Driver

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Chapter 1

Driver

1.1 Driver.guide

```
                Train Driver Simulator V1.7
----------------------------
```

Introduction

Quick Start

Startup Options Screen

Driving

Other features

Keys and lights

Problems

Author

DISCLAIMER

1.2 Introduction

Description

Installation

The Class 87 Locos

The West Coast Main Line

1.3 Description

```
                This is a Train Driver Simulator, simulating
Class 87 locos working on the West Coast Main Line from Euston
to Glasgow.

At least read Quick Start in TrainDriver.guide or you'll get nowhere!

    Features:
              9 Difficulty levels
              Moving graphics
              Sound effects
              Unlimited choice of journeys with auto timetable creation
              Realistic train handling
              401 miles of route of varying gradients and curvature
              Five possible weather/rail conditions
              Various startup options
              Day or night trains
              Save journeys at any time
              Log made of journey with average speeds etc.
              Random Temporary Speed Restrictions
              Time speed up (up to x5)
              Detail On/Off option for slower Amigas

              and many more options to experiment with.



    Requirements:

              Any Amiga with at least 1 mb

    Recommended:
              Hard Drive
              Accelerated A1200 or better

Note: This guide uses SYS:Utilities/MULTIVIEW to view pics on the disk.

This is Version 1.7 of a Train Driver Simulator, simulating

                 The Class 87 Locos
                 working on the West Coast Main Line from
Euston to Glasgow.

I originally wrote this program for my own use, but I have been persuaded
by friends who have played it, that it was suitable for public release.

I wrote this program with the excellent Blitz2 because the
other train driver simulations advertised for fifteen or twenty quid (UKP)
in the railway mags, are generally text based, with limited options
so I wanted to write a program that made you feel that you were
actually in the cab, and one in which the train behaved realistically,
with proper moving graphics, unlimited options, and was freely available.

This program is aimed at users with a little UK railway knowledge
but anyone can have a go. Although the program has moving graphics I
```

would be the first to admit these are simple and are there mainly to indicate
the approach of railway-related objects, and are not particularly scenic,
although in V1.7 there are curves, bridges and trees added.

I have yet to see a commercial train driver simulator with any graphics
other than signals and still objects.

As well as this guide there are help pics on the disk:

Help
Keys
Map
Profile

The first two pics can be accessed from within the program with the Help key.

Please note this program is still in development
but is generally stable.

Also some of the data is incomplete, such as signal numbers, but
the data on the program is otherwise accurate as far as I know.

Changes since V1.6
^^^^^^^^^^^^^^^^^^

- New weather conditions Icy and Fall

Icy: Very poor rail adhesion
Wheelslip in upper half of green zone
Brakes may cause wheel slide below 60 psi
Snowfall!

Fall: Leaf-fall season. Very treacherous!
Wheelslip possible whenever taking power
Braking may cause wheelslide at any time

The rail adhesion is also affected by the difficulty level chosen.
The chosen setting may also change during your journey depending
on the difficulty level chosen.

- Diversionary route via Northampton added between milepost 56 and Rugby

This line is an extension of the Slow lines from Hanslope junction to Rugby.
The line speed is 75 mph and is signalled with 3 aspect colour light signals
(ie no double yellows). This route is two miles longer than the main line
via Weedon. The line falls at 1 in 200, through Hunsbury Hill tunnel, to
Northampton and then climbs at 1 in 230 back up to Rugby through a short tunnel
at Crick.

To force a train to be diverted hold Left-alt key while passing Signal no 79.

- New cab screen graphics (Thanks to Hans Berkhout :))

- Random speed trap

At any point along the route there could be a speed trap set up by traction
inspectors. You will be advised as soon as your speed has been recorded.

If you are speeding there is a possibility you will be releived of your
driving duties immediately.

 o Better compatability GUI

GUI problems with A500 fixed

 o Optional screen requester to help NTSC users for the cab screen,
   and other screens are now NTSC compatible.

 o More fine tuning of data and graphics

 o Guide and help pics updated

 o More bugs fixed ('Start at' gadget etc)

1.4 Installation

Just drag the TrainDriver disk/drawer to where you want it on your ↩
Hard Drive

Open the new TrainDriver drawer and double click Start_TrainDriver
which will make the necessary assigns and run the program.

Or to do it manually:

All the files needed must be in the same drawer which must be
assigned TrainDriver:

e.g.
*   C:Assign Traindriver: DH0:Traindriver/   (<--or wherever)

Also

c:Copy Traindriver:fonts/ ALL FONTS:

OR

*   C:Assign FONTS: Traindriver:fonts/ ADD

Add these lines(*) to your S:user-startup if you use it regularly.

Double-click on TrainDriver1.7 icon if assigns have been made permanent.

Any
Problems
?

1.5 Problems

If the simulation runs very slowly try and free as much memory as
possible. Turn details off with key J or on the Option screen.

It will multitask but runs quicker on its own.

Boot without startup-sequence and type

```
cd dh0:Traindriver ( <-- or wherever)
C:execute Start_TrainDriver
```

or write a short new alternative startup as above

I have done a lot of work to try and make this program work on all
Amigas from A500 to A4000, and it has been successfully ran on many
configurations.

Any other problems write to
me
.

1.6 WCML

The West Coast Main Line is 401 miles long and runs from London ↩
Euston
to Glasgow Central.

Map
Profile

The route was electrified through to Glasgow in 1974 and since then has
been mainly in the hands of Class 87 locos, as featured in this simulation.

The main stations on the route, where some InterCity West Coast services
stop are:

Watford Junction
Milton Keynes
Rugby
Nuneaton
Tamworth
Lichfield Trent Valley
Stafford
Crewe
Warrington
Wigan North Western
Preston
Lancaster
Oxenholme
Penrith
Carlisle

and in Scotland:

Lockerbie (no ICWC trains stop)
Carstairs (no ICWC trains stop)
Motherwell

The highlights of the route are the climbs over Shap and Beattock
summits with
Gradients
as steep as 1 in 69.
Although generally these cause no problems for electric locos,
on wet rails a standing start on these gradients with a heavy train
takes skill, care, and patience

Despite the title of "West Coast" the sea is only visible at Hest Bank,
north of Lancaster.

The quickest scheduled journey time is under five hours on 1S57.

Also included is the Slow Line alternative route from Hanslope to Rugby
via Northampton.
This line is an extension of the Slow lines from Hanslope junction to Rugby.
The line speed is 75 mph and is signalled with 3 aspect colour light signals
(ie no double yellows). This route is two miles longer than the main line
via Weedon. The line falls at 1 in 200, through Hunsbury Hill tunnel, to
Northampton and then climbs at 1 in 230 back up to Rugby through a short tunnel
at Crick.
To force a train to be diverted via Northampton hold Left-alt key while
passing Signal no 69 on the Fast Line.

1.7 Gradients

See also Profile

Please note that if you have just driven over a summit,
that until at least half of the train has passed over
the top, the gradient will be effectively still uphill,
even though the gradient may read downhill.

Gradients may vary on the Slow Lines

Miles	Gradients	Location
0.0	Down 1 in 149	Euston
0.2	Down 1 in 575	
0.4	Up 1 in 70	
0.6	Up 1 in 112	
0.8	Up 1 in 77	
1.0	Down 1 in 409	
1.3	Level	
2.3	Down 1 in 643	
3.2	Up 1 in 587	
4.5	Level	
7.0	Up 1 in 339	
14.4	Level	
15.8	Down 1 in 337	
16.0	Down 1 in 708	
16.8	Up 1 in 586	

```
 17.2 Up   1 in  393 Watford
 18.5 Up   1 in 1038
 20.0 Up   1 in  508
 22.2 Up   1 in  338
 23.8 Down 1 in  812
 24.0 Up   1 in  335
 31.0 Level
 31.9 Down 1 in  333
 38.0 Down 1 in  540
 39.0 Up   1 in 1330
 40.0 Down 1 in  927
 41.2 Down 1 in 1683
 44.2 Down 1 in  660
 46.2 Level
 46.8 Up   1 in  892
 48.3 Level
 48.7 Down 1 in  440 Milton Keynes
 51.0 Level
 52.0 Down 1 in  225
 52.3 Up   1 in  350
 52.9 Level
 54.1 Up   1 in  475
 54.6 Up   1 in  326
 56.3 Up   1 in  410
 58.1 Up   1 in  330
 60.8 Down 1 in  320
 62.9 Down 1 in 2640
 66.0 Up   1 in  800
 67.2 Down 1 in 1200
 68.0 Down 1 in  765
 69.1 Up   1 in  330
 69.4 Up   1 in  310
 69.7 Down 1 in  933
 69.9 Up   1 in  490
 70.8 Up   1 in  350
 73.8 Up   1 in  415
 75.6 Up   1 in  640
 76.2 Level
 76.7 Down 1 in  870
 78.0 Down 1 in  370
 81.7 Down 1 in  200
 82.1 Down 1 in  365 Rugby
 83.8 Level
 84.2 Up   1 in  330
 85.6 Level
 86.5 Down 1 in  510
 87.0 Up   1 in  395
 88.0 Down 1 in  600
 88.4 Up   1 in  530
 88.8 Level
 90.4 Up   1 in  330
 92.0 Down 1 in 1254
 93.7 Down 1 in  320
 97.1 Down 1 in  730 Nuneaton
 99.0 Up   1 in  645
101.8 Down 1 in  415
102.8 Down 1 in  321
```

```
104.7 Up   1 in  888
105.2 Down 1 in  439
106.9 Down 1 in  654
108.3 Level
110.1 Up   1 in  851 Tamworth
110.3 Down 1 in  359
111.7 Up   1 in 1305
112.7 Up   1 in  376
113.4 Level
114.0 Up   1 in  463
115.0 Up   1 in  331
117.7 Down 1 in 2707
119.0 Down 1 in  766
121.3 Down 1 in  317
122.2 Level
122.6 Up   1 in  577
123.9 Down 1 in  381
124.7 Up   1 in  408
126.8 Down 1 in  452
127.2 Down 1 in  815
127.6 Up   1 in  437
128.4 Down 1 in  330
129.2 Up   1 in  351
130.9 Down 1 in  346
132.5 Up   1 in  846
133.0 Down 1 in 1847
133.3 Up   1 in 3910 Stafford
135.9 Up   1 in  517
139.0 Up   1 in  509
141.0 Up   1 in  650
143.4 Up   1 in  590
145.0 Up   1 in  398
147.9 Level
148.4 Down 1 in  348
150.0 Down 1 in  177
153.3 Down 1 in  269
156.8 Down 1 in  330 Crewe
157.8 Level
162.4 Down 1 in  411
162.9 Down 1 in  616
163.6 Up   1 in 2485
164.4 Down 1 in  300
165.6 Down 1 in 2220
166.6 Down 1 in  419
168.6 Level
168.9 Up   1 in  360
169.9 Down 1 in 1981
170.8 Down 1 in  440
171.8 Level
172.6 Down 1 in  330
173.9 Level
174.2 Up   1 in  330
175.5 Level
175.8 Down 1 in  180
176.9 Down 1 in  112
177.2 Down 1 in  567
178.9 Level
```

```
179.4 Up   1 in  135
180.6 Down 1 in  160
180.9 Down 1 in  135
181.9 Down 1 in  460 Warrington
183.3 Up   1 in  400
183.1 Down 1 in 1010
184.2 Up   1 in  639
185.7 Up   1 in  132
186.4 Up   1 in  470
186.8 Up   1 in  255
187.1 Up   1 in  156
187.8 Up   1 in  473
189.6 Down 1 in  417
191.1 Level
192.2 Up   1 in  705
193.3 Up   1 in  260
193.7 Up   1 in  156 Wigan
193.9 Down 1 in  200
194.1 Up   1 in  360
194.4 Up   1 in  104
196.0 Up   1 in  366
197.6 Up   1 in  242
198.1 Up   1 in  119
198.4 Down 1 in  596
199.0 Down 1 in  197
199.4 Down 1 in  246
200.0 Down 1 in  106
200.6 Down 1 in  235
201.0 Down 1 in  114
202.0 Up   1 in  936
203.3 Down 1 in  432
204.2 Down 1 in  110
204.9 Down 1 in  314
206.8 Down 1 in  106
207.2 Down 1 in  440
208.1 Up   1 in  397
208.8 Up   1 in  240
209.0 Up   1 in  240 Preston
209.1 Up   1 in  101
209.3 Level
209.5 Up   1 in  173
209.7 Up   1 in  503
212.1 Down 1 in 1115
214.3 Down 1 in  644
216.8 Level
217.1 Up   1 in 1042
220.0 Level
221.0 Up   1 in 1199
222.2 Level
226.1 Up   1 in  736
228.0 Down 1 in  735
228.8 Down 1 in   98
229.8 Down 1 in  347
230.0 Up   1 in  363 Lancaster
230.2 Level
230.6 Down 1 in  305
231.6 Down 1 in  469
```

```
233.1 Level
234.0 Up   1 in  460
235.7 Down 1 in  369
236.8 Level
237.0 Up   1 in  134
239.4 Down 1 in  293
240.8 Level
242.8 Up   1 in  173
245.5 Up   1 in  193
246.6 Up   1 in  392
247.2 Up   1 in  111
248.6 Up   1 in  178 Oxenholme
249.6 Up   1 in  104
250.4 Up   1 in  213
250.8 Up   1 in  124
251.5 Up   1 in  131
253.9 Up   1 in  106
255.9 Up   1 in  396
256.1 Down 1 in  204
257.1 Up   1 in  777
258.2 Level
258.8 Down 1 in  425
260.2 Level
261.5 Up   1 in  146
263.1 Up   1 in   75 Shap
267.2 Level
268.0 Down 1 in  130
269.2 Level
270.0 Down 1 in  142
271.2 Down 1 in  125
277.2 Level
279.0 Down 1 in  193
280.1 Up   1 in  191
280.5 Down 1 in  616
282.1 Level
283.6 Up   1 in  539
283.2 Down 1 in  186
285.1 Level          Penrith
287.0 Down 1 in  164
289.5 Down 1 in  228
292.4 Level
292.8 Down 1 in  184
294.3 Down 1 in  131
298.1 Level
298.7 Down 1 in  110
298.8 Level          Carlisle
299.1 Down 1 in  100
299.4 Level
299.8 Up   1 in  318
300.0 Up   1 in  318
300.2 Up   1 in  877
300.5 Up   1 in  311
301.1 Down 1 in  330
302.1 Level
304.0 Down 1 in  527
305.1 Down 1 in  616
305.8 Level
```

```
306.2 Up   1 in  193
308.5 Up   1 in  200
313.7 Level
313.8 Down 1 in  190
314.7 Level
314.9 Up   1 in  396
315.6 Down 1 in  493
315.9 Level
316.8 Up   1 in  203
321.0 Down 1 in  200 Lockerbie
323.8 Down 1 in  528
327.9 Level
328.1 Up   1 in  880
329.9 Up   1 in  366
332.5 Down 1 in  330
333.5 Level
334.6 Up   1 in  202
339.0 Up   1 in   88
341.0 Up   1 in   81
342.0 Up   1 in   79
343.1 Up   1 in   74
344.1 Up   1 in   76
345.0 Up   1 in   69
345.3 Up   1 in   75
348.7 Up   1 in  835 Beattock
349.0 Down 1 in   99
351.1 Level
352.5 Down 1 in  152
354.0 Down 1 in  240
361.6 Level
362.2 Up   1 in  340
362.7 Level
363.2 Up   1 in  231
363.4 Up   1 in  194
364.8 Down 1 in 1020
366.2 Down 1 in  100
367.7 Level
368.0 Up   1 in  196
369.0 Down 1 in  150
371.1 Level
372.0 Up   1 in  165
372.4 Up   1 in  402
372.6 Up   1 in  207
373.0 Up   1 in  300 Carstairs
373.5 Up   1 in  366
373.9 Up   1 in  453
375.1 Up   1 in  204
376.2 Level
376.7 Up   1 in  190
377.2 Down 1 in  190
378.1 Down 1 in  129
380.0 Down 1 in   98
381.8 Down 1 in  261
382.5 Down 1 in  140
383.0 Down 1 in  199
386.2 Down 1 in  137
387.3 Down 1 in  116
```

```
388.1 Down 1 in  143 Motherwell
388.6 Up   1 in  146
388.8 Level
389.1 Down 1 in  132
389.6 Down 1 in  178
389.9 Down 1 in  115
390.8 Down 1 in  135
392.8 Down 1 in  391
393.0 Level
393.2 Up   1 in  280
393.7 Up   1 in  108
394.2 Level
394.6 Down 1 in  724
395.0 Level
395.3 Up   1 in  110
395.6 Down 1 in  236
396.0 Down 1 in  163
397.1 Up   1 in  440
397.3 Down 1 in  516
397.6 Down 1 in  224
397.9 Up   1 in  630
398.2 Level
398.3 Up   1 in  274
398.5 Level
398.7 Up   1 in  268
399.0 Down 1 in  217
399.4 Down 1 in  400
400.0 Down 1 in  177
400.2 Up   1 in  177
400.5 Up   1 in  220
400.6 Up   1 in  132
400.7 Down 1 in  245
401.0 Up   1 in  231
401.2 Up   1 in  172 Glasgow
```

1.8 Quick Start

```
                Double Click on Start_TrainDriver to make necessary assigns and ↩
                   run TrainDriver

Click mouse to remove title screen

Select "1S47" on file requester

Click  "OK" on
                Startup Options Screen
                 for default options

Press:  a       to cancel
                 AWS
                 horn
        f       to select Forward
                "F" should appear above the brake guage
        z       to release brakes
Hold    .       for power
```

```
You should now start to move !

Press   Help      to view help pics
```

1.9 Startup Options Screen

```
                If in doubt, click OK to choose the default options until you get ↩
                   the hang of it.


                 Difficulty Level

                 Start time

                 Loco no.

                 Train length

                 Initial Speed

                 Starting mileage

                 Headcode

                 Select Stops

                 Dry/Wet/Fog/Icy/Fall

                 Confirm Quit On/Off

                 Auto-delete On/off
                     Pal Screen/Screen req

                 Vigilance/Isolated

                 Detail On/off

                 View Log

                 View Timings

                 Delete

                 Help

                 Load

                 OK
```

1.10 Difficulty Level

```
Select a difficulty level between 0 and 9

    0   Fewer random events, no crashes
    1   Realistic level
  2-9   Increasing number of random events, slippery rail, longer station
        stops, lower power, poorer brakes  etc.
        Also greater chance of being diverted over Slow Lines and via
        Northampton.
```

1.11 Start Time

```
Select Hours and Minutes of start time

Default is 06:19 for 1S47

It is best to set the time to one minute before departure to allow
station time before "R" appears.
```

1.12 Locos

```
Select any loco 87001 to 87035, or thyristor controlled 87101.

When selected the loco's name will be displayed. Some of the locos have been
renamed, but I prefer the old names.

Class 87  locos were built in 1973-75 and are 5,000 hp
AC electric locos, supplied by 25 kv overhead wires. They have four
traction motors which can be used for rheostatic braking above 10 mph.
The power is increased through 38 notches, and then into weak field.

87101 is the most powerful though it is currently ironically
demoted to freight duties. It will generally have a higher random
power rating.

All locos are 110 mph.

Although powerful these locos have a very high power to weight ratio
which means poor adhesion, particularly on a wet rail.

When you start a new journey the loco will be given a random loco-rating.
This will be displayed at the top of the cab screen.
This indicates the amount of power available compared to a 100% fit loco.
Braking may also be affected.
```

1.13 Train length

```
Select number of coaches to be attached behind your loco.
Most of the trains on this line have 9 or 10.
```

Default is 9.

Average weight is 35 tons.

1.14 Starting Mileage

Select starting mileage between 0.18 and 401 from Euston.

The loaded trains are at 0.18 which is the mileage of your loco
from the buffers at Euston. Trains starting at Euston MUST start
at 0.18 miles.

You must start at Euston when creating a new train.

See also
Start at -->

1.15 Headcode

The train Headcode is a four digit code

eg 1S47

1 denotes Class 1 Express Passenger train
S denotes destination region ie Scotland
47 denotes individual train number

1S57 is the quickest train on the line, "The Royal Scot"

In the Save Drawer are these trains:

1S47
1S55
1S57 Royal Scot
1S75
1S83
1S84
1S89
1S13
1S26 Sleeper

These trains have been given preset parameters which you may
alter from the Startup Options Screen.

Load with the
LOAD
gadget.

If these trains are used the timekeeping function (see
Timings
)
will use timings built into the program.

If you type in a different code, set all other parameters and then click OK,
the program will look in Traindriver:Trains/ and see if a file exists for that
train.

If not, it will create timings for this train based on the parameters chosen
and take the time selected as being one minute before departure from Euston.
A file will now be created for the Trains and Save drawers.

Note: when creating trains it is assumed you are at Euston,
and the Timing gadget will not work until the train is created.
To view the created timings press "t" during the sim.

1.16 Initial Speed

Set your initial speed to 0-110 mph

Default is 0.

If you start at 0 mph you are effectively just inserting the key in the
loco, which will cause the
AWS
horn to sound.
You will then have to select "f" for Forward before you will obtain
power.

1.17 Stops

If you select the "Calls at -->" gadget it will change to "Start at -->",
and you must select the station to start your train.

Click on the stations to choose where your train will stop/not stop.

Loaded trains will set the stops automatically.

1.18 Auto-Delete On/Off

If selected ON this will automatically delete any files with
the same name, but with lower miles, each time a game is saved.

eg

When saving 1S47.Joe.101.001.123
all files beginning 1S47.Joe.101.001.... less than 123 miles will be deleted.

1.19 Detail On/Off

Toggle Detail On/off for faster screen drawing.
Useful for slower Amigas but very basic graphics.

Also press "j" in game to toggle.

1.20 Vigilance

Click on this gadget to isolate (ie disable)
Vigilance Device

1.21 Rail & Weather conditions

Click to change initial rail conditions between Dry, Wet or Fog.

Dry: Good rail conditions
Wheelslip unlikely unless in red zone
Braking firm at any pressure

Wet: Fair rail conditions
Wheelslip likely in yellow or red zones
Braking may cause wheel slide below about 50 psi

Fog: Visibility about 100 yards
Poor rail adhesion
Wheelslip at top of green zone
Brakes may cause wheel slide below 55 psi

Icy: Very poor rail adhesion
Wheelslip in upper half of green zone
Brakes may cause wheel slide below 60 psi
Snowfall

Fall: Leaf-fall season. Very treacherous!
Wheelslip possible whenever taking power
Braking may cause wheelslide at any time

The rail adhesion is also affected by the difficulty level chosen.
The chosen setting may also change during your journey depending
on the difficulty level chosen.

1.22 Confirm Quit On/Off

Choose either "Confirm Quit Off" for quit exits or "Confirm Quit On"
for a small requester on your WB screen checking you want to quit
after pressing "Esc".

1.23 View log

View Log views log of loaded train.

Close window when viewed or press Return
Esc to Quit if viewed from cab screen

1.24 Timings

View scheduled timings of loaded train.

Format: Miles, Station, Time due, Stop

Click mouse when viewed or press Return

Hold "t" during simulation to see this screen.

1.25 Help

Click this gadget to view the two in-game Help pics:

Help

Keys

Pressing "Help" during the simulation shows these pictures.

1.26 Load

Click to bring up a requester to load saved train file.
Requester will be set to "TrainDriver:Save/" but if the disk gets full use any drawer/disk you like

If you want to see if you are keeping time, you must use the codes of the trains which can be loaded from the "LOAD" gadget from the "TrainDriver:Save" drawer, as can any trains you save.

1S26 is a sleeper train departing at 2355 with 16 coaches.
This train is timed at 80 mph, and stops at Carstairs
to detach a portion for Edinburgh.

1.27 Delete

Click "OK" on the first requester to confirm you want to delete chosen files.

Then choose files to delete from the file requester to delete saved train file.

Requester will be set to "TrainDriver:Save/" but if the disk gets full use any drawer/disk you like

Use to delete any other file if you wish.

Click "Cancel" when you have finished.

1.28 OK

Click "OK" when you are done and you should be taken into the cab.

Let's go!

1.29 Driving

When you enter the cab from the
Startup Options Screen
you
will see the drivers view through the cab window on the left,
and the data display on the right. Below these are the dashboard indicators,
and between them are the driver's indicator
Lights
and the milepost symbol.

You may also notice a small horizontal white line which indicates when
the horizon is level. Watching the horizon gives warning of changing gradients.

For a description of these features see the Help pic

If you start at a stand the
AWS
horn
will be sounding and will need
to be cancelled with "a". Press "f" to put the motors into Forward and when the
"R" appears below the signal number, (after a few seconds and only in a station),
you may depart.(If you get bored of waiting, press "5" to speed up time.)
The bottom row of
keys
control the brakes and power.
So press "z" to release the brakes and then "." or ">" to notch up the power.
Watch the gradient and speed to make sure you don't roll back.

To find out where you are at any time press Space bar to view the
profile chart of the next ten miles ahead.

Signals and Crossovers

Stations

Braking

Power

1.30 Signals

The distance from the next signal is shown on the display in yards ↩
.

If you see two yellows, then the next signal may be one yellow and the next may be red, in which case you must stop within 35 yards of it to get the message from the signalman.

Some signals, in lower speed areas, have only three aspects, red, yellow and green. Here there is no advance warning double-yellow.

He may ask you to pass the signal at danger.

Your speed passing a signal with two yellows should generally be below 90mph and at one yellow try to reduce your speed to 60mph.
If you can see a red signal and you're over 60mph you will struggle to stop. However, beware of signals closer together than usual, and reduce your speed accordingly.

A hint to assist stopping is to keep your speed well below one tenth of the number of yards from the stopping point.

Flashing yellows countdown to a high speed junction, speed 30 to 70mph.

A junction signal either has a letter above, S for Slow Line or F for Fast Line, or has five white lights diagonally displayed, indicating the direction of the crossover.

Other signals may have a number displayed indicating the platform that you will enter.

Junctions without flashing yellow signals are protected by red signals which will change as the train passes over the
AWS
magnet if the
route is set and the line is clear.

These junction speeds vary between 10 and 40 mph.

A warning board will be shown after passing the junction signal indicating the junction speed, and the speed limit board will also be seen indicating the position of the junction.

1.31 Stations

The distance from the next station you are stopping at is shown on
the display in miles, and then in yards when you approach.

Again you must stop within 35 yards of the Stop board displaying the
number of coaches to enable you to get the "R" indication when your
guard is ready to leave. If you pass this board, select "O" to shut
the motors down, then "R" to select Reverse and notch up power with
"." in the usual way until you are back behind the board. Be careful
 not to overshoot again backwards !

The time you arrive and depart stations, and certain other points
will be recorded on the log, plus the average speed since the previous
point.

The "R" indicator will not appear before the booked time to depart,
or at a red signal, or if you pass the stop board.

1.32 Braking

Keys:

z	Release
x	Reduce
c	Increase
v	Increase (continuous)
b	Emergency

To apply brakes hold c until the guage reads 50 psi (pounds per square inch)
and release with z when approaching the desired speed level.

Alternatively use v to brake, "catching" the brake with x as the needle comes
down to 50 psi.

Normal Full Service application is 50 psi (vertical needle on dial).
Normally the driver would not use a greater braking force than this,
particularly in the wet.

Allow time for the brakes to release down the length of the train
particularly after heavy braking, before taking power.

When braking try not to brake too hard as you come to a stand
or you will spill the tea, and you will have to wait for the
air brake pipe to charge up again. You will hear the wheels screech
to a halt if you stop too harshly.

Having said that, don’t pass a red signal ever, and don’t speed excessively
or the guard will put the brake on or you may even derail the train.

In the wet don’t be too heavy on the brakes or the wheels may lock up
and slide greatly increasing braking distance.

Your speed passing a signal with two yellows should generally be <90 mph
and at one yellow try to reduce your speed to 60 mph.

If you can see a red signal and you're over 60 mph you will struggle to stop.
However, beware of signals closer together than usual, and reduce your speed
accordingly.

If necessary kill the power with "n". This is bad but better than
passing red signals !

A hint to assist stopping is to keep your speed well below
one tenth of the number of yards from the stopping point,
until the speed is down to 10 mph, then release brakes
completely until about 50 yards, then rub brakes lightly
for smooth stop (no audible screech).

1.33 Power

Keys:

n	Power Off
m	Run down
<	Notch down
>	Notch up
/	Run up

When taking power watch that you don't let the Ammeter go into
the red area or you will overload the motors and lose power.

Reset with "i", you may need more than one attempt.

In poor weather you should also stay below the yellow
region to avoid wheelslip.

When reducing power you should use "m" and wait for the notch indicator
to run down, rather than use "n", as sudden shutting off of power
could cause arcing and damage to the motors.

The speed limit is indicated by a white circular sign, with a red border.

Reductions in speed limit are indicated by a white triangle
with a yellow border, with the new limit in black.
Generally about 1.5 miles warning is given, unless two or
more reductions follow closely.
In cases of severe speed reduction, an
AWS
horn will sound.

When passing from a lower speed to a higher speed section remember
not to accelerate until the whole train has passed the higher speed
limit board.

At any point along the route there could be a speed trap set up by traction
inspectors. You will be advised as soon as your speed has been recorded.
If you are speeding there is a possibility you will be releived of your
driving duties immediately.

1.34 Other features

Saved trains

Neutral Sections

Gradients

AWS

Vigilance Device

Temporary Restrictions

Clock speed

1.35 Saved trains

To save a train just press Q and then select OK on the
filerequester. Unless Auto-delete is switched off in the Startup
screen all old savings of this journey will be deleted.

The file will be saved to TrainDriver:Save/
The file name will be set to the code of the train,
drivers name, loco no., difficulty level, mileage.
eg 1S47.Bill.033.001.133

1.36 Neutral Sections

If you see the Neutral Section Warning Board you must run down the
power to zero before the Neutral Section Board, or there may
be a loss of power (reset with "i").

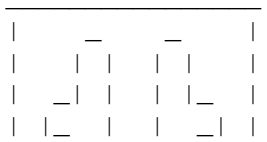
The warning board is one mile before the neutral section.

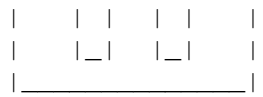
As a guide it takes 36 seconds to run down power from full power
which is a mile at 100 mph.

If you shut off power in time, power will be returned at the end of the
short dead section.

Do NOT use the brakes in a neutral section as it is a rheostatic brake
fed from the motors, so you will lose braking.

Warning is white on black, board at neutral section is black on white.





1.37 AWS

Two hundred yards before signals you will pass over an Automatic Warning System magnet

If the signal is green this will ring a bell and no further action need be taken.

Otherwise a horn will sound and you must press "a" to cancel within five seconds or the brakes will be applied. Joystick button also cancels the AWS horn.

There are also AWS magnets at Speed Reduction Warning Boards.

1.38 Vigilance Device

If Vigilance is not isolated in the Startup Options Screen a bleeper will sound if no key is pressed for 60 seconds.

If "d" is not pressed within five seconds , the brakes will be applied.

This replaces the traditional Deadman's Pedal.

1.39 Temporary Speed Restrictions

Random TSRs will be generated depending on the Difficulty level selected.

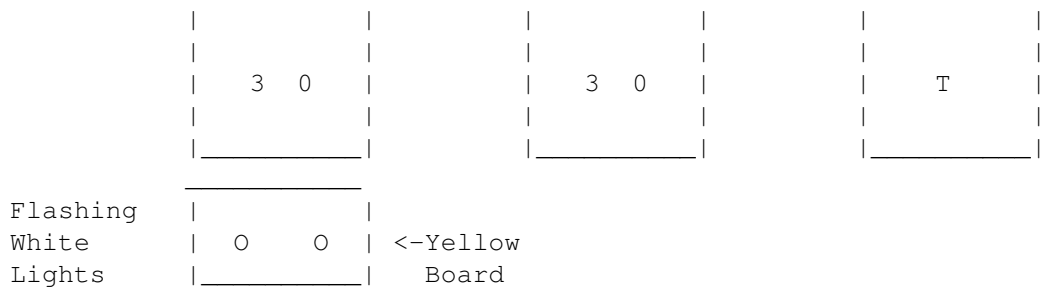
An AWS horn will sound and a board with flashing white lights will tell you what speed you must reduce to by the next board. After your train has passed the "T" board you may resume Line Speed. Remember to allow for the length of the train to pass. The "T" board on the display will remain there until the train is clear.

TSRs appear on the profile chart, seen by pressing Space bar.

The TSRs will be recorded on the log along with the speed you entered the restriction.

TSR Boards: Green with Black figures or Blue with White figures

Warning	Commencement	Terminating



1.40 Clock speed

By holding keys 1 to 5 until the number appears alongside the time ↩
,
you may adjust the speed with which time elapses.

eg key 5 will make the clock advance 5 seconds every second

However use the faster clock speeds with care as naturally your
reaction time will effectively be that much slower.

If the
AWS
horn sounds, or a Speed Reduction Board
appears, or certain other events occur, requiring your attention
your clock speed will revert to 1.

Key p pauses the simulation.

1.41 Keys and lights

Keys

Lights

1.42 Keys

Note: hold keys until desired result is seen

f	Forward
r	Reverse
o	Off

The letters O F or R appear above the brake guage to indicate
current mode.
Note: f & r only work when the game has first started or after the
train has stopped and o has been pressed to stop the motors.
In reality there is a three position switch:

```
F O R
\ | /

so you must stop, go to O (off) then into Reverse.
Putting the switch into Off while moving will cause a brake
application. Pressing f or r whilst the motors are running and audible
will have no effect.

Also power notches must be run down to zero before changing direction.

So when starting, hold F until you hear the motors start up, and F appears
then hold O until you hear them shut down, see O, then press R until you hear
the motors restart and R appears. You are now in reverse.

NOTE: Maximum speed when reversing is 10 mph.

Esc  Escape without saving etc.
 q   Save, View log and Continue (or Esc to Quit)
     The file name will be set to the code of the train,
     drivers name, loco no., difficulty level, mileage.
     eg 1S47.Bill.033.001.133
Space View profile of next ten miles
 l   View Log
 t   View Timings
 h   Horn (also joystick up/down)
 w   Wiper On/Off
 1-5
                 Clock speed
                 p   Pause
 s   Clears Signalman's message or tunnel name from screen
 i   Resets overloads (when B light comes on)
 a   Cancels
                 AWS
                 horn (also joystick button)
 d   Cancels
                 Vigilance Device
                  bleeper
 j   Toggles Detail On / Off
 t   View booked timings (if available for your
                 Headcode
                Help View Keys
          Help


                 Braking
                Keys: z  x c v       b
Off   << < > >> On   Emergency


                 Power
                Keys: n        m  < > /
     Off  Down << < > >> Up
```

1.43 Lights

```
                  L   Line light indicates 25KV power on
    W   Wheelslip
    B   Air Blast Breaker cuts off power at
                Neutral Sections
                and on overload
```

1.44 DISCLAIMER

```
                THIS PROGRAM IS PROVIDED ON AN "AS IS" BASIS, NO WARRANTIES ARE ↩
                   MADE, EITHER
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DIRECT, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING FROM ANY USE
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This program and all the disk's contents are MAILWARE, but must all be
distributed together with this doc.


If you use the program please at least send me an email or postcard :)
-------------------------------------------------------------------

Let me know if you want to include this disk on a CD, Coverdisk etc.
and send
                me
                a copy.
```

1.45 Author

```
Enjoy the program!

Any comments, bug reports, donations, upgrade requests etc. to;


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                                England

Email: paul@robins.powernet.co.uk


* If you would like a reply/upgrade please send a donation to at least
  cover P&P etc. (eg 3UKP, 10DM) *

-----------------------------------------------------------

Title picture, original photo by    M.Tindall
Data compiled with assistance from 'Druid'
```

```
Special thanks to main beta-tester  Gary Gagnon
Cab screen graphics                 Hans Berkhout

-Thanks !
```