

How to make guns for Blade and Sorcery (for U8)

Hi all. I was doing a shooting weapon and thought I might as well adapt the code so anyone can use it if they follow this guide. So, if you're eager to make a gun, or an item spawner, a crossbow without animations, or, idk, an item that spawns block you can climb, this is your guide!

I'll set up my Reiterpallasch (rapier gun) step by step, so you can follow along.

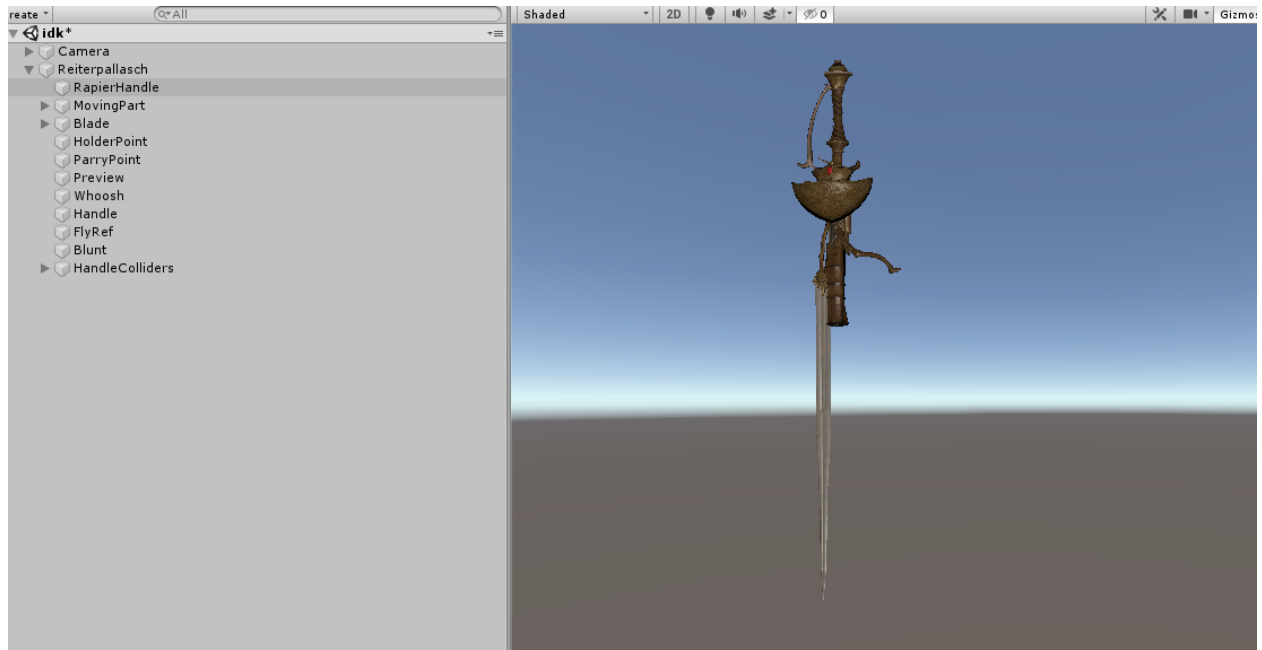
To use my script, you need to download my bazooka mod, that has the latest version of the plugin.

<https://www.nexusmods.com/bladeandsorcery/mods/2103>

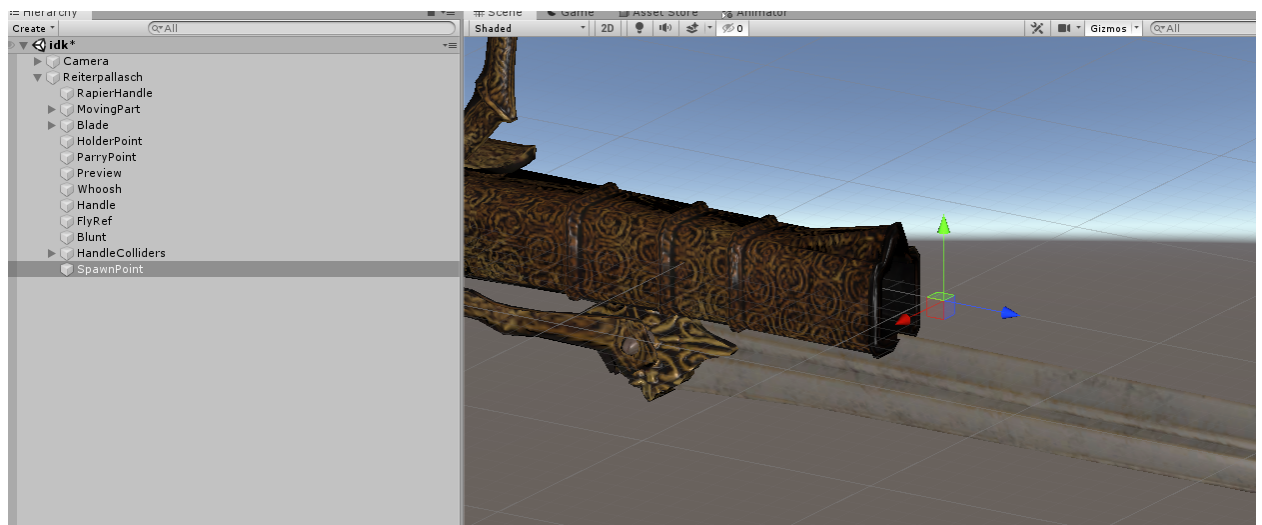
You'll need to add this mod as a requirement for yours to work.

For you coding modders, I made it all public so you can access it from another script and add conditions to the shooting. For example, in the Reiterpallasch, you're only allowed to shoot when the blade is sideways. The public bool `isShootingAllowed` is always true in the original script and never changes, and if it's false it won't shoot, so there's that.

First, you need a working weapon, the one you want to be able to shoot. In my case, it's Bloodborne's Reiterpallasch:



I tested it ingame and it works, so now let's add everything the code needs to be able to shoot. First, we need a spawning point for the bullets, for that we create an empty gameObject and place it wherever you want the bullets to spawn. The blue arrow of that spawning point MUST point in the direction you want the bullet to go, and the green arrow pointing in the up direction of your bullet, in case that matters to you. You can place the spawnPoint inside the gun itself, it won't cause issues. I'll place mine in front of the gun barrel, as that makes sense. If you plan to use a huge bullet, take that into account and place the spawn point far away.

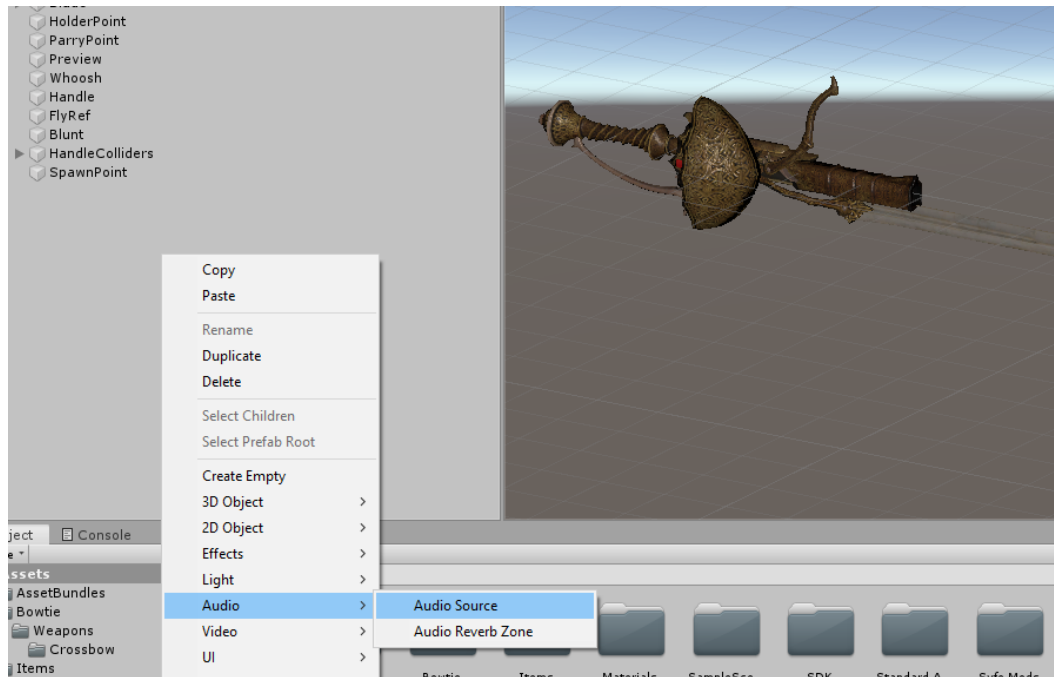


Nice. You can call it whatever (I called it SpawnPoint), just make sure you remember that name, as you'll need to reference it in the .json file later.

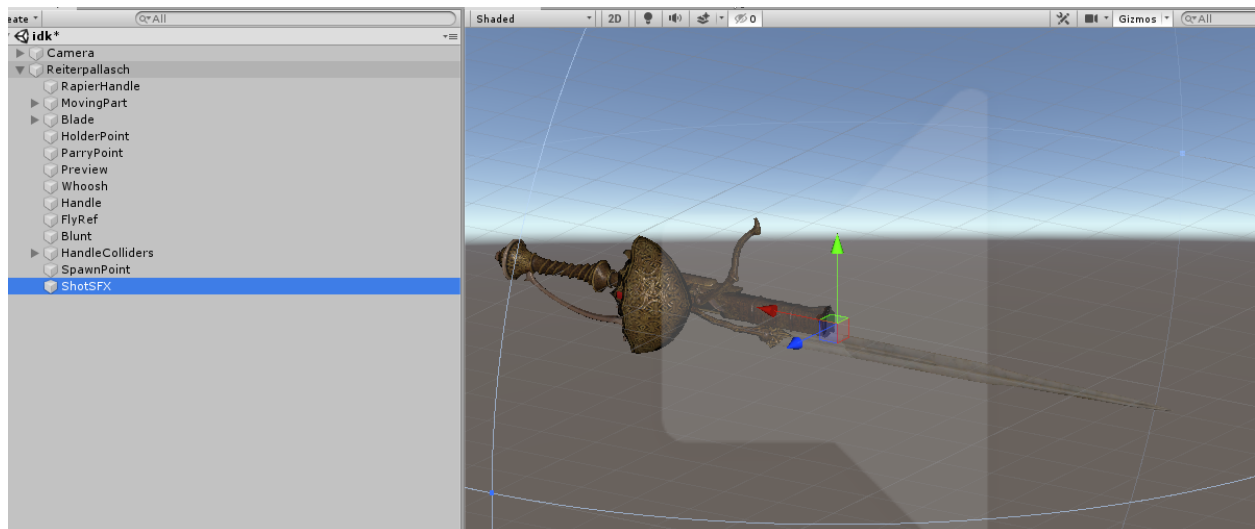
The mainHandleRight is the handle that lets you shoot, every other one doesn't, so make sure to make the main handle the one the correct one!

If you want to make it super simple, that would be it, really. But we can also add a sound effect and a particle system, to make it look better!

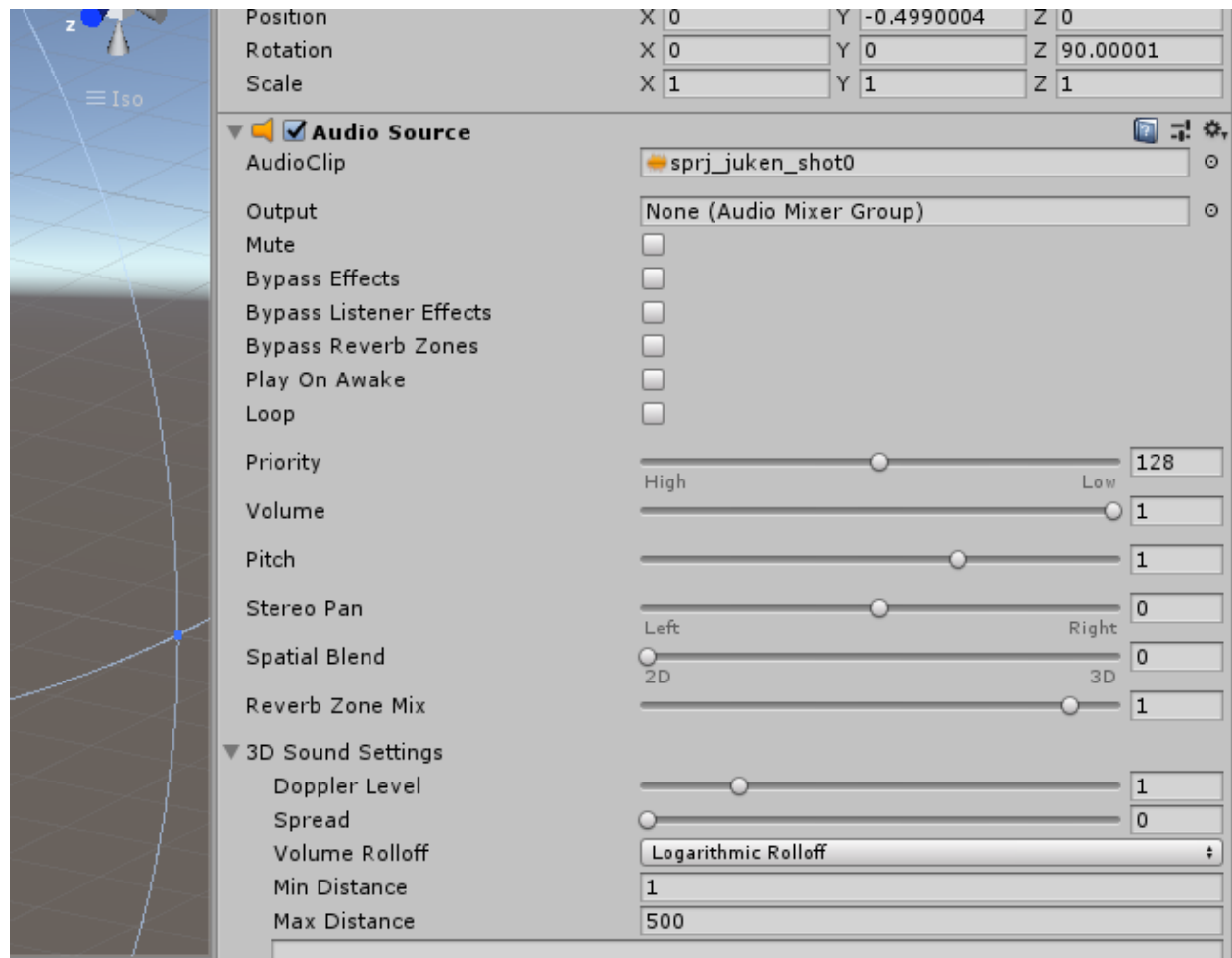
First, let's do the AudioSource by right click -> Audio -> Audio Source



And place it where you want your sound to come from. In my case, from the gun point. Take note of the name of the gameObject (ShotSFX in the image), as you'll need to reference it later in the .json file.

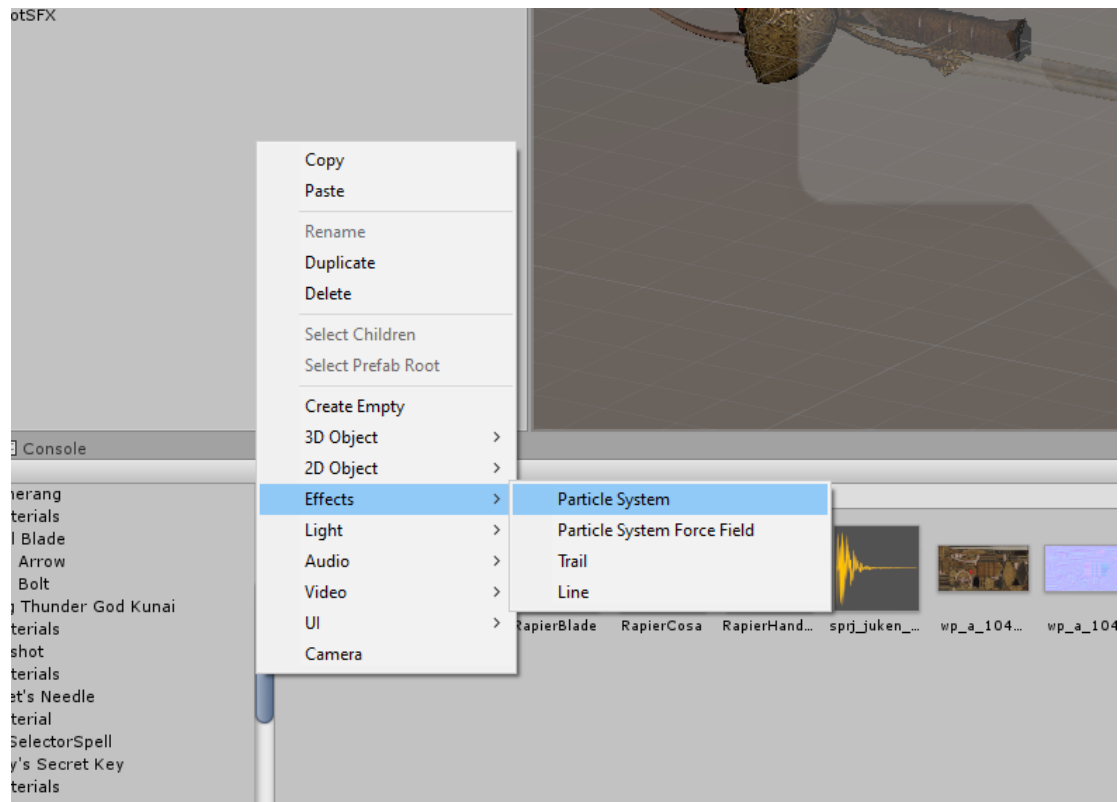


Select your audio and make sure you **uncheck the “Play on Awake”** in the options. The name of your audioClip doesn’t matter, you don’t need it.



You’re done with the sound.

Now the particle system. You create it by right click -> effects -> Particle System.



How to set up a Particle System is beyond this guide, you'll need to do it on your own. Just **make sure it is NOT set to Loop, and it doesn't play on awake**. Good luck! Make sure you remember the name as well.

Ok, we have finished with Unity. Now let's go to the .json file.

Now, you get into the item.json file, and you need to tell it you have a new module.

To make that, you can paste this code in modules, or you can copy the one from my bazooka or from some other gun made with this guide.

```
"$type": "ItemShooter.ItemModuleShooter, ItemShooter_V5_1",
  "projectileID": "Arrow",
  "bulletSpawnName": "SpawnPoint",
  "shootWithAltUse" : false,
  "projectileSpeed": 20,
  "timeToDespawn": 0,
  "shotDelay": 0.05,
```

```
"delayBetweenShots": 1,  
"multipleShotsWithoutReleasingTrigger": false,  
"shootOnRelease": false,  
  
"shootSFX" : "None",  
"triggerPressSFX" : "None",  
"shootVFX" : "None",  
"triggerPressVFX" : "None",  
"magID" : "None"
```

You probably want to change some of the settings here, so here's what each one does:

-ProjectileID is the ID of your bullet. By default it shoots vanilla arrows.

-bulletSpawnName is the name of the empty gameObject you created as the spawn point for the bullets (SpawnPoint in my case). By default is the ParryPoint of your weapon (that might cause issues).

-shootWithAltUse: lets you shoot using the spell selector button instead of trigger. In theory you can add the module twice (ItemShooter_V5_1B), set each to a different button and you can have a gun that shoots two kinds of bullets (you'll need two different versions of ItemShooter for this to work).

-projectileSpeed is how fast you want your bullet to move in meters / second. 40 m/s is like the crossbow. If it is too fast, it might move through enemies without detecting them.

-timeToDespawn is how much time the bullet stays ingame before despawning. You can set it to 0 and the bullet won't despawn, but you might get laggy if you shoot a lot. Might be useful in some situations, though.

-shotDelay: if you want a small delay between pressing the trigger and the bullet actually firing, change this setting.

-delayBetweenShots: fire rate

-multipleShotsWithoutReleasingTrigger: true for automatic gun, just hold trigger and it will keep shooting. Make sure your delayBetweenShots is greater than 0 or it won't work.

-shootOnRelease: set this to true if you want to shoot when you release the trigger instead of when you press it. The triggerPressed SFX will still play when you press.

-shotSFX is the name of the gameObject that holds the AudioSource you want to play when the shooting happens. **IT'S NOT THE NAME OF YOUR AUDIO CLIP.** If you don't want an audio, put "None" or delete the line.

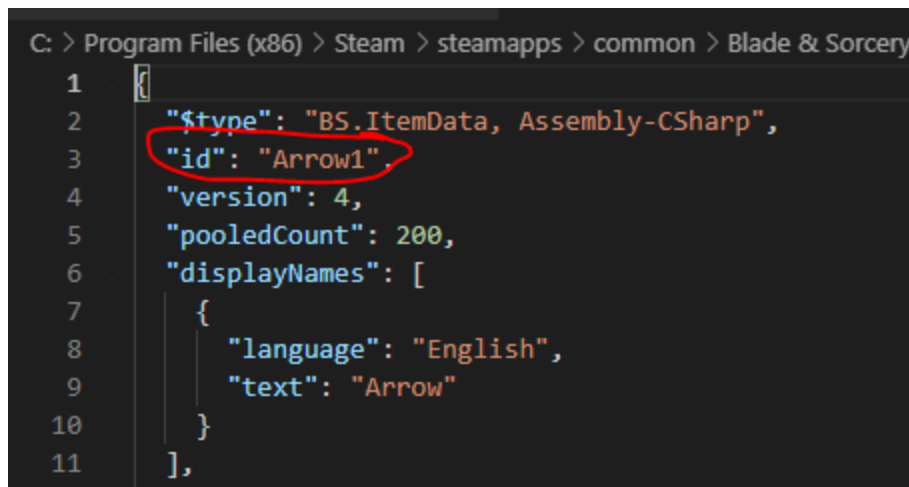
-triggerPressedSFX: the same but it will play a sound when the trigger is pressed instead of when the bullet fires. Useful if you have a delay between pressing and shooting, or if you shoot on release.

-shootVFX is the name of the gameObject that holds the particle system you want to play when the bullet fires. If you don't want a particle system, put "None" or delete the line.

-triggerPressedVFX: the same but when you press the button instead of when the bullet fires. If you don't want any, leave it as "None".

-magID: If you add a holderObject and add a mag as the held item(follow Alesha guide on how to do sheathes for that) the gun will only fire if the mag is in place. Make sure to add the itemID of the mag here. If you don't add any holderObject, then it will behave as normal, don't worry.

And you're done! You have a gun that shoots whatever item you told it to when pressing trigger. To check what itemID has an item, just go to StreamingAssets -> Default -> Items, and click on any of the .json files. The itemID appears on the top. For example, for the vanilla arrow is "Arrow1":



The screenshot shows a code editor window with the path "C: > Program Files (x86) > Steam > steamapps > common > Blade & Sorcery". The JSON content is as follows:

```
1  {
2    "$type": "BS.ItemData, Assembly-CSharp",
3    "id": "Arrow1",
4    "version": 4,
5    "pooledCount": 200,
6    "displayNames": [
7      {
8        "language": "English",
9        "text": "Arrow"
10     }
11  ],
```

The "id": "Arrow1" line is circled in red.

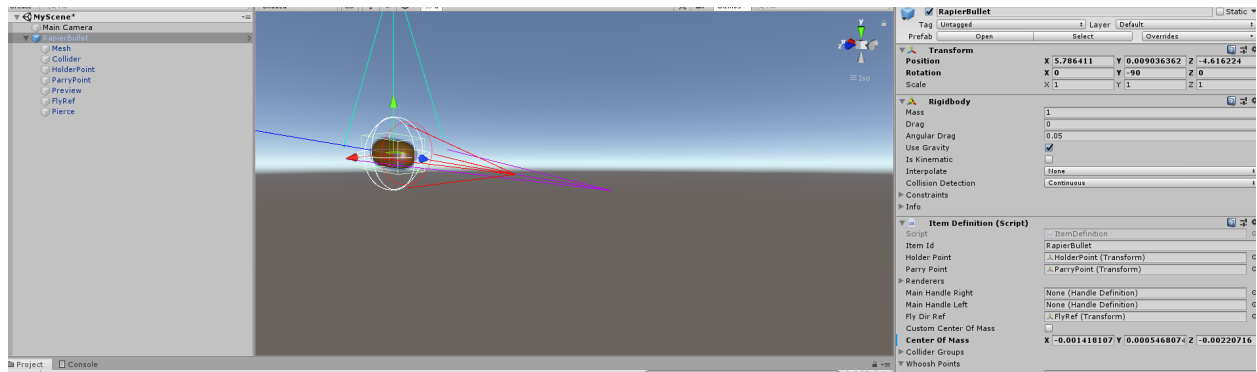
You can also spawn modded weapons, go wild.

You can add a second ItemShooter module:

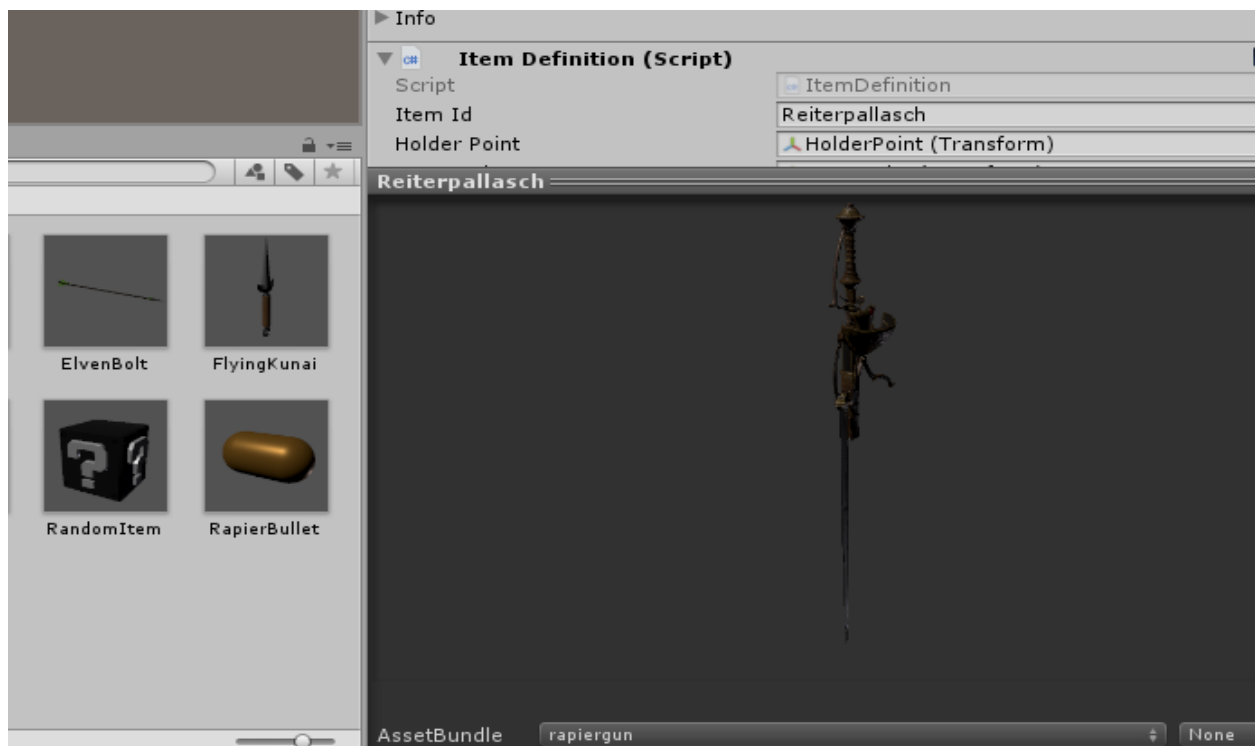
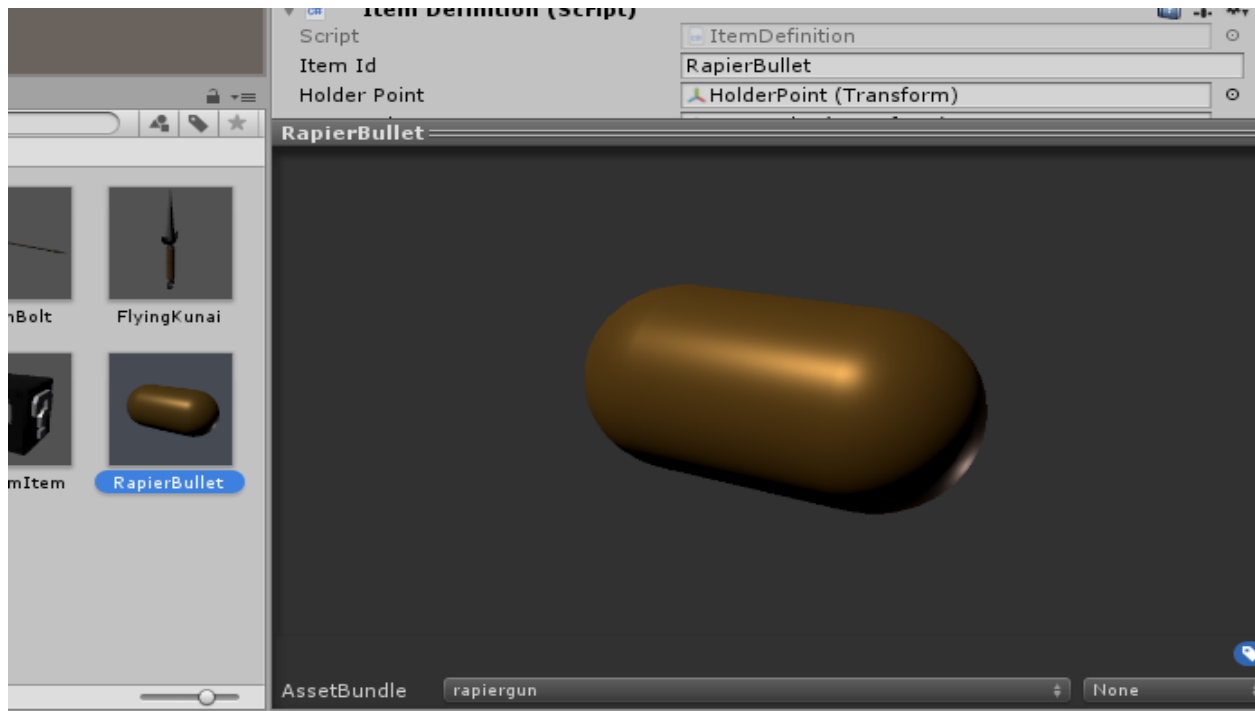
```
"$type": "ItemShooter.ItemModuleShooter, ItemShooter_V5_1B",
```

If you want your weapon to shoot from two points or "shoot" empty mags when you shoot, or shoot one type of bullet with trigger and another with the spell wheel button.

You also probably want to spawn your own bullet. To do that, just create a new item like you usually do, with the item definition, the colliders, the damagers and all that stuff, and make sure you give it an itemID!



Then, you make the prefab as normal, and add both your gun and the bullet to the assetBundle:



In the mod folder, you put the manifest and a .json file for the gun and another for the bullet.

As always, make sure everything you've added to the prefab is referenced in the item .json file. The bullet doesn't need a handle, but if you remove it from the .prefab, make sure to remove it from the .json file as well! Also remove the ItemModuleAI to stop NPCs from freezing in place.

Also, if you set “purchasable” to false, it won’t show up in the book, so it doesn’t clutter everyone’s firearms category:

```
6      "displayNames": [],
7      "descriptions": [],
8      "author": "Ebediam",
9      "price": 0.0,
10     "purchasable": false,
11     "tier": 2,
12     "levelRequired": 0,
13     "slot": 3,
14     "isStackable": false,
15     "category": 2,
```

If you want a preview of my bullet .json file, here it is. But again, **MAKE SURE YOU REFERENCE EVERYTHING YOU HAVE, DON'T COPY IT BLINDLY**

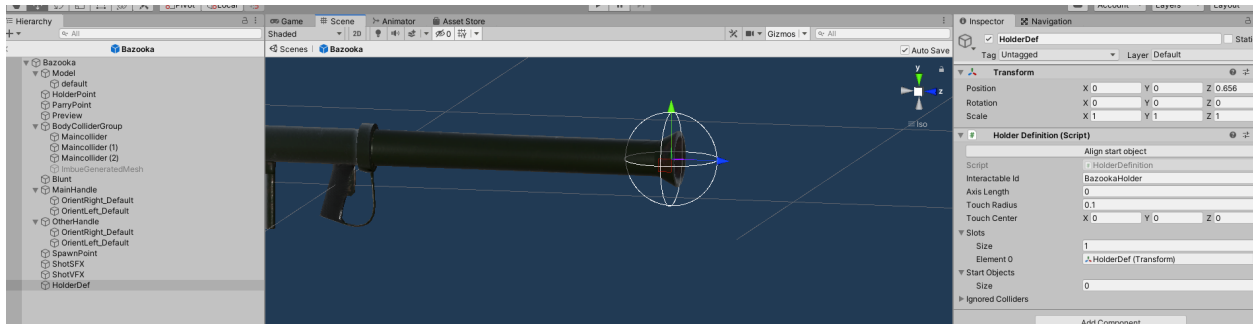
```
{
  "$type": "ThunderRoad.ItemPhysic, Assembly-CSharp",
  "id": "BazookaBullet",
  "version": 4,
  "prefabName": "@bazooka:BazookaBullet.prefab",
  "pooledCount": 0,
  "type": 1,
  "slot": "Medium",
  "mass": 0.1,
  "drag": 1.0,
  "angularDrag": 0.05,
  "manaRegenMultiplier": 1.0,
  "spellChargeSpeedPlayerMultiplier": 1.0,
  "spellChargeSpeedNPCMultiplier": 1.0,
  "collisionMaxOverride": 0,
  "collisionEnterOnly": false,
  "collisionNoMinVelocityCheck": false,
  "ignoredCollisionRagdollParts": [],
  "forceLayer": 0,
  "audioSnapPath": "@audio:SnapSword",
  "flyFromThrow": false,
  "flyRotationSpeed": 3.0,
  "flyThrowAngle": 0.0,
```

```
"telekinesisSafeDistance": 1.0,
"telekinesisSpinEnabled": true,
"telekinesisThrowRatio": 1.0,
"damageTransfer": 0,
"grippable": true,
"customSnaps": [],
"modules": [],
"colliderGroups": [
  {
    "transformName": "MainColliderGroup",
    "colliderGroupId": "BladeT3"
  }
],
"damagers": [
  {
    "transformName": "Blunt",
    "damagerID": "Mace1H"
  }
],
"Interactables": [],
"effectHinges": [],
"whooshes": [],
"localizationId": "EbediamBazooka",
"displayName": "Bazooka",
"description": "A bazooka. You know what to do.",
"author": "Ebediam",
"price": 0.0,
"purchasable": false,
"tier": 2,
"levelRequired": 0,
"isStackable": false,
"categoryPath":
[
  "Firearms"
],
"iconEffectId": null
}
```

Then, just change the line in the gun .json file from the itemID of the arrow to the one of your bullet. Just make sure the bullet has a FlyRef that points forward. And that's it, have fun!

HOW TO DO MAGS

If you want a mag, you need to add a HolderDefinition to your weapon, like this:



Make sure you give it a custom InteractableID.

You need a a Interactable.json file for your weapon, just copy the one from the Quiver (you can find it in the default -> interactables), and just change the ID to the one you put in unity and the slot type to the one your mag is going to be in:

```
{
  "$type": "ThunderRoad.InteractableHolder, Assembly-CSharp",
  "id": "BazookaHolder",
  "version": 3,
  "tagFilter": 1,
  "slots": [
    {
      "Firearms": 1
    }
  ],
  "locked": false,
  "warnIfNotAllowed": true,
  "warnIfInUse": false,
  "warnIfLocked": false,
  "grabFromHandle": false,
  "allowTeleGrab": true,
  "hideFromFpv": false,
  "grabTeleport": 2,
  "disableObjectProximityHighlighter": false,
  "delegateToParentHolder": true,
  "audioContainerPath": "@audio:SnapArrow",
  "disableTouch": false,
  "highlighterView": 0,
  "highlighterViewHandFreeOnly": false,
  "highlighterPath": "Handle",
  "highlighterShowAxisLine": false,
  "highlighterShowAxisLineOnProximity": false,
  "highlightDefaultTitle": "Arrow",
  "highlightDefaultDesignation": ""
}
```

Now go to your item_gun.json file and add the quiver module (you can find it in the Item_quiver.json file) to it, making sure you put the magID both in the quiver module and in the itemShooter module:

```
51     "$type": "ItemShooter.ItemModuleShooter, ItemShooter_V5_1B",
52     "projectileID": "BazookaBullet",
53     "bulletSpawnName": "SpawnPoint",
54     "shootWithAltUse" : true,
55     "projectileSpeed": 50,
56     "timeToDespawn": 5,
57     "shotDelay": 0.05,
58     "delayBetweenShots": 0.5,
59     "multipleShotsWithoutReleasingTrigger": true,
60     "shootOnRelease": false,
61
62     "shootSFX" : "ShotSFX",
63     "triggerPressSFX" : "None",
64     "shootVFX" : "ShotVFX",
65     "triggerPressVFX" : "None",
66     "magID" : "BazookaBullet"
67 },
68 {
69     "$type": "ThunderRoad.ItemModuleQuiver, Assembly-CSharp",
70     "quiverProjectileID": "BazookaBullet",
71     "quiverRespawnDelay": 0
72 }
```

And that's it! If you don't have the mag equipped, it wont shoot, and if it does, it will. Nuff said.

Troubleshooting

My gun makes a shot sound the moment it spawns!

You need to go to the AudioSource and disable "Play On Awake".

My gun makes the firing animation over and over again!

You need to go to your particle system and disable "Loop"

My bullets doesn't fly straight!

Add a flyRef to your bullet and set it's blue arrow pointing in the direction you want your bullet to face when shot.

Infinite loading screen :(

Make sure you have both the bullet and the gun in the assetBundle, and make sure you have the correct path for both in each .json files.

My gun doesn't spawn at all

Every parameter in the module in the json file should end with a comma (,), except the last one. Make sure you have all the commas needed.

My gun doesn't do automatic fire!

Make sure you have "delayBetweenShots" set to something bigger than 0 and multipleShotsWithoutReleasingTrigger set to true.

Changelog

V1: Initial release. Press trigger to shoot.

V2: Added automatic fire and delay between trigger press and the shooting.

V2.1: Added... idk

V2.2: Added the option to shoot using the action button instead of the trigger.

V2.3: Added the option to add custom sounds and particles on trigger pressed (in addition to on the shooting event).

V3: Now you can attach a mag. If it is not there, you won't be able to shoot.

V3.1: Now it plays an animation if the item has one.

V3.2: Error fixes.

V3.3: Added some checks so not having a mag doesn't stop you from using the item.

V3.4: Error fixes.

V3.5: Removing the mag while shooting now stops the shooting.

V3.6: Added custom log errors during the initialization of the script so you know where is the issue

V3.7: Now you can add Particle Systems and Audio Sources to a child of the Game Object you specify in the .json file and it will work.

V3.8: Updated to U7 LWRP

V3.9: Improved compatibility with other scripts accessing ItemShooter

V4.0 and v4.1: complete rework of how the code is handled. Added the option to shoot on release instead of on press.

V5.0 and v5.1: Updated to U8, now you can place the spawnPoint inside the gun and it wont cause issues.