



Vigilante Asset Customization Guide

This extra guide has been created as a helper to our customers who are looking to customize the assets for their specific needs. It is not asset specific, but instead attempts to help with an overview of how we add or edit parameters on our assets. (e.g., TurretRotation, GunElevation, WheelSpeed, etc.)

This Guide includes detailed information regarding editing the assets with the hope that it will help you to tune the assets for just the right level of control for your simulation Projects.

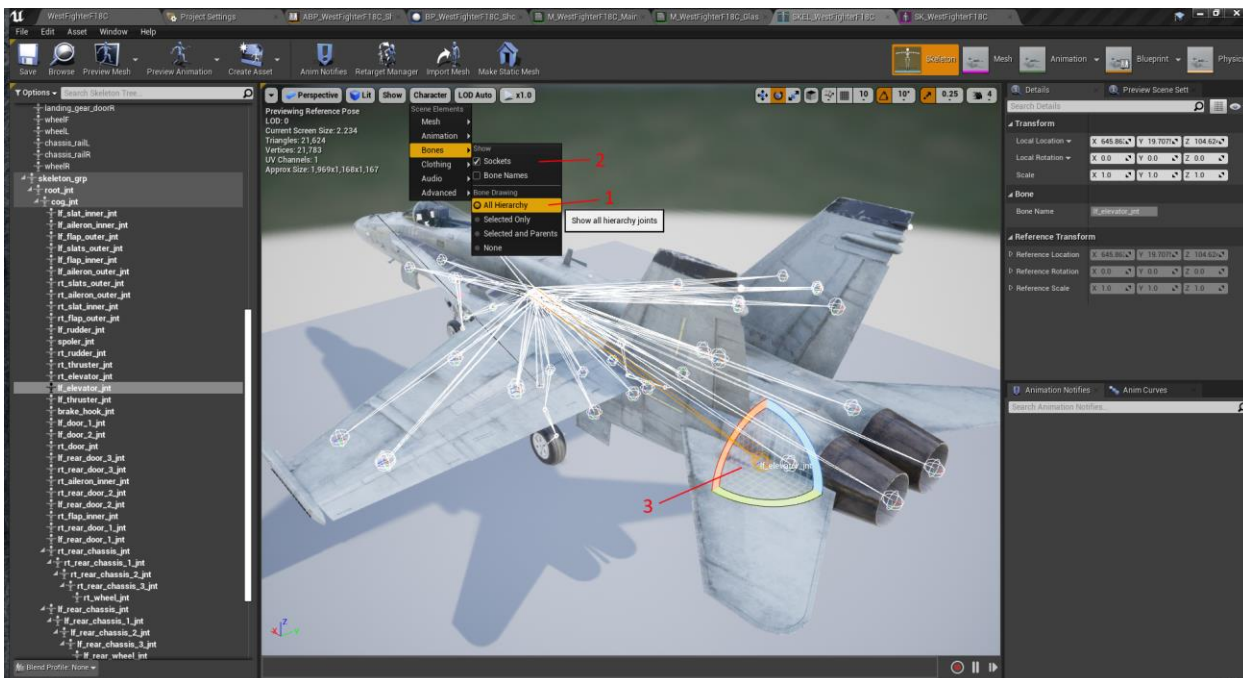
For information regarding the Blueprints and content of a specific Vigilante Asset, please see the Documentation link provided with that Asset's Epic Marketplace page. That is beyond the scope of this document.

Please know that this information is not unique and is well documented in standard Unreal Tutorials. We have prepared this Guide as an extra sample that has been aligned with our assets to help as an extra aid for our Vigilante customers.

Skeleton Overview

All the moveable parts have bones. Open the Skeleton asset and use these settings to find the bone and test how rotating and moving the bone changes the model:

1. To see all the bones and be able to select them in the viewport, select the option:
Character > Bones > All Hierarchy
2. To be able to see the sockets and modify them tick the checkbox:
Character > Bones > Sockets
3. To be able to see the name and modify a bone, simply select it from the viewport.

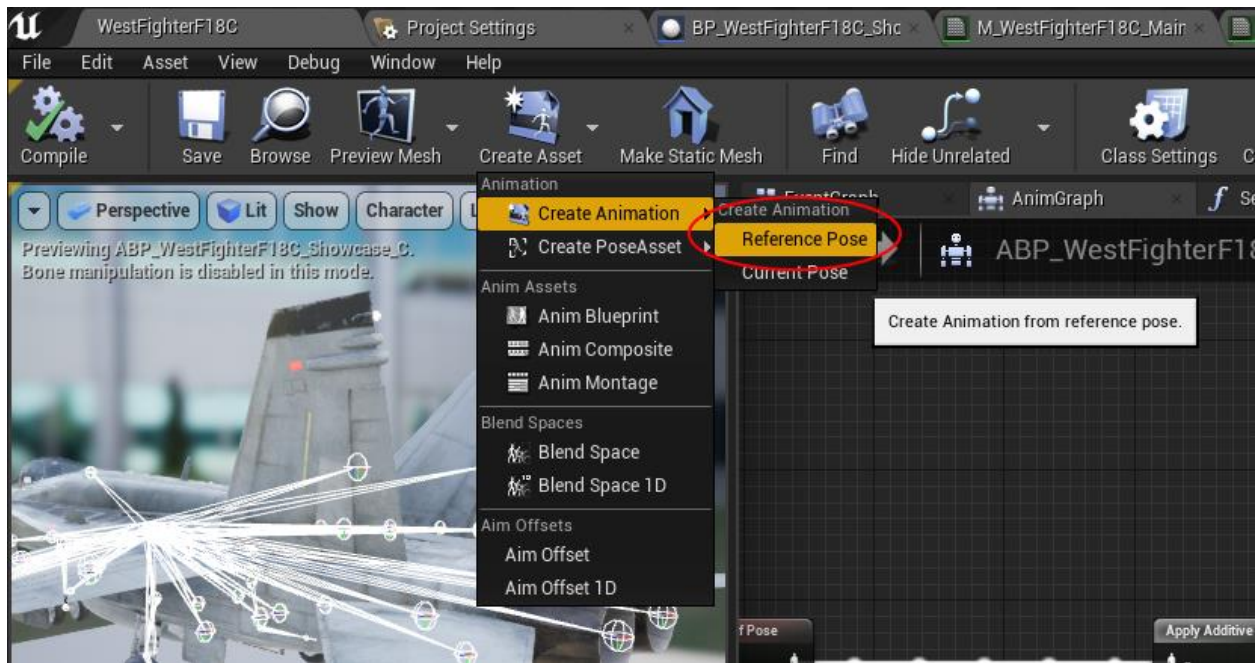


Animation

All models already contain basic animations but in case there is a need to add new animation or change the animation logic, there are 2 ways recommended that are already used in the models:

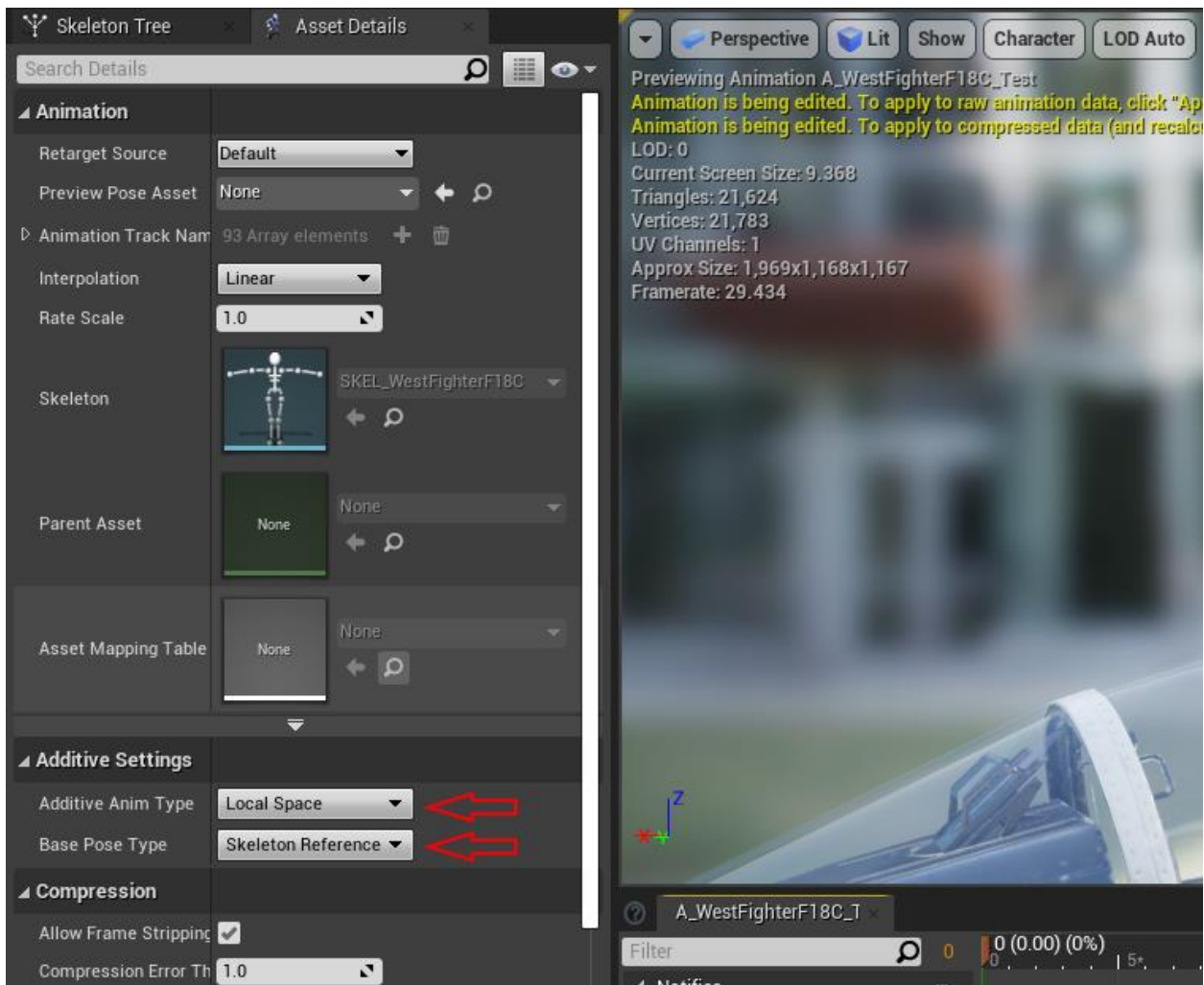
1- using blendspaces and additive animations

For this purpose, open the target skeleton, mesh, or animation blueprint and from the Toolbar: Create Asset > Create Animation > Reference Pose.

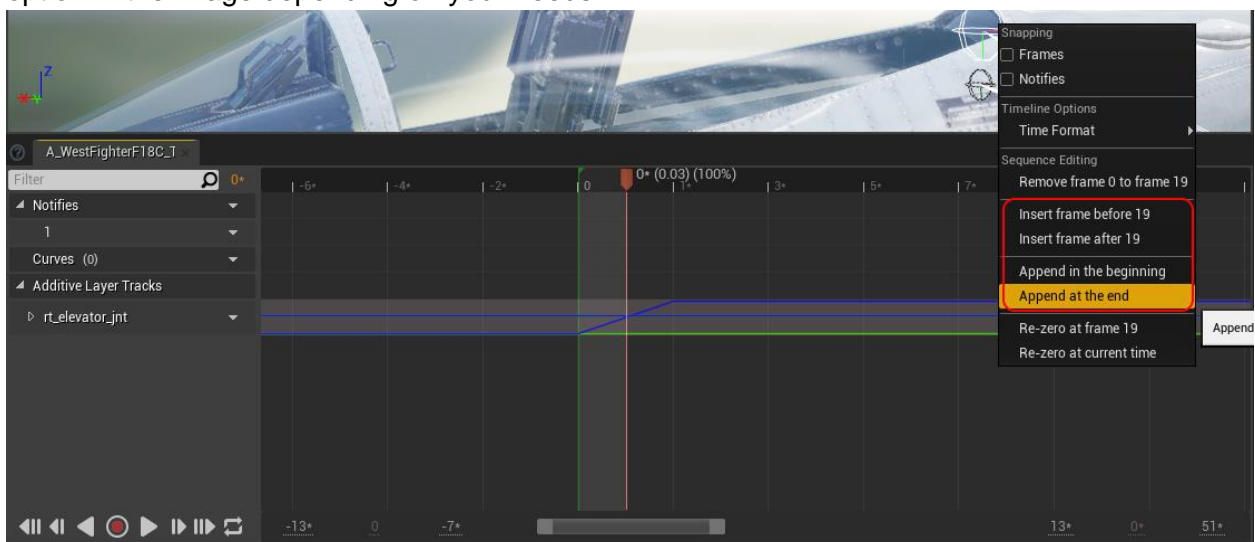


Choose a name and location for the animation sequence file and then the animation editor will open. You can rely on [this document page](#) for detailed instructions and information, but to get started fast, you just need to take these steps:

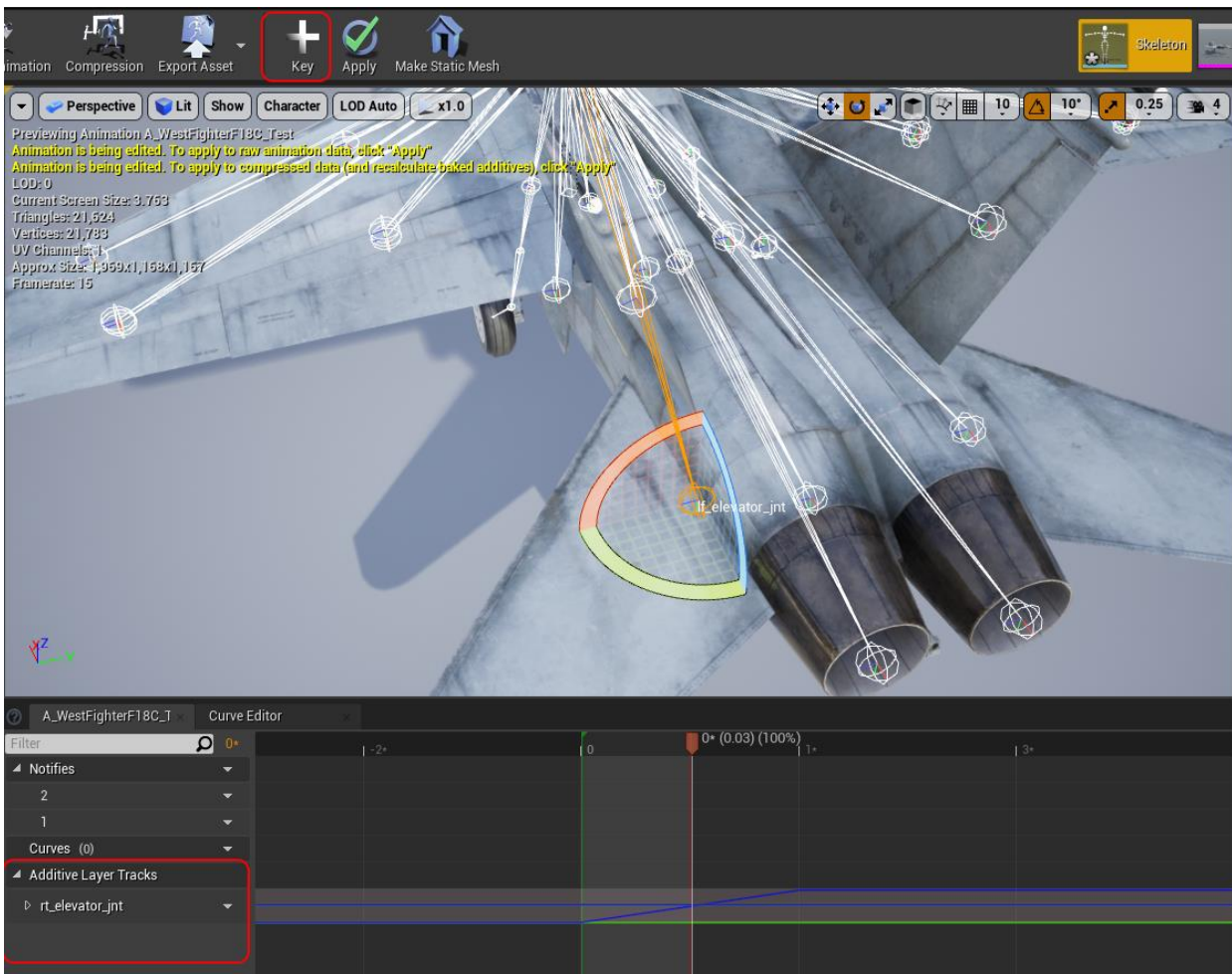
- 1- make sure you have the same options selected in Asset Details tab:



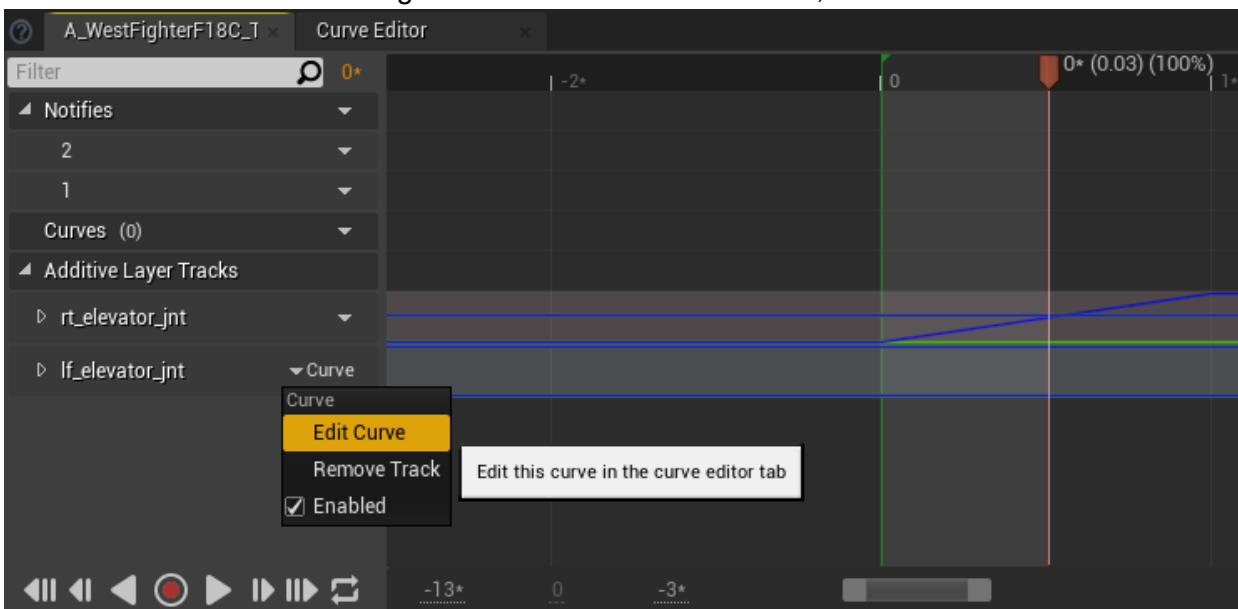
2- Add new frames in Animation Editor by right clicking in an empty place inside it and choose one of the 4 option in the image depending on your needs:



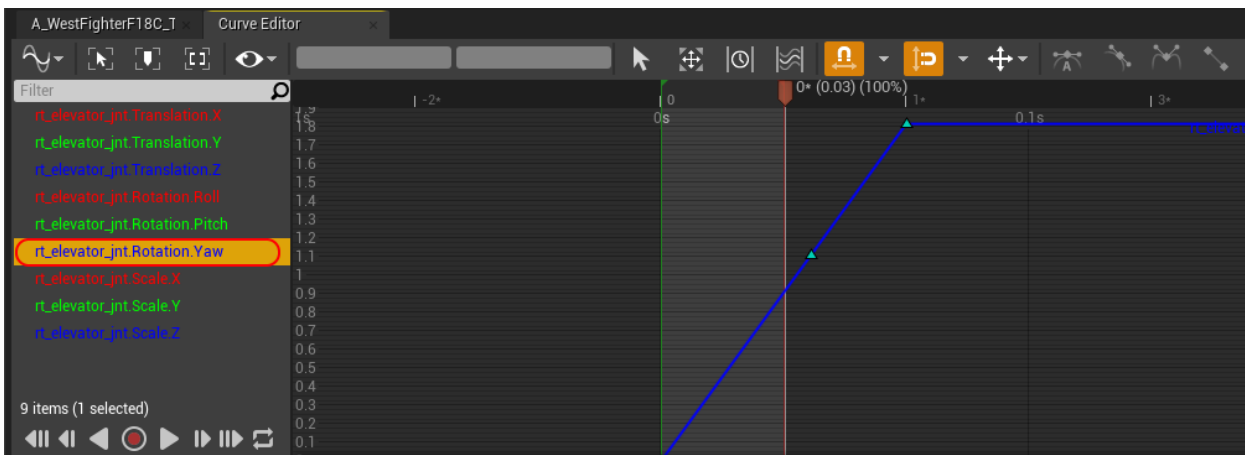
3- Select a bone, and click on the “Key” button to add the bone to animation timeline:



4- hover on the arrow on the right side of the added bone track, and select “Edit Curve”.



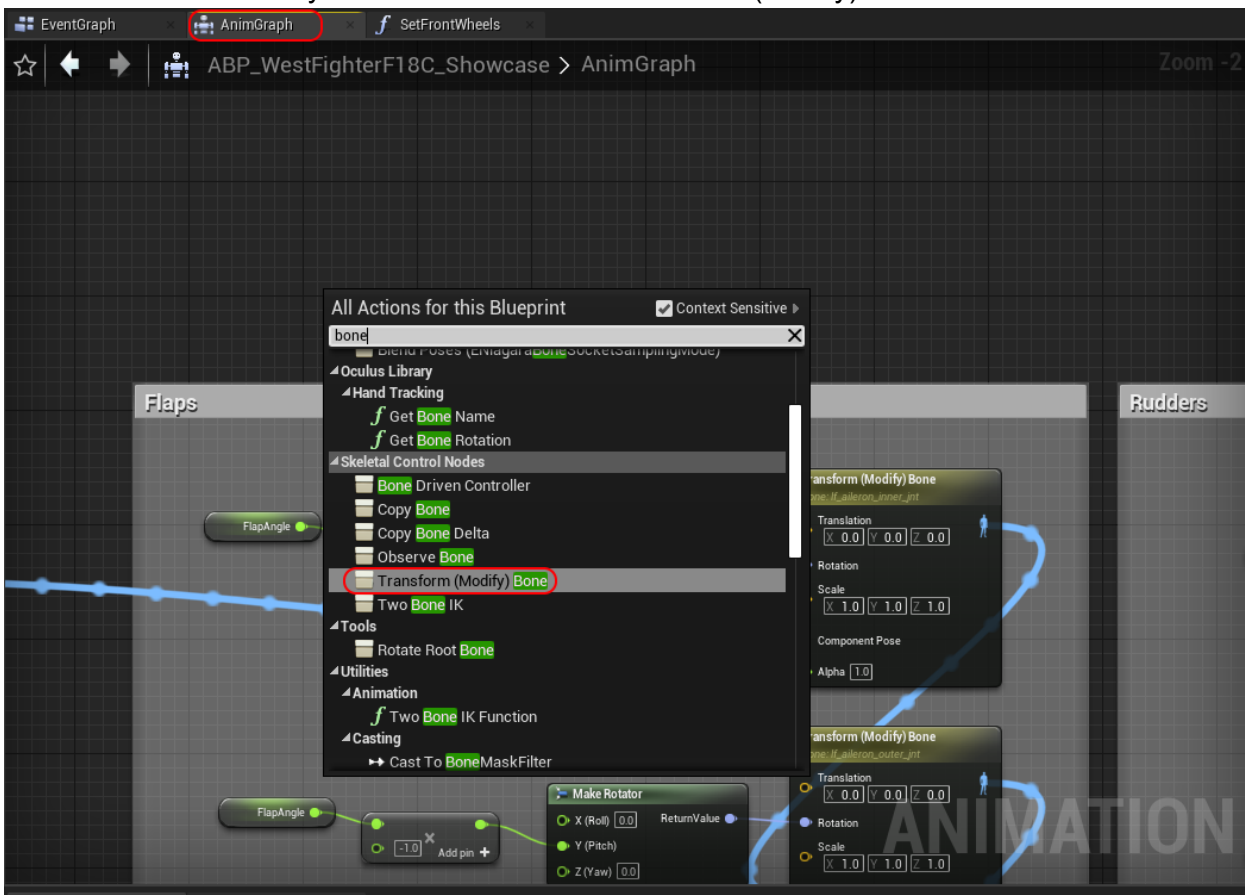
5- In the opened Curve Editor, select the property of the bone you want to change from the list on the left, and use the curve editor to modify the value. The curve editor is straightforward and similar to other curve editors (particle systems, etc.) in Unreal Engine.



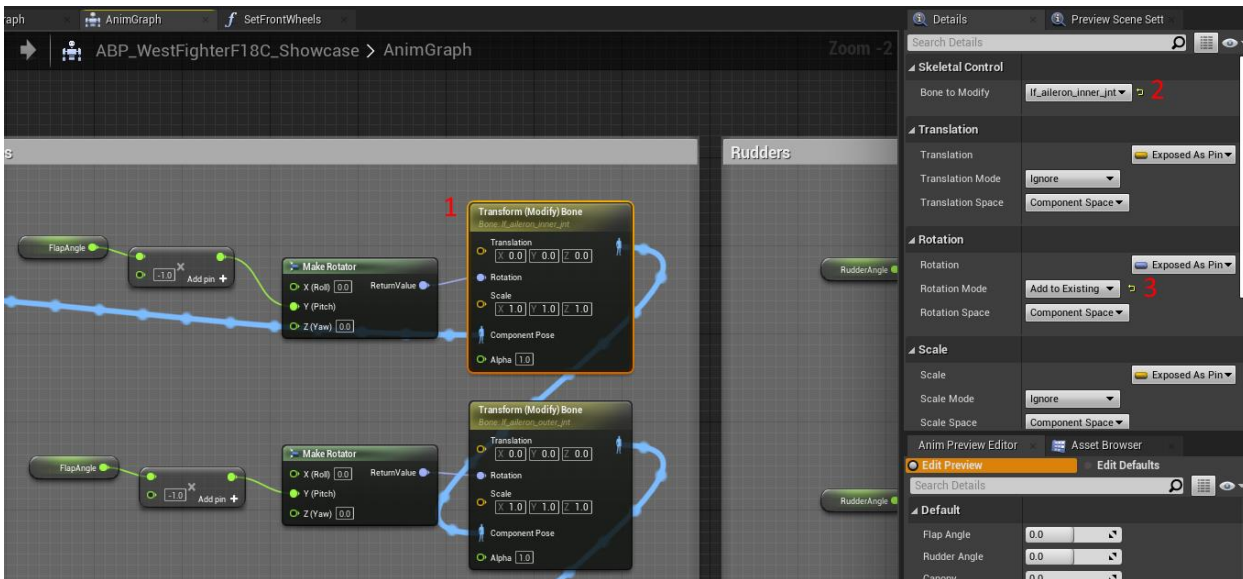
How to utilize this animation along with other animations will be covered in next part (Animation Blueprint)

2- changing the bones transform in blueprint

This method is recommended if you want to avoid making an animation file for doing a simple modification to a bone. For this method, open the Animation Blueprint (starts with ABP_) and in the AnimGraph tab, right click and search “bone” and you can find the Node “Transform (Modify) Bone”. Select it.



Now you have to node selected, check the detail tab (in the right side of screen by default) and select the bone you want to modify (refer to Skeleton part for finding the name of bone you are looking for). Then Set the Translation/Rotation/Scale mode and space according to what you want to achieve. In general, if you do not want to modify it, leave the Mode as “ignore”. And if you want to add the value to the original Transform/Rotation, select “Add to Existing” like the Image below:



As you can see, we already used this method to apply basic rotation to two bones. How to connect this node with other parts will be covered in next part (Animation Blueprint)

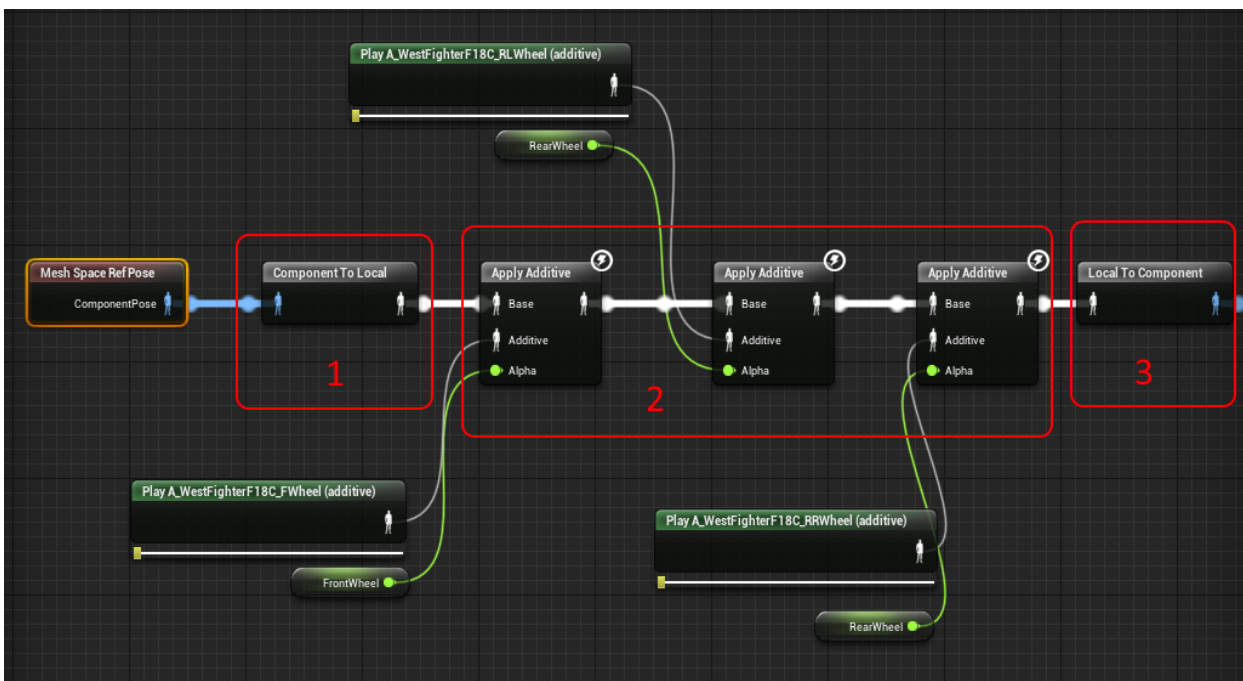
Animation Blueprint

Animation Blueprint is where the logic of animation happens. We can break it down to two parts. First, all the parameters and processes that are needed for the AnimGraph. Second, the AnimGraph which uses the parameters as input to determine the final animation(pose) of the model. How to set the parameters is totally dependent on the project but for the AnimGraph, it is highly recommended to use the 2 methods explained in the Animation part and use this structure/flow inside AnimGraph:

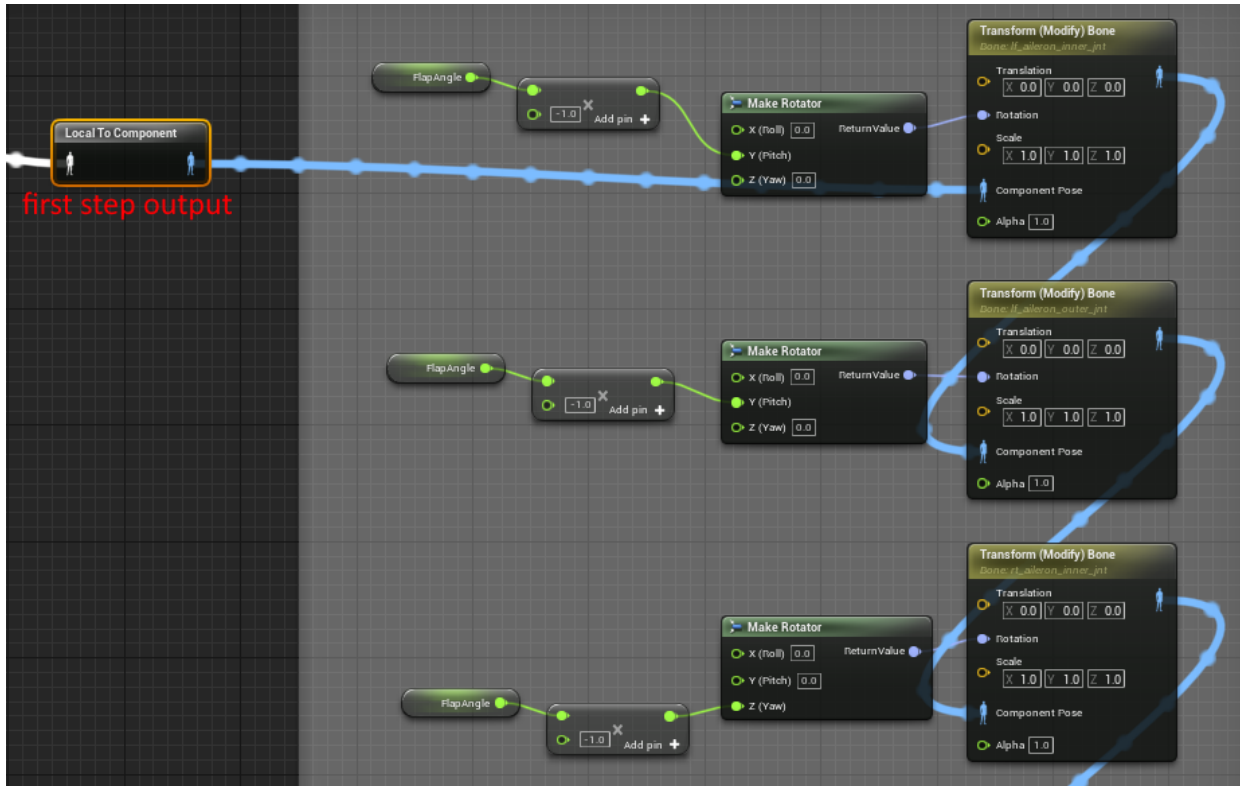
First, apply all additive animations. And then apply the bone transformations.

Apply additive animations is made of 3 steps:

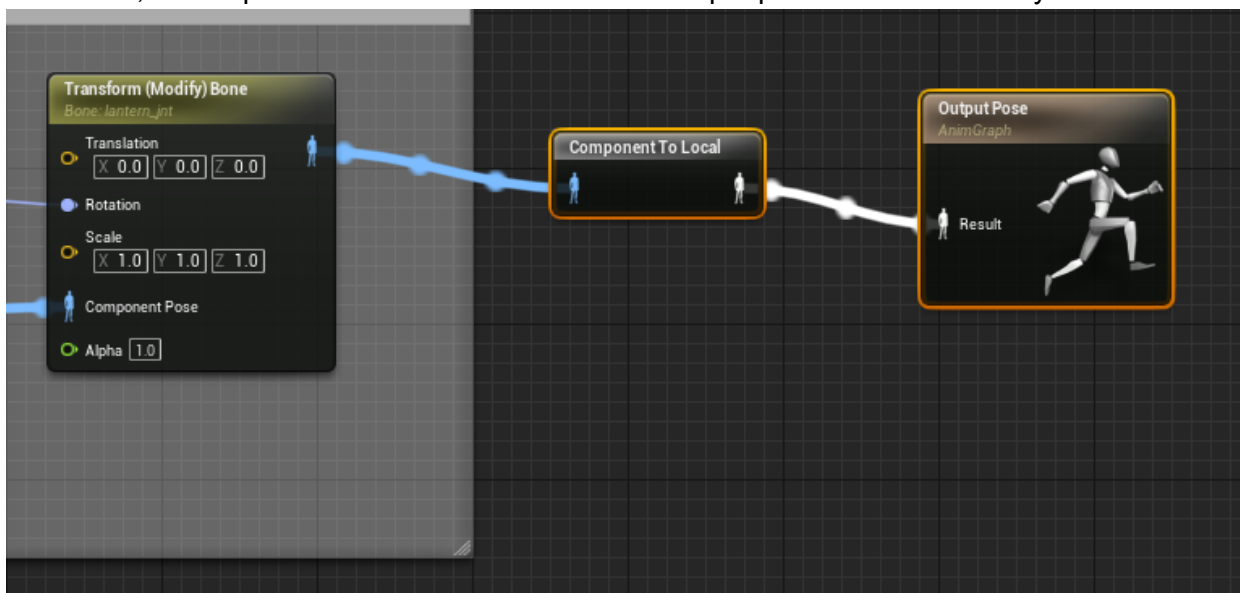
1. Convert the component space pose to local space
2. apply the additive animations using a chain of “Apply Additive” nodes
3. Convert the local pose to component pose



As you can see, the base pose is either the reference pos or the result of previous step. The additive node is the animation sequence you intend to use. To make Apply Additive node, simply, right-click on an empty space in AnimGraph and search for “apply additive” and also search the name of the animation you want for the “play animation” node (the green one). Alpha is the parameter that controls the blend amount. For the bone transformation part, you need to connect the output node of this step to the “transform (modify) Bone” nodes and keep in mind the related instructions covered in Animation part:



In the end, the output should be connected to the “Output pose” which is already inside the AnimGraph:



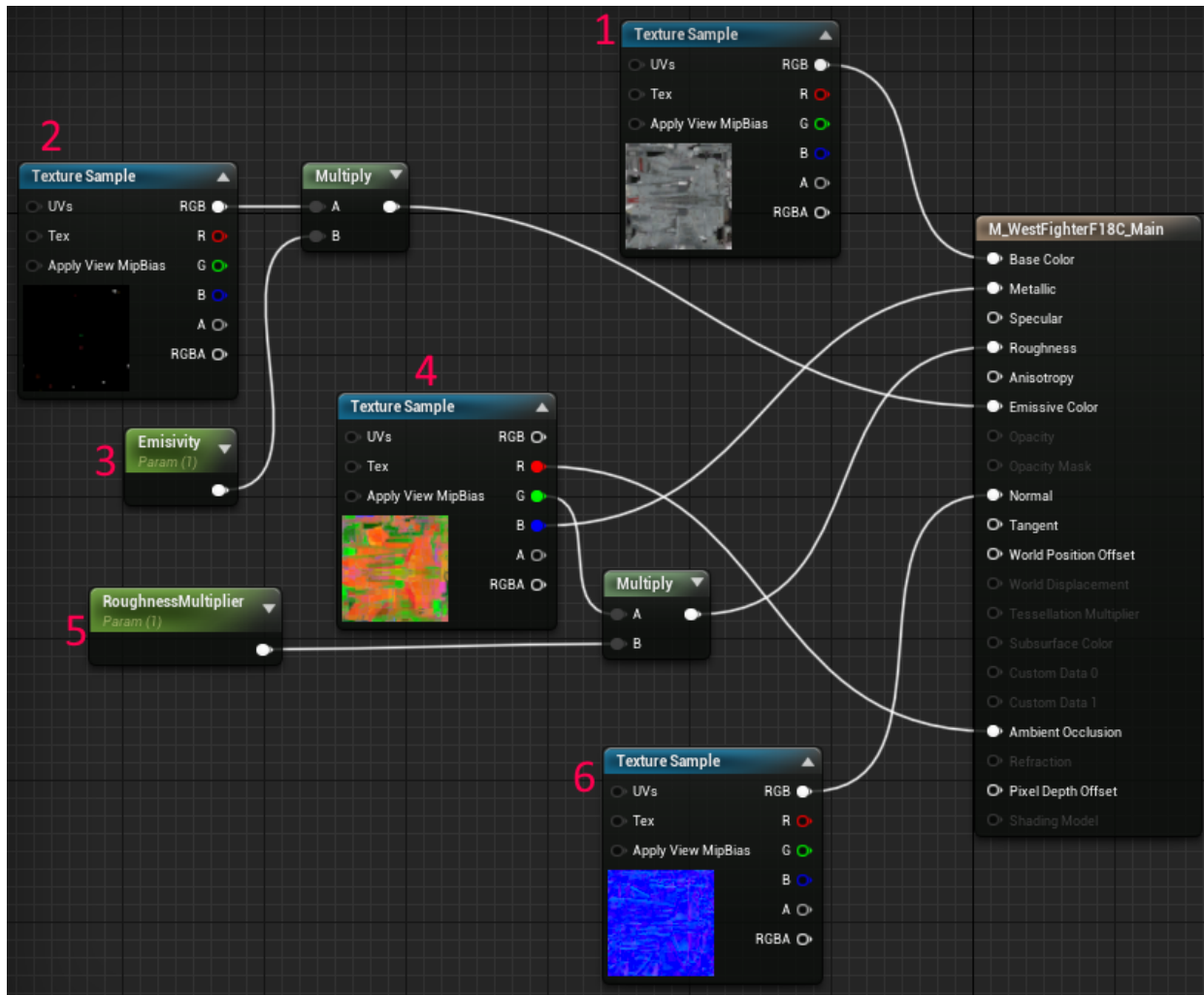
If there is a need to convert the component pose to local pose, it will automatically happen.

Material Customization

Each model comes with already set-up materials and there should not be a need to change them. Still, there are some parameters defined to tweak the materials easier.

For the F18 asset, there are 3 materials. The main material of the model, the glass material for the canopy of the model and the wreck material.

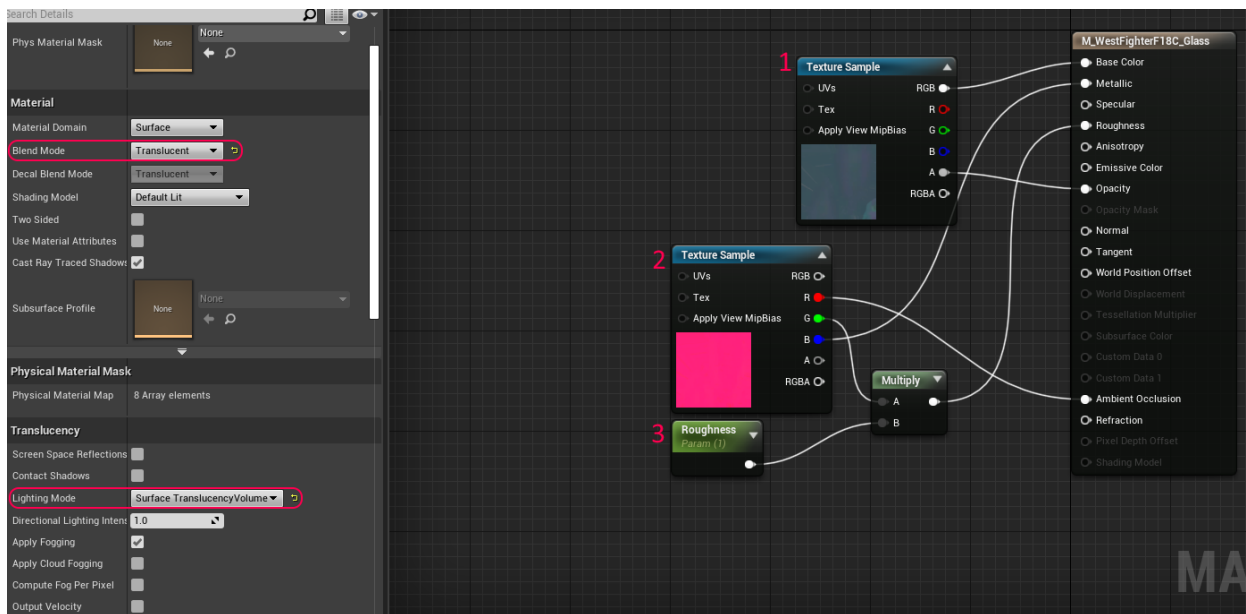
Main Material



As you can see there are 6 inputs for the material. 4 textures and 2 floats as multipliers of some properties.

- 1: main (defuse) texture/map
- 2: emissive map
- 3: emissivity (multiplier of emissive value)
- 4: Ambient Occlusion (red channel) + Roughness (green channel) + Metallic (blue channel)
- 5: Roughness Multiplier
- 6: Normal map

Glass Material



As you can see there are 3 inputs for the material. 2 textures and 1 float as multipliers of some properties.

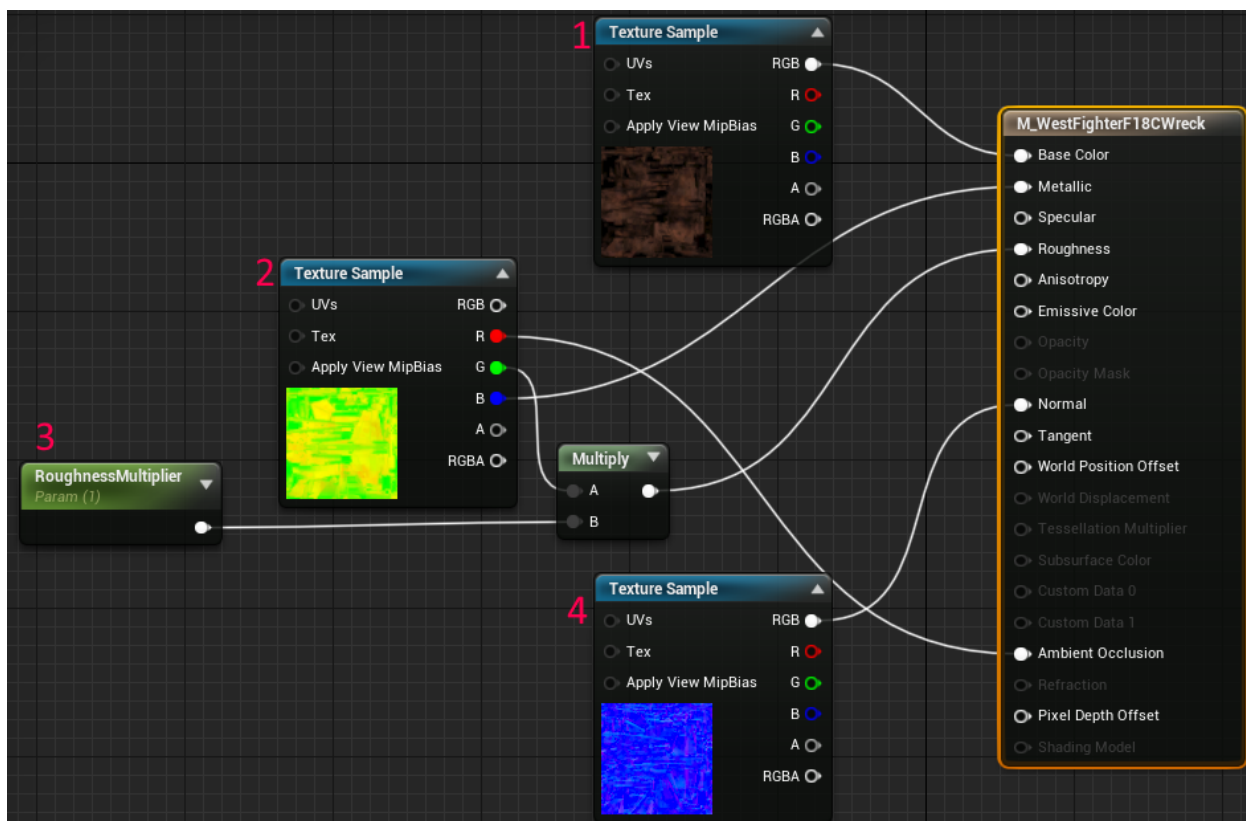
1: main (diffuse) texture/map

2: Ambient Occlusion (red channel) + Roughness (green channel) + Metallic (blue channel)

3: Roughness Multiplier

In order to work correctly as a transparent object, the blend mode should be set to “Translucent” and the lighting mode as “Surface TranslucencyVolume”.

Damage / “Wreck” Material



The Wreck Material is the same as the main material. Only missing the emissive map and its multiplier:

1: main (diffuse) texture/map

2: Ambient Occlusion (red channel) + Roughness (green channel) + Metallic (blue channel)

3: Roughness Multiplier

4: Normal map