# Better Live Game Releases with Persona Based Testing

Nicholas Joebgen
Senior Quality Assurance – Pocket Gems

# About Me

- Nine years of experience working on game and general tech development teams

- Five years spent in Quality Assurance
  - Three years on the QA Team on War Dragons, working with most of the different development pods at this point

- Worked on titles ranging from VR first person shooters to mobile tank arcade games

# Agenda

- Why we needed a new solution for release testing
- What criteria we set for a new format of testing
- How we created and set up persona testing
- Installing the new system
- The results
- Next steps

# About War Dragons

- Launched six years ago, still one of the top 4K games to this day
    - Remains a fully supported and staffed project at Pocket Gems
    - New game features, revamps to legacy features, and new content release with monthly updates
    - Weekly live operation events are run that engage players with leaderboards, prizes, and competition to see who can be the best

- Since launch, the super game has evolved to become entirely different from day one
    - Systems interact with each other differently, there are more intricacies, many different user flows that go from menu to menu without ever having to go back to the world map
    - Even the mini-game, an on-rails dragons destroying towers with fire and spells, now has multiple complex strategies

- Tens of thousands of loyal players continue to log in daily, many that have done so for most of the game's existence
    - These players, too, have grown in how they interact with the game

# Our Pre Release/Release Testing

● Our QA Team utilized a strategy to test our Pre Release (Pre RC) and Release Candidate (RC) Builds for client releases, one that was built back when War Dragons went world wide

● We would run a Feature Control Test (FCT) Pass, every feature would have it's test cases run start to finish individually.
  ● Many different testers would be utilized to cover all of these features, with none of them ever interacting with each other in game

● As the years went on, we'd add more into the FCT as we added more features into the game.

● It ballooned to a five day pass, with a total of about 50 testers worth of work days to cover it

● For years after going world wide, this system seemed to work well.
  ● Releases would be relatively smooth
  ● Players wouldn't report too many issues, with client fires being a rarity
  ● However…

# The Crisis We Faced

- In 2019, our client update releases were no longer consistently stable
  - Players would find show stopping bugs, requiring us to fix and re-release, which are costly

- We'd immediately ask why we didn't find it in pre-release or release candidate testing
  - Reviews of test case results from the FCT would always show the same thing, marked as pass with no issues found

- If test cases were coming back clean, then what could be causing these problems and why were we missing this in our FCT Pass on the PreRC/RC build?

Our game had evolved over time

Our game had evolved over time

Our players had evolved over time

Our game had evolved over time

Our players had evolved over time

Our release testing… was the exact same as the day we went world wide

# The Problem Identified

- Everything about our game had changed, yet we were still testing it like it was the world wide build that went live in 2015

- Our game now had many new features and players with goals, strategies, and user flows that they shared amongst each other

- Our testing was only scratching the surface, but never testing any of these user flows

- It was tiring out our testers and causing them to lose focus and only think about the test cases in front of them

Okay.

Problem Identified.

Now what?

# Persona Testing

- Our players would prove to be the answer we were looking for
  - We've seen them falling into different types when playing the game (social, collection oriented, power driven, leadership, incomers)

- Could we use our players, by emulating them, to test our Pre Release and Release builds?

- Instead of deep diving in test cases, let's test the flows and different ways these archetypes typically interact with War Dragons

# Persona Testing

- This type of testing, if done right, creates a snapshot of what play will look like on the new binary

- In fact, it should look like we've invited players into our dev server

# How Persona Testing Works

- Our testers emulate the different archetypes, testing the game by playing it like they would

- Testing is broken into 45 minute sessions, followed by backgrounding or hard quitting the game, and taking a small break

- First half of the day on one OS, second half of the day on the other OS, the entire time staying on one account and one persona

- Feature test cases are not used, instead "user scenarios" are performed with goals that simulate test cases

- User scenarios are comprised of goals that players from that persona are trying to achieve when playing the game, we ask our testers to string features together and achieve these goals. Running into a bug when trying to achieve that goal triggers as fail.

- Two types of user scenarios, normal (everyday gameplay) and upgrade (testing when an update deploys)

- Testers use premade accounts meant to simulate each persona, multiple accounts exist for each persona so we can have different amounts of each type

- As testers progress through the PreRC and RC test passes, they'll use a tracker to show what features they interact with

# PreRC Pass And RC Pass

- The Pre RC Pass runs for three days and uses ten testers each day
  - More socializers involved, but at least one of every persona gets involved
  - Run at a time when our build has all features in, but could still have bug fixes or other hardening code coming in
  - Focuses on typical gameplay sessions, using the normal user scenarios

- The RC Pass runs for one day and uses seven testers
  - We run this when we've locked down our code, testing the build we view as our release candidate (what we plan to submit to Apple for approval and release to our players)
  - Snapshots the first hour of players experiences after they update, using the upgrade user scenarios

# Building The Personas For Testing

- We need to document the archetypes of players

- A survey was sent out to random players identified by our marketing team, asking very specific questions

- These questions would play a very important role in establishing the different archetypes
  - We used the answers to group together users into their different archetypes
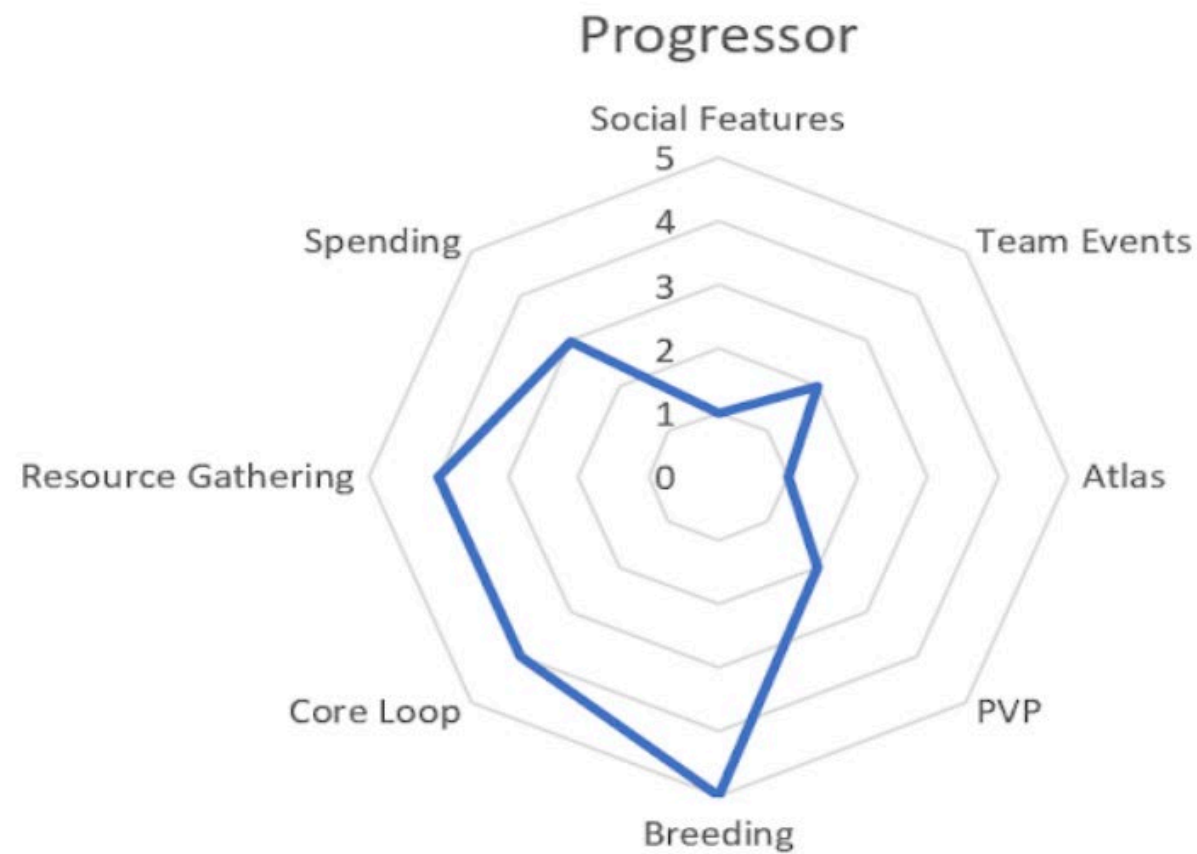
# Building The Personas For Testing

- The questions we asked focused around:

  - How long typical game sessions last
    - Important because it'll structure how long each persona's game session should last for

  - Why users play War Dragons
    - This lets us understand at a high level what their goals/motivations are

  - What parts of the game they engage with/ignore the most
    - We use this to further hone in on what type of player they are, and what features they may focus on

    - This will help use construct user flows to test

  - What pain points exist for them in the game
    - This is less used for testing, but important to include so we know that we don't break those areas any further

# The Personas: Harmonizer



Harmonizer
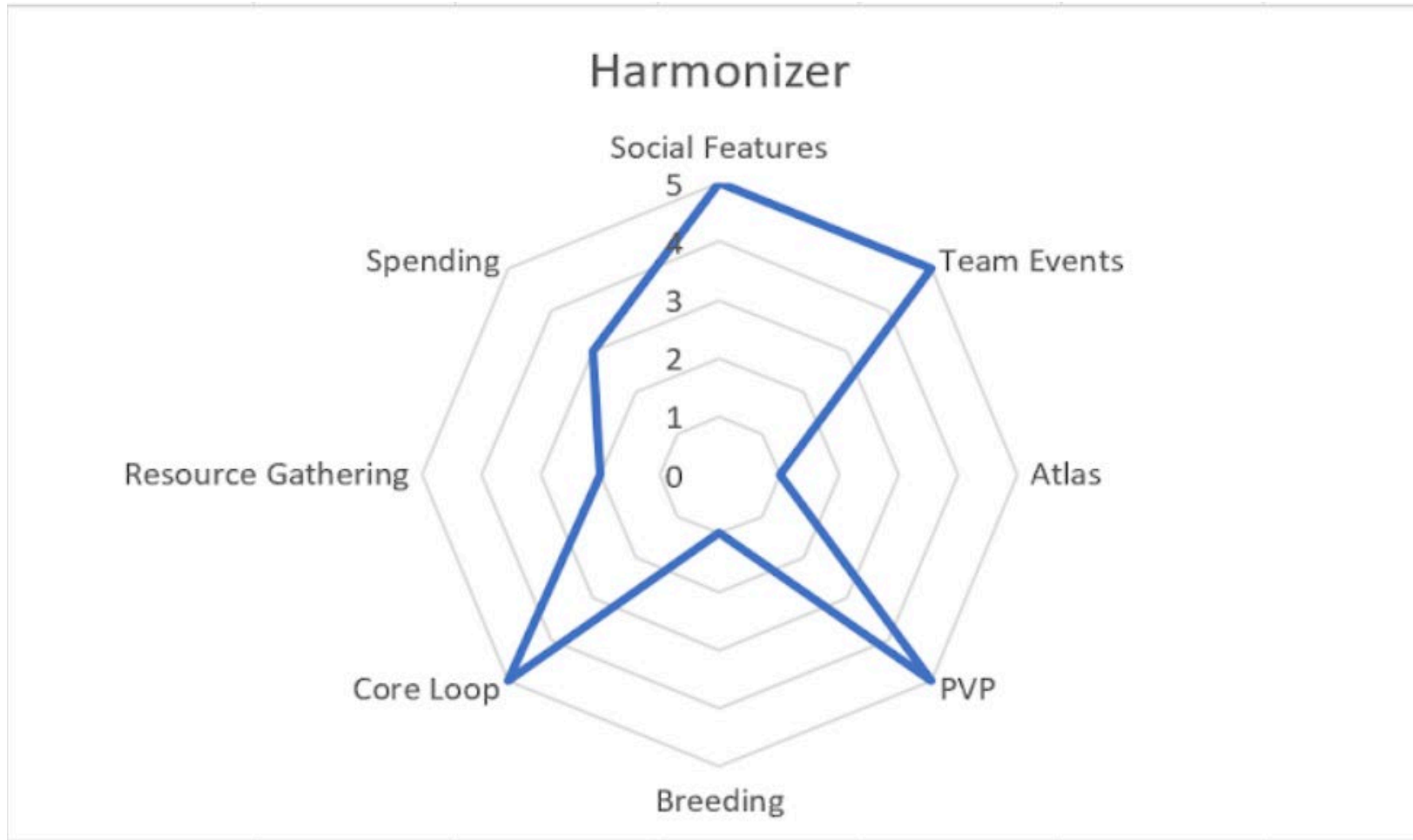
- The social butterfly

- Looks to primarily do things with friends

- Puts in the work to keep social ties strong

# The Personas: Progressor



Progressor

Social Features — 5, 4, 3, 2, 1, 0
Spending
Team Events
Resource Gathering
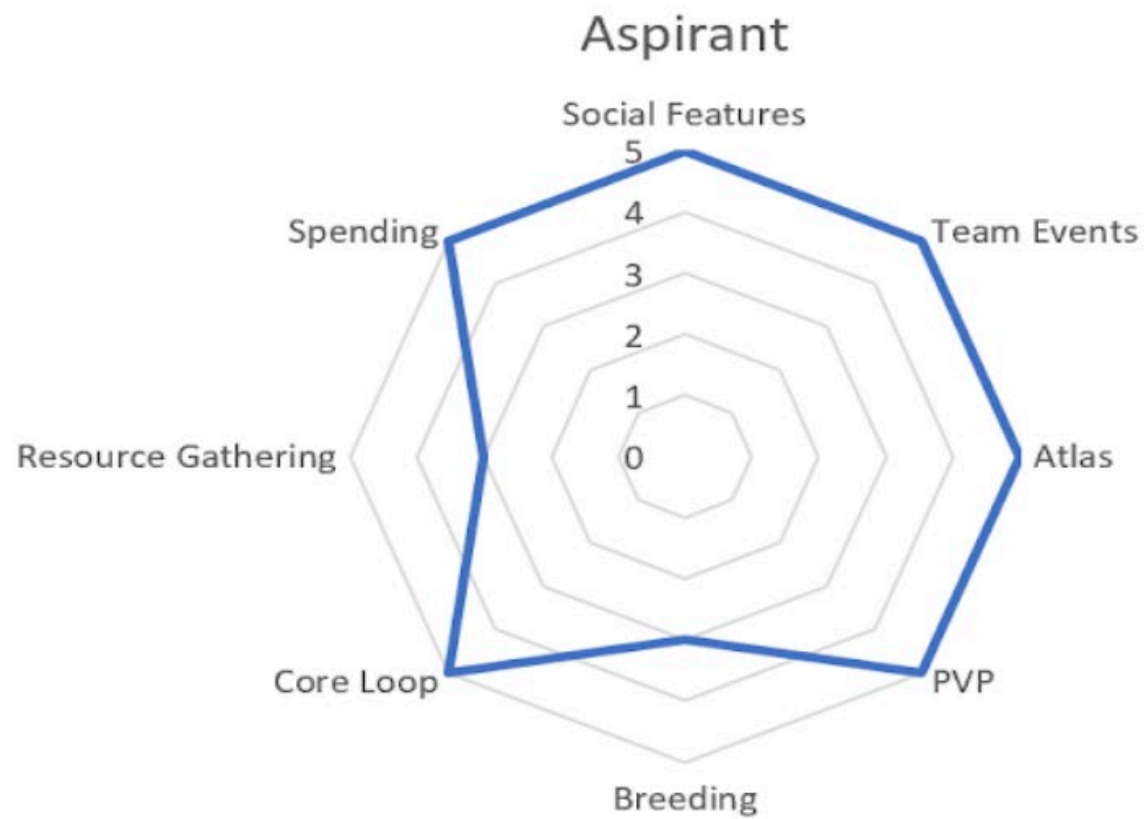Atlas
Core Loop
PVP
Breeding

- The in-game collector

- Wants to reach end game to have everything

- Doesn't care about power, wants to show off their collection

# The Personas: Organizer



Organizer

- Creating the social experiences

- Coordination of large scale team efforts

- Likely in positions of leadership within the game

# The Personas: Aspirant



- Desire to be seen as the most powerful

- Driven by competition, measures success from it

- Acquires and trains the strongest content that suits their playstyle

# The Personas: Tourist

- New installs just learning the game

- Likely found from an advertisement, have expectations of what they'll find

- Learns about the game, will either churn out or evolve into one of the other archetypes

# Creating The Test Scenarios

- Our Persona pass relies on goals for each persona to achieve
  - This breaks away from the rigidity of traditional pass/fail test cases

- Testers have the freedom to pick the features in the game that they feel are the most natural to use

- These goals mirror those of the goals that our different player archetypes have said they have

# Creating The Test Scenarios

- The goals set are meant to be achieved by playing the game, instead of trying to break it
  - Remember: Players, for the most part, aren't looking to break the game. They just want to have a smooth experience. That's what we need to be checking at this stage

- Two different types of user scenarios, normal and upgrade
  - Normal user scenarios focus on the typical game sessions we'll see from players, testing that experience (used in our Pre RC Pass)
  - Upgrade user scenarios hone in on goals the personas might have when they log in for the first time after receiving a new binary update, creating a snapshot of the first hour or so of play post upgrade (used in our RC Pass)

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# Creating The Test Scenarios

**Harmonizer Normal Gameplay User Scenario #1** 0 ✎

|   | | ID | Title |
|---|---|---|---|

Add Case | Add Subsection

**Social Goals** 5 ✎

|   | | ID | Title |
|---|---|---|---|
| ⠿ | ☐ | C1989... | Engage in social conversation 50% of the time |
| ⠿ | ☐ | C1989... | Be an active participant in over five group messages when online |
| ⠿ | ☐ | C1989... | Utilize the HUD chat bar to successfully track social messages coming in |
| ⠿ | ☐ | C1989... | Be responsive in mail chains with other users |
| ⠿ | ☐ | C1989... | Initiate new mail threads with users |

Add Case | Add Subsection

**Team Achievement Goals** 4 ✎

|   | | ID | Title |
|---|---|---|---|
| ⠿ | ☐ | C1989... | Achieve at least team rank 5 in the current running event |
| ⠿ | ☐ | C1989... | Participate and achieve goals in team quests |
| ⠿ | ☐ | C1989... | Coordinate with online teammates to follow in as many war attacks as possible |
| ⠿ | ☐ | C1989... | Help the team achieve victory in three different wars |

Add Case | Add Subsection

**Aspirant Upgrade Scenarios** 0 ✎

|   | | ID | Title |
|---|---|---|---|

Add Case | Add Subsection

**First Glance** 3 ✎

|   | | ID | Title |
|---|---|---|---|
| ⠿ | ☐ | C200... | Check that base power and layout have not changed |
| ⠿ | ☐ | C200... | Check that the active roster has not changed |
| ⠿ | ☐ | C200... | Check that active roster dragons are the same level as before, with same equipment and riders |

Add Case | Add Subsection

**Battle Ready** 4 ✎

|   | | ID | Title |
|---|---|---|---|
| ⠿ | ☐ | C200... | Compare that battle has not changed unexpectedly from previous binary |
| ⠿ | ☐ | C200... | Compare that dragons are still dealing the same damage as before |
| ⠿ | ☐ | C200... | Communicate with other Aspirants as to findings with battle, perform a couple of back and forth battles with them to compare |
| ⠿ | ☐ | C200... | If any new features pertain to combat, check them out and discuss findings with teammates |

Add Case | Add Subsection

**Power Increase** 2 ✎

|   | | ID | Title |
|---|---|---|---|
| ⠿ | ☐ | C200... | Continue to increase dragon power, checking that this hasn't been impacted and dragons can still level up/equipped with things |
| ⠿ | ☐ | C200... | Play around with any new features that increase power and battle prowess, learn to use them and get advantages from them |

# Creating Supporting Documentation

- Supporting documentation will help testers better understand and emulate the personas

- We can't expect them to know the personas from test cases alone, building this documentation lets testers learn and have items to refer to

- In fact, the feedback we got back from our test team suggested that this supporting documentation is the reason they felt comfortable running this type of testing

# Creating Supporting Documentation

- A living document with a detailed breakdown of each persona
  - Much like the graphs shown above, but broken down into much more minute detail

- Persona Breakdowns
  - A high level of who belongs in the archetype

- Potential In-Game Behaviors
  - Our best guesses as to the features and actions these users take

- Testing Focuses
  - Where we feel testers should focus more of their time when emulating that persona

# Creating Supporting Documentation

- Typical Game Flows for each persona
  - A flow chart describing the actions that a persona might take during a game session

  - Not a step by step guide

- Breaks down a game session into different segments, with each segment having a list of actions that are possibly taken
  - As a personal flair, I opted to put a little descriptive blurb of each segment to help testers better understand them

- Kept lightweight on purpose so that actual in-game actions can be varied based on the tester's decisions

# Creating Supporting Documentation

## Harmonizer
- *Looks for all the social aspects* • *Will work to keep social ties* • *Only engages in things they do with friends*

### 1. Log In

- Glance around HUD

- Check for social notifs

The Harmonizer is logging in and getting a sense for what social items need their attention. They're formulating an action plan for how to get to everything and in what order.

### 2. Get Social

- Check for online teammates

- Engage in conversation

- Respond to messages

The Harmonizer has formed their plan for getting to social. They'll see who's online, hang around a chat for a while, and follow up on messages and group chats

### 3. Help Teammates

- Send resources

- PvP as supporter

- Fly as a supporter

With responses out of the way, the Harmonizer gets down to business. Their conversations focus to helping others, engaging in more social actions.

### 4. Team Participant

- Team Quests

- Engage in events with teammates

- War Participation

The Harmonizer, after supporting their own teammates, engages with the game to further team progression on various elements. Everything is still done with teammates, as much as possible.

### 5. More Social

- Utilize HUD elements to track conversations

- Relax and chat in team chat and group messages

- Check for more incoming mail and respond

With all in-game battle actions out of the way, the Harmonizer now relaxes and spends the remainder of their time engaging in chats and mail messages. They may still fly a support run or two, but it's no longer their focus.

### 6. Wrap Up

- Final check and message response

- Finish conversation with team and say goodbye

The Harmonizer sees that it's time for them to take their leave. They'll do a quick check of all messages to send final responses, bid teammates farewell, and then sign off.

# Creating Supporting Documentation

- Features Tracker

- Each tester goes through and marks what features they interacted with during a pass

- This sheet is not to make sure every feature is tested
  - Instead it's used to see what features naturally are being touched by personas, and if any features are becoming "low use"

- This is very useful for us an analysts to have some sense of the traffic level for each feature, and when some might be considered for less testing because it barely sees use

# Guidelines when performing Persona Testing

- Do not use any in-game cheats, all currency should be acquired the same way a player would

- Game sessions should last about the length of an average game session

- Use the same account for each persona involved, have that account switch between the different platforms

- Do not wipe the account while in the middle of your persona testing, use it until the full pass has concluded

- Determine what setup exists for your game that needs to be included
  - For War Dragons, this meant instructing testers to have two teams created (one by each organizer), and to have certain personas join each team
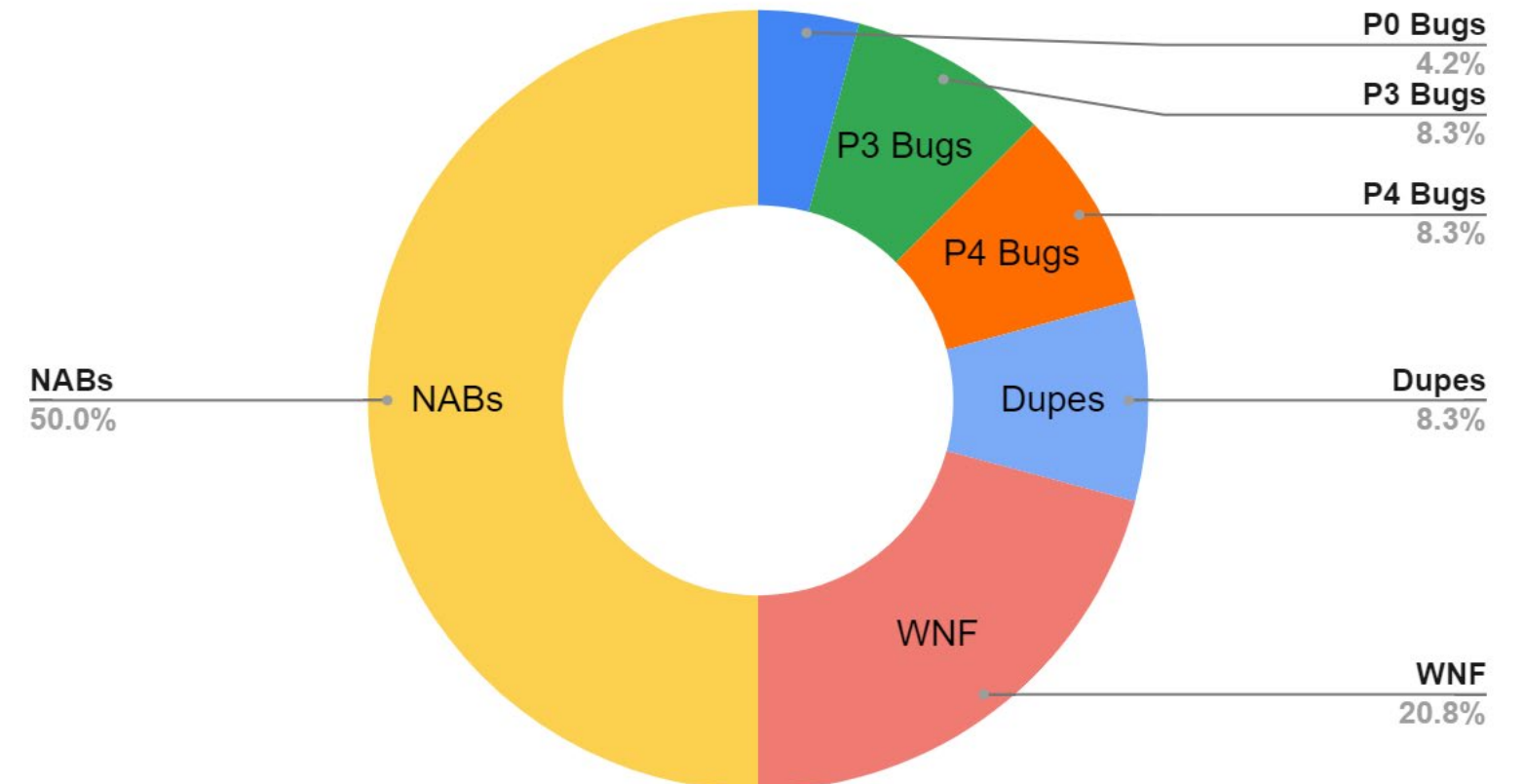
# The First Trial Run: Execution

- After setting up the first trial run, I had a call with my test leads to go over the new process
  - It was important to get their buy in so they could explain and coach the other testers through running this

  - We had some discussion and edits for supporting documents, and made sure all goals were clearly laid out

- The first trial run would be executed without a side by side using the old method
  - This was so testers could get fully involved with the new process

  - While potentially risky, we were analyzing the results and were ready to make the call to switch back to the old method if we weren't seeing the data we needed to see

# The First Trial Run: Results



5.23 PreRC: Total Tickets 9

- WNF 11.1%
- Dupes 11.1%
- Suggestion Tickets 44.4%
- P3 Bugs 22.2%
- P4 Bugs 11.1%
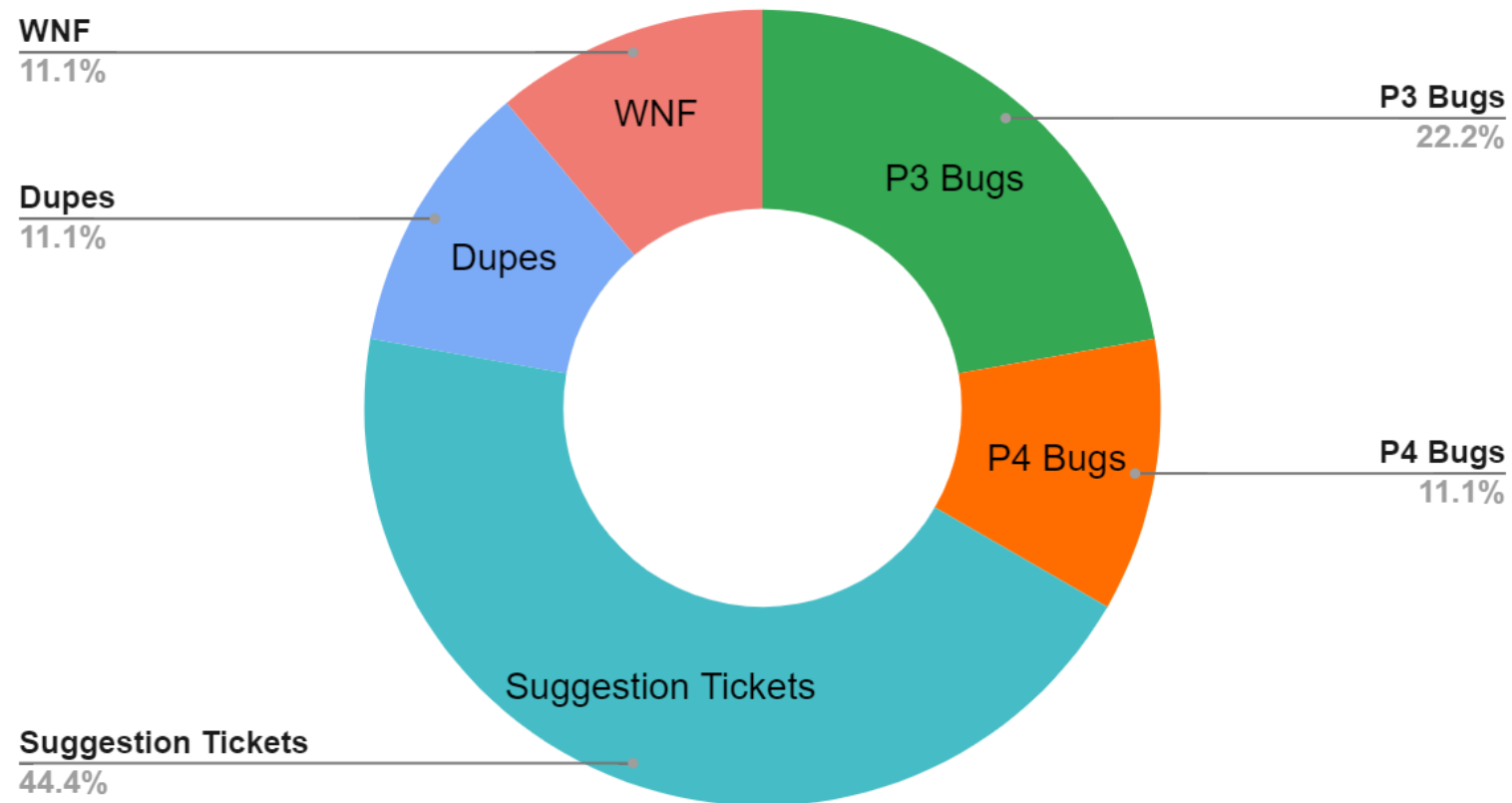
Average From Last PreRCs: Total Tickets 24

- NABs 50.0%
- P0 Bugs 4.2%
- P3 Bugs 8.3%
- P4 Bugs 8.3%
- Dupes 8.3%
- WNF 20.8%

# Results: First Release Using Persona Testing

- Our first client release that was testing using the Persona Testing method yielded no fires, high, or medium priority issues reported by players
  - Based on this success, we opted to continue on the path of using Persona Testing for our PreRC and RC passes

- Our subsequent releases for the remainder of the year continued to see no fires reported by players, and only a few high priority issues

# Gauging Success: External

- When comparing releases using the old PreRC and new Persona PreRC method, we found that player reported bugs that stemmed from client releases decreased by an impressive 30%
  - We attribute this heavily to the fact that our persona pass is now catching the issues players would run into, before the players ever actually encounter them

- We additionally saw that players were generally happier and less apprehensive with our releases, with an increase in people installing the update before we forced all players onto it

# Gauging Success: Internal

- Following the first trial run of persona testing, we sent out a survey to all of the testers involved in the pass
- This survey utilized questions meant to:
  - Gauge how effective the provided documentation was
  - How comfortable testers felt with the new testing style
  - Any other thoughts on the process

- I will note it was emphasized that this survey was anonymous and all testers were assured it wouldn't be used to evaluate their performance

# What Went Well    vs    Not Well

- 90% of the testers said the documentation was easy to understand, and they felt like they could successfully emulate the personas

- Testers had very little confusion as to how the PreRC and RC Passes should be executed

- 82% of the testers said they engaged with the game differently, and felt like they were seeing through the eyes of the players

- Every night of the first run of the new PreRC and RC pass saw a valid bug get filed

- The initial first run saw testers feeling like there was very little structure in place, they couldn't gauge if they had tested enough features

- Testers initially felt only semi-comfortable switching away from test cases

- In the initial run, I was insistent a tester stay with their same persona for the entire pass.

# Where to next?

- As I like to remind myself, the work isn't done for our persona pass

- Next steps include bringing this testing methodology to other stacks within the game, such as server releases

- We want to also try and bring this method of testing down a stream, and see if we can run it on branch testing for new features
  - My hypothesis is we will get better user testing from this and lead to potential positive feature scope changes when we still have the easy chance to do so

# Closing thoughts

- We still run our old FCT, however now it only gets run once a quarter and a majority of the bugs found are still lower priority edge cases

- Since installing persona testing, we still have yet to encounter a client blocker that has led to a live fire
  - At last count, we've prevented six blocker issues from going live over the past nine months when using this method of testing

- Our test team was very positive with this change, and have felt like our PreRC and RC Passes have gotten even stronger

# GDC

# Thank you for coming, please enjoy the rest of GDC!

## Special Thanks

Pocket Gems QA Team

WeRPlay Studios

Sijun Yang

Max McArthur

David Longerbeam

Brett Schmidtt

Yena Oh

## Contact Info

@nick_joebgen92 on Twitter

nick.joebgen@gmail.com