

# Cloud Enhancement Pack

# AP

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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 'Cloud Enhancement Pack - Part 1'. Double-click this file and follow the steps until the installer completes
- 4) Now carry out step 3 again for 'Cloud Enhancement Pack - Part 2.exe' & 'Cloud Enhancement Pack - Part 3.exe'.
- 5) After installing all three parts, this pack is now installed.
- 6) Please ensure you have the latest version of the *Sky & Weather Enhancement Pack 2.0* installed so this pack functions as intended.

## Important Note

This pack is an expansion to our *Sky & Weather Enhancement Pack 2.0* which must be installed for this to pack function.

It is assumed in this manual that the user has also read the manual for the *Sky & Weather Enhancement Pack 2.0*.

## Summary

This pack contains a wide variety of clouds to be used in conjunction with the weather patterns found in our *Sky & Weather Enhancement Pack 2.0*.

By default, in the *Sky & Weather Enhancement Pack 2.0*, only one variant of each cloud type is included so overcast will always look the same for example. This pack seeks to represent the almost endless variety that clouds offer so as to provide a more immersive and varied experience every time you use Train Simulator. As well as offering more variety, they also now better represent the weather you encounter, or are likely to encounter. For example, if a scenario creator has implemented showers, a cloudscape with shower clouds will automatically be selected.

This project has without a doubt been a labour of love and we hope you enjoy the visual splendour of these clouds as much as we do!

# Cloud Types

The cloudscares in this pack have been split into main three categories and numerous sub-categories.

## High Cloud

### *Non-Haze*

Not thick enough to obscure the sun.

One of these is randomly selected for High Cloud weather patterns when Train Simulator is loaded.

Variants - <https://armstrongpowerhouse.smugmug.com/High-Cloud/Non-Haze/>



## **Haze**

Thick enough to partly obscure the sun.

One these is randomly selected when using a dynamic weather pattern containing Haze or ;**Haze= 1** has been added to the **AP SWEP Weather** track marker when using any weather pattern containing Haze.

Variants - <https://armstrongpowerhouse.smugmug.com/High-Cloud/Haze/>

Note that the first three variants are digitally created/not from a photograph and are designed to simulate the general haze you sometimes see in the sky which has no texture to it.



## Fair Cloud

### *Fair Weather*

Broken cloud with no risk of precipitation.

One of these is randomly selected for Fair Cloud weather patterns when Train Simulator is loaded. Only variants applicable to the relevant season will be chosen.

Variants - <https://armstrongpowerhouse.smugmug.com/Fair-Cloud/Fair-Weather/>

If you wish to narrow these variants down to the specific season they're relevant to, see the following links:

Summer (April - October) - <https://armstrongpowerhouse.smugmug.com/Fair-Cloud/Fair-Weather-Summer>

Spring/Autumn (November to March) - <https://armstrongpowerhouse.smugmug.com/Fair-Cloud/Fair-Weather-SpringAutumn>

Winter (December, January & February) - <https://armstrongpowerhouse.smugmug.com/Fair-Cloud/Fair-Weather-Winter>

If setting a scenario in December, January or February and you don't wish to have snow on the ground, set the season to Spring but choose a cloudscape from the Winter selection.



## ***Showers (Distant)***

Broken cloud with rain bearing shower clouds in the distance. Look far enough away to be unlikely that the player will encounter precipitation.

These are also taken into account when randomly selecting a cloudscape for Fair Cloud weather patterns when Train Simulator is loaded. Once again, only variants applicable to the relevant season will be chosen.

Variants - <https://armstrongpowerhouse.smugmug.com/Fair-Cloud/Showers-Distant/>



## **Showers**

Broken cloud with rain bearing shower clouds close by. The player likely to encounter precipitation.

One these is randomly selected when using a dynamic weather pattern containing Fair Cloud or Fair/High Cloud Showers.

Variants - <https://armstrongpowerhouse.smugmug.com/Fair-Cloud/Showers>



## Overcast

### ***Rain Bearing***

One of these is randomly selected for Overcast weather patterns when Train Simulator is loaded.

This type is also shown when rain is falling during Overcast Showers.

Variants - <https://armstrongpowerhouse.smugmug.com/Overcast/Rain-Bearing/>



### ***Non-Rain Bearing***

Variants - <https://armstrongpowerhouse.smugmug.com/Overcast/Non-Rain-Bearing/>





## **Haze**

Hazy overcast cloud where the sun is still visible at times. Tends to be thicker and more textured than the Haze clouds found in the High Cloud category.

Variants - <https://armstrongpowerhouse.smugmug.com/Overcast/Haze/>



## **Broken**

Breaks in the cloud to the north. The south, where the sun is, remains overcast.

Variants - <https://armstrongpowerhouse.smugmug.com/Overcast/Broken/>



## **Showers**

Rain bearing shower clouds close by. The player likely to encounter precipitation.

One these is randomly selected when using a dynamic weather pattern containing Overcast Showers.

Variants - <https://armstrongpowerhouse.smugmug.com/Overcast/Showers>



## ***Mid-Shower***

Intended for use during a Fair Cloud or Fair/High Cloud shower. Highlights of Fair Cloud weather beyond often visible.

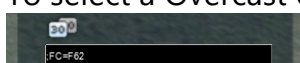
Variants - <https://armstrongpowerhouse.smugmug.com/Overcast/Mid-Shower/>



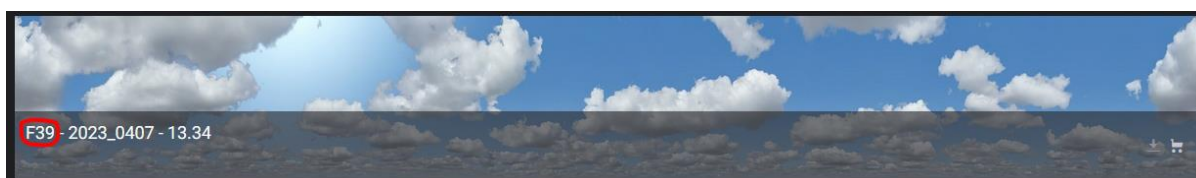
# How to Select a Cloudscape

Whilst clouds are randomly selected based on the kind of weather you are using as explained in the previous section, it is also possible for scenario creators to override this and choose a specific variant for their needs.

- 1) Open Train Simulator, click **Build, Scenario**, and select the scenario you wish to apply a custom cloudscape to. Click **Edit** and wait for the scenario to load.
- 2) Once loaded, 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) In the left-hand rolling stock fly-out, click the **Track Infrastructure** category and select **AP SWEP Weather**.
- 5) Now place this track marker on any piece of track.
- 6) Double click the blue box which says **AP Weather** on it and go to the right-hand fly-out menu.
- 7) Go to <https://armstrongpowerhouse.smugmug.com/> where you can browse the full selection of cloudscares available.
- 8) To select a Fair Cloud cloudscape, add **;FC=x** to the **Speed Limit** box.  
To select a High Cloud cloudscape, add **;HC=x** to the **Speed Limit** box.  
To select a Overcast cloudscape, add **;OC=x** to the **Speed Limit** box.



In all cases above, **x** is the code stated at the start of the image caption as shown below.



Please note, if you have a dynamic weather trigger name inputted in the **Speed Limit** box, the parameters above must be entered after that.

Finally, whilst most weather patterns are self-explanatory as to which cloud type shows during them, please see below for a comprehensive list which covers those where it may not be so obvious:

<b>Weather Pattern Type</b>	<b>Cloud Type Shown</b>
High Cloud	High Cloud
Haze	High Cloud
Fair Cloud	Fair Cloud
Fair/High Cloud	Fair Cloud & High Cloud
Overcast	Overcast
Overcast (Sun)	Overcast
Fog	No Cloud Type Shown
Rain (No Fog)	Overcast
Snow (No Fog)	Overcast
Fair Cloud Showers	Fair Cloud during dry spells Overcast during shower
Overcast Showers	Overcast during dry spells High Cloud during shower

For example then, if a weather pattern type contains **Haze**, you must add **;HC=x** to the **Speed Limit** box to select a custom cloudscape.

In the case of weather patterns which use two cloud types, you are free to choose two custom cloudscares if you wish. For example, when using **Fair/High Cloud**, you can add both **;FC=x** and **;HC=x** to the **Speed Limit** box.

To confirm, **x** can be any cloudscape as found at <https://armstrongpowerhouse.smugmug.com/>. It is not restricted where you can only use a Fair Cloud cloudscape on a Fair Cloud weather pattern for example, though this may well look odd if you use an overcast grey sky with the sun out...!

To give another example, when it's raining/snowing during **Overcast Showers**, if you wish to select a rain bearing overcast cloudscape with the code **O5** you would add **;HC=O5** to the **Speed Limit** box. Whilst it may seem odd that High Cloud is used in this case, weather patterns in Train Simulator can only show 3 cloud layers and with Overcast already used during dry spells, High Cloud is used during wet spells as it's simply an alternative layer to use, we just so happen to have called it High Cloud as it's usually used for this purpose.

## Selection Tips

Here are some tips on selecting the right cloudscape for your scenario/chosen weather pattern.

### ***High Cloud***

These are the easiest to choose as high cloud tends to look the same regardless of season. Simply choose whichever one you like the look of the most!

### ***Fair Cloud***

This is arguably the most variable type of cloud so we encourage you to browse the cloudscape according to which season your scenario is based in. This will help ensure you don't choose a cloudscape which quite obviously looks summery in winter for example.

Additionally, during summer (April to October), time of day is particularly important. For example, in the morning, cumulus cloud tends to appear more ragged and less defined. Into the afternoon, they often increase in density and rise in height, looking more 'cauliflower' like. By the evening, they tend to dissipate, often become flatter in appearance. To assist in quickly finding a cloudscape that suits, we have applied the following keywords to all summer fair cloud variants as shown in our gallery at <https://armstrongpowerhouse.smugmug.com/Fair-Cloud/Fair-Weather-Summer/>.

<b>Keyword</b>	<b>Scenario Start Time</b>
Dawn	07:45 or before
Morning	07:45 to 10:30
Noon	11:00 to 14:00
Afternoon	14:00 to 18:00
Evening	18:00 or after

To search by a keyword, simply go to the search bar at the top-right of the gallery and input your keyword of choice.

Additionally, all cloudscape are captioned with the date and time at which they were captured.

These are very general rules so as to guide those who aren't too sure what sort of clouds should appear at a certain time of day. By all means deviate from them if you wish.

## **Overcast**

Overcast skies can vary by season but not as much as fair cloud so keep this in mind when choosing a cloudscape. For example, a humid and turbulent grey sky probably won't suit a January day.

Something else to look out for is that many of our overcast clouds feature highlights where you can see the sun trying to shine through from behind the cloud. Overcast clouds are static due to a Train Simulator limitation so these highlights will always be oriented towards the south. This means the highlights broadly look in the correct position in relation to the sun. Of course, avoid using these kind of clouds before sunrise or after sunset!

As already mentioned, the 'Broken' category of overcast skies have gaps in the sky located to the north. When these are used with a Fair Cloud weather pattern, their orientation flips so the gaps in the sky are located towards the south. This can allow for some rather dramatic scenes where the sun illuminates the scene with a backdrop of dark overcast clouds. Always test these in relation to the time of day of your scenario to ensure the gap in the clouds is where the sun will be during your scenario.

## Note for Scenario Developers

If you have selected a custom cloudscape for use in your scenario, the scenario will still work just fine for anyone who doesn't own this pack. They will simply revert to seeing the default clouds included with the *Sky & Weather Enhancement Pack 2.0*. If they don't own the *Sky & Weather Enhancement Pack 2.0*, they will just experience default weather and clouds.

Remember, as with our *Sky & Weather Enhancement Pack 2.0*, if you are using the **AP SWEP Weather** track marker, this must be placed on a piece of track that a train will not pass over in the scenario. This ensures that if the player doesn't own this pack, the signalling on the route will still behave as intended.



## Known Limitations

Through the creation of this pack, we have had to work within the confines of Train Simulator Classic. The limitations this has presented are listed below so as to confirm these are not bugs but simply factors we are unable to work around:

- Our clouds are 2D images, not 3D, so they follow the train around. The 3D 'Dynamic Clouds' system provided with Train Simulator Classic was assessed for this project but offered nowhere near the amount of flexibility to have it match the visual quality seen both in this pack and the *Sky & Weather Enhancement Pack 2.0*.
- A small section directly above the camera in the simulator is blank and/or distorted as the sky-dome (the hemisphere that is used to project the cloudscapes on to) reaches its zenith. It is very rare that the player will look at this angle.
- Train Simulator Classic only allows one cloud layer to rotate to simulate the appearance of clouds moving in the wind. The layer we have selected for this is Fair Cloud, so we encourage the use of the Fair Cloud (Wind) dynamic weather patterns included in our *Sky & Weather Enhancement Pack 2.0* to take advantage of this and ensure the player doesn't see the same clouds in the same direction for the whole scenario. This does mean though that Overcast and High Cloud remain static throughout the duration of a scenario.