

# Sky & Weather Enhancement Pack

# AP

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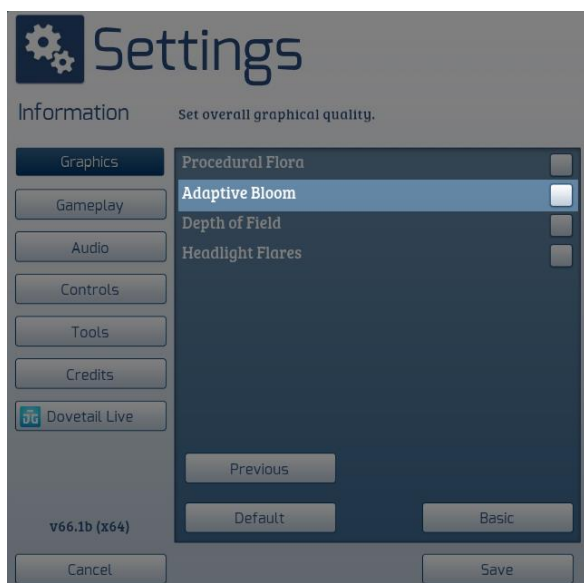
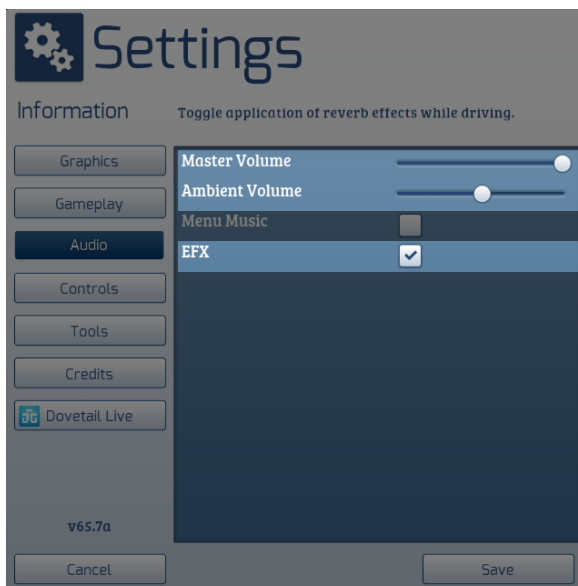
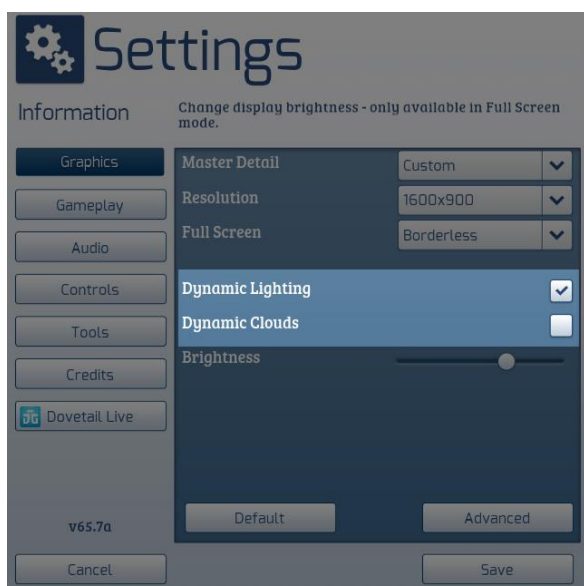
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# How to Install

- 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 'Sky & Weather Enhancement Pack'. Double-click this file.
- 4) Follow the steps and by the end of the process, this pack will have installed.

## Recommended Settings

To experience this pack as intended, you must change your in-game Audio & Graphics settings as displayed below:



# Features

## Sky & Environmental Lighting

### *Sky Colour*

Sky colours have been carefully chosen to represent the transition from the brilliant blue of mid-day, to the subtle blues of dusk, to the black of night. Seasonal changes are taken into account so for example, when the sun is at its highest point in autumn the sky will look more like 16:00 during summer. All screenshots below are taken during summer.

#### **13:00 (sun at its highest point)**



#### **19:30 (90 minutes before sunset)**



**21:00 (sunset)**



**22:00 (1 hour after sunset)**



**00:00 (night)**



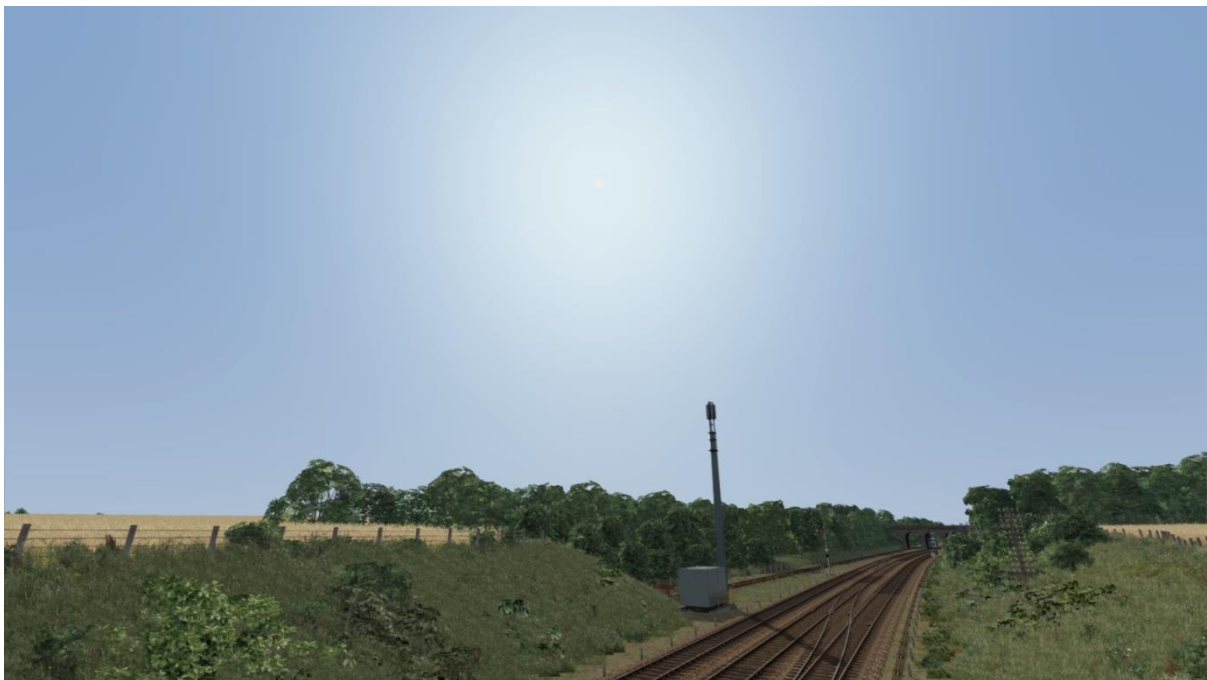
## ***Clouds***

Within the limitations of the simulator, we have provided as many different cloud types as possible. Which cloud type is shown depends on the weather used which is covered later in this manual.

### **Cumulus**



### **Haze**



**Overcast**



**Stormy**





## ***Sunlight Colour & Angle***

As per reality, sunlight colour changes from a very white light at mid-day to a warm glow at sunset. Seasonal differences are once again taken into account so the mid-day sun during winter will look warmer compared to summer. In addition to this, the angle of the sun varies by season so the sun is a lot lower at mid-day during winter compared to summer. Finally, the sun is in the south at mid-day, as is correct for the northern hemisphere. Both screenshots below are taken during summer.

### **13:00 (sun at its highest point)**



### **20:40 (20 minutes before sunset)**



## ***Sun Glare***

Great care has been taken to try and produce the best possible looking glare from the sun within the limitations of the simulator. This accentuates the brightness of the sun during the middle of the day, its orange glow at sunset, and afterglow after sunset.

**16:00 (mid-afternoon)**

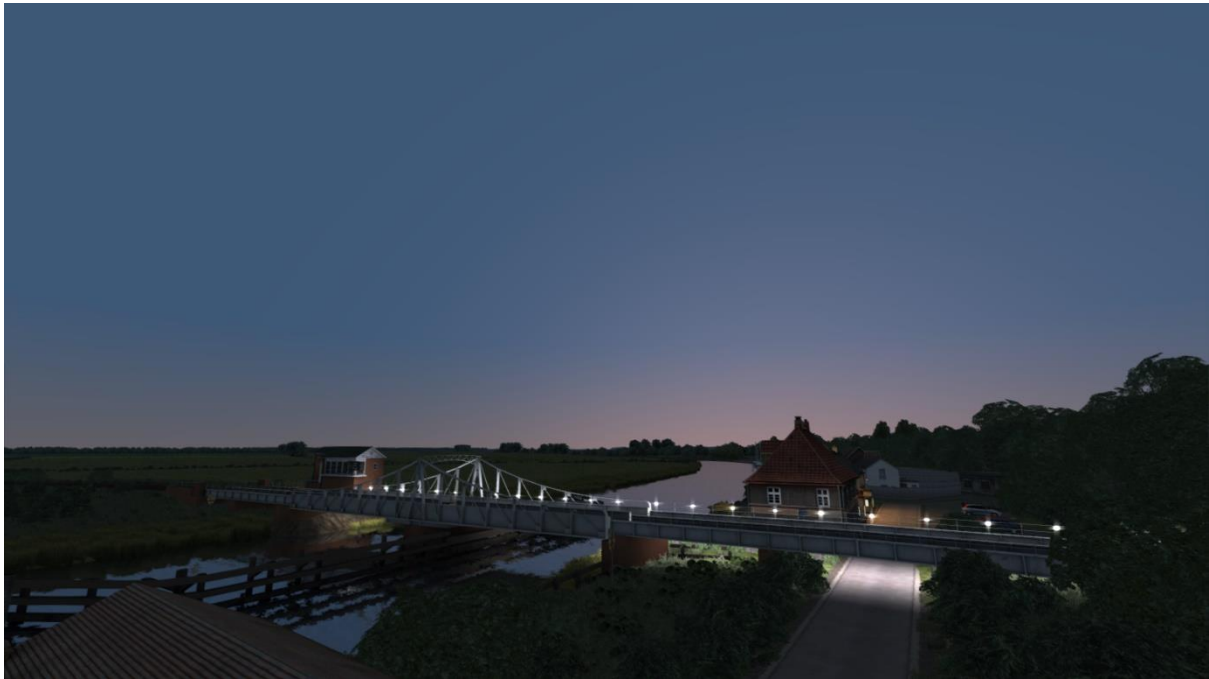


**20:50 (10 minutes before sunset)**





**21:30 (30 minutes after sunset)**



### ***Moon***

Nine different phases of the moon are represented and which one shows is dependent on the date of the scenario.



## ***Supported Routes***

Please see below for a list of the routes which will have this new sky automatically applied:

- AP Wherry Lines: Norwich to Great Yarmouth & Lowestoft
- BMG Welsh Marches Line: Newport to Shrewsbury
- DTG Birmingham Cross City Line: Lichfield - Bromsgrove & Redditch
- DTG Chatham Main Line: London - Gillingham
- DTG Chatham Main & Medway Valley Lines
- DTG Chatham Main Line: London - Dover & Ramsgate
- DTG East Coast Main Line
- DTG East Coast Main Line: London - Peterborough
- DTG Edinburgh - Glasgow
- DTG Falmouth Branch
- DTG Fife Circle Line: Edinburgh - Dunfermline
- DTG Great Eastern Main Line: London - Ipswich
- DTG Great Western Main Line
- DTG Huddersfield Line: Manchester - Leeds
- DTG Isle of Wight
- DTG Liverpool - Manchester
- DTG London - Brighton
- DTG London - Faversham High Speed
- DTG Midland Main Line: London - Bedford
- DTG North London Line
- DTG North London & Goblin Lines
- DTG North Wales Coast Line: Crewe - Holyhead
- DTG Portsmouth Direct Line: London Waterloo - Portsmouth
- DTG Riviera Line: Exeter - Paignton
- DTG Riviera Line in the Fifties: Exeter - Kingswear
- DTG Settle - Carlisle
- DTG Somerset & Dorset Railway
- DTG South London Network
- DTG South Wales Coastal: Bristol - Swansea
- DTG South Western Main Line: Southampton - Bournemouth
- DTG WCML South: London Euston - Birmingham
- DTG Weardale & Teesdale Network
- DTG West Coast Main Line North
- DTG West Coast Main Line Over Shap
- DTG West Somerset Railway
- DTG Western Lines of Scotland
- DTG Woodhead
- DTG Woodhead Electric Railway in Blue
- Just Trains Bristol - Exeter
- Just Trains Midland Main Line
- Just Trains South Western Expressways - Reading

- Milepost Simulations West Highland Line (South)
- Rivet Games Suburban Glasgow Northwest: Springburn - Helensburgh

Please note that we only recommend using these new skies in conjunction with the weather patterns included in this pack. Using other weather patterns could result in intermittent display issues.

### ***How to Apply to Other Routes***

**DISCLAIMER:** This advice is given on a no-support basis and assumes some prior knowledge. We recommend you only attempt this if you are confident in your knowledge of Train Simulator folder structures.

- 1) Go to the assets folder for the relevant route and find the folder called 'TimeOfDay'. If there is no folder called this, find the 'template' blueprint for the route which is usually in a folder called 'TemplateRoutes'. Open this blueprint and see where the TimeOfDay blueprints are located and go there.
- 2) Go to your RailWorks directory and navigate to **Assets\AP\WeatherEP\TimeOfDay**.
- 3) Copy the four .bin files in this folder named after each season and paste them into the TimeOfDay folder of your chosen route. If the naming convention differs for the relevant route, re-name accordingly so the new files match the naming of the old.

Please note that we cannot permit the distribution of these TimeOfDay files. If you wish to distribute a route, or a patch for a route which uses these files, you must edit the template blueprint to point to the AP\WeatherEP\TimeOfDay folder and enable the AP>WeatherEP blueprint set in the route editor.

## Weather

A wide variety of new weather patterns are supplied in this pack to make best use of the new clouds and to give more variety/immersion within scenarios. They consist of two types; 'standard' & 'extension'.

Standard weather patterns are generally constant and do not change during a scenario, though there are exceptions.

Extension weather patterns tend to change throughout scenarios and can contain more advanced functionality such as lightning flashes, thunder and custom density of precipitation shown on the windscreen.

Please see below for an overview of the types of weather included and information regarding each individual weather pattern. 'Name' is the name of the weather pattern as it appears in the scenario editor:

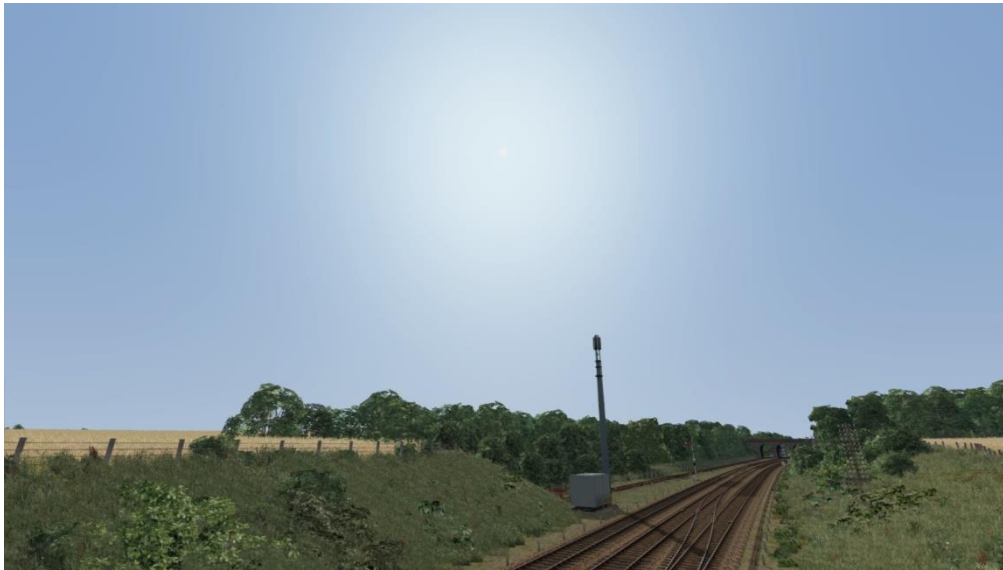
### ***Clear***



### **Standard Weather Patterns**

Name	Notes
APEP Clear (Low Wind)	8mph wind
APEP Clear (Mid Wind)	16mph wind
APEP Clear (High Wind)	23mph wind

## ***Haze***



### **Standard Weather Patterns**

Name	Notes
APEP Haze Light	
APEP Haze Medium	
APEP Haze Thick	

## ***Mist***



### **Standard Weather Patterns**

Name	Notes
APEP Mist Light	Due to a Train Simulator limitation, the colour of the mist is linked to sky colour, which is why it has a blue tinge.
APEP Mist Medium	
APEP Mist Thick	



## Fog



### Standard Weather Patterns

Name	Notes
APEP Fog Light	700m visibility
APEP Fog Medium	450m visibility
APEP Fog Thick	150m visibility
APEP Fog Variable 1	Fog varies in thickness during scenario
APEP Fog Variable 2	Fog varies in thickness during scenario
APEP Fog Variable 3	Fog varies in thickness during scenario
APEP Clear to Fog Light	Starts as Clear and after 20 minutes, transitions to Fog Light
APEP Clear to Fog Medium	Starts as Clear and after 30 minutes, transitions to Fog Medium
APEP Clear to Fog Thick	Starts as Clear and after 40 minutes, transitions to Fog Thick
APEP Fog Light to Clear	Starts as Fog Light and after 20 minutes, transitions to Clear
APEP Fog Medium to Clear	Starts as Fog Medium and after 30 minutes, transitions to Clear
APEP Fog Thick to Clear	Starts as Fog Thick and after 40 minutes, transitions to Clear

### Extension Weather Patterns

Name	Trigger Name	Notes
APEP Fog Variable	Weather1	Fog varies in thickness during scenario with occasional patches of clear blue skies
	Weather2	
	Weather3	
APEP Weather	ClearLightFog	Transitions from Clear to Fog Light over 2 minutes
	ClearMedFog	Transitions from Clear to Fog Medium over 2.5 minutes
	ClearThickFog	Transitions from Clear to Fog Thick over 3 minutes
	LightFogClear	Transitions from Fog Light to Clear over 2 minutes
	MedFogClear	Transitions from Fog Medium to Clear over 2.5 minutes
	ThickFogClear	Transitions from Fog Thick to Clear over 3 minutes
	MistLightFog	Transitions from Mist Light to Fog Light over 2 minutes

	MistMedFog	Transitions from Mist Light to Fog Medium over 2.5 minutes
	MistThickFog	Transitions from Mist Light to Fog Thick over 3 minutes
	LightFogMist	Transitions from Fog Light to Mist Light over 2 minutes
	MedFogMist	Transitions from Fog Medium to Mist Light over 2.5 minutes
	ThickFogMist	Transitions from Fog Thick to Mist Light over 3 minutes

Weather1, Weather2 & Weather3 are variations on the same theme that have different timings for when fog is thick or not and when clear blue skies appear. This is to help avoid a repetitive feel when using the same weather type in multiple scenarios. They should be triggered at the very start of a scenario.

The six weather patterns highlighted in yellow are provided to give fine control over when fog gives way to clear skies and vice versa. These can be triggered whenever you wish during a scenario but you must take care in ensuring that if you wish to go from Clear to Fog Light for example, that your starting weather is Clear so as to avoid any sharp transitions. At the end of one of these patterns, it will hold the type of weather so Clear to Fog Light will keep the weather as light fog unless you trigger another weather pattern such as Fog Light to Clear to return to clear skies.

The six weather patterns highlighted in green are provided to give fine control over when fog gives way to light mist and vice versa. These can be triggered whenever you wish during a scenario but you must take care in ensuring that if you wish to go from Mist Light to Fog Light for example, that your starting weather is Mist Light so as to avoid any sharp transitions. At the end of one of these patterns, it will hold the type of weather so Mist Light to Fog Light will keep the weather as light fog unless you trigger another weather pattern such as Fog Light to Mist Light to return to light mist.

## ***Fair Cloud***



### **Standard Weather Patterns**

<b>Name</b>	<b>Notes</b>
APEP Fair Cloud	
APEP Fair Cloud (Haze)	Haze Thick
APEP Fair Cloud (Mist)	Mist Light
APEP Fair Cloud (Snow)	To be used if snow to be triggered
APEP Fair Cloud (Haze) (Snow)	Haze Thick. To be used if snow to be triggered.
APEP Fair Cloud (Mist) (Snow)	Mist Light. To be used if snow to be triggered.

## Overcast



### Standard Weather Patterns

Name	Notes
APEP Overcast	
APEP Overcast (Fog)	Should not be used at night
APEP Overcast (Snow)	To be used if snow to be triggered outside of winter
APEP Overcast (Fog) (Snow)	To be used if snow to be triggered outside of winter. Should not be used at night
APEP Overcast (Winter)	To be used during winter
APEP Overcast (Fog) (Winter)	To be used during winter and should not be used at night
APEP Clear to Overcast	Over 1 hour, clear skies give way to haze and then an overcast sky
APEP Clear to Overcast (Snow)	Over 1 hour, clear skies give way to haze and then an overcast sky. To be used if snow to be triggered once skies have become overcast.
APEP Overcast to Clear	Over 1 hour, overcast skies give way to haze and then a clear sky

### Extension Weather Patterns

These extension weather patterns must be used with APEP Overcast as the standard weather pattern.

Name	Trigger Name	Notes
APEP Overcast	ClearOvercast	Over 1 hour, clear skies give way to haze and then an overcast sky
	OvercastClear	Over 1 hour, overcast skies give way to haze and then a clear sky

## Rain



### Standard Weather Patterns

Name	Notes
APEP Rain Light	
APEP Rain Light (Fog)	Should not be used at night
APEP Rain Moderate	
APEP Rain Moderate (Fog)	Should not be used at night
APEP Rain Heavy	
APEP Rain Heavy (Fog)	Should not be used at night. Recommended if you wish for rain to appear more like a downpour.

### Extension Weather Patterns

Name	Trigger Name	Notes
APEP Weather	DrizzleFog	Constant drizzle and should not be used at night
	ModRain	Identical to standard Rain Moderate but with realistic density of rain drops on windscreen
	ModRainFog	Identical to standard Rain Moderate but with realistic density of rain drops on windscreen. Should not be used at night.
	HeavyRain	Identical to standard Rain Heavy but with more realistic density of rain drops on windscreen
	HeavyRainFog	Identical to standard Rain Heavy but with realistic density of rain drops on windscreen. Should not be used at night.
APEP Rain Variable	Weather1	Rain varies in intensity during scenario with occasional dry spells
	Weather2	
	Weather3	
APEP Rain Variable (Fog)	See Rain Variable above	Identical to Rain Variable but with fog. Should not be used at night.
APEP Overcast to Rain	Weather1	First 10 minutes are Overcast before transitioning to Rain Heavy over 30 minutes



	Weather2	First 25 minutes are Overcast before transitioning to Rain Moderate over 20 minutes
	Weather3	First 40 minutes are Overcast before transitioning to Rain Light over 10 minutes
APEP Overcast to Rain (Fog)	See Overcast to Rain above	Identical to Overcast to Rain but with fog. Should not be used at night.
APEP Rain to Overcast	Weather1	First 10 minutes are Rain Heavy before transitioning to Overcast over 30 minutes
	Weather2	First 25 minutes are Rain Moderate before transitioning to Overcast over 20 minutes
	Weather3	First 40 minutes are Rain Light before transitioning to Overcast over 10 minutes
APEP Rain to Overcast (Fog)	See Rain to Overcast above	Identical to Rain to Overcast but with fog. Should not be used at night.
APEP Overcast	OvercastClearRain	From Overcast, Rain Moderate rain develops over 15 minutes, then a 4 minute burst of Rain Heavy before transitioning to Clear over 3 minutes. Represents a cold front passing through.
	OvercastFairRain	Identical to above but transitions to Fair Cloud instead of Clear.
APEP Rain to Clear	Weather1	First 10 minutes are Rain Moderate, then 4 minutes of Rain Heavy before transitioning to Clear over 3 minutes. Represents a cold front passing through.
	Weather2	First 25 minutes are Rain Moderate, then 4 minutes of Rain Heavy before transitioning to Clear over 3 minutes. Represents a cold front passing through.
	Weather3	First 40 minutes are Rain Moderate, then 4 minutes of Rain Heavy before transitioning to Clear over 3 minutes. Represents a cold front passing through.

For trigger names Weather1/2/3, these extension weather patterns should be triggered at the very start of a scenario. Unless otherwise stated, Weather1, Weather2 & Weather3 are variations on the same theme that have different timings for when rain is heavy or not. This is to help avoid a repetitive feel when using the same weather type in multiple scenarios.

For other trigger names, these can be triggered whenever you like.

## Snow



### Standard Weather Patterns

Name	Notes
APEP Snow Light	
APEP Snow Light (Fog)	Should not be used at night
APEP Snow Moderate	
APEP Snow Moderate (Fog)	Should not be used at night
APEP Snow Heavy	
APEP Snow Heavy (Fog)	Should not be used at night. Recommended if you wish for snow to appear more like a blizzard.

### Extension Weather Patterns

Name	Trigger Name	Notes
APEP Weather	LightSnow	Identical to Snow Light but with greatly reduced raindrops on windscreen to simulate snow bouncing off
	LightSnowFog	Identical to Snow Light (Fog) but with greatly reduced raindrops on windscreen. Should not be used at night.
	ModSnow	Identical to Snow Moderate but with greatly reduced raindrops on windscreen
	ModSnowFog	Identical to Snow Moderate (Fog) but with greatly reduced raindrops on windscreen. Should not be used at night.
	HeavySnow	Identical to Snow Heavy but with greatly reduced raindrops on windscreen
	HeavySnowFog	Identical to Snow Heavy (Fog) but with greatly reduced raindrops on windscreen. Should not be used at night.
APEP Snow Variable	Weather1	Snow varies in intensity during scenario with occasional dry spells
	Weather2	
	Weather3	
APEP Snow Variable (Fog)	See Snow Variable above	Identical to Snow Variable but with fog. Should not be used at night.

All of these extension weather patterns should be triggered at the very start of a scenario. Weather1, Weather2 & Weather3 are variations on the same theme that have different timings for when snow is heavy or not. This is to help avoid a repetitive feel when using the same weather type in multiple scenarios.

## Rain Showers



### Extension Weather Patterns

#### Fair Cloud

These extension weather patterns must be used with APEP Fair Cloud, APEP Fair Cloud (Haze) or APEP Fair Cloud (Mist) as the standard weather pattern.

These are one-off showers that can be triggered whenever you wish during a scenario. Once they reach their end, they will fade back into your chosen standard weather pattern. You should always ensure that one of these is not active when triggering another.

Name	Trigger Name	Notes
APEP Fair Cloud	LightRainShower1	Light shower that lasts 8 minutes
	LightRainShower2	Light shower that lasts 13 minutes
	LightRainShower3	Light shower that lasts 8 minutes. Starts raining with sun still out at start.
	LightRainShower4	Light shower that lasts 15 minutes
	LightRainShower5	Light shower that lasts 7 minutes. Starts raining with sun still out at start.
	LightRainShower6	Light Shower that lasts 17 minutes
	ModRainShower1	Moderate shower that lasts 11 minutes.
	ModRainShower2	Moderate shower that lasts 10 minutes.
	ModRainShower3	Moderate shower that lasts 10 minutes. Starts raining with sun still out at start.
	ModRainShower4	Moderate shower that lasts 19 minutes.
	ModRainShower5	Moderate shower that lasts 12 minutes. Starts raining with sun still out at start.
	ModRainShower6	Moderate shower that lasts 8 minutes.

	HeavyRainShower1	Heavy shower that lasts 11 minutes. Heavy rain starts very quickly.
	HeavyRainShower2	Heavy shower that lasts 8.5 minutes. Short burst of heavy rain.
	HeavyRainShower3	Heavy shower that lasts 9.5 minutes. Starts raining with sun still out at start. Rain stops quickly at end.
	HeavyRainShower4	Heavy shower that lasts 19 minutes
	HeavyRainShower5	Heavy shower that lasts 11 minutes. Starts raining with sun still out at start.
	HeavyRainShower6	Heavy shower that lasts 9 minutes. Gradual build to 2 minutes of heavy rain.

To make these showers have a stormier feel with darker skies and environment, add 'Stormy' to the trigger name. For example, 'HeavyRainShower1' would become 'HeavyRainShowerStormy1'.

To add fog to a stormy shower, add 'Fog' to the trigger name. For example, 'HeavyRainShowerStormy1' would become 'HeavyRainShowerStormyFog1'. This is recommended if you wish for rain to appear more like a downpour or drizzly. This should not be used at night.

APEP Rain Showers	Weather1	17 minutes before first heavy shower. 2 subsequent heavy showers. Total duration of 75 minutes. Constant Fair Cloud after.
	Weather2	6 minutes before first heavy shower. 2 subsequent heavy showers. Total duration of 70 minutes. Constant Fair Cloud after.
	Weather3	Starts in the middle of a heavy shower. 3 subsequent heavy showers. Total duration of 85 minutes. Constant Fair Cloud after.

Weather1, Weather2 & Weather3 are variations on the same theme that have different timings for when showers appear and their length. They should be triggered at the very start of a scenario and will continue infinitely. This automates showers appearing and is for those who don't wish to trigger showers individually.

### **Overcast**

These extension weather patterns must be used with APEP Overcast or APEP Overcast (Fog) as the standard weather pattern. We do not recommend using a foggy standard weather pattern in conjunction with a non-foggy extended weather pattern and vice versa.

These are one-off showers that can be triggered whenever you wish during a scenario. Once they reach their end, they will fade back into your chosen standard weather pattern. You should always ensure that one of these is not active when triggering another.



Name	Trigger Name	Notes
APEP Overcast	LightRainShower1	Light rain shower that lasts 8 minutes
	LightRainShower2	Light rain shower that lasts 4.5 minutes
	LightRainShower3	Light rain shower that lasts 14.5 minutes
	LightRainShower4	Light rain shower that lasts 9 minutes
	LightRainShower5	Light rain shower that lasts 8 minutes
	LightRainShower6	Light rain shower that lasts 22 minutes
	ModRainShower1	Moderate rain shower that lasts 14 minutes
	ModRainShower2	Moderate rain shower that lasts 8 minutes
	ModRainShower3	Moderate rain shower that lasts 23 minutes
	ModRainShower4	Moderate rain shower that lasts 12 minutes
	ModRainShower5	Moderate rain shower that lasts 10 minutes
	ModRainShower6	Moderate rain shower that lasts 32 minutes
	HeavyRainShower1	Heavy rain shower that lasts 14 minutes
	HeavyRainShower2	Heavy rain shower that lasts 8 minutes
	HeavyRainShower3	Heavy rain shower that lasts 23 minutes
	HeavyRainShower4	Heavy rain shower that lasts 12 minutes
	HeavyRainShower5	Heavy rain shower that lasts 10 minutes
	HeavyRainShower6	Heavy rain shower that lasts 32 minutes

To add fog to a shower, add 'Fog' to the trigger name. For example, 'HeavyRainShower1' would become 'HeavyRainShowerFog1'. This is recommended if you wish for rain to appear more like a downpour or drizzly. This should not be used at night.

## Snow Showers



### Extension Weather Patterns

#### *Fair Cloud*

These extension weather patterns must be used with APEP Fair Cloud (Snow), APEP Fair Cloud (Haze) (Snow) or APEP Fair Cloud (Mist) (Snow) as the standard weather pattern.

These are one-off showers that can be triggered whenever you wish during a scenario. Once they reach their end, they will fade back into your chosen standard weather pattern. You should always ensure that one of these is not active when triggering another.

Name	Trigger Name	Notes
APEP Fair Cloud	LightSnowShower1	Light snow shower that lasts 5 minutes
	LightSnowShower2	Light snow shower that lasts 6 minutes
	LightSnowShower3	Light snow shower that lasts 9 minutes
	LightSnowShower4	Light snow shower that lasts 4 minutes
	LightSnowShower5	Light snow shower that lasts 17 minutes
	LightSnowShower6	Light snow shower that lasts 10 minutes
	ModSnowShower1	Moderate snow shower that lasts 6.5 minutes
	ModSnowShower2	Moderate snow shower that lasts 5 minutes
	ModSnowShower3	Moderate snow shower that lasts 9.5 minutes
	ModSnowShower4	Moderate snow shower that lasts 4 minutes
	ModSnowShower5	Moderate snow shower that lasts 19 minutes
	ModSnowShower6	Moderate snow shower that lasts 10.5 minutes
	HeavySnowShower1	Heavy snow shower that lasts 6.5 minutes

	HeavySnowShower2	Heavy snow shower that lasts 5 minutes
	HeavySnowShower3	Heavy snow shower that lasts 9.5 minutes
	HeavySnowShower4	Heavy snow shower that lasts 4 minutes
	HeavySnowShower5	Heavy snow shower that lasts 19 minutes
	HeavySnowShower6	Heavy snow shower that lasts 10.5 minutes

To add fog to a shower, add 'Fog' to the trigger name. For example, 'HeavySnowShower1' would become 'HeavySnowShowerFog1'. This is recommended if you wish for snow to appear more like a blizzard. This should not be used at night.

### **Overcast**

These extension weather patterns must be used with APEP Overcast (Snow), APEP Overcast (Fog) (Snow), APEP Overcast (Winter) or APEP Overcast (Fog) (Winter) as the standard weather pattern. We do not recommend using a foggy standard weather pattern in conjunction with a non-foggy extended weather pattern and vice versa.

These are one-off showers that can be triggered whenever you wish during a scenario. Once they reach their end, they will fade back into your chosen standard weather pattern. You should always ensure that one of these is not active when triggering another.

<b>Name</b>	<b>Trigger Name</b>	<b>Notes</b>
APEP Overcast	LightSnowShower1	Light snow shower that lasts 5 minutes
	LightSnowShower2	Light snow shower that lasts 6 minutes
	LightSnowShower3	Light snow shower that lasts 9 minutes
	LightSnowShower4	Light snow shower that lasts 4 minutes
	LightSnowShower5	Light snow shower that lasts 17 minutes
	LightSnowShower6	Light snow shower that lasts 10 minutes
	ModSnowShower1	Moderate snow shower that lasts 6.5 minutes
	ModSnowShower2	Moderate snow shower that lasts 5 minutes
	ModSnowShower3	Moderate snow shower that lasts 9.5 minutes
	ModSnowShower4	Moderate snow shower that lasts 4 minutes
	ModSnowShower5	Moderate snow shower that lasts 19 minutes
	ModSnowShower6	Moderate snow shower that lasts 10.5 minutes
	HeavySnowShower1	Heavy snow shower that lasts 6.5 minutes
	HeavySnowShower2	Heavy snow shower that lasts 5 minutes
	HeavySnowShower3	Heavy snow shower that lasts 9.5 minutes
	HeavySnowShower4	Heavy snow shower that lasts 4 minutes
	HeavySnowShower5	Heavy snow shower that lasts 19 minutes
	HeavySnowShower6	Heavy snow shower that lasts 10.5 minutes

To add fog to a shower, add 'Fog' to the trigger name. For example, 'HeavySnowShower1' would become 'HeavySnowShowerFog1'. This is recommended if you wish for snow to appear more like a blizzard. This should not be used at night.

Name	Trigger Name	Notes
APEP Snow Heavy Showers	Weather1	4 minutes before first shower. 4 subsequent showers. Total duration of 55 minutes. Constant Overcast after.
	Weather2	15 minutes before first shower. 4 subsequent showers. Total duration of 75 minutes. Constant Overcast after.
	Weather3	Starts in the middle of a shower. 3 subsequent showers. Total duration of 65 minutes. Constant Overcast after.
APEP Snow Heavy Showers (Fog)	See Snow Heavy Showers above	Identical to Snow Heavy Showers but with fog. Should not be used at night. Recommended if you wish for snow to appear more like a blizzard.

Weather1, Weather2 & Weather3 are variations on the same theme that have different timings for when showers appear and their length. They should be triggered at the very start of a scenario and will continue infinitely. This automates showers appearing and is for those who don't wish to trigger showers individually.

## Thunderstorms



### Extension Weather Patterns

Name	Trigger Name	Notes
APEP Thunderstorm	Weather1	Continuous heavy rain with lightning flashes and thunder
APEP Thunderstorm (Fog)	Weather1	Identical to Thunderstorm but with fog. Should not be used at night. Recommended if you wish for rain to appear more like a downpour.
APEP Thundery Showers	SingleWeather1	Starts in the middle of a shower that lasts 11 minutes. Rain reduces over 2 minutes at end.
	SingleWeather2	Shower that lasts 12.5 minutes. Heavy rain starts very quickly. Rain reduces over 2 minutes at end.
	SingleWeather3	Shower that lasts 11 minutes. Short burst of heavy rain.
	SingleWeather4	Shower that lasts 13 minutes.
APEP Thundery Showers (Fog)	See Thundery Showers above	Identical to Thundery Showers but with fog during showers. Should not be used at night. Recommended if you wish for rain to appear more like a downpour.

These weather patterns must be used in conjunction with APEP Fair Cloud, APEP Fair Cloud (Haze) or APEP Fair Cloud (Mist) as the standard weather pattern.

Weather1 should be triggered at the very start of a scenario and will continue infinitely.

SingleWeather1 to 6 are one-off showers that can be triggered whenever you wish during a scenario. Once they reach their end, they will fade back into your chosen standard weather pattern. You should always ensure that one of these is not active when triggering another. SingleWeather1 should only be triggered at the very start of a scenario.



### **IMPORTANT NOTE**




Only flashes simulating sheet lightning appear in the weather patterns listed above. Fork lightning does **not** appear. Due to the way the simulator supports fork lightning, it must be created on a per scenario basis with each strike individually placed and timed. This is why we have included a scenario with this pack to show off this exciting new feature, with a view to including it in future scenarios too.

Whilst we would love to give you the ability to create your own weather patterns to take advantage of this in your own scenarios, we have not found a way of achieving this which would ensure only those who have purchased this pack would experience it. As a result, this feature will only be available in scenarios designed by us.

## ***How to Apply Weather to a Scenario***

### **Standard**

Standard weather patterns are what most scenario creators will already be familiar with and can be applied very easily by following the steps below:





- 1) Open Train Simulator, click 'Build', 'Scenario', and select the scenario you wish to apply a new kind of weather to. Click 'Edit' and wait for the scenario to load in the scenario editor.
- 2) Hover the mouse on the middle far-left of the screen and the rolling stock menu will fly-out, click the object set filter which looks like a blue box with an orange arrow to the right of it. 
- 3) Hover your mouse on the far-right of the screen and a fly-out will appear. Select 'AP' from the drop-down menu and tick the second and third box next to 'WeatherEP'. 
- 4) Now find the scenario marker for your scenario and double click it.
- 5) Hover the mouse on the far-right of the screen and a menu will fly-out listing scenario information.
- 6) Where there is a cloud and sun icon, click the arrow to bring up the drop-down menu and select the weather you desire. 

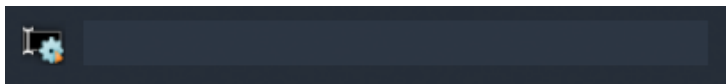
### **Extension**

Extension weather patterns require a little more setting up and must be triggered in your player train's instructions. We recommend you only carry this out if you have a basic knowledge of Train Simulator's scenario editor and that you know where your RailWorks directory is located. Please note that from our experience, career scenarios cannot have extended weather patterns added to them.

Unless otherwise stated as being designed to be activated at the very start of a scenario, these weather patterns can be activated whenever a player wishes. Until activated, the simulator will use whatever standard weather pattern you have selected. At the end of an extension weather pattern, it will either stay constant or fade back into the standard weather pattern. Please see the notes earlier in this manual for the characteristic of your chosen extension weather pattern.

To apply this type of weather, follow step 1 to 5 as listed on the last page in the 'Standard' section and then read below:

- 1) Towards the top of the menu, click the cogs icon. 
- 2) Click the arrow to bring up the drop-down menu and select the weather you desire.
- 3) Hover your mouse on the top far-left of the screen and the tool box menu will fly-out. This has a red tool box icon on the top left of the screen.
- 4) Click the 'Timetable View' icon  and select the player train.
- 5) Towards the top right-hand corner of the screen. click the 'Trigger Instruction' icon  which will create a trigger instruction. For weather extension patterns that need to be triggered at the very start of a scenario, select the instruction and move it to the top of your player train's instructions by clicking the 'Move Up' icon . For a weather extension pattern which you wish to trigger later in a scenario, move the instruction to the point where you would like to trigger it using the 'Move Up' or 'Move Down' icons.
- 6) Open the trigger instruction by clicking its icon and go to the fourth field which looks like this:



- 7) In this field, enter the 'Trigger Name' for your relevant weather extension pattern. Please refer to the list of weather types earlier in this manual to find this. If you would like to delay when this weather extension pattern is triggered, change the duration field, which by default is '+00:00' (instant).
- 8) Now exit 'Timetable View' and save the scenario by pressing **F2**.
- 9) Exit Train Simulator and then load it again. Make sure that you are either in windowed or borderless mode.
- 10) Click 'Build', 'Scenario', and select the scenario you are applying the extension weather pattern to.
- 11) 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.
- 12) In a separate window, go to your RailWorks directory and double click the following folders in sequence: **Assets\AP\WeatherEP\ScenarioScript**.
- 13) You will find a file called 'ScenarioScript.lua', copy this to the scenario folder you should still have open in another window.
- 14) Your weather extension pattern should now be set up and ready to use.

## ***Quick Drive***

The weather included in this pack can also be used in Quick Drive. Please see below for which weather patterns correspond to the weather setting you choose in Quick Drive:

<b>Quick Drive Weather Setting</b>	<b>AP Weather Pattern Used</b>
Clear	APEP Clear (Low Wind)
Cloudy	APEP Fair Cloud
Foggy	APEP Fog Variable 1
Rain	APEP Moderate Rain (standard)
Stormy	APEP Heavy Rain (Fog)
Overcast	APEP Overcast
Cloudy Snow	APEP Heavy Snow (Fog)

We would have liked to have used a thundery weather pattern for the 'Stormy' setting but Train Simulator does not support using extension weather patterns in Quick Drive.

## ***Note for Scenario Developers***

We encourage the use of our weather in scenarios, though anyone using a scenario with our weather will of course need to purchase this pack to experience it. That said, please note that any scenarios using our weather will still work for those who haven't purchased this pack, they will just experience a default weather pattern instead.

# Scenario

One scenario has been included in this pack to show off the fork lightning functionality.

## **APWSEP: 2046 12:07 Sutton - Luton**

Route = MML - London St. Pancras to Bedford

Track covered = St. Pancras - Luton

Traction = Ex-First Capital Connect 319370

Year = 2015

Duration = 50 minutes



# Credits

Thanks goes to the following individuals for providing photographs of lightning:

'J Iannone' - <https://www.flickr.com/photos/jiannone/5935989764/>

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