



Custom trailers in Snowrunner:

Part 1: Mod File Structure

Within your mod file you will need the following in bold for your saddles. If you are using custom models and not just editing the XML, you will also need to follow part 4 of my guides for how to export custom models.

- **mod_name**
 - **classes**
 - customization_presets
 - engines
 - gearboxes
 - suspensions
 - **trucks**
 - addons
 - cargo
 - **trailers**
 - vehicle_name_tuning
 - winches
 - **meshes**
 - **trucks**
 - addons
 - cargo
 - **trailers**
 - vehicle_name_tuning
 - **textures**
 - **trucks**
 - ui
 - textures

Part 2: Truck XML File

This file will be saved within the **classes/trucks** folder. Within the truck's xml file you will need the following to make the trailers attachable. Also note that (0.000; 0.000; 0.000) represents the origin and will need adjusting to fit your mod.

```
789 <!--trailer addons-->
790 <AddonSockets>
791 <Socket
792     Names="ScoutTrailer"
793     Offset="(0.000; 0.000; 0.000)"
794     ParentFrame="BoneChassis_cdt"
795 />
796 <Socket
797     Names="Trailer"
798     Offset="(0.000; 0.000; 0.000)"
799     ParentFrame="BoneChassis_cdt"
800 />
801 <Socket
802     Names="Semitrailer, SemitrailerOiltank"
803     Offset="(0.000; 0.000; 0.000)"
804     CablesName="env/trailer_cable"
805     TruckCablesPos="(0.000; 0.000; 0.000)"
806     ParentFrame="BoneChassis_cdt"
807 />
```

```
808 <Socket
809     Names="LargeSemitrailer, LargeSemitrailerOiltank"
810     Offset="(0.000; 0.000; 0.000)"
811     CablesName="env/trailer_cable"
812     TruckCablesPos="(0.000; 0.000; 0.000)"
813     ParentFrame="BoneChassis_cdt"
814 />
815 <Socket
816     Names="SemitrailerCat770g"
817     Offset="(0.000; 0.000; 0.000)"
818     ParentFrame="BoneChassis_cdt"
819 />
820 <Socket
821     Names="Goosenecktrailer"
822     Offset="(0.000; 0.000; 0.000)"
823     ParentFrame="BoneChassis_cdt"
824 />
825 </AddonSockets>
```

You will also need to add a saddle addon tag for any trailer that also requires a saddle to be equipped:

```
838 <Socket
839     Names="SaddleLow"
840     NamesBlock=""
841     Offset="(0.000; 0.000; 0.000)"
842     ParentFrame="BoneChassis_cdt"
843 />
```

This will need to match the corresponding trailer's install sockets. For example, SaddleLow, SaddleHigh etc.



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Part 3: Trailer Install Sockets

The trailer XML file will be saved within the **classes/trucks/trailers** folder. Within the file, you will need the following to make your trailer compatible with each saddle type:

Scout Trailers:

```
643 <!--hitch position-->
644 <InstallSocket
645   Offset="(0.000; 0.000; 0.000)"
646   Type="ScoutTrailer"
647   ParentFrame="BoneChassis_cdt"
648 />
```

Bumper-Pull Trailers:

```
649 <!--hitch position-->
650 <InstallSocket
651   Offset="(0.000; 0.000; 0.000)"
652   Type="Trailer"
653   ParentFrame="BoneChassis_cdt"
654 />
```

Low Saddle Semitrailers:

```
655 <!--hitch position-->
656 <InstallSocket
657   Offset="(0.000; 0.000; 0.000)"
658   CablesPos="(0.000; 0.000; 0.000)"
659   Type="Semitrailer"
660   ParentFrame="BoneChassis_cdt"
661 />
662 <RequiredAddon _template="SaddleLow" />
663 <!--hitch position-->
664 <InstallSocket
665   Offset="(0.000; 0.000; 0.000)"
666   CablesPos="(0.000; 0.000; 0.000)"
667   Type="SemitrailerOilTank"
668   ParentFrame="BoneChassis_cdt"
669 />
670 <RequiredAddon _template="SaddleLow" />
```

High Saddle Semitrailers:

```
671 <!--hitch position-->
672 <InstallSocket
673   Offset="(0.000; 0.000; 0.000)"
674   CablesPos="(0.000; 0.000; 0.000)"
675   Type="LargeSemitrailer"
676   ParentFrame="BoneChassis_cdt"
677 />
678 <RequiredAddon _template="SaddleHigh" />
679 <!--hitch position-->
680 <InstallSocket
681   Offset="(0.000; 0.000; 0.000)"
682   CablesPos="(0.000; 0.000; 0.000)"
683   Type="LargeSemitrailerOilTank"
684   ParentFrame="BoneChassis_cdt"
685 />
686 <RequiredAddon _template="SaddleHigh" />
```

Special Mining Trailers:

```
687 <!--hitch position-->
688 <InstallSocket
689   Offset="(0.000; 0.000; 0.000)"
690   Type="SemitrailerCat770g"
691   ParentFrame="BoneChassis_cdt"
692 />
693 <RequiredAddon _template="SaddleLow" />
```

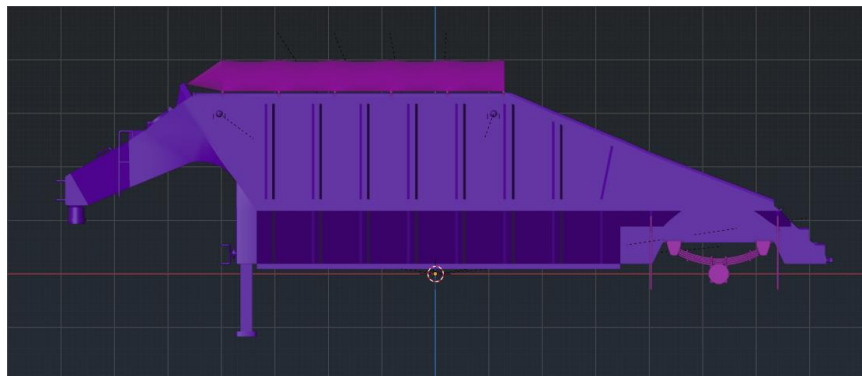
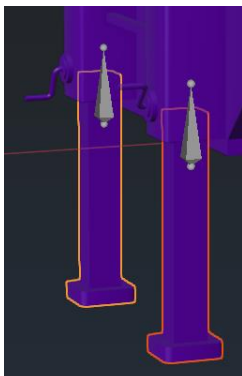
Gooseneck Trailers:

```
694 <!--hitch position-->
695 <InstallSocket
696   Offset="(0.000; 0.000; 0.000)"
697   Type="GooseneckTrailer"
698   ParentFrame="BoneChassis_cdt"
699 />
```

Again, note that (0.000; 0.000; 0.000) represents the origin and will need adjusting to fit your mod. Additionally, if you do not want the trailer to use the vanilla trailer wires and breakline pipes, then you should remove lines 658, 666, 674 and 682 respectively.

Part 4: Trailer Legs

Within the Trailer 3D file, you will need to separate the legs into their own objects and parent them to either a single bone between the two, or a bone each. You should also note the location of the base of the feet. For example, the feet are at the positions: 3.5X, -1.2Y, 0.8Z and 3.5X, -1.2Y, -0.8Z





Custom trailers in Snowrunner:

Within the TruckData tags, you should then add a foot origin tag using the feet positions:

```
<Foot Origin="(3.500;-1.200; 0.800)" />
<Foot Origin="(3.500;-1.200;-0.800)" />
```

This allows the trailer to spawn into the game with the feet above the ground.

The next step is to define the trailer leg bones, and their powered constraints in order to get them to auto-retract and extend when a trailer is connected to a truck. For example, the below are what the GGMS Heavy Gooseneck Trailer uses:

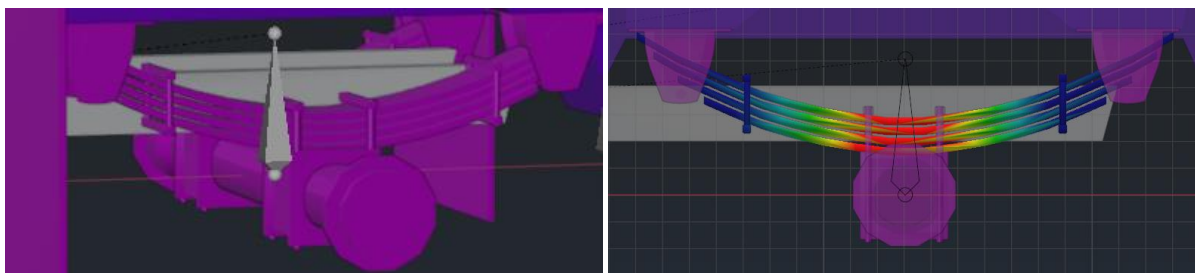
```
220 <!--trailer collisions data-->
221 <PhysicsModel Mesh="trucks/trailers/ggms_heavy_gooseneck_4">
222 <Body
223   CenterOfMassOffset="(0; 0; 0)"
224   ImpactType="Truck"
225   Mass="100"
226 >
227 <Body
228   CenterOfMassOffset="(0;-1; 0)"
229   ImpactType="Truck"
230   Mass="10000"
231   ModelFrame="BoneChassis_cdt"
232 >
233 <Constraint Type="Fixed" />
234 <!--legs-->
235 <Body
236   Mass="500"
237   ModelFrame="BoneHeavyLegLeft_cdt"
238   NoFoliageCollisions="true"
239 >
240 <Constraint
241   AxisLocal="(0; 1; 0)"
242   Name="Leg"
243   Type="Prismatic"
244   MinLimit="0"
245   MaxLimit="1.200"
246 >
247 <Motor Force="50000" Type="Position" />
248 </Constraint>
249 </Body> <!-- BoneLegLeft_cdt end -->
```

```
123 <!--feet activation-->
124 <PoweredConstraints>
125 <Group
126   Id="_trailer_foot"
127   ParentBodies="BoneHeavyLegLeft_cdt, BoneHeavyLegRight_cdt"
128 >
129 <Constraint
130   InitialFix="true"
131   Name="Leg"
132   Tau="0.04"
133   TerminalFix="true"
134   SpeedMult="1.000"
135   Position="1.200"
136 />
137 </Group>
138 </PoweredConstraints>
```

**Note: The ID must be exactly as above for the feet to auto activate.*

Part 4: Trailer Axles, Suspension & Wheels

In order to get axles to be animated, and have the suspension 'flex', you will need an axle bone for each axle. The bone should be positioned in the centre of the axle, with the suspension weighted between the chassis and the axle bone as follows:



Then in the trailer XML file, within the TruckData tags, you will need to define the axle bone:

```
<Axles>
  <Axle Frame="BoneAxle" ParentFrame="BoneChassis_cdt" />
</Axles>
```



Custom trailers in Snowrunner:

You will also want to define the axle suspension info, wheel location and wheel types. Here I make use of templates at the start of the XML to increase the readability of the code:

```
1  <_templates Include="trucks">
2    <Wheel>
3      <TrailerWheel
4        Location="rear"
5        SuspensionHeight="0.05"
6        SuspensionMin="-0.25"
7        SuspensionStrength="0.02"
8        Damping="0.4"
9        ConnectedToHandbrake="true"
10       Torque="default"
11       ParentFrame="BoneAxle"
12     />
13  </Wheel>
```

The wheel info should be within the TruckData tags:

```
98  <Wheels
99    DefaultRim="rim_1"
100   DefaultTire="mudtires_1"
101   DefaultWheelType="wheels_superheavy_cat770g_double"
102  >
103   <Wheel _template="TrailerWheel" Pos="(-5.300; 0.000; 1.360)" />
104   <Wheel _template="TrailerWheel" Pos="(-5.300; 0.000; 1.360)" RightSide="true" />
105  </Wheels>
106  <CompatibleWheels Scale="0.94" Type="wheels_superheavy_cat770g_double" />
```