TD2

COLLABORATORS			
	TITLE : TD2		
ACTION	*NAME*	*DATE*	*SIGNATURE*
WRITTEN BY		December 25, 2022	

REVISION HISTORY			
NUMBER	DATE	DESCRIPTION	NAME

Contents

Chapter 1

TD2

1.1 TD2.guide

```
                Train Driver 2
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```


Note some of the pictures are viewed with Sys:utilities/Multiview
If you don't have it use Display or D/Ppaint to view the files on the disk.

1.2 Introduction

```
                Train Driver 2
**************
```

Modular Train Driver Simulator

Following on from Train Driver 1.9 and TD Route Generator, this new version combines them with many new features, to allow loading of any route with details.

Features:

* Driver’s eye view graphics
* Loco sound effects
* Generates 50 billion different random routes
* Load in any route or loco
* Semaphore signals plus 2, 3 or 4 aspect colour light signals
* Guard, station and signalman speech (requires DEVS:narrator.device WB2)
* En route profile chart showing scenery, speeds and gradients
* Timings screen and automatic timetable creation or loading
* Train Log screen showing details of journeys
* 10 Difficulty levels
* Realistic train handling
* Scenery any colour or height
* Trees configurable
* Double headed locos
* Double tracks for loops, platforms, Slow/Goods Lines.
* Signal route indicators displaying any digit
* Random loco failures
* Five different rail and weather conditions
* Weather seasons
* Windscreen and wiper effects
* Variable fog visibility
* Reasons for delays displayed
* Changing train load whenever train stops
* Load and Save timings, route and loco automatically
* Tool Types for Driver, Vigilance, Speech, Clock speed, Confirm Quit etc.
* Day or night running
* Random Temporary Speed Restrictions
* Time speed up (up to x 6)
* Detail On/Off option for slower Amigas
* Sanders for wet slippery starts
* On line Help
* Many other options and features

Requirements:

Any Amiga with at least 2 mb and WB2.04+

Recommended:

Hard Drive
A1200 or better

There are three ways of using Train Driver Route 2

 * Generate a random route by adjusting the sliders on the
 Loading Screen
 * Load data from a real railway route

 * Create a real or fictional route using
 Data files
 or

 Train Driver Route Editor
 On Line Help is always available by pressing the Help key.

Train Driver Simulations Catalogue 7 September 1996
==========

All prices include P & P to UK or Europe (UKP)

TD2 15.00
includes Locos : Class 40, 87
Routes: WCML, Bletchley-Bedford, DSBline

TD Route Generator 1.1 5.00

Locos for TDRG and TD2 Any 2 5.00 per pair

Routes for TD2 5.00 each

Train Driver 2 Route Editor 5.00 (Free with any order for ↩
extra locos/routes)
Graphical User Interface to create Route data files

BR Locos:

20	Diesel	1000 hp	60 mph	
25	Diesel	1250 hp	75 mph	
26	Diesel	1160 hp	75 mph	
27	Diesel	1250 hp	75 mph	
33	Diesel	1550 hp	85 mph	
37	Diesel	1750 hp	90 mph	
40	Diesel	2000 hp	90 mph	FREE with TD2
47	Diesel	2580 hp	95 mph	
50	Diesel	2700 hp	100 mph	
HST	Diesel	2250 hp	125 mph	
86	Electric	4040 hp	100 mph	
87	Electric	4850 hp	110 mph	FREE with TD2
91	Electric	6090 hp	140 mph	
Steam	Steam	1500 hp	60 mph	

DSB: Ma-Lyntog	Diesel	2250 hp	110 mph	
EA-Electric	Electric	6111 hp	140 mph	
Mf-IC3	Diesel	5577 hp	125 mph	
My-Diesel	Diesel	2580 hp	90 mph	
Mz-Diesel	Diesel	4850 hp	110 mph	

Routes for TD2:

Glasgow - Euston) Free with

```
  Bletchley - Bedford       )  TD2

  Havnestation - Copenhagen )

  Euston - Glasgow

  Crewe - Holyhead

  Paddington - Bristol (by Brian Pollock)

  Kings Cross - Edinburgh (by Brian Pollock)

  Several excellent routes in Denmark (by Per Kjaer)


Send Cash, Guaranteed Cheques, Postal Orders, WH Smith vouchers...

Paul Robins
13 Windsor Street
Bletchley
Milton Keynes
MK2 2LN
England

OR pay by ACCESS/VISA/MASTERCARD from F1 Software Tel:01392 493580

Email:paul@robins.powernet.co.uk
WWW:  http://www.powernet.co.uk/user-bin/run?robins
```

1.3 Quick Start

```
                Double Click on Start_TD2 to make necessary assigns and run Train  ↩
                   Driver 2

Click mouse to remove title screen

Click  "OK" on
                Loading Screen
                Click  "OK" on
                Options Screen
                Press:  a       to cancel
                 AWS
                 horn
        f       to select Forward
                "F" should appear above the brake gauge
        z       to release brakes
Hold    .       for power


You should now start to move !

Press   Help      to view help pics
```

1.4 Loading Screen

Length

Start Time

Stations

Steepness

Curves

Tunnels

Load Route

Load Loco

Load Train

Randomize

Diesel/Electric Route

Mixed/Colour/Semaphore

OK

1.5 Length Slider

Select the length of a randomly generated route

Range 20-200 miles

1.6 Stations Slider

Select the likelihood of intermediate stations on a randomly generated route

Range 0 - 100%

Station names are taken from the station.data file if a random route is generated, or from the Routes/.../stations file of a loaded route.

1.7 Steepness Slider

Select the likelihood of change and steepness of gradients on a randomly generated route

Range 0 - 100%

1.8 Curves Slider

Select the likelihood of, and sharpness of curves on a randomly generated route

Range 0 - 100%

1.9 Tunnels Slider

Select the likelihood and length of tunnels on a randomly generated route

Range 0 - 100%

1.10 Train Start Time

Select Hours and Minutes of start time

Default is 06:20

This selects the start time to be used for calculating timings for the chosen route and loco.

The timings will be calculated allowing for line speeds, station stops loco hp and loco max speed, number of coaches and gradients.
These timings may seem easy to maintain. If so increase the difficulty level or train length and try again.
Don't worry if you are running a couple of minutes late as recovery time is allowed for at the end of the journey.

1.11 Randomize gadget

RANDOMIZE

Click this gadget to generate random parameters in the slider gadgets above

1.12 Diesel or Electric Route

Diesel or Electric Route

Choose between a Diesel or Electric Route.

Electric routes have overhead gantries, neutral sections

Diesel routes obviously need a diesel or steam loco.

You can load in an electrified route and select Diesel
to view the route without wires.

1.13 Load Route

Load Route

Click to bring up a requester to choose a drawer from where to load route files.
The requester will be set to "TD2A:Routes/" but if the disk gets full use any
drawer/disk you like.

See
Data files
Can also be set through
Tool Types

1.14 Load Loco

Load Loco

Select the path to, and load the loco sound effects, graphics and loco data.
This should be TD2A:locos/xx/ where xx is the class of loco.

See
Data files
Can also be set through
Tool Types

1.15 Random Signal type

Mixed/Colour/Semaphore Signals

With this button you may choose Mixed Signals, Semaphore only
or Colour Light Signals only on a random route.

This gadget is ghosted if a Route is loaded.

1.16 OK

OK

Click to go on to the
Options Screen

1.17 Options Screen

If in doubt, click OK to choose the default options until you get the idea.

Difficulty Level

Clock speed

Select Stops

Start time

Loco no.

Fog Visibility

Train length

Dry/Wet/Fog/Icy/Fall

Seasons

Initial Speed

Confirm Quit On/Off

Starting mileage

Auto-delete On/off

Pal Screen/Screen req

Vigilance/Isolated

Detail On/off

Delete

Route code

View Log

Driver

Speech On

Back

Help

OK

Load Timings

Quit

1.18 Difficulty Level

Select a difficulty level between 0 and 9

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

1.19 Start Time

Select Hours and Minutes of the current time

Default is 06:19 ie one minute earlier than the selected Train Start Time
It is best to set the time to one minute before departure to allow station time before "R" appears.

1.20 Locos

When selected the (front) loco's name will be displayed.
Choose the number of locos.

2 x Locos will give double power and increase Brake force.

1.21 Train length

Select number of coaches to be attached behind your loco.

Default is 9.

Average weight is 35 tons.

The weight will vary and will adjust as passengers get on and off the train at stations

1.22 Starting Mileage

Select starting mileage between 0.18 and the end of the line

Be careful when selecting mileages within 4 signals prior to a junction signal as without the full approach sequence signals may be set for crossovers without warning!

This does not apply to loaded trains where the necessary variables will be set.

1.23 Headcode

Code

This will display either the random route code or the name of a loaded route.

1.24 Initial Speed

Set your initial speed between 0 and the max speed of the loco.

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.

1.25 Default Clock Speed

Select Time x 1 or Time x 2 as your default clock speed
This is the speed the clock will run at in the event of an AWS horn
or a brake application etc.

Can also be set through
Tool Types

1.26 Fog configuration

FOG

Use the Fog Slider to select the Fog visibility in yards.

Choose Random or Fixed fog visibility length.

Remember to select Fog on the weather gadget if you wish to see the effects
straight away.

1.27 Stops

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

Loaded trains will set the stops automatically.

1.28 Auto-Delete On/Off

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.

1.29 Screen Pal/Req

Screen Pal/Req

Toggle between default PAL screen and a screen requester for the main cab screen.
Note however that the screen will remain 320x256 whatever mode is chosen.

This was included to allow NTSC users to select DBLNTSC to enable them to see the lower part of the screen.
If PAL SCREEN option is used, and Mode Promotion is selected in WB3 Prefs/Icontrol the screen should be promoted to the WB default.

1.30 Speech On/Off

SPEECH

Speech may be turned on or off here

You will hear the guard's announcements after leaving stations and any time by pressing "g".

Also the signalman will speak to you if you are detained at a red signal.

Be careful as the guard's voice may drown out the other noises in the cab so watch ↩ out for the visual reminders for AWS and Vigilance.

1.31 Driver

DRIVER

Enter your name here.

Use the
Tool Type
entry to have your name entered automatically.

1.32 Detail On/Off

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.

1.33 Vigilance

```
               Vigilance


Click on this gadget to isolate (ie disable)
                Vigilance Device
               Can also be set through
                Tool Types
```

1.34 Rail & Weather conditions

```
Rail & Weather conditions


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

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

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.

The windscreen will now show the effects of these weather conditions and you will
need to switch on the wipers using "w". Watch out for the "W" indicator
next to the message display.
There is a remote possibility that the wipers may fail making visibility very poor ↩
    indeed.
```

1.35 Seasons

```
Choose between :
```

```
Fixed - Weather stays as selected
Changeable - Weather may change to any other possibility
Summer - Weather Dry or Wet only
Autumn - Weather Dry, Wet, Fog or Fall      ) Some brightly coloured fields
Winter - Weather Icy, Dry, Wet, Fog or Fall ) will appear duller
```

1.36 Confirm Quit On/Off

```
                Choose either "Confirm Quit Off" for quick exits or "Confirm Quit  ↩
                   On"
for a small requester on your WB screen checking you want to quit
after pressing "Esc", in the cab screen

New Quit requesters (WB2+) now give you the option to re-start the game
after quitting a train.

You will need "Confirm Quit On" for this option.

Can also be set through
                 Tool Types
```

1.37 View log

```
View log

Views log of loaded train.

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

1.38 Timings

```
View scheduled timings of loaded train.

At the top of the screen is the loco no (x 2 if two locos), the bhp, and % rating  ↩
    (compared to Class 87)

Format: Miles, Station, Time due, Stop/Timekeeping

Timings shown are departure times, apart from final destination.
Arrival times are one minute earlier.


On the right hand side of the screen:

Current time

Current mileage

Next timing point (miles from)
```

Due in (minutes)

Average speed required (for punctual arrival)

Click mouse when viewed or press Return

Hold "t" during simulation to see this screen.

1.39 Help

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

Help

Keys

Pressing "Help" during the simulation shows these pictures.

Pressing "Help" again will show this guide

Pressing "Esc" will return to the program

1.40 Load Train

Click to bring up a requester to load saved train file.
Requester will be set to "TD2A:Save/" but if the disk gets full use any drawer/disk you like

The correct Route and Loco will automatically be loaded.

1.41 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 "TD2A:Save/" but you may delete any other file as well.

Use to delete any other file if you wish.

Click "Cancel" when you have finished.

1.42 Load Timings

Load Timings

Click to load a timings file in the selected Routes/ drawer.

See also
Timings Data

1.43 Quit

QUIT

Click QUIT to completely exit the program.

1.44 Back

Back

Click Back to go back to the
Loading Screen

1.45 OK

OK

Click "OK" when you are done and you should be taken into the
Cab Screen

1.46 Tool Types

Tool Types

To amend a Tool Type select the Start_TD2 icon on the Workbench Screen
and select Icons/Information from the menu.

Tool Types available are

	OR
Driver=Your_Name	
Vigilance=Isolated	On
Time=2	1

```
Speech=On                              Off
Confirm Quit=On                        Off
Intro=On                               Off
Locos_Path=TD2A:Locos                  DF0:Locos etc
Default_Loco=TD2A:Locos/87
Routes__Path=TD2A:Routes               DF0:Routes etc
Default_Route=TD2A:Routes/Glasgow      * Do not use this if you want a random route
```

This will enable you to have your preferred settings, loco and route loaded automatically when you start a new game.

Change the paths for locos and routes if, for example, you are running from floppies. This is the path the file requester will start from when asked to load.

Remove a tool type by adding any non-text character at the beginning of the line.

eg

#Default_Route=TD2A:Routes/Glasgow

will enable Random Route generation.

1.47 Cab screen

Keys

Driving

Braking

Power

En route Chart Screen

Timings Screen

Log Screen

Signals and Crossovers

Stations

Neutral Sections

Gradients

AWS

Vigilance Device

Temporary Restrictions

Clock speed

Sanders

Dashboard lights

1.48 Driving

DRIVING

When you enter the cab from the
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 red line which indicates when
the horizon is level. Watching the horizon gives warning of changing gradients.

For a view 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 "6" 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.

1.49 En route Profile chart

Real-time Profile Chart

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

On this chart the white line shows how the gradient rises and falls,
the green line shows how the line speed changes.

Also indicated are neutral sections in red, stations in brown and

tunnels in black.

Either side of the line are the scenery colours, trees and buildings.
Also marked are level crossings and signals

When a temporary speed restriction has been indicated by a warning board
this will also appear in green or blue.

The scales are labelled miles along the bottom and speeds down the
sides, and the vertical grey lines indicate the mileages shown.

If you are within ten miles of the last station a vertical yellow line will
move along showing you where you are.

1.50 Log screen

Log Screen

Press L to view the log of your journey.

This screen shows the times you arrive and leave stations,
your average speeds, the speed you enter and exit temporary speed restrictions
and any other out of course incidents such as red signals and crossovers.

Close the window or press Return to exit or press Esc to exit the program

Press Help to view this guide.

1.51 Gradients

Gradients

The gradients are displayed on the right hand side of the screen.
and the horizon will be seen to rise and fall.

Remember that when driving a long train the effects of the gradient will be
delayed until at least half the train has entered the gradient.

1.52 Signals

Signals picture

There are many types of signal as shown on the picture linked above.
The normal sequences are also indicated.

Colour lights may have two, three or four aspects.

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

If any signal shows red, you must stop within 35 yards of it to get the
message from the signalman.

He may ask you to pass the signal at danger.
If so you should give a long blast on the horn and proceed cautiously
until passing the next signal. Remember the next signal may be red.

Your speed passing a signal with two yellows (where available) 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, generally 30 to 70mph.

A junction signal either has a letter above, eg 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, or the line you are crossing to.

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.

If you are detained at a red signal for a couple of minutes the guard will
announce the reason for the delay to the passengers and it will be displayed on ↩
   the
Message Display and in the log.

1.53 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 !

Arrival times at intermediate stations are 1 minute before the shown
departure time.

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.

1.54 Braking

Braking will vary depending on the loco details, the number of coaches,
and weather conditions.

Keys:

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

Brake gauge

72	Brake released
65	Initial application
50	Full service
0	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.

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 below 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).

Suggested maximum speeds at 50 psi.
(dependant on rail condition, difficulty level, gradient, weather etc)

880 yards 60 mph
200 yards 30 mph
100 yards 20 mph
50 yards 10 mph

1.55 Power

Keys:

n	Power Off	Alternative keys:
m	Run down	7
<	Notch down	8
>	Notch up	9
/	Run up	0

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.

Note if you overload excessively the loco may fail and your drive is over!

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. A guide to this is the fact that the gantries are about
eight coaches apart.

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.

1.56 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 normally be saved to TD2A: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

1.57 Neutral Sections

Neutral sections allow electric trains to pass from one electricity supply station
to another. Diesel locos may ignore them.

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.

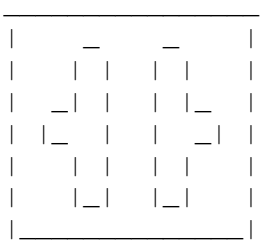
As a guide it takes 36 seconds to run down power from full power
which is a mile at 100 mph.

If you shut off power in time, power will be returned at the end of the
short dead section, otherwise you will have to try and reset the motors using
key i after exitting the neutral section.

Note if you overload excessively the loco may fail and your drive is over!

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

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



1.58 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.
A red "A" will appear in the bottom right of the screen.
The joystick fire button also cancels the AWS horn.
The yellow "dartboard" will then appear.

There are also AWS magnets at Speed Reduction Warning Boards.

There are no AWS magnets at Semaphore signals

1.59 Vigilance Device

If Vigilance is not isolated in the
 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.

As a Visual reminder, and to help when other sound effects such as the speech
clash, a red D will appear in the boyyom right of the screen

This replaces the traditional Deadman’s Pedal.

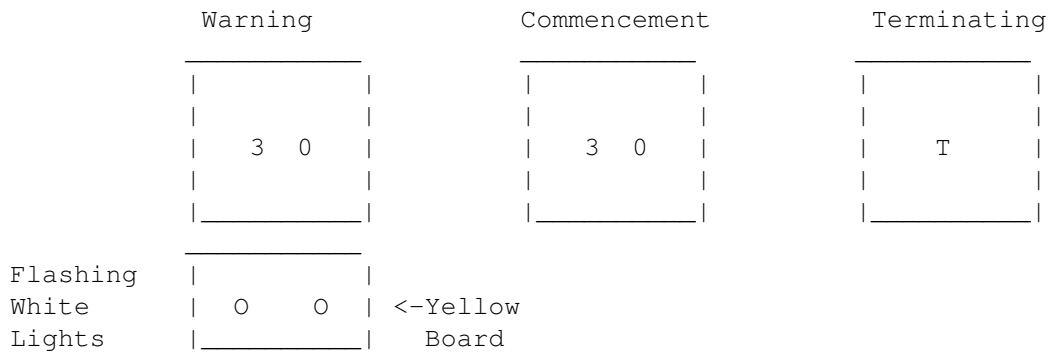
1.60 Temporary Speed Restrictions

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.

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



The speed you enter and exit the TSR will be recorded in the log.

1.61 Clock speed

Clock speed

By holding keys 1 to 6 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, or 2 if that is chosen as the default clock speed.

On some occasions the clock speed will always revert to the default speed selected ↩
.

Key p pauses the simulation.

1.62 Sanders

Sanders

If you have trouble starting up on a steep, slippery gradient
press u to apply sand for better traction up to 5 mph.

This will not work above 4 mph.

Press s to clear "Sand applied" message

1.63 Keys

Keys picture

Note: hold keys until desired result is seen

```
 f   Forward
 r   Reverse
 o   Off
```

The letters O F or R appear below 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.

```
Esc     Escape without saving etc.
 q      Save, View log and Continue (or q again 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 Chart
                of next ten miles
 l      View Log
 t
                View Timings
                h      Horn (also joystick up/down)
 w      Wiper On/Off
 1-6
                Clock speed
                p      Pause
 s      Clears Message Display
 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
 u      Apply sand to rail
 g      Listen to guard's announcement if speech is available.
Help    View Keys
           Help



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


                Power
               Keys:          n        7  8 9 0      (or number pad)
  or:          n        m  < > /
              Off  Down << < > >> Up
```

1.64 Lights

```
                  L   Line light indicates 25KV power on

      P on Diesels indicating engine is running

    W   Wheelslip

    B   Air Blast Breaker cuts off power at
                Neutral Sections
                and on overload
```

F on Diesels indicating Fault

1.65 Train Start Time

Train Start Time

Select Hours and Minutes of start time

Default is 06:20

This selects the start time to be used for calculating timings for the
chosen route and loco.

The timings will be calculated allowing for line speeds, station stops
loco hp and loco max speed, and gradients.
These timings may seem easy to maintain. If so increase the difficulty level
or train length and try again.
Don’t worry if you are running a couple of minutes late as recovery time
is allowed for at the end of the journey.

1.66 Load Route

Load Route

Click to bring up a requester to choose a drawer from where to load route files.
The requester will be set to "TD2A:Routes/" but if the disk gets full use any
drawer/disk you like.

See
Data files

1.67 Loco data

Loco data

Select the path to, and load the loco sound effects, graphics and loco data.
This should be TD2A:locos/xx/ where xx is the class of loco.
Included are Classes 87 and 40

If no train is loaded the built-in class 87 data will be used.

In the drawer there must be the following files:

horn iff sound sample for train warning horn

hornlo) optional sound samples for low/high tones of horn

```
hornhi )  activated by up/down joystick, preferably looping

start  )
run    >  iff sound samples for train motors
stop   )

run  must be a looping sample

rev  an optional looping sample which will be used when the loco is taking
     power. If not available "run" will be used at all speeds.

View

      If present in the locos/xx drawer this 165x160 brush will
      be loaded and will be the window frame inside the window

Nose

      If present in the locos/xx drawer this 165x160 brush will
      be loaded and will be the loco "nose" outside the window

      To create load the TD2A:cab picture into D/PPaint for the correct pallette.
      Draw a black box, colour 0, over the cab view window and draw in your
      nose/view graphics.
      Cut the brush, with co-ordinates on from 0,0 to 165,160 and save brush.
      See the example in Locos/40/

data    text file

Class 87 example (TD2A:Locos/87/data)


36                          No of locos on top line
87001                       First loco
Royal Scot                  Name #1
Royal Sovereign
Patriot
Britannia
City of London
City of Glasgow
City of Manchester
City of Liverpool
City of Birmingham
King Arthur
The Black Prince
Coeur De Lion
John O'Gaunt
Knight of The Thistle
Howard of Effingham
Sir Francis Drake
Iron Duke
Lord Nelson
Sir Winston Churchill
North Briton
Robert The Bruce
Cock O' The North
Highland Chieftain
```

```
Lord of the Isles
Borderer
Redgauntlet
Wolf of Badenoch
Lord President
Earl Marischal
Black Douglas
Hal O' the Wynd
Kenilworth
Thane of Fife
William Shakespeare
Robert Burns
Stephenson                    Name #36
4850                          BHP
1                             1=electric loco 0=diesel loco See
                 Diesel Locos
                110                              Loco official Max speed up to 125
60                            Acceleration factor Default=50 Range 1-100 )   ↩
   OPTIONAL
50                            Braking factor Default=50 Range 1-100      )
End                           Must be present on last line


Leave blank lines if locos have no names
```

1.68 Diesel and Electric Locos

```
                Diesel and Electric Locos


There are a number of differences between diesel and electric locos

Diesel locos run up power quicker and no harm is done by shutting
off power to 0 (key n). They also do not need to shut off power
through neutral sections. They weigh more adding more brake force
and giving better traction in slippery conditions.

Drivers would not normally switch a loco to Off at intermediate stations and
signals.

Instead of a Line light a Power light is available which glows red
in case of overload shut-down indicating the loco has shut down.
Instead of a Breaker light a Fault light is available which glows
blue if a fault develops on the loco.

Both these lights can usually be reset by key I.
If not your loco has failed and your drive is over!

Included with this release are
                 Data files
                 and sound effects for two
locos, BR classes 87 and 40.

Class 87
```

========

Users of TrainDriver will be familiar with these locos.

Built 1973-75
HP 4850 (87101 5000)
Weight 80 tons
Max Speed 110 mph

Class 40
========

These locos were withdrawn from BR traffic in the 1980's.

Built 1958-62
HP 2000
Weight 135 tons
Max Speed 90 mph

1.69 Data files

WARNING - Creation of Data-files is a long process and is only recommended for enthusiasts!

See
Train Driver Route Editor
for an easier way!

You will need to be competent with a Text Editor and able to copy files etc.

If you want to create your own fictional line or try to simulate a real line familiar to you, you will need to create the necessary data files in any text editor (eg ED in Workbench:c/)

First you must create a drawer in the TD2A:routes/ drawer
(Makedir TD2A:Routes/MyLine)
Choose a name for your route, without spaces in the name, LESS THAN 12 CHARACTERS.

Then in this drawer you may create the following files.
The only files must be present are Data and Stations.

If the program can't find any of the other files it will attempt to generate data based on the position of the sliders.

The following are linked and both or neither should be present

signals1 and speeds1 (and signals2 and speeds2 if double track)
gradients and scenery

Note: Do not write any comments in your files
No blank lines
Last line must be End
First value must be on top line

Route Files:

Data

Stations

Curves

Tunnels

Neutrals

Bridges

Gradients

Signals

Speeds

Scenery

Junctions

Crossings

Buildings

Trees

Timings
Loco files:

Locos
If you do create any data files please send them to me or upload ↩
to aminet,
so we can all try them out!

Suggested sources of data (BR)
##############################

British Rail-Mainline Gradient Profiles Ian Allan

Collectors Corner (nr. Euston, London)
for outdated Sectional Appendices, Working Timetables etc

1.70 Data Data files

```
20          Total Mileage
1           1=electrified 0=Non-electrified
140         Max line speed 20-150 mph
2           No. of lines (1 or 2)
Main Line   Line name #1 to be displayed
Slow Line             #2 if 2 lines
End
```

The total mileage figure must be the same as the last signal and the last station, and be between 20 and 500 miles.

Non-electrified routes will have no overhead gantries or neutral sections

1.71 Curves data

TD2A:Routes/Example/curves

Value	Comments
12	No of curves
1.4	Mileage of start of curve
-40	Sharpness of curve
3	Mileage
33	Sharpness
4.5	Mileage
-22	Sharpness
5.68	Mileage
25	Sharpness
6.3	Mileage
33	Sharpness
7	Mileage
12	Sharpness
8	Mileage
30	Sharpness
9	Mileage
-33	Sharpness
10	Mileage
-36	Sharpness
10.7	Mileage
-31	Sharpness
12	Mileage
30	Sharpness
14	Mileage
-35	Sharpness
End	Must be present

```
Curves sharpness must be in the range -40 to 33
Curves must be at least 0.7 miles apart
Avoid using curves that start less than 0.7 miles before the mouth of
a tunnel.
```

1.72 Gradient data

```
TD2A:Routes/Example/Gradients

20     No of gradients
0      Mileage of start of gradient
-123   Steepness of gradient
1      Mileage
272    Steepness
2      Mileage
-45    Steepness
3      Mileage
40     Steepness
4      Mileage
-40    Steepness
5      Mileage
49     Steepness
6      Mileage
44     Steepness
7      Mileage
0      Steepness
8.2    Mileage
112    Steepness
9.5    Mileage
-59    Steepness
11     Mileage
40     Steepness
12     Mileage
0      Steepness
13     Mileage
40     Steepness
14     Mileage
-40    Steepness
15     Mileage
-48    Steepness
16     Mileage
0      Steepness
17     Mileage
45     Steepness
18     Mileage
99     Steepness
19     Mileage
-232   Steepness
19.5   Mileage
-80    Steepness
End    Must be present

Gradients steepness must be in the range -40 to 40
Negative numbers indicate uphill gradients.
```

1.73 Neutral Data files

```
TD2A:Routes/Example/Neutrals

2      No of neutral sections
2.3    Mileage #1
19.3   Mileage #2
End    Must be present

Neutrals are usually about 15 miles apart and must be at least 1.5 miles apart
```

1.74 Signal Data files

```
You need a signals# and a speeds# for each line

eg if you have two lines you need signals1 and signals2


TD2A:Routes/Example/signals1



22     Number of signals
0.19   Mileage of Sig #1 must be 0.19
0      Code of Sig #1
0.8    Mileage of Sig #2
0      Code of Sig #2
1.8    Mileage of Sig #3
0      Code of Sig #3
3      Mileage of Sig #4
0      Code of Sig #4
4      Mileage of Sig #5
0      Code of Sig #5
5      Mileage of Sig #6
0      Code of Sig #6
6      Mileage of Sig #7
0      Code of Sig #7
7      Mileage of Sig #8
0      Code of Sig #8
8      Mileage of Sig #9
0      Code of Sig #9
9      Mileage of Sig #10
0      Code of Sig #10
10     Mileage of Sig #11
0      Code of Sig #11
11     Mileage of Sig #12
0      Code of Sig #12
12     Mileage of Sig #13
0      Code of Sig #13
12.9   Mileage of Sig #14
```

```
13     Code of Sig #14
13.7   Mileage of Sig #15
0      Code of Sig #15
14.8   Mileage of Sig #16
0      Code of Sig #16
15.55  Mileage of Sig #17
0      Code of Sig #17
16.3   Mileage of Sig #18
0      Code of Sig #18
17.6   Mileage of Sig #19
0      Code of Sig #19
18.9   Mileage of Sig #20
1      Code of Sig #20
M      Letter displayed
19.3   Mileage of Sig #21
2      Code of Sig #21
F      Letter displayed if route set to line 1
S      Letter displayed if route set to line 2
20     Mileage of last signal at buffers
0      Code of last signal usually 0 for buffer stops
End    Must be present

The last signal must be the same mileage as the last station

Signal codes

 0      Normal 4 colour signal, usually green
 1      Theatre box indicator - no change of line
 2      Theatre box indicator with change of line
 3      Left hand junction signal with steady yellows at previous two signals
  (Low speed with white light direction feather)
 4      Right hand junction signal with steady yellows at previous two signals
  (Low speed with white light direction feather)
 9      No indication - change of line (eg end of loop)

13,14     Junction signal with flashing yellows at previous two signals (High  ↩
   speed)
23,24     Junction signal usually green (Line speed)

Aspect codes add:
100       3 aspect colour light
200       2 aspect colour light red/green
300       2 aspect colour light red/yellow
400       2 aspect colour light yellow/green
500       Buffer stop with red lights (last signal only)
600       Semaphore Stop signal       red/green
700       Semaphore Distant signal    yellow/green
800       Semaphore Stop and Distant  red/yellow/green
900       Semaphore Fixed Distant signal  Yellow only

Line destination codes add
1000    After signal line crosses to line 1
2000    After signal line crosses to line 2
9000    Current line ends - all trains must cross to other line at previous signal

Signals picture
```

```
Signals with codes other than zero,1 or 9 should be at least three signals apart
as the signal sequence usually takes three signals.
Also when testing start at least 4 signals before signals to test
their effect.

To create first make up your signals1 file for the main line
and the make a copy as signals2 and edit the codes for the second line.
Do not edit the mileages, particularly of junction signals.
The number of signals on both lines should be equal.
Use code 9000 to show that signals on line 2 do not apply until the next crossover ↩
    from line 1.

Also note that after a signal code 1 (or 101 etc) there should be an entry to
show which digit is to be displayed in the theatre box indicator
sbove the signal. This is in fact the name of the file in the Matrix drawer, so
you may create your own digits.

The format is a 5x5 grid:

22122
21122
22122
22122
22122    = 1

where 1 is a white light and 2 is a grey light, ie off.
Any colour 0-9 may be substituted.

After a signal code 2 (or 202,1202 etc) there should be an entry for each line,
the first entry for line 1, the second for line 2. See the above example.
```

1.75 Speed Data files

```
You need a speeds1 and speeds2 file if you have 2 lines

If you make a speeds1 file you'll need to do a signals1 file etc

TD2A:Routes/Example/speeds


6    No of speed restrictions
0    Mileage #1 must be 0
25   Speed restriction
0.5  Mileage #2
75   Speed   #2
2    Mileage #3
110  Speed   #3
3    Mileage #4
125  Speed   #4
17   Mileage #5
115  Speed   #5
19.6 Mileage #6
30   Speed   #6
```

```
End  Must be present

First create your speeds1 file for the Main Line and then copy as speeds2
and add additional restrictions for line 2.
There should be more entries in speeds2 than speeds1.
```

1.76 Tunnel Data files

```
TD2A:Routes/Example/tunnels

2             No of tunnels
Short Tunnel  Name of Tunnel #1
1.8           Start mileage of Tunnel #1
1.9           End mileage of Tunnel #1
2             Colour of entrance #1
Long Tunnel   Name of Tunnel #2
15            Start of Tunnel #2
18            End of Tunnel #2
2             Colour of entrance #2
End           Must be present
```

1.77 Stations Data files

```
                TD2A:Routes/Example/stations; this file must be present

11              # of stations
0.181           Miles #1
Riverside       Name  #1
3               Code  #1
2               Platform Line code (ONLY after code 3/13 station on 2 line route)
2.4
Coastline
1
3
Hill on Sea
3
4
Sea Bridge
1
7
Bland Sands
2
9
Highbridge
1
12
Sea Crossing
1
13.2
Sea Port
13
15
```

```
South Mouth
1
18
North Mouth
1
20.0
Bloomfield
3
End

Station codes:

1=name only (shown in yellow one mile before)
2=small local platform
3=Main selectable station with large platform and optional building and roof
  Also used as a timing point

Add 10  for right hand platform
 or 20  for platforms on both sides
 or 30  for platforms on both sides but on right only on line 2 (island platform  ↩
    loop)

Add 100 for abandoned platform

Add x1000 on code 3/13 stations for:

0      Platform with roof
1000   Platform without roof or building
2000   Platform with building
3000   Platform with roof and building

If the building is not appropriate you may add your own with the
                 Buildings
                 file.


Platform line codes: (Next line only after code 3/13 station)

1  Train will be crossed to line 1 to stop if selected and signalling permits
2  Train will be crossed to line 2 to stop if selected and signalling permits
0  Train can stop on either line (if available) but if on line 2 the platform will ↩
    be on the other side

Station names must not exceed 14 letters
The last station mileage must be the same as the length of the line in the "data"  ↩
   file
```

1.78 Bridges Data files

```
TD2A:Routes/Example/bridges

20     No of bridges
0.7    Mileage
2      Colour
1.5    Mileage
```

```
3      Colour
3.5
3
4.54
4
5.3
5
6.8
6
7.1
7
8.2
8
9.7
9
10
10
11.2
11
12.8
12
13.2
13
14.6
14
14.9
15
18.1
10
18.6
2
19.4
1
19.6
2
19.8  Mileage
0     Colour
End   Must be present
```

To create long bridges place the first bridge then up to 4 black bridges 0.02 ↩ miles apart.

Up to 5 bridges can be on screen at once.

Take care not to place bridges inside tunnels!

Colours

0 Black
1 White
2 Dark Grey
3 Red
4 Sky (Footbridge)
5 Dark yellow
6 Bright Green

```
7 Bright Yellow
8 Dark Green
9 Dark Blue
10 Light Grey
11 Brown
12 Light Blue
13 Medium Green
14 Sand
15 Dark red
```

1.79 Scenery

```
                Scenery data file

See also
                 Trees
                22     # of scenery changes
50      Tree generator factor 0-100% Must be >0 or no Trees
50      Fir tree percentage   0-100% Ignored if Trees file found
0      Miles #1 First should be 0
0200   Colour Code #1 see below
0      Height Code #1 see below
0.6
0909
0
0.8
0208
088099
2.4
0209
099000
3
0809
077000
4
0909
0
5
0808
033099
6
0813
077000
7
1414
0
8
1313
0
9
0404
0
10
0813
099000
```

```
12
1212
0
13
1308
000077
14
0808
001055
14.5
1414
0
14.8
1212
0
15.5
1414
0
17.3
1212
0
18.5
1414
0
19
0802
078034
19.5
0202
001000
End


Colour Codes

LLRR  where LL is lefthand colour number
        and RR is righthand colour number

00 Black
01 White
02 Dark Grey
03 Red
04 Sky (high bridge)
05 Dark yellow
06 Bright Green
07 Bright Yellow
08 Dark Green
09 Dark Blue
10 Light Grey
11 Brown
12 Light Blue
13 Medium Green
14 Ballast (for wide yards, lines, desert)
15 Dark red

Scenery colours are all grey (2) at night.
```

```
Height Codes

LLLRRR  where LLL is lefthand height
        and RRR is righthand height

Range 001-120 minimum pixels from top of screen

Code 0=Flat ie 120120

Note: Heights are effected by placement of tunnels
```

1.80 Junctions

```
For junctions after appropriate signals.

2    # of junctions
2.7  Miles start #1
2.9  Miles end #1
70   Speed #1
3
3.1
50
End

The speed restrictions only apply for trains
crossing over at the junction, but the sound effects and
bouncing effect will always be shown.
```

1.81 Level crossings

```
5       # of crossings
0.6     Miles #1
102     Code #1 see below
5.2
111
14.5
11
18.6
2
19.3
111
End

Codes:

Colours

Add 100 for wider road crossing
```

```
00 Black
01 White
02 Dark Grey
03 Red
04 Sky ?
05 Dark yellow
06 Bright Green
07 Bright Yellow
08 Dark Green
09 Dark Blue
10 Light Grey
11 Brown
12 Light Blue
13 Medium Green
14 Ballast ?
15 Dark red

Half a mile before the crossing mileage a round white sign
with a grey border will be seen with the letter W.
This is a "Whistle" board indicating the driver should sound
his horn in daylight hours (0700-2330)

Crossings are not visible at night
```

1.82 Buildings

```
Buildings


This file allows you to show simple block buildings and by adjusting the  ↩
   parameters
you can create walls etc.

Up to 8 buildings can be on screen at once.

6         No. of buildings
0.3       Mileage building #1
0.2       length of  building #1 (miles) Maximum 0.5
32        Width (in pixels when nearest) #1
64        Height (in pixels when nearest) #1
11        Colour of  building #1
1         Side #1:  -1 = Left  1 = Right
0.4       Mileage building #2
0.2
32
48
10
-1
0.55      Mileage building #3 (wall)
0.5
1
64
14
1
1         Mileage building #4
```

```
0.1
48
48
2
-1
50.75     Mileage building #5
0.1
48
64
13
-1
50.9      Mileage building #6
0.03
16
64
10
1
End       End of file


Colours

00 Black
01 White
02 Dark Grey
03 Red
04 Sky ?
05 Dark yellow
06 Bright Green
07 Bright Yellow
08 Dark Green
09 Dark Blue
10 Light Grey
11 Brown
12 Light Blue
13 Medium Green
14 Ballast
15 Dark red
```

1.83 Trees

```
                Trees


This data file enables you to create banks of trees

Trees will be drawn over platforms but behind buildings.

See also entries in
                 Scenery
                 data file

9       No of "woods"
0.7     Mileage start
0.2     Length of wood (miles)
```

```
0       Type of tree 0=circular 1=fir
0       Side 0=both -1=left 1=right
8       Actual number of trees equally spaced
1.3
0.2
0
0
8
2
0.5
0
0
16
3
0.9
0
0
32
4.3
1.2
0
0
32
7.2
0.5
0
0
16
8.3
0.4
0
-1
8
10.55
0.8
0
0
32
14.2
0.8
0
0
16
End
```

1.84 Timings

This option allows you to load in timings if the computer generated timings are not to your liking or if you want to load in a real train's timetable.

Format:

```
0002  time due to start
0145  time due next stop
0308  time due next stop
0456  time due next stop
0722  time due next stop
1123  time due next stop



1301  time due last stop
```

There is no need for a counter or "End" line in this file.

If Routes/xx/timings is present these timings will be used.
If not you may either let the program calculate the timings
or Load Timings from the second GUI.

The program expects in this case the pattern #?.timings in the
Routes/xx/ drawer. So you could have slow.timings and express.timings
for a slow or express train

1.85 TDRE

Train Driver Route Editor is a user friendly graphical interface for creation of the
necessary files to create routes to load into TD2.

TDRE was originally designed by Orvo Leskinen

It will be completed during September 1996 and will be available for five pounds
or free with any order for locos or routes.

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1.87 Author

Enjoy the program!

Please send me any sets of data files you make,
in return for freebies.

Any comments, bug reports etc. to;

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–Thanks !