Twinkles Steam & Smoke Effects

The Twinkles particle effect system is a method to produce particle effects for Trainz Railway Simulator 2004 and 2006. The effects produced by this program can enable content creators to bring an extra level of realism to their creation. The aim of this guide is to show content creators how to use some pre-created twinkles effects for their content. This guide is aimed at content creators who have knowledge of locomotive config.txt's.

The files included with this tutorial are the compiled Twinkles effects used on the latest locomotives by Lesto Route Works. The way each effect is controlled is by a 'mode', currently there are 4 document modes and 3 undocumented modes. The 4 documented modes are:

- time
- speed
- anim
- timeofday

The descriptions for these are listed on page 123 of the TRS04 CCG. The first undocumented mode is mode "stack"

```
mode "stack"
inherit-velocity 0.0
scale 0.98
```

Mode stack comes with two other tags, these being 'Inherit-velocity' and 'scale'. Both these tags like values ranged between 0 and 1.

The inherit-velocity tag was found to have some strange effects if this had a value above 0. The main problem was the twinkles effect would fly of to one side when going round corners, as if it had gained the centrifugal force of the locomotive. This tag may be useful for some applications but in general it seemed to provide a negative result when used with steam locomotives.

The scale tag appears to have control over the rate of the twinkles effect. By setting the number with a smaller value you can increase the precision of the effect turning on and off with regards to Regulator usage. The layout for this mode is as follows:

```
smoke0
 {
  attachment "a.smoke0"
  mode "stack"
  file "chimneymoving.tfx"
  color 0,0,0,0
  enabled 1
  inherit-velocity 0.0
  scale 0.98
 }
```

The second undocumented mode is mode “lowpressurevalve”. This mode is used to turn on and off a smoke effect listed in the config in relation to the max boiler pressure in the listed in the engine spec aliased to the locomotive. When the max boiler pressure is reached when driving the effect will be activated until the boiler pressure drops below the specified max pressure. The layout for this mode is as follows:

```
smoke4
 {
  attachment "a.smoke3"
  mode "lowpressurevalve"
  file "safetyvalve.tfx"
  color 0,0,0,0
  enabled 1
 }
```

The final undocumented mode is not so much a mode but a naming convention when constructing the model. When placing a attachment for a whistle steam effect the attachment must be named a.whistle for the effect to turn on when the whistle key is pressed. The config layout for the effect is shown below:

```
smoke7
 {
  attachment "a.whistle"
  mode "anim"
  file "whistle.tfx"
  color 0,0,0,0
  enabled 1
 }
```

This package comes with 8 complied twinkles effects for use on a steam locomotive.

chimneymoving.tfx

This effect is steam/smoke effect that is exhausted from the chimney of a steam locomotive when it is moving. Its recommended to use this effect for large locomotives with a multijet exhaust. This effect has been created to be used in conjunction with mode “stack” in the smoke effects section of your config file.

Chimneymoving2.tfx

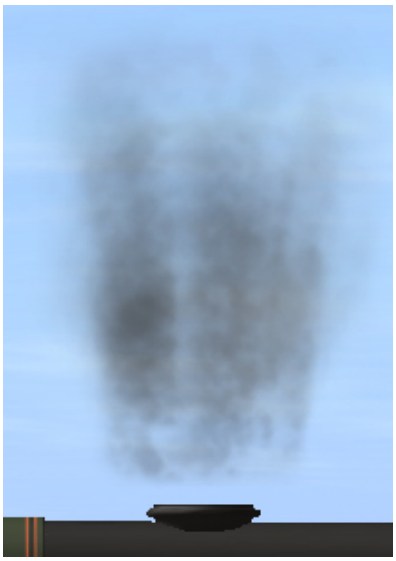
This effect is steam/smoke effect that is exhausted from the chimney of a steam locomotive when it is moving, this smoke from this effect will also lower to a limited degree to resemble lower cut off values. It is recommended to use this effect with single chimney locos. This effect has been created to be used in conjunction with mode “stack” in the smoke effects section of your config file.

Chimneymoving3.tfx

This effect is steam/smoke effect that is exhausted from the chimney of a steam locomotive when it is moving, this smoke from this effect will also lower to a limited degree to resemble lower cut off values. It is recommended to use this effect with single chimney locos. This effect has been created to be used in conjunction with mode “stack” in the smoke effects section of your config file.

chimneystopped.tfx

This effect is used to simulate the effect of the blowers turned on a large loco with multi jet exhaust when stationary. It’s also used to simulate smoke out of the chimney when the locomotive is moving. Used in conjunction with the chimneymoving.tfx effect this can create a realistic steam locomotive exhaust.

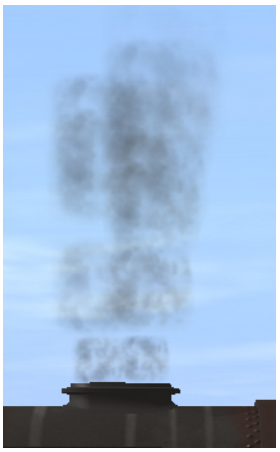


Chimneystopped2.tfx

This effect is used to simulate the effect of the blowers turned on a single chimney when the loco is stationary. It’s also used to simulate smoke out of the chimney when the locomotive is moving. Used in conjunction with the chimneymoving2.tfx effect this can create a realistic steam locomotive exhaust.

ChimneyStopped3.tfx

This effect is used to simulate the effect of the blowers turned on a single chimney when the loco is stationary. It's also used to simulate smoke out of the chimney when the locomotive is moving. Used in conjunction with the chimneymoving2.tfx or chimneymoving3.tfx effect this can create a realistic steam locomotive exhaust.



whistle.tfx

Whistle.tfx effect is used primarily with an attachment point named a.whistle. When the whistle key is pressed it will activate the effect to simulate steam being exhausted from the whistle.

safetyvalves.tfx

The safety valves effect when used in conjunction with mode "lowpressurevalve" The effect is designed to simulate high pressure steam being released from safety valves when max boiler pressure is reached.

LargeGlands.tfx

This particular effect is used to simulate steam leaking from a gland on the locomotive at low speeds. Its turned off as the speed of the loco increases.

SmallGlands.tfx

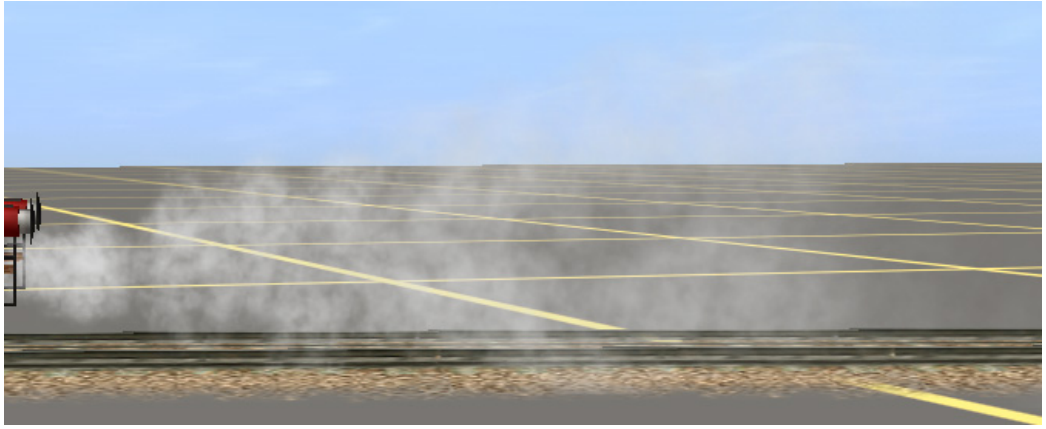
SmallGlands.tfx is the same as the large version except the effect is confined to a smaller area with smaller particles.

SteamLeak.tfx

This effect is designed to be used continuously on the locomotive to simulate steam leaking from a particular part or area. The effect has a short particle life so it doesn't look stretched at speed.

cyldraincocks.tfx

The cyldraincocks.tfx effect simulates the opening of the cylinder drain cocks when a locomotive moves of from a standing start or changes direction. The effect is only turned on at very low speeds as the cylinders don't take long to warm up and for any water or steam at the wrong side of the piston to be exhausted. This effect is not tied in anyway to the cylinder drain cock lever in steam loco cabs.



Custom Textures & Config.txt examples

All the twinkles effects listed in this document use custom textures which are present on the DLS. If these custom textures are not installed in trainz then the locomotive or effect may not show or function as intended. Listed below is the custom textures and what effects need them to function correctly.

Custom texture name & Kuid	Twinkles effect
Smoke-Steam_effect kuid2: 101839:40001:2	Chimneymoving.tfx
Smoke-Steam_effect2 kuid2: 101839:40004:1	Chimneymoving2.tfx
Smoke-Steam_effect3 kuid2: 101839:40008:1	Chimneymoving3.tfx
Smoke_effect kuid2: 101839:40003:1	Chimneystopped.tfx Chimneystopped2.tfx
Steam_effect kuid2:101839:40002:1	Whistle.tfx
	Safetyvalves.tfx
	LargeGlands.tfx
	SmallGlands.tfx
	SteamLeak.tfx
	cyldraincocks.tfx

Its highly recommend when using these effects to list the custom textures required in the kuid table of the config.txt of the locomotive. The sample kuid table below shows the custom texture listed so they can be downloaded with the locomotive.

```
kuid-table
 {
  1      <kuid2:101839:40001:2>
  2       <kuid2:101839:40002:1>
  3       <kuid2:101839:40003:1>
}
```

Listed below is an example of each effect described in the previous sections added to a smoke effect container. Each effect is used once in a TRS06 approved container.

chimneystopped.tfx example

```
smoke0
 {
  attachment "a.smoke0"
  mode          "speed"
  file "chimneystopped.tfx"
  color 0,0,0,0
  enabled 1
  maxspeedkph 65
 }
```

Chimneystopped2.tfx example

```
smoke0
 {
  attachment "a.smoke0"
  mode          "speed"
  file "chimneystopped2.tfx"
  color 0,0,0,0
  enabled 1
  maxspeedkph 65
 }
```

chimneymoving.tfx example

```
smoke1
 {
  attachment "a.smoke0"
  mode "stack"
  file "chimneymoving.tfx"
  color 0,0,0,0
  enabled 1
  inherit-velocity 0.0
  scale 0.98
 }
```

Chimneymoving2.tfx example

```
smoke1
 {
  attachment "a.smoke0"
  mode "stack"
  file "chimneymoving2.tfx"
  color 0,0,0,0
  enabled 1
  inherit-velocity 0.0
  scale 0.98
 }
```

cyldraincocks.tfx example

```
smoke2
 {
  attachment "a.smoke1"
  mode "speed"
  file "cyldraincocks.tfx"
  color 0,0,0,0
  enabled 1
  maxspeedkph 7
 }
```

safetyvalves.tfx example

```
smoke3
 {
  attachment "a.smoke3"
  mode "lowpressurevalve"
  file "safetyvalves.tfx"
  color 0,0,0,0
  enabled 1
 }
```

Whistle.tfx example

```
smoke4
 {
  attachment "a.whistle"
  mode "anim"
  file "whistle.tfx"
  color 0,0,0,0
  enabled 1
 }
```

LargeGlands.tfx

```
Smoke5
 {
  attachment "a.gland1"
  mode "speed"
  file "LargeGlands.tfx"
  color 0,0,0,0
  enabled 1
  maxspeedkph 15
 }
```

SmallGlands.tfx

```
Smoke6
 {
  attachment "a.gland5"
  mode "speed"
  file "SmallGlands2.tfx"
  color 0,0,0,0
  enabled 1
  maxspeedkph 15
 }
```

SteamLeak.tfx

```
Smoke7
 {
  attachment "a.gland13"
  mode "speed"
  file "SteamLeak.tfx"
  color 0,0,0,0
  enabled 1
  maxspeedkph 65
 }
```

License

These effects maybe used in any Trainz freeware asset that is to be uploaded to the DLS. Use of these effects for personal use is also granted, if used on another authors loco please check their license agreement about modifications. The effects remain property of Rob Hill (LieLestoSbrat). Use of the effects for a payware asset or asset which will not be uploaded to the DLS is forbidden unless written consent is received from the author. By using one or more of these effects in your content you accept to include the text below in the description tag of your config.txt

“This Locomotive uses one or more twinkles effects and custom textures created by Rob Hill (LieLestoSbrat) of Lesto Route Works and UK Branch Lines.”