 available from the same location the program files were downloaded from. If you wish the overlay to show then you also need to run TS in Windowed or Borderless mode.**

### ***Quick setup Standard Version***

1. Plug in your Raildriver/Joystick
2. Run the TS2019 (x86).exe for the 32 bit version or TS2019 (x64).exe for the 64 bit.
3. In the window that pops up, select your Railworks.exe location. This is usually C:\Program Files (x86)\Steam\steamapps\common\railworks\ (for 64 bit windows) or C:\Program Files\Steam\steamapps\common\railworks\ (for 32 bit windows).
4. On the welcome screen, select "Standard" and click OK.
5. On the Extract Data screen select OK and wait for the data to be extracted, this can take up to 20 minutes per 100GB of assets but should only ever have to be run once. On completion you will get a message saying Extraction complete Time taken 00:00:00, click OK.
6. If you have a Raildriver(s) attached you will get a screen advising you to calibrate the Raildriver(s) select OK then run the Raildriver calibration by selecting "Settings/Calibrate Raildriver" from the main menu and if you have more than one Raildriver attached you will be asked to select which you wish to calibrate. Then follow the instructions on the calibration screen.
7. In order for your Raildriver/Joystick axis to work they need to be assigned to the cab levers you wish to use them with. See (Master Lever Assignment on page 11 of the TS 2017 Raildriver and Joystick Interface Manual located in the Manuals folder).
8. To start the program communicating with TS and the Raildriver or joystick click the "Start Callback" button.
9. Start TS2020 and you can then select any scenario or quick drive and drive the train with your Raildriver or joystick.
10. To end the program either click the "Stop Callback" button and close the form or just close the form.

Subsequent running of the program will only require steps 1, 2, 8, 9 and 10 to be completed.

### ***Quick setup Advanced Version***

1. Plug in your Raildriver/Joystick
2. Copy the Railworks\_Getdata\_Script.lua file from the Settings folder to the Plugins folder inside your TS2020 installation folder.
3. Run the TS2019 (x86).exe for the 32 bit version or TS2019 (x64).exe for the 64 bit
4. In the window that pops up, select your Railworks.exe location. This is usually C:\Program Files (x86)\Steam\steamapps\common\railworks\ (for 64 bit windows) or

- C:\Program Files\Steam\steamapps\common\railworks\ (for 32 bit windows).
5. On the welcome screen, select "Advanced" and click OK.
  6. On the Extract Data screen select OK and wait for the data to be extracted, this can take up to 20 minutes per 100GB of assets but should only ever have to be run once. On completion you will get a message saying Extraction complete Time taken 00:00:00, click OK.
  7. If you have a Raildriver(s) attached you will get a screen advising you to calibrate the Raildriver(s) select OK then run the Raildriver calibration by selecting "Settings\Calibrate Raildriver" from the main menu and if you have more than one Raildriver attached you will be asked to select which you wish to calibrate. Then follow the instructions on the calibration screen.
  8. In order for your Raildriver/Joystick axis to work they need to be assigned to the cab levers you wish to use them with. See (Master Lever Assignment on page 11 of the TS 2017 Raildriver and Joystick Interface Manual located in the Manuals folder).
  9. To start the program communicating with TS and the Raildriver or joystick click the "Start Callback" button.
  10. Start TS2020 and you can then select any scenario or quick drive and drive the train with your Raildriver or joystick.
  11. To end the program either click the "Stop Callback" button and close the form or just close the form.

Subsequent running of the program will only require steps 1, 3, 9, 10 and 11 to be completed.

It is also advisable to at least read the "TS 2017 Raildriver and Joystick Interface Manual" located in the manuals folder for in depth instructions and then the other manuals when required.

.