MML: London to Bedford Enhancement Pack

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System Requirements

Minimum

RAM: 6GB

If you have less RAM than this, you run the risk of experiencing 'Out of Memory' errors.

Recommended

For the best FPS in busy/detailed areas of the route (Bedford, Luton, St. Albans City & Cricklewood southwards), we recommend the following:

RAM: 8GB
Processor (CPU): Max turbo clock rate 5GHz
Graphics card (GPU): Train Simulator Classic is very heavy in its use of your processor so your graphics card isn't usually so important. Anything remotely well matched to your processor so your graphics card does not cause a bottleneck will suffice. You can find out whether your graphics card is a bottleneck by reducing the resolution you play at. If your FPS increases when reducing the resolution, your graphics card is probably what is limiting FPS.

This enhancement pack will still function just fine for those with lesser systems than what is recommended above, but FPS could well be limited in the aforementioned busy/detailed areas.

How to Install

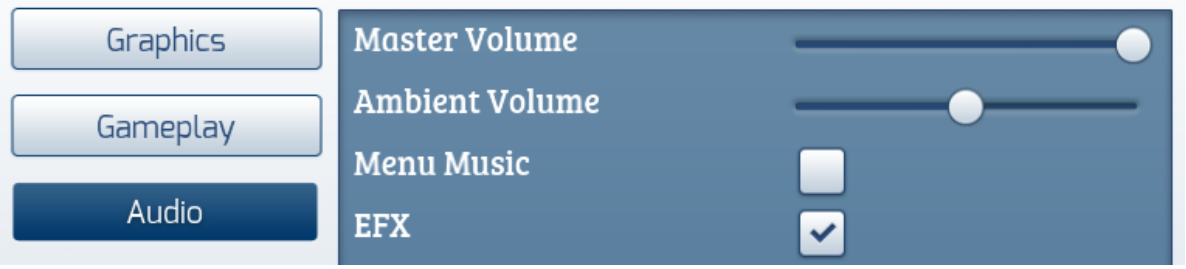
1) Locate where you have downloaded this pack and unzip it. Information on how to do this can be found *here*.
2) Go to the location where you have extracted the files from the .zip file.
3) Now find the .exe file called 'MML London to Bedford Enhancement Pack'. Double-click this file.
4) Follow the steps and by the end of the process, the enhancement pack will have installed.
5) The route is a separate copy to the original and named 'AP - Midland Main Line South' in the simulator.
6) For the route to function correctly, you must also have the following packs installed:
   - *DTG Midland Main Line London - Bedford*
   - *DTG Chatham Main Line: London Victoria & Blackfriars – Dover & Ramsgate*
   - *DTG WCML South: London Euston - Birmingham*

   And at least ***ONE*** of the following three packs from *Just Trains*:
   - *Midland Main Line: Sheffield - Derby*
   - *South Western Expressways - Reading*
   - *Wessex Main Line: Southampton - Salisbury*

7) If you intend to use any of the included scenarios, make sure you have the relevant payware add-on packs listed on the product page installed so the scenarios function as intended.
8) If your overhead wires are missing, please ensure you have 'Academy – UK, US and German Training Zones' ticked within your Steam DLC list.

Recommended Audio Settings

When using this route, we recommend using the following volume levels within your in-game Audio settings so as to have the right balance between train sounds and ambient noise. We also recommend having EFX turned on so as to take advantage of the reverb effects in tunnels & beneath bridges.



Overview

This pack overhauls DTG's Midland Mainline London – Bedford to a high standard to represent the route (roughly) between 2011 & 2019. Please see below for a summary of the key features:

- Majority of scenery visible from the driver's cab has been ripped out and replaced with higher quality and more accurate/detailed assets.
- Overhead line equipment completely replaced
- 12 car platforms added
- 'HST' speed limits added
- Kings Cross Thameslink added
- Cricklewood Curve Junction/Brent Curve Junction to Dudding Hill Junction re-laid with accurate gradients
- Additional track added between Carlton Road Junction & Junction Road Junction
- Signalling functionality vastly improved using our *Signal Enhancement Pack* (packaged for use with this route only)
- Neutral sections and cab secure radio (CSR) boards added

Features

A more detailed overview of what has been added/enhanced.

Scenery

Vegetation

Many of the assets from our *Vegetation Enhancement Pack* are packaged and utilised in this enhancement pack. Combined with careful use of grass in the foreground and more performance friendly 2D assets further from the track, this route now has rich and luscious vegetation.

We have also taken care in how vegetation looks in autumn, spring & winter which is often neglected in routes. Whilst it's hard to beat the height of summer with everything in bloom, this route is now a joy to drive in all seasons.

Trackside Clutter

Special attention has been given to trackside clutter such as signage, cable trunking, railway waste & junction boxes. All of these things come together to simulate a detailed and varied railway environment.

Station Clutter

Plenty of clutter has also been added to stations such as signage, posters, fencing, platform markings, seating and driver only operation (DOO) monitors.

Overhead Lines (OHLE)

All existing overhead line equipment has been completely removed and replaced with high quality assets from Just Trains' "Common Library". Each gantry and hanger has been carefully placed and chosen to reflect the prototype as closely as possible.

Mileposts

Once again, using Just Trains' "Common Library", mileposts have been accurately placed every quarter of a mile as per reality. After over a century in situ, many of these mileposts have developed a lean which has also been represented.

Boundary Fencing

Boundary fencing has been added where it was previously missing. Palisade fencing has been replaced by post & wire, or vice versa, to reflect reality. Where this changed during the route's era of 2011 to 2019, the type in place the longest has been used.

Lighting

Night lighting has been overhauled to be of a realistic colour, coverage and intensity. A colour temperature of around 4000K has been used as per reality for station lighting.

St Albans South Signal Box

The preserved St Albans South signal box has been given a spruce up with more accurate colours and many various artefacts added. Make sure to pop in for a quick visit between driving duties!

Platform Dwell Times

By default, when loading/unloading passengers at a platform, it will take 35 seconds. The only exception is if the stop is timetabled and you are held for your departure time. If you are running late however, you are bound to the 35 second dwell time. This is fine for a suburban service but for intercity services, their dwell times are typically longer so 35 seconds feels far too short.

To counter this, at Luton Airport Parkway (fast lines only), Luton (fast lines only) & Bedford, the default loading time has been increased to 90 seconds. This also applies to Wellingborough, Kettering & Corby if you own the Bedford to Corby extension.

This allows the creation of late-running intercity scenarios with realistic dwell times.

Luton Airport

At Luton Airport Parkway, keep an eye (and ear!) out for landing aircraft. This can be seen from many miles away so once north of the cutting at Harpenden or south of Leagrave, make sure to play “spot the A320”!

Please note that your ambient audio volume must be set as described at the beginning of this manual to hear the plane.

Infrastructure

Signalling

All signals are now placed correctly with accurate ID plates which match industry signalling diagrams. Missing ground signals have also been added in many locations. The height of signals, whether they are offset, or whether they are on a gantry, has also been taken into account.

LED signals have been added where applicable. Like with the boundary fencing, if they were changed during the route's era of 2011 to 2019, the type in place the longest has been used.

Using our *Signal Enhancement* Pack, which is packaged with this pack for use with this route only, realistic approach control behaviour on diverging junctions is implemented, with accurate release distances on many signals, and plausible ones on others where reference material was not available to us. In addition, associated position lights illuminate for routes as per reality.

Also, all of the lovely visuals as seen in our *Signal Enhancement* Pack, such as signal aspect sequencing and incandescent bulb fade are all present.

Finally, the original version of this route suffered from signal gantries which were too low, sometimes clipping trains, and also gantry signals which lacked sighting boards behind them. Both of these things have been rectified.

Speed Limits

Speed limits have been moved/changed where they were previously incorrect.

Also, from December 2013, many stretches of the fast lines from Elstree Tunnel northwards were upgraded to allow speeds of up to 125mph compared to the previous maximum of 110mph. These have been added and are boarded as 'HST', which applies to the HSTs & 222s used on this route.

Dudding Hill Junction

Located between Cricklewood & Hendon are Brent Curve Junction (north facing) & Cricklewood Curve Junction (south facing), which form two sides of a triangle, meeting at Dudding Hill Junction. These chords serve the freight-only line to Acton and are where the majority of freight trains join the Midland Mainline. This track has been re-laid with accurate gradients and scenery added to provide a natural start/end point for freight scenarios.

Junction Road Junction

Similar to Dudding Hill Junction, scenery and track has been added between Carlton Road Junction & Junction Road Junction to give a natural start/end point for freight scenarios using this link to the Gospel Oak – Barking line.

Kings Cross Thameslink

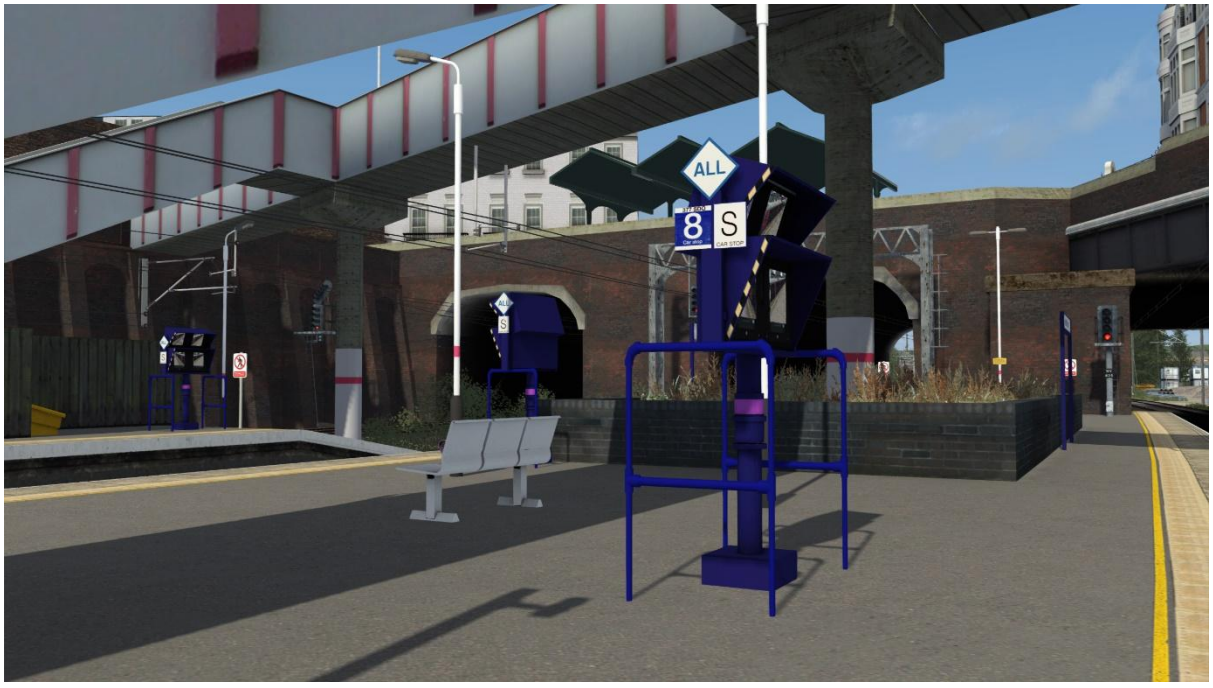
Despite the era of the route being 2011 to 2019, Kings Cross Thameslink station has been represented in full late 90s/early 00s regalia to provide a proper start/end point in London for scenarios based before the station's closure in December 2007.

12 Car Platforms & Sidings

In 2010/2011, many platforms were extended to facilitate 12 car trains. These have been added to the route. Bedford Jowett Sidings have also been extended to take 12 car trains.

Stop Car Markers

Stop car markers have been added at every station, as well as FLU/RLU/ALL signage for Class 700 operation. Additionally, stopping points are provided in the scenario editor so scenario creators can stop AI in the correct position with ease.



Neutral Sections

Neutral sections have been added, along with the relevant signage, so that scenario creators do not need to do this themselves.

Cab Secure Radio (CSR)

Cab secure radio (CSR) signage has been placed as per reality for when CSR was still in use pre-2014(ish). This means that scenario creators will not need to manually place this signage themselves to have operational CSR in their scenario, it will simply work out of the box with any of our rolling stock that has it simulated.

Rough Ride Over Junctions

When passing over junctions, particularly at speed, you will experience a rougher ride, just like reality. This is visible both inside and outside the cab.

Audio

Ambient

All existing ambient audio has been removed and been replaced with newly recorded audio from 59 separate locations on the route in reality. Whether it's the roar of the M1 traffic at Mill Hill Broadway, the tweeting birds of Radlett, or the sirens of Luton, these sounds intend to immerse you even further in the route.

Please note that your ambient audio volume must be set as described at the beginning of this manual to hear this as intended.

Finally, we recognise that the sounds of the train themselves are more important than ambient audio, so if Train Simulator hit its limits of the number of sounds that it can play at once, ambient audio will mute itself before other sounds. If you can't hear the ambient audio then, this is why.

Reverb

Detailed reverb effects have been added throughout the route so you hear the sound change as you pass through tunnels or under bridges. More subtle reverb has also been added where there are solid structures close to the line, including the brick cutting walls on the approach to London.

Again, as described at the beginning of this manual, please ensure you have 'EFX' ticked within in your in-game Audio settings to hear these effects.

St Pancras Low Level Track Rumble

Anyone who has been to the Thameslink platforms at St. Pancras will know that the track makes a distinctive kind of resonant sound when trains arrive/depart. This has been implemented.

AI Horns

When using products of ours advertised as featuring 'AI horns', AI trains (not the train you're driving) will automatically sound their horn at various locations as per reality.

Firstly, the two whistle boards located on the approach to Bedford platform 4. These are the only whistle boards on the route.

Secondly, on the approach to stations, there is a chance of non-stop AI trains travelling over 50mph sounding their horn. How likely this is depends on the speed & curvature of the line, as well as what we deem the probability of passengers being on that particular platform. For example, AI trains passing St Albans City platform 3 have a 50% chance of sounding their horn as the high line speed, curvature & busy nature of this platform mean that drivers are likely to provide a warning. On the other hand, AI trains passing Radlett platform 3 have only 5% chance of sounding their horn, as most of the time, this platform is closed off to passengers so presents little risk.

Finally, on liveries applicable primarily to pre-2004 operations, AI trains will blow their horn entering and exiting tunnels. November 2004 is when this was removed as a requirement on the real railway.

Quick Drive

Simple no AI Quick Drive is featured which allows you to drive from any station on the route.

In addition, for departure stations listed with a year suffix, 'Bedford (2019)' for example, these Quick Drives offer AI and even the chance of facing adverse signals. The year stated denotes the kind of AI traffic you will see pass you:

2011 – 319s, 377s, 222s & HSTs
2016 – 319s, 377s, 387s, 222s & HSTs
2019 – 700s, 222s & HSTs

In addition to those staples, in all eras, there is also a chance of seeing freight/non-passenger trains.

Finally, which trains you see, if any, is dependent on owning the relevant enhancement/rolling stock packs from our website. Except the 222, which at the time of writing, uses just the standard version from Just Trains.

Bits and Bobs

This section is dedicated to aspects of this pack that don't warrant a dedicated section but are still of note:

- Numerous custom scenery assets to represent structures on the route
- For everything you see, an effort has been made to ensure there is a consistent use of shading and colours so scenery assets look right in the overall scene. For example, a consistent shade of white which is neither too bright or dark.
- Sundon Loop added
- Bedford North Junction re-laid with accurate gradients and scenery extended slightly further north to allow a natural starting point for freight scenarios heading south
- Platforms 1 & 2 at Harpenden re-laid to feature more realistic curvature
- Slow lines slewed around the arch overbridge a mile or so south of Harpenden rather than just being straight as per the original version
- Cricklewood South Sidings added. These were constructed in 2014/2015 in readiness for Class 700 operation. This does not include the extension to the South Sidings which was constructed in 2020.
- Cricklewood North Sidings extended in length
- St Albans Centre Siding extended in length
- Tunnels made properly dark
- Bromham Road bridge north of Bedford station replaced with an arched bridge
- Green-ish lighting at St Pancras Thameslink platforms replaced with a more realistic, neutral colour
- Track from our *Track Enhancement Pack* utilised
- Traditional bullhead, jointed track is used in the small number of locations it still exists (Elstow, Luton Limbury Road, Luton Crescent Road, Radlett Redland Roadstone & West Hampstead Down Carriage Loop)
- West Hampstead Thameslink footbridge painted purple (as per prototype as of 2014)
- Numerous portals added to aid scenario creation

Scenarios

Four scenarios are included as an introduction to the route. They use minimal requirements so as to make them available to as many people as possible.

[01] 9K11 07:00 Luton - Orpington
Route = AP - Midland Main Line
Track covered = Luton – St. Pancras International
Traction = Thameslink 700018
Date = 10th July 2018
Duration = 50 minutes

[02] 9R56 18:32 Gatwick Airport – Bedford
Route = AP - Midland Main Line
Track covered = St. Pancras International - Bedford
Traction = Thameslink 700121
Date = 28th June 2019
Duration = 1 hour

[03] 9R63 21:35 Bedford - Three Bridges
Route = AP - Midland Main Line
Track covered = Bedford – St. Pancras International
Traction = Thameslink 700111
Date = 28th May 2019
Duration = 1 hour

[04] 9L93 16:32 Bedford - East Grinstead
Route = AP - Midland Main Line
Track covered = Jowett Sidings - Bedford – St. Pancras Intl
Traction = Thameslink 700135
Date = 30th October 2018
Duration = 1 hour 10 minutes

Notes for Scenario Creators

Kings Cross Thameslink

If you would like to hide the St Pancras Thameslink platforms when creating a scenario using Kings Cross Thameslink, please follow the instructions below:

1) Load Train Simulator.
2) Click 'Build', 'Scenario', and select your scenario.
3) On the right hand-side of the screen, you will see a button that says 'Open'. Click this and it will take you to the scenario's folder on your hard drive.
4) In a separate window, go to your RailWorks directory and double click the following folders in sequence: **Assets\AP\MMLEP\KingsXTLScenario**.
5) Extract the 'Scenery.zip' file and copy the 'Scenery' folder to the scenario folder you should still have open in another window.

HST Speed Limits

If creating scenarios pre-December 2013, before the introduction of HST speed limits, give the player train a 'Freight' priority. This will display the non-HST speed limits to the player.

Credits

Toby Amiel & Pablo Martinez – The masterminds behind this project. These two chaps are responsible for the vast majority of scenery you see in this pack.
4 Aspect Simulations – Quick Drive & a number of custom scenery assets

Third Party Restrictions

Extensions to this route or 'merges' with other routes are not permitted to be released in any form.