GDC
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SAN FRANCISCO, CA

Audio QA : Getting useful feedback on your audio work

Renaud Barne
Audio QA & Voice Director at Demute

Agenda

- Introduction
- Why are we talking about Audio QA ?
- Getting started
- How it has worked
- Takeaway points

Introduction

- Renaud Barne
- Audio QA
- Voice Director
- Past exp.: localization post-production & quality control
- Bachelor in Sound & Image
- Most of all: I ❤️ sound

Studio

demute·
innovative sound

A few games

SMITE
BATTLEGROUND OF THE GODS

ROGUE
COMPANY

PALADINS
CHAMPIONS OF THE REALM

DKO
DIVINE · KNOCKOUT

CENTURY
AGE OF ASHES

ARY
secret of seasons

WARHAMMER
SHOOTAS, BLOOD
&TEEF

PLEASE,
TOUCH
THE ARTWORK

THEM'S
FIGHTIN'
HERDS

OUTCAST

GANGS OF
SHERWOOD

JAGGED ALLIANCE 3

FLOTSAM

silhouette

STELLARIS

TIGER
BLADE

TRIBES
RIVALS

PANOPTIC

THE MAN
CAME
AROUND

DOMINIVERSE

ASFALIA
BOOK 1: ANGER

GOD of ROCK

OVERRIDE 2
SUPER MECH LEAGUE

PC
PAINTING VR

UNDEAD INC.

Replaceable

HUBRIS

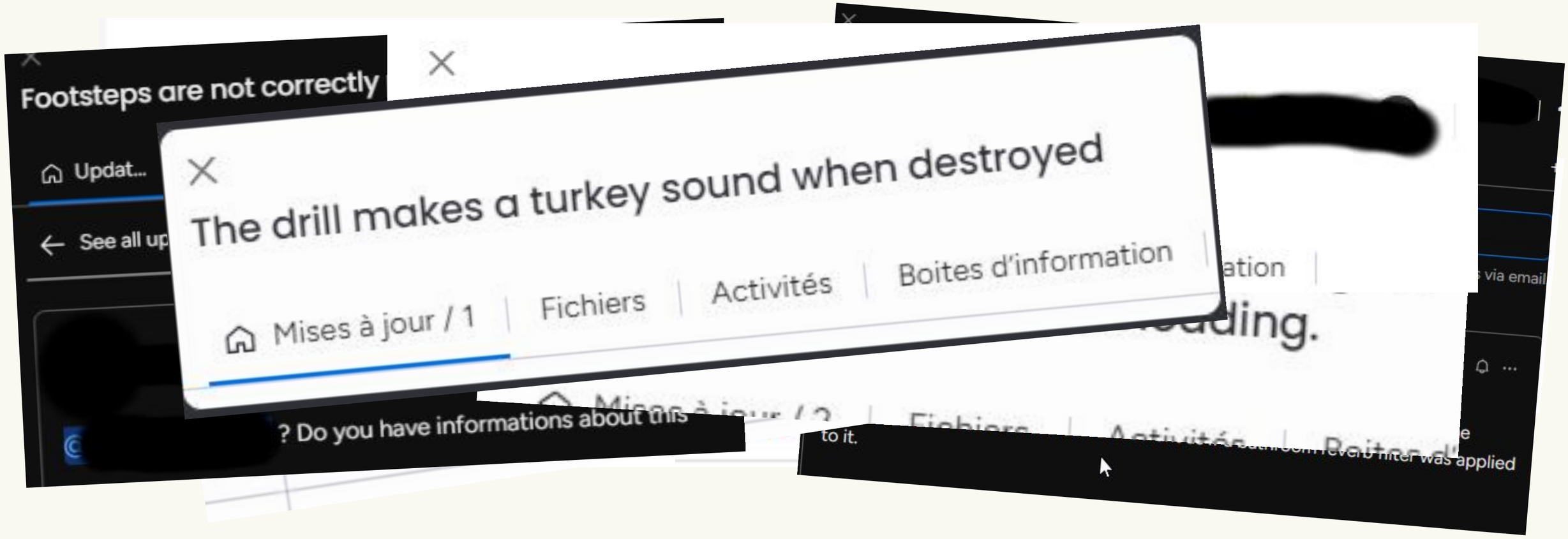
STAR
SHAMAN

VAIL

RISE
OF
HUMANITY

Why Audio QA?

Have you ever received a bug/feedback like these ?



Misunderstanding of Sound

- Incomprehension of what is really audio-related
- Underestimation of the importance of audio
- Sound also often overshadowed in QA itself

Verification · Lengthy process

- Original bug: muddy splash
- Actual ground material: dry land
- Bug V2: muddy footsteps
- Intended sound:

Verification · Lengthy process

[redacted] Demute

It plays a mud footstep because the floor material is tagged as "mud". I can put "earth/dirt" footstep when I receive "mud" material variable but it means that we won't have "mud" footsteps in the game anymore.

Another way to fix that is to replace the mud ground in [redacted] by the earth/dirt ground, but it is not on the sound side

there does not seem to be separation between this mud and other mud (near the rivers, lakes, [redacted].), if i understand correctly.

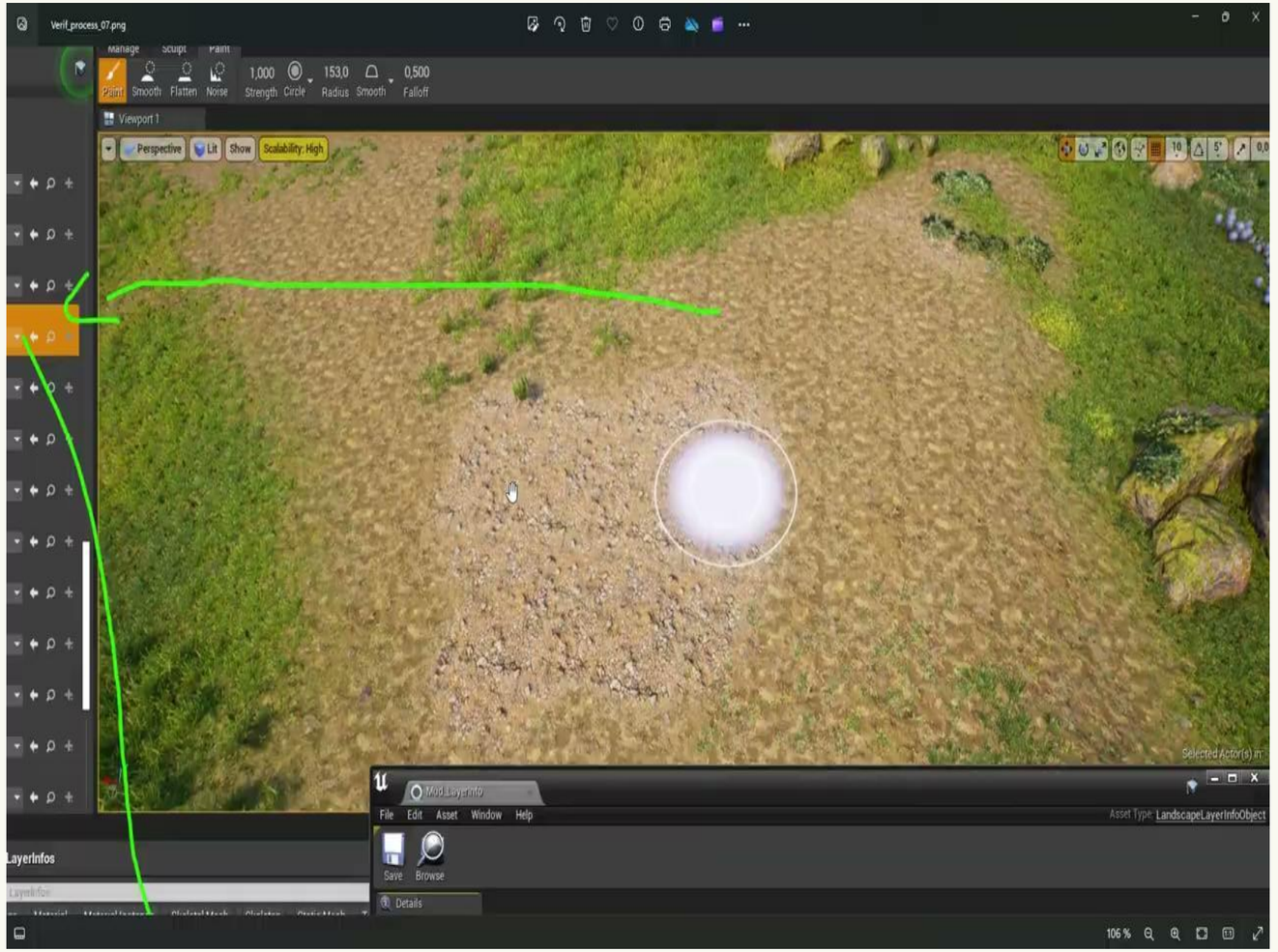
This might be more of an artist thing/fix/issue in the end. If they can separate the mud layers (create a new one for the mud found in the picture), then we can maybe create a new physical material and add like a semi-muddy footstep sound.

[redacted] Demute

the original bug was fixed. What you hear now is the mud footsteps, which is linked to the type of material used for the ground.

👍 1

Verification · Lengthy process

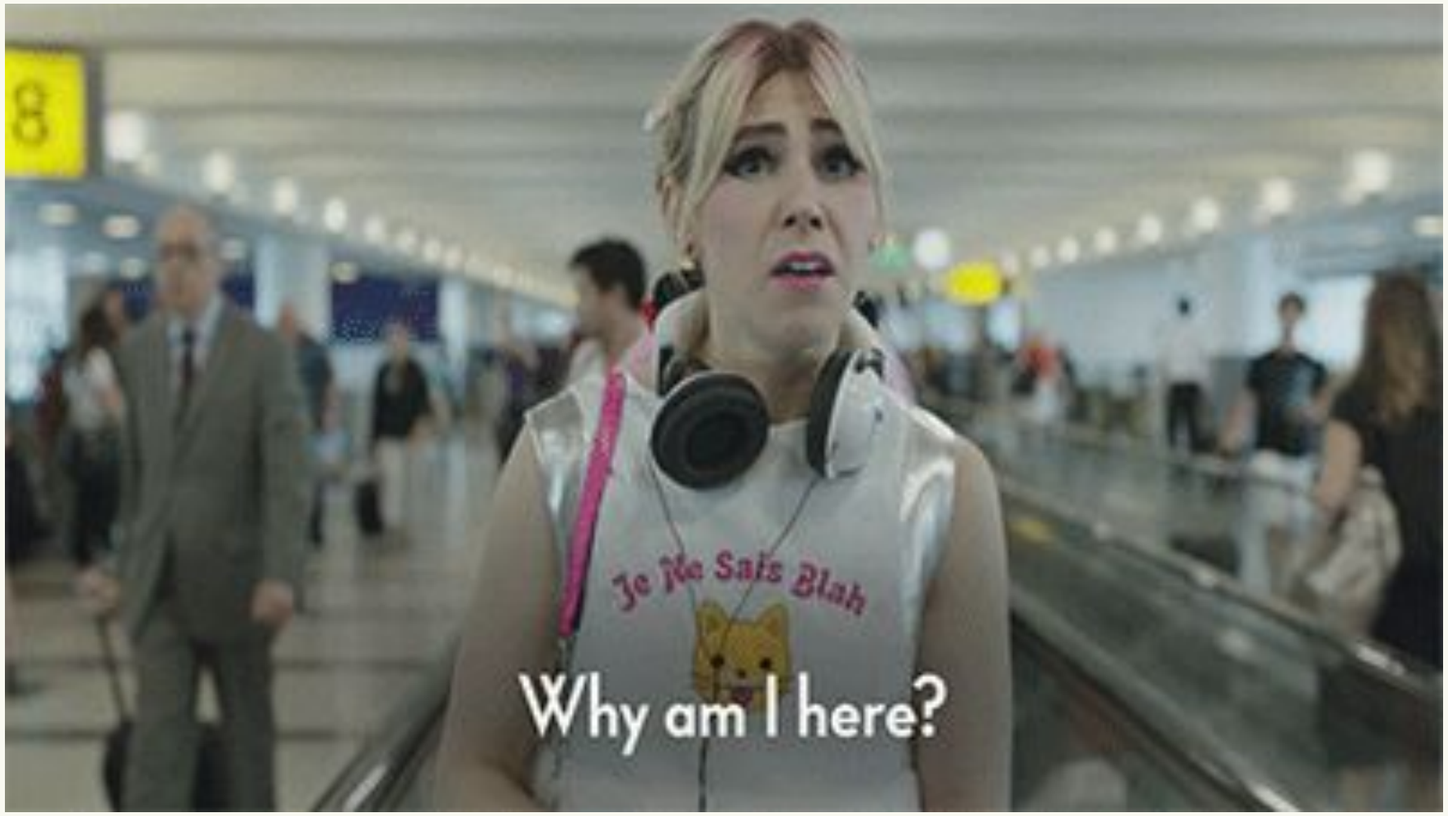


Audio QA · The solution?

Three considerations:

- It would be a relief for our team
- Fail early ➡️ succeed later
- It sparked interest in our clients

Audio QA · What even is it?



Audio Quality Assurance

Similar to Quality Assurance:

- Goal: ensure a level of **quality** and **playability**
- Via: chasing **bugs**
- How: identify the right **method**

Audio QA adds:

- *“Making sure your game sound as intended”* (Amanda Laven)
- With: **knowledge of sound** & use of various **audio tools**

Audio QA · Prerequisites

Knowledge

- Reverb
- Compression
- Mix
- What is audio-related

Audio tools

- Hear the intended sound
- How audio works
- Make QA more interesting

Audio QA · How-to

Variety of tools:

- Bug tracking tools

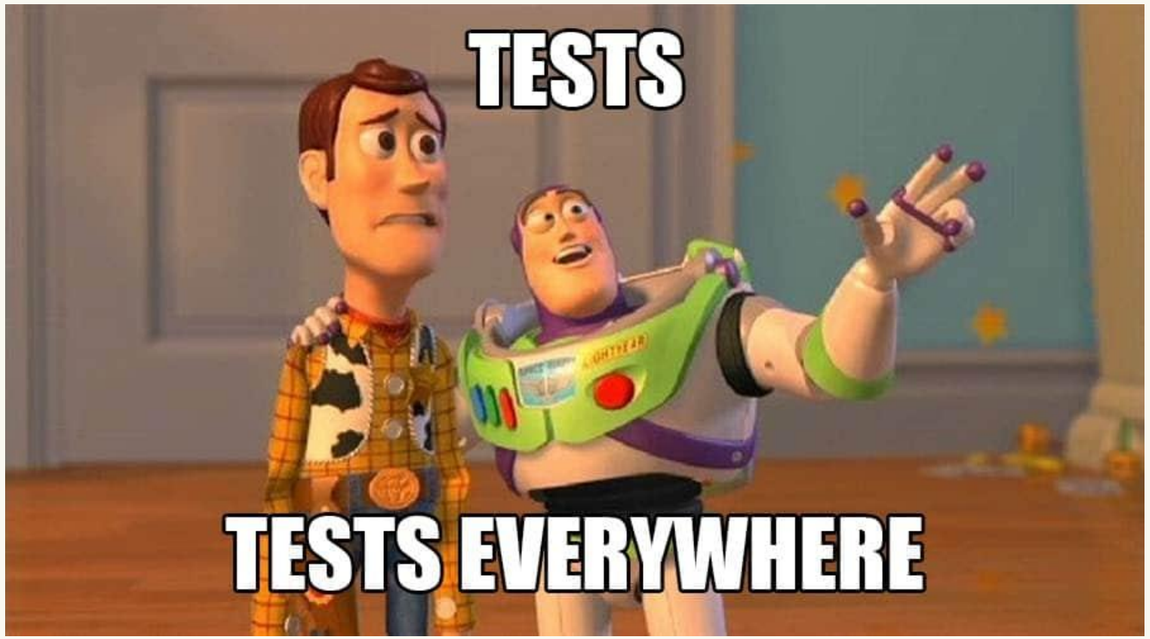
  Jira, Redmine, Bugzilla, Monday &+
- Screen recorder
- Engines, middleware

  UE, Unity, Wwise, FMOD &+

Documentation:

- Artistic direction
- Cheats/debug doc

Audio QA · Test Plans



- What to test
- Strategy
- Prerequisites
- Steps
- Expected results
- Actual results

Audio QA · Some tests

- Smoke · *Quick run on essential elements*
- Functionality · *Verifying the game's functionalities*
- Manual · *Feature test*
- Confirmation · *Verifying a bug fix*
- Regression · *Checking validation after added content*
- & many more

Audio QA · How it has worked

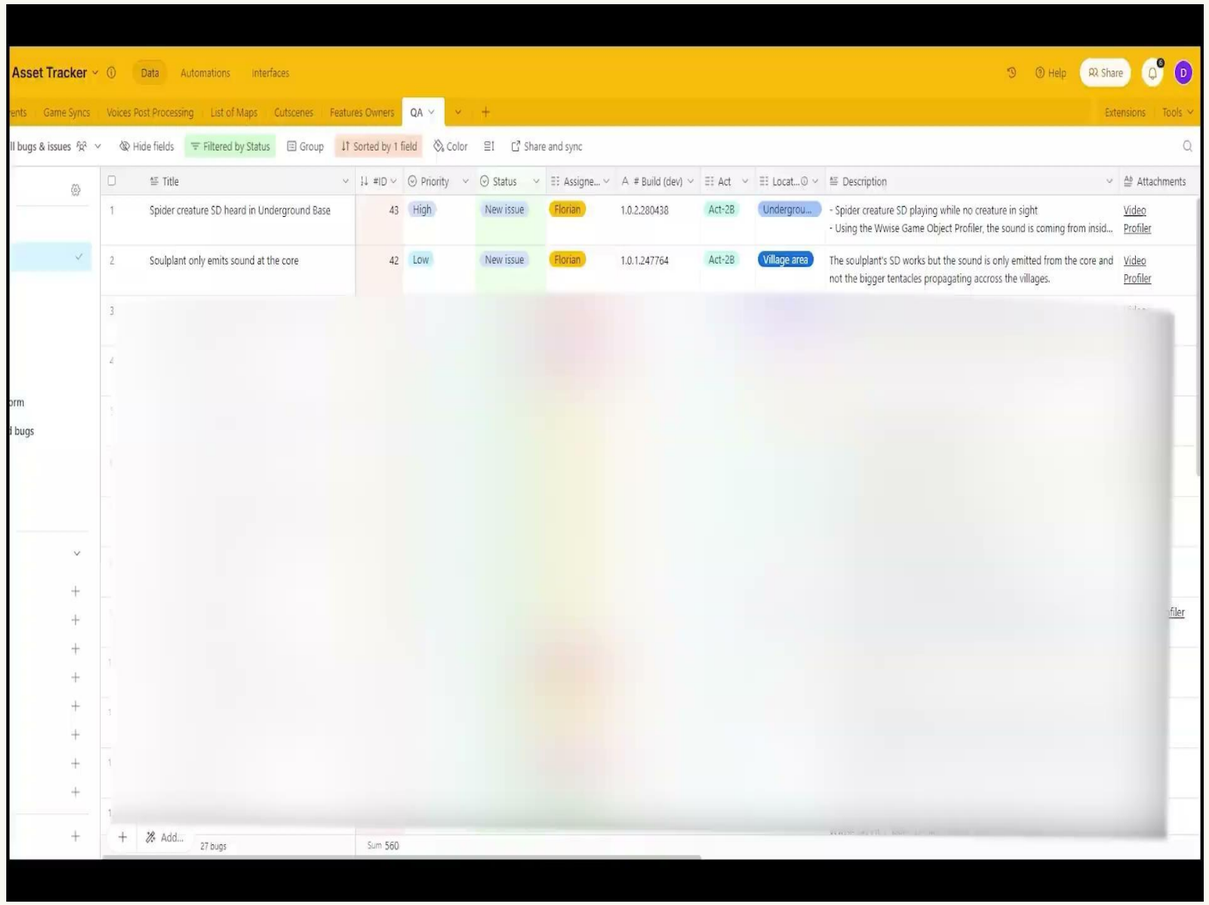
- Implemented across different departments:
  - Sound design
  - Music
  - Voices
- Two focus:
  - Flexibility
  - Upskilling

Audio QA · Writing bugs

- Define the level of audio knowledge expected
- Provide what people need to accurately fix bugs

Audio QA · Sound Design

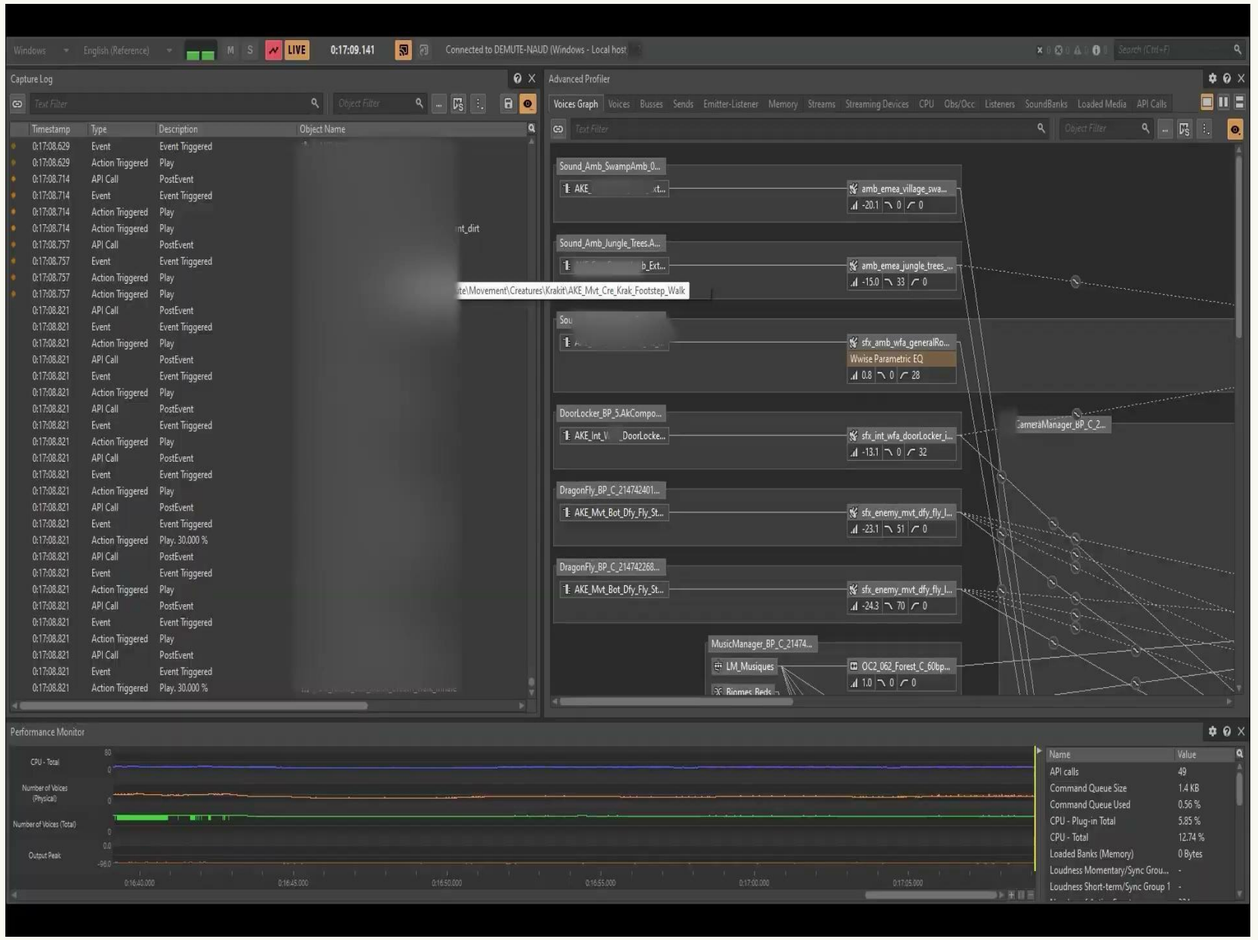
- Bespoke bug report tool
- Pair assets/events with bugs
- Profiler sessions/videos/logs



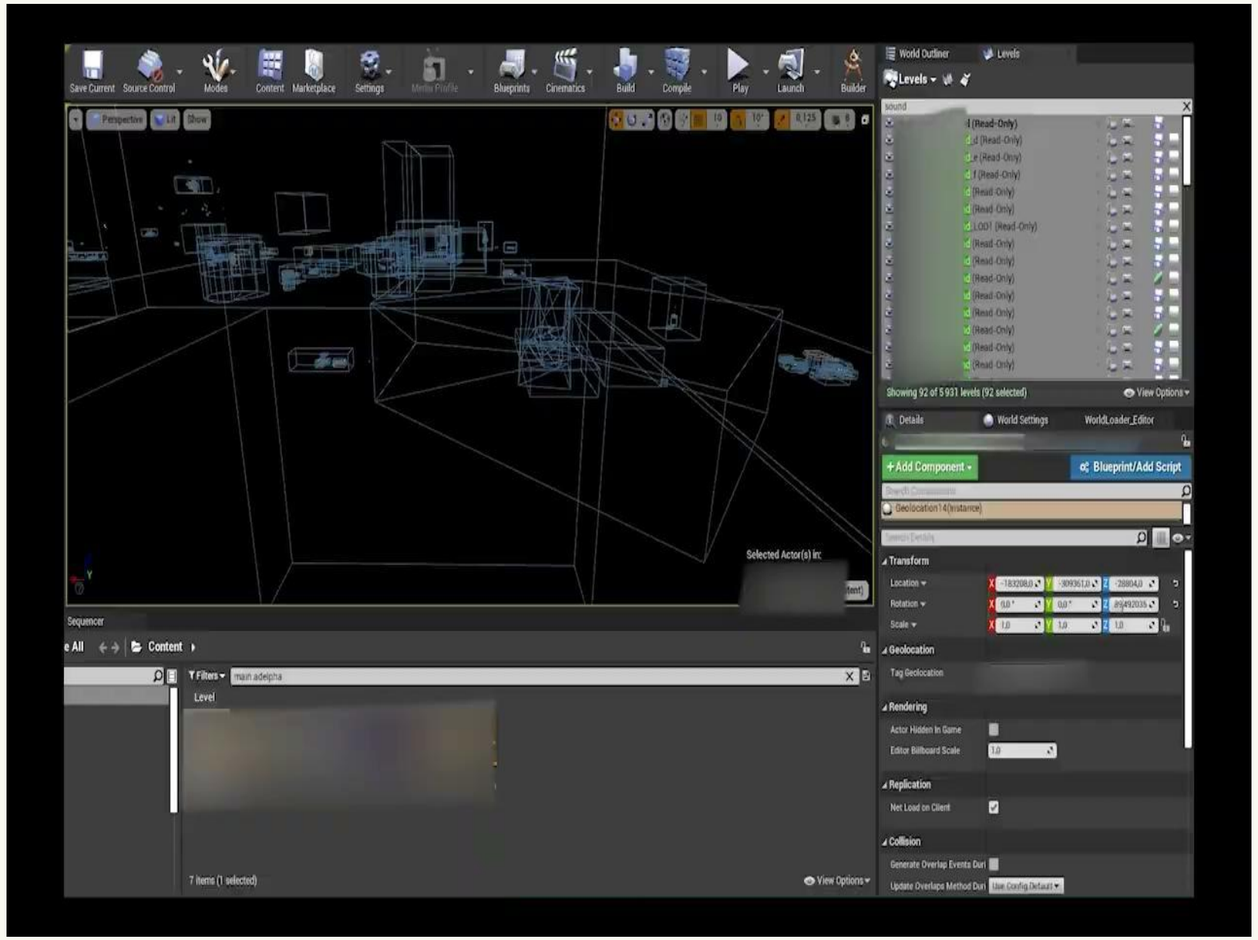
Audio QA · Profiling

Example with Wwise:

- Profiler
- Game object profiler



Audio QA · Engines

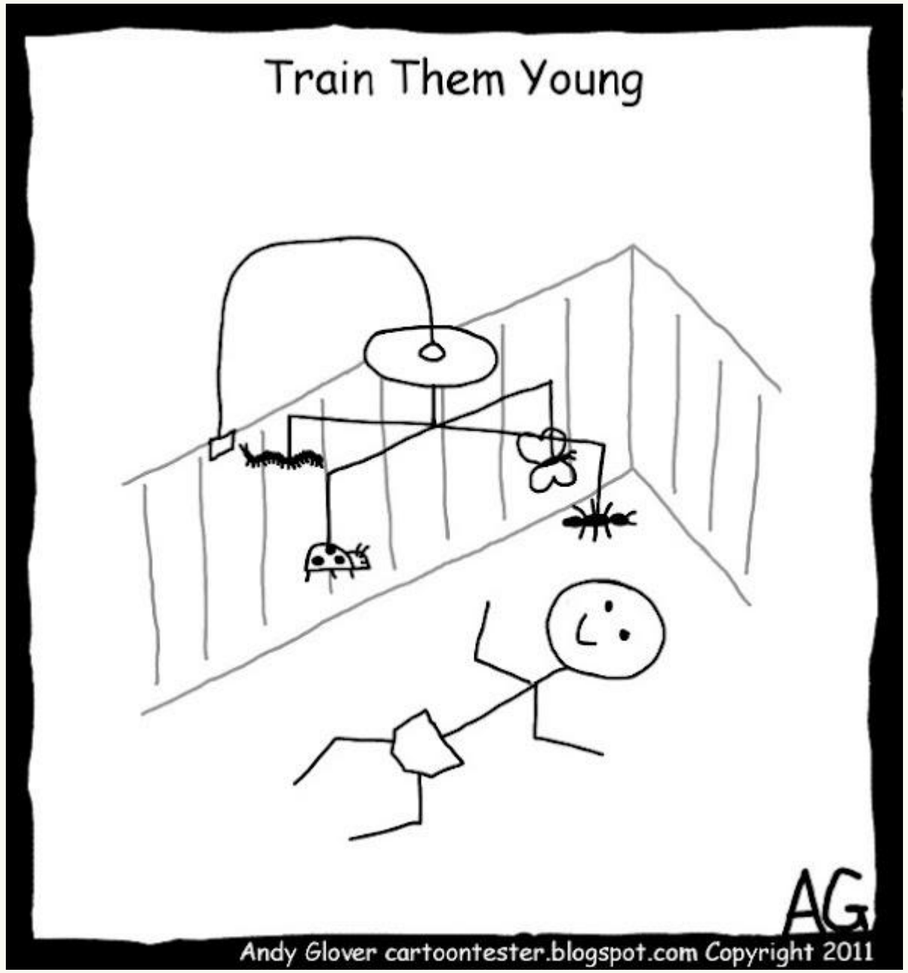


Audio QA · Small bug fixer

Audio QA can do more than investigate:

- Check collision parameters in-engine and fix them
- Check the event actions and fix them
- Relink broken events

Audio QA 🤝 SD



- Get creative finding and developing tools and methods with your Audio Programmers & Sound Designers
- Lots of tools are easily teachable
- It empowers QA

Audio QA 🤝 Music

- Understand how the system is implemented
- Quickly identify tracks playing in build
- Check for transition issues

Keypoints:

- Faster work than what it would take with manual testing
- More iterations in shorter amount of time

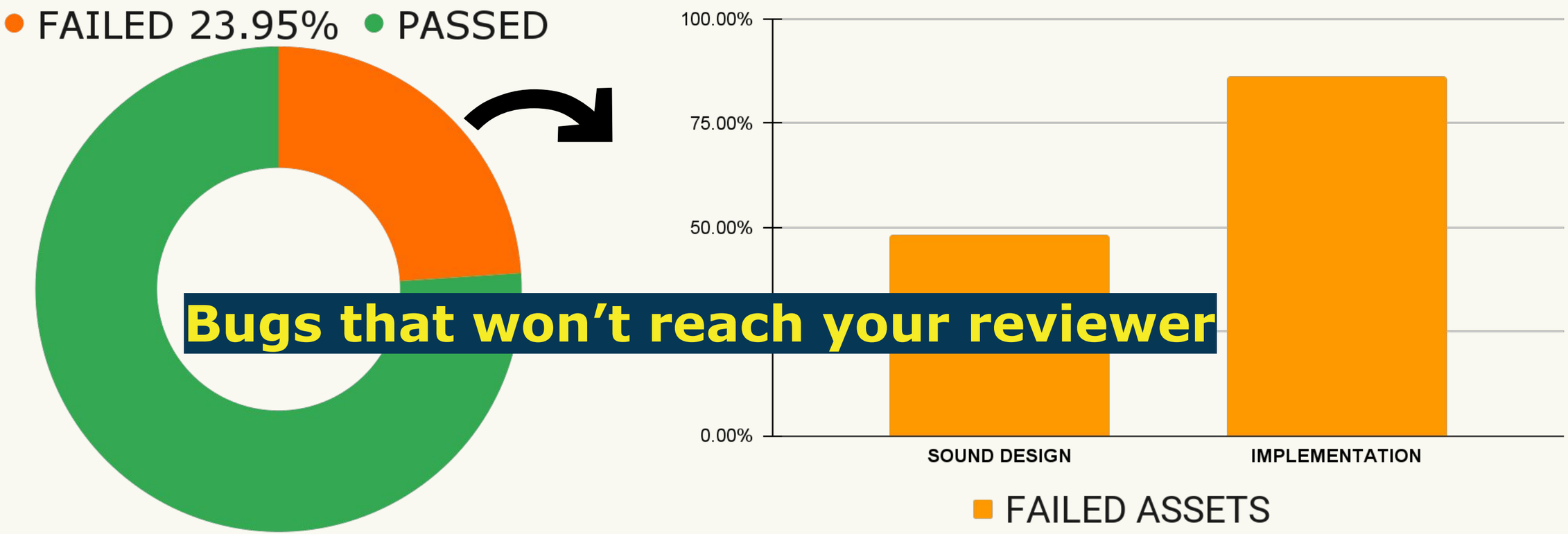
Audio QA 🤝 Voice Direction

- Playtest to listen to voice lines in context
- Identify issues of acting
- Effect chains
- Volume issues

<u>Keypoints</u>:

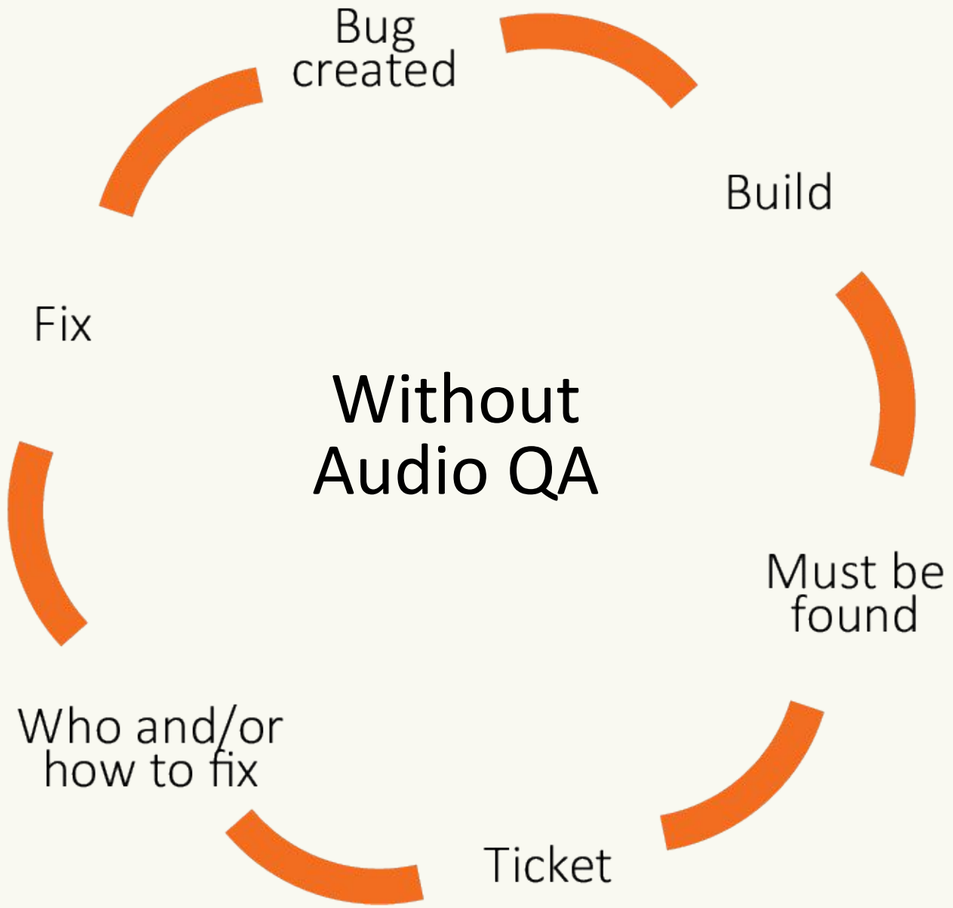
- Audio QA doesn’t have to be only technical
- Lack of consistency is a bug

Does Audio QA work?



Bugs that won’t reach your reviewer

Path of an audio bug



Audio QA · Many benefits

- *It would be a relief for our team*
- *Fail early ➡️ succeed later*
- *It sparked interest in our clients*

\+ \+ \+

- Developers don’t know how to play their own game
- Bugs you detect early won’t reach the reviewer
- Overall it makes builds more stable

Has it worked all the time?

- More effective if milestone or feature-based
- Ad Hoc or Exploratory testing is difficult to integrate
- Make audio QA an essential part of your team for it to work

Takeaway points

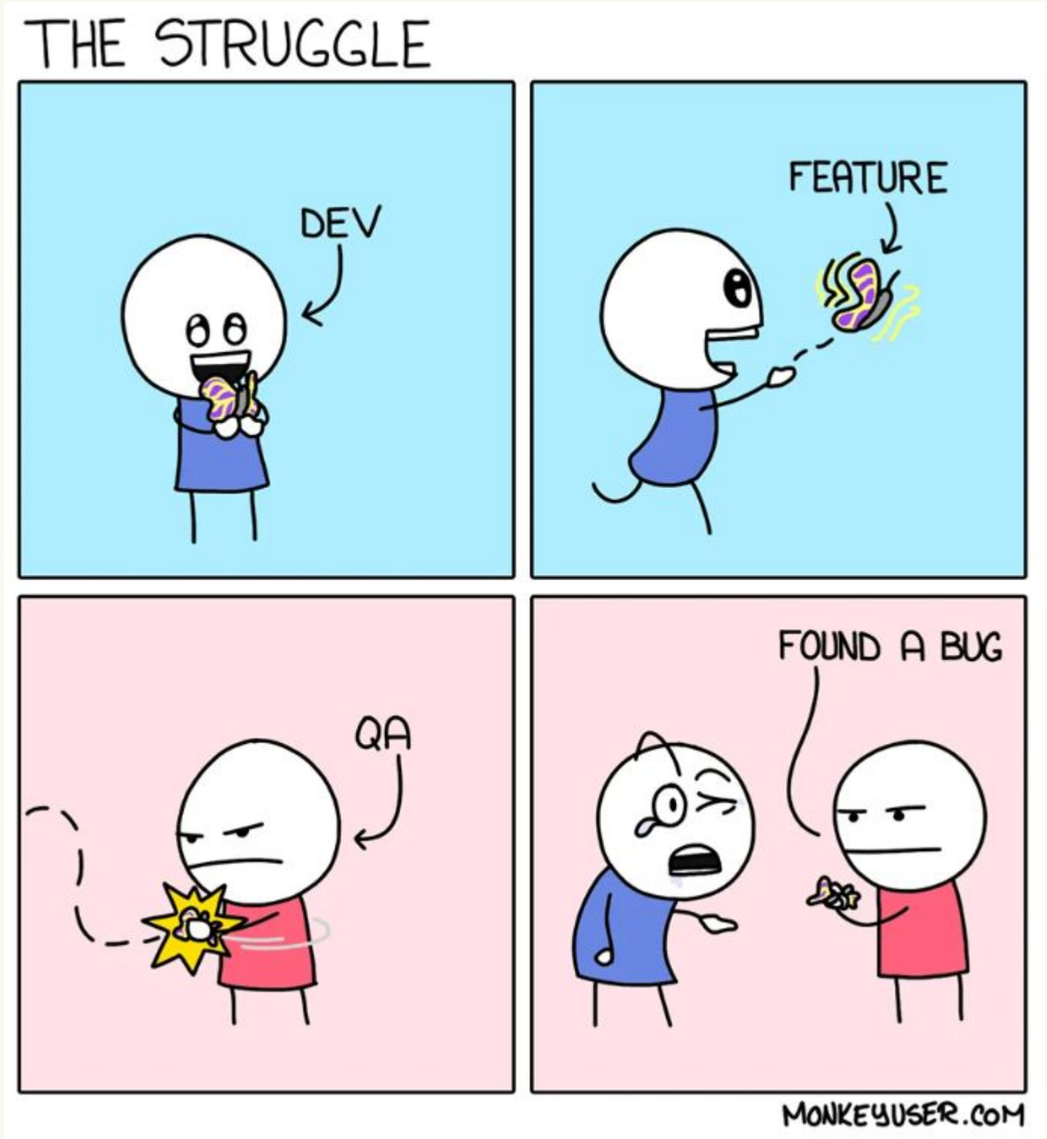
- Bugs are *sort of* inevitable

  ↳ Bugs **will happen**, so **tackle them** ?

- QA is disconsidered ? ➡️ Let’s make it more interesting
- Audio QA is just one type of QA
- Don’t leave artistic questions out of audio QA
- Audio QA can bridge your teams
- Build methods between audio QA & developers

DEV VS QA

DEVELOPER: THERE IS NO I IN TEAM
TESTER: WE CANNOT SPELL BUGS WITHOUT U
imgflip.com


THE STRUGGLE
DEV
FEATURE
QA
FOUND A BUG
MONKEYUSER.COM

What devs truly look like

Questions?

Thank you & Contact

- Game Developers Conference
- Scott Selfon
- My team at Demute ❤️

- **renaud@demute.studio**
- Or join me on **Discord:**

  - username: naudzor

  - Demute Discord

Some resources

- GDC Vault: Sounds as Intended: Quality Assurance in Game Audio
- GDC Vault: Horizon Zero Dawn: A QA Open World Case Study
- Spotify: How Real Life Works - Video Games QA Tester
- Ministry of Testing: The One Page Test Plan
- Wwise Courses by Audiokinetic (especially Wwise 251)
- Learn Profiler Filtering by Audiokinetic (& more on Youtube)
- Unreal Engine 5 by Unreal Sensei
- 7 different types of game testing by DZone