

The GDC logo is centered at the top of the image. It features the letters "GDC" in a bold, white, sans-serif font. The letters are set against a red, diamond-shaped background that points downwards. The overall background of the image is a dark blue, with several thin, light blue lines forming a large 'X' shape across the frame. There are also small, light blue geometric shapes (squares and diamonds) scattered in the corners.

GDC

GAME DEVELOPERS CONFERENCE
MARCH 18-22, 2019 | #GDC19

The GDC logo is centered at the top of the slide. It consists of the letters "GDC" in a white, bold, sans-serif font. The letters are positioned within a large, solid red triangle that points downwards. The background of the entire slide is a dark blue with several thin, light blue diagonal lines forming a grid-like pattern. There are also small, faint geometric shapes like squares and diamonds scattered across the background.

GDC

I Can't Hear You!

-

Considering Deaf Gamers

Karen Stevens
EA SPORTS Accessibility Lead

GAME DEVELOPERS CONFERENCE

MARCH 18-22, 2019 | #GDC19

Statistics

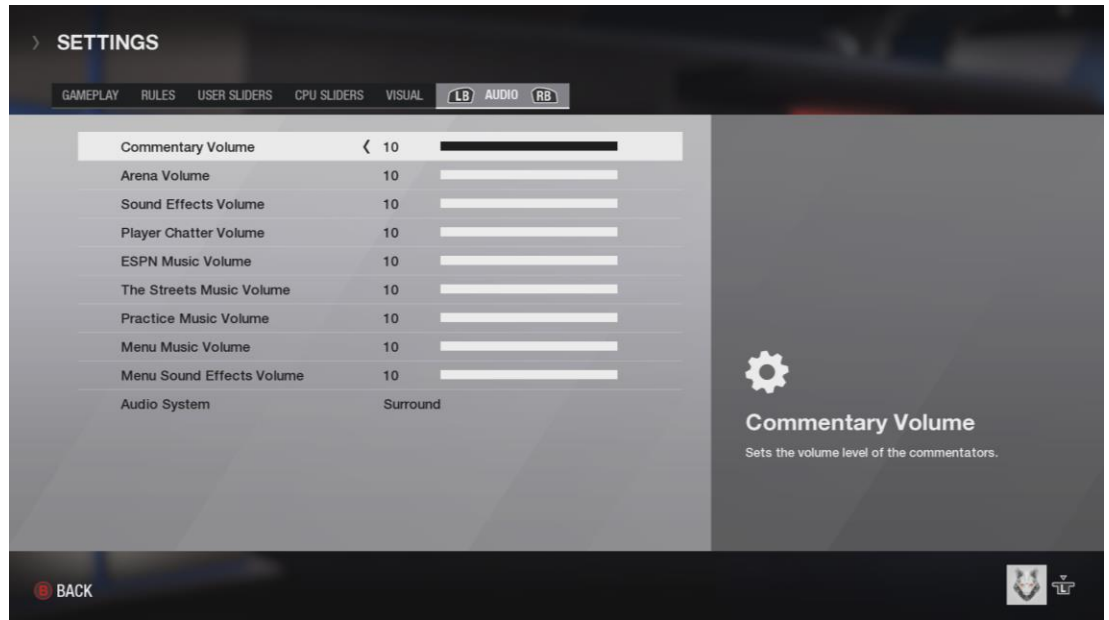
- 1 in 5 have at least one disability
 - 1 in 4 who are 18+
 - 1 in 2 by mid 70s
-
- This amounts to over 30 million US gamers

Need for Deaf Awareness

- Over 40 million in the US have hearing loss
- Many people prefer subtitles on, even if they have hearing in the normal range
 - Noisy rooms
 - Competing noise in game
 - Need to keep environment quiet

Deafness is a Spectrum: Audio Channels are Important

- Often those who have hearing issues are still able to hear some sounds
- Channel based volume controls help distinguish sounds of interest



The GDC logo is rendered in white, bold, sans-serif capital letters. It is positioned at the top center of the slide, partially overlaid by a large red triangle pointing downwards. The background is a solid dark blue with several thin, light blue geometric lines forming large triangles and diamonds. In the corners, there are small decorative elements: a diamond in the top-left, a cluster of three squares in the top-right, and a cluster of three squares in the bottom-left.

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Subtitles & Captions

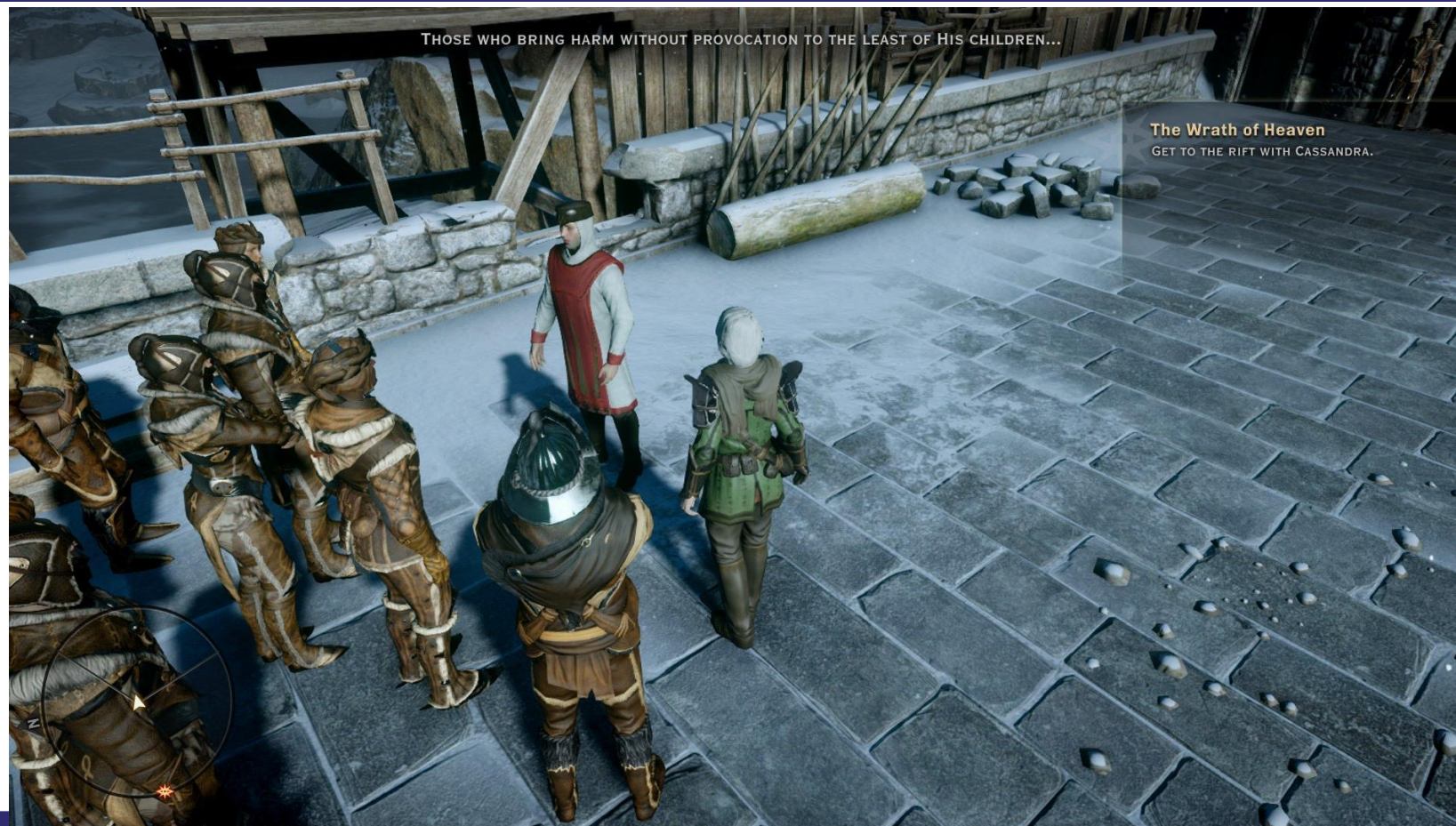
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Font Best Practices

- Mixed case can be easier for some to read, while others prefer all caps
- Stick to Sans Serif fonts, i.e. Arial, Helvetica, or Verdana
- Avoid italics: use **bold**, **enlarged**, or underlined words instead
- 1:12 men, 1:200 women are colorblind, adjustable colors are ideal

Alternate Fonts



Alternate Fonts

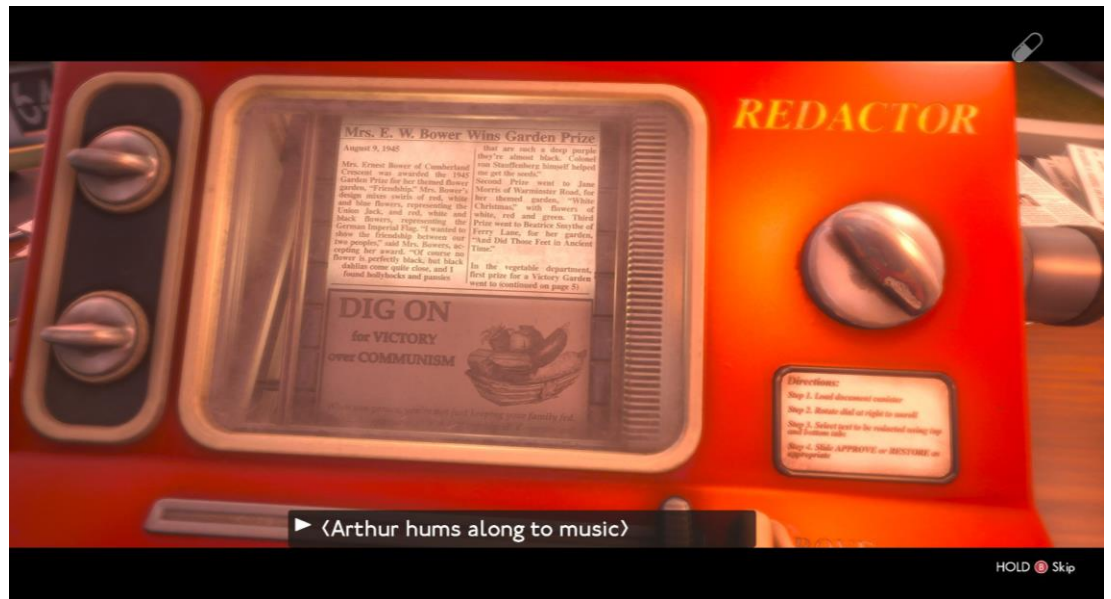


Font Best Practices

- Approximately 3% of the screen height
 - 3%: 1080p text, 32 pixels tall, 4 pixels wide
 - 2.6%: 1080p text, 28 pixels tall, 3 pixels wide
- Max text on TV is 37 characters across
 - This allows for 8% of the screen height
 - 86+ pixel tall font on 1080p
- For mobile, consider system font size

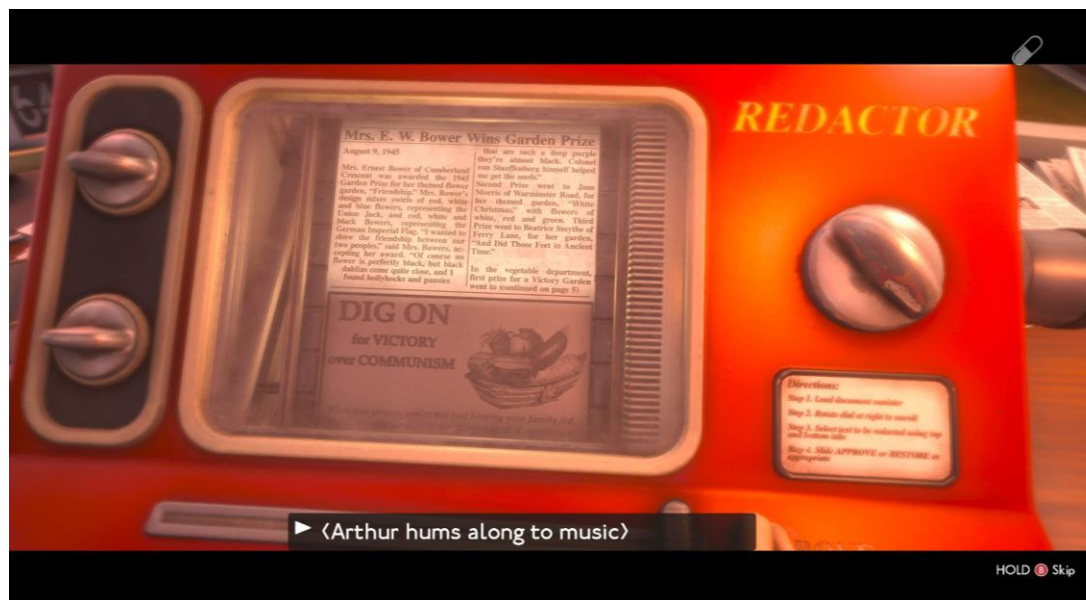
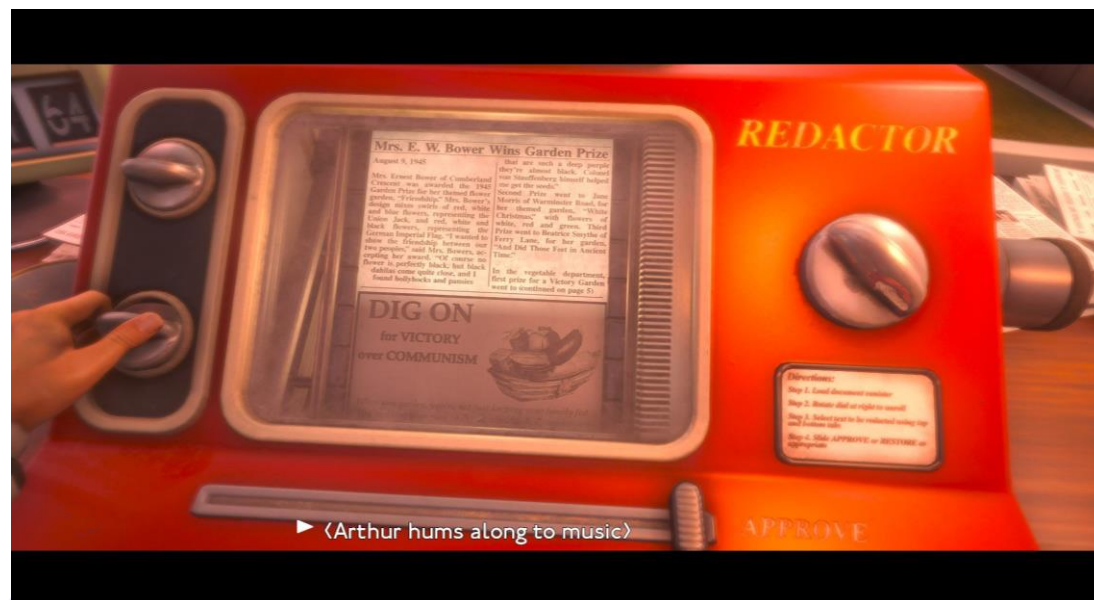
Resizable Text

- Adjustable sizes are recommended, as the user can balance legibility needs



Text Background

- Font should always either be outlined with a few pixels of contrasting colors, or a block background (optionally translucent)



Direct Vs Background Speech

- Direct speech is a primary conversation with player
- Background speech is heard as player passes by NPCs
- All speech matters, as it is not a full experience in its absence
- It's important to indicate who's speaking

Background Speech



Speaker Indicator



Speaker Name



Layout

- Avoid placing text on top of important screen elements, such as UI menus
- Keep text in the same location, unless it results in covering something important
- Keep text within a safe area of the screen
 - 5% margins for consoles & PC

Content Matching

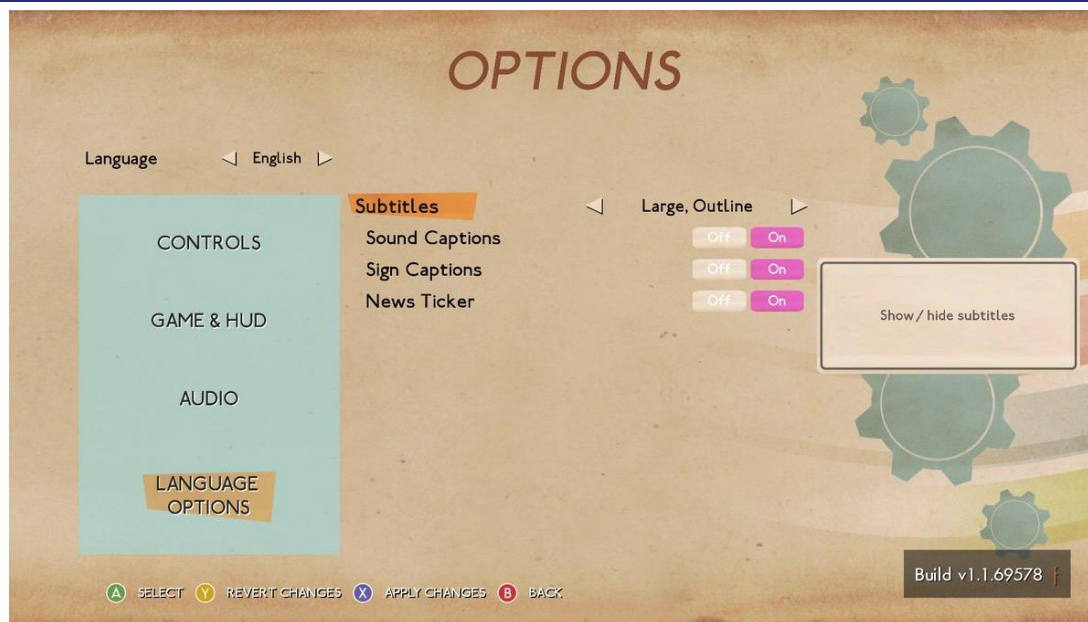
- Each subtitle should be a single sentence
 - Exceptions can be made for too-fast timing reasons, or unusually long sentences
- Match subtitles to scene onsets
- Keep subtitles up if lips are still moving
- Avoid giving away “reveals” too early

Speed, Timing, Line Count

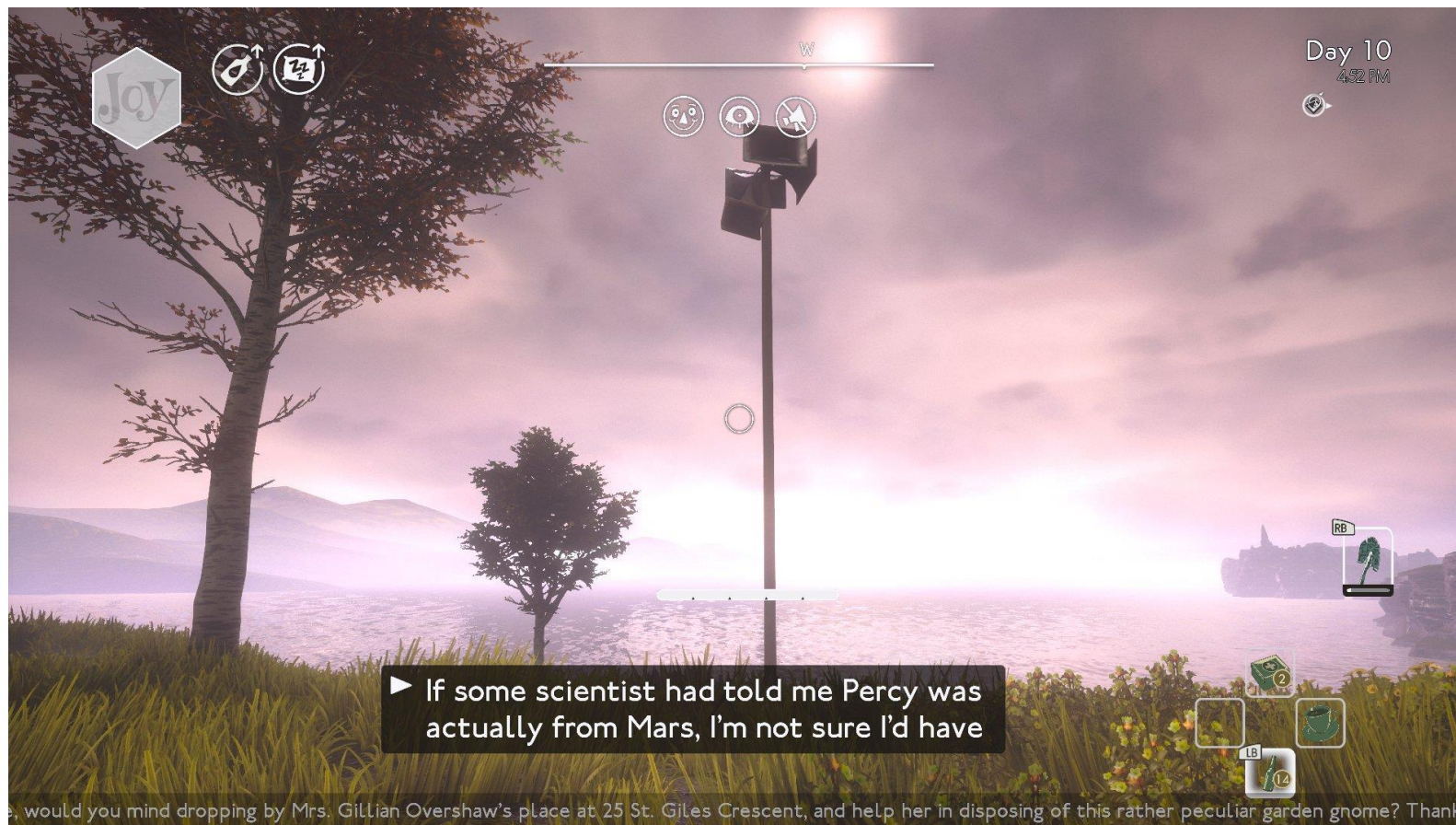
- 160-180 words a minute is recommended
 - About 0.3-0.375 seconds per word
- Text should match verbal words, whenever possible. WPM can vary as needed
- Two lines of text is ideal, but actual lines displayed can vary as needed

Subtitle Channels

- Similar to audio channels, this allows reducing subtitles to only the area of interest
- Less text can allow for slower reading speeds



Channel Example



Captions Vs Subtitles

- Subtitles cover speech
- Captions cover sounds, including speech



Sound Effect Captioning Best Practices

- Should have an indication that indicates they are different than speech
 - [Brackets are ideal]
 - Again, avoid relying on color
- Describe sounds, not action
 - [Ball bounces], not [Ball is thrown at wall]
- Keep short, in subject-verb format

Sound Effects



Music Best Practices

- If there are words, there should be subtitles
- If there are no words, describe the sound
 - Eerie music
 - Upbeat music
 - Hums “Jingle Bells”

Musical Sound



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Cues

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Sound Cue Imagery

- Visible footsteps help pinpoint locations of people, even though they may not be able to be heard



Sound Directional Indications

- Radar-type imagery is useful for pinpointing audio of interest

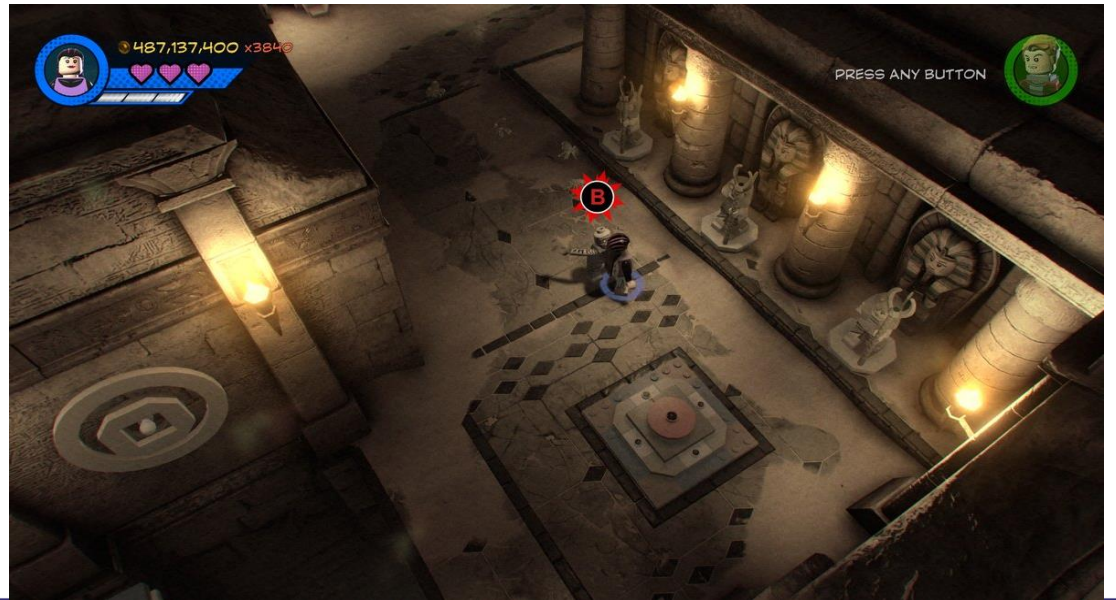


HUD Radar



Environmental Sounds

- Adding visual changes to audio changes adds more immersion, and acts as cues



Haptic Feedback

- Controller vibrations can be used to compliment sound
- In Diablo 3, there is a haptic pattern when a powerful enemy is about to be summoned



The GDC logo is positioned at the top center of the slide. It consists of the letters 'GDC' in a bold, white, sans-serif font. The letters are set against a red, downward-pointing triangle that is part of a larger geometric design. The background of the entire slide is a dark blue, featuring several thin, light blue lines that create a sense of depth and movement. There are also small, white, square icons scattered throughout the design, adding to the modern and tech-oriented aesthetic.

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Accessibility Settings

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Accessibility Settings Must be Accessible

- If settings can not easily be found, they are useless
- It's OK if settings can be found in multiple places
- Settings must be available at the start of the game

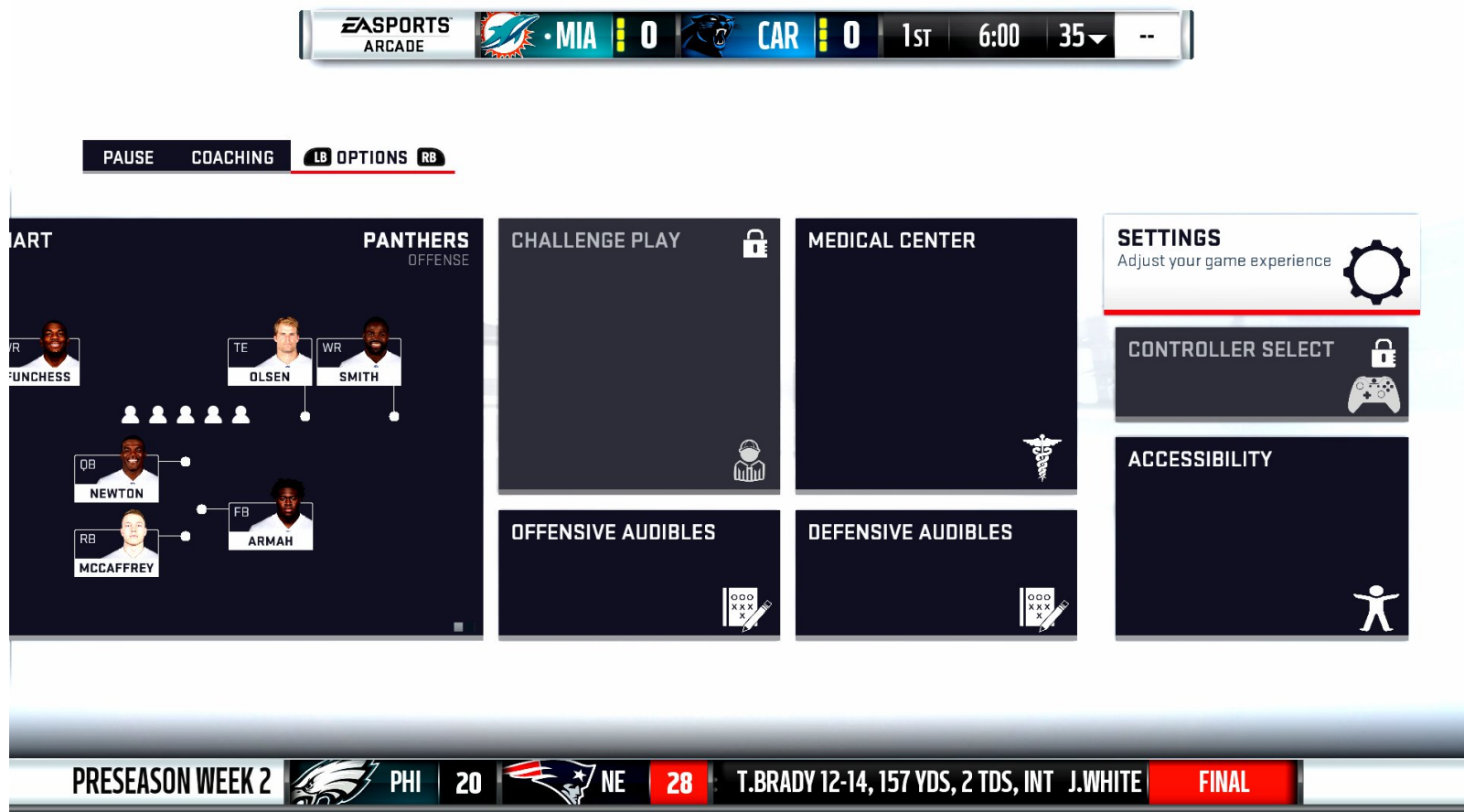
Accessibility Menu



Available When Entering Game



Available In Pause Menus



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Thank You

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Questions?

- Karen Stevens
 - kstevens@ea.com or able@ea.com
 - http://twitter.com/ea_accessible
 - <http://ea.com/able>
- Resources
 - <http://contrast-ratio.com>
 - <http://gameaccessibilityguidelines.com>

What is Accessibility

- Accessibility is the correction of a mismatch between a person and their environment
- Anything that modifies the user experience can be considered an accessibility setting

Games are Used in Multiple Settings



Games are Used in Multiple Settings



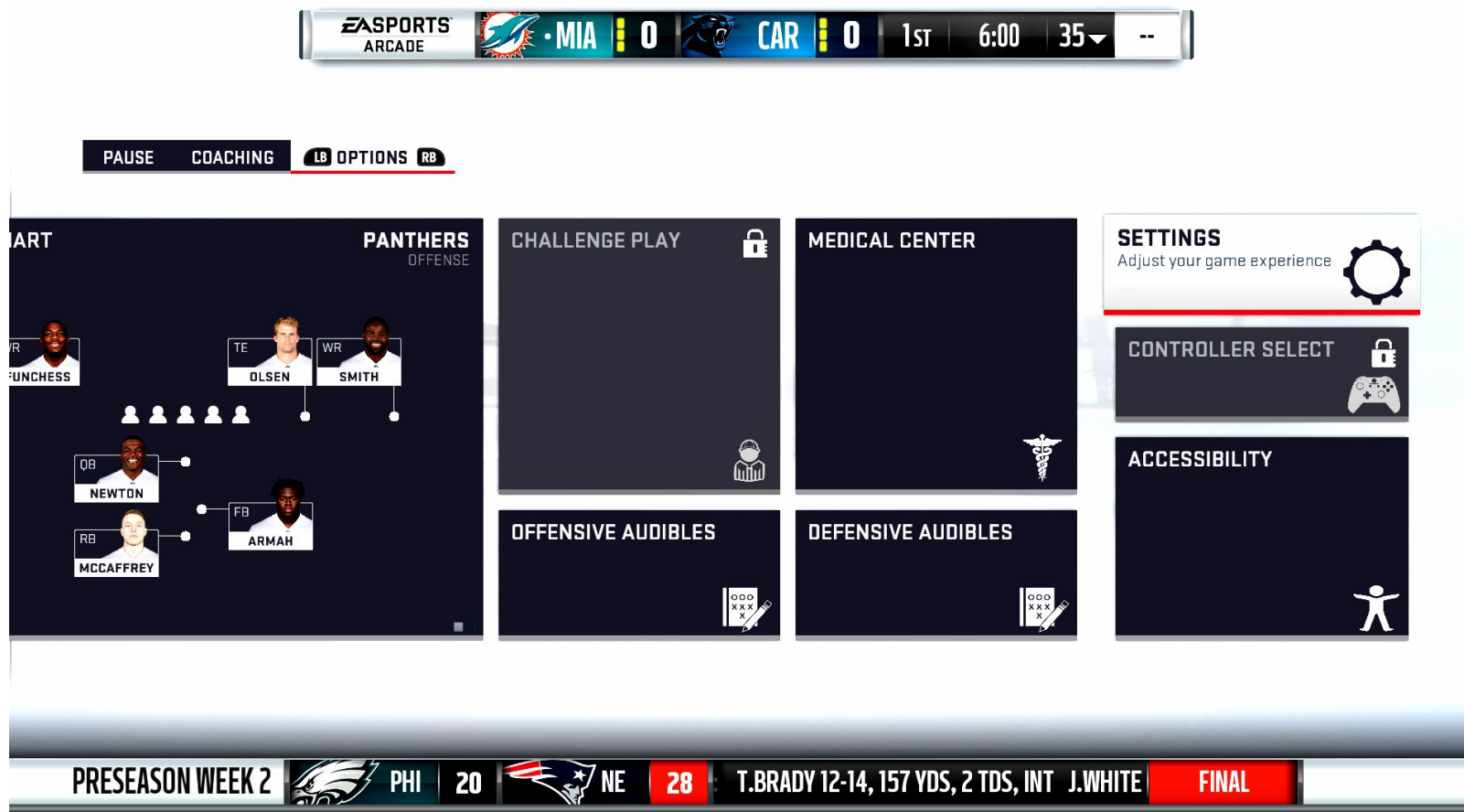
Dedicated Dialog



Available When Entering Game

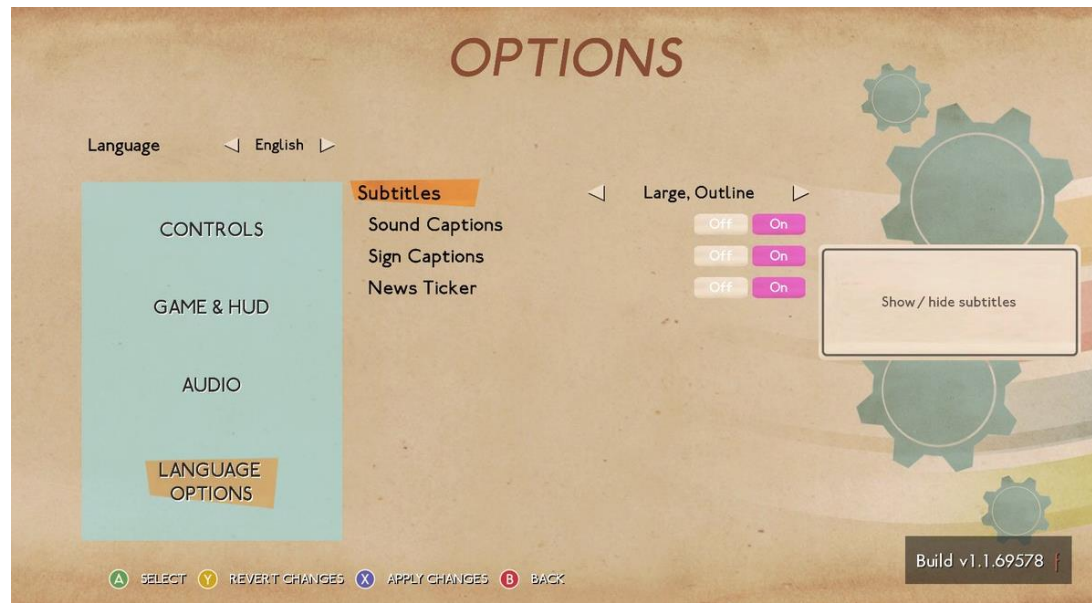


Available In Pause Menus



Example of Sign Captions

- Allows clear reading of fancy sign fonts through use of captioning



Lines of Text

- One line of text risks rushed pacing
- Two lines of text is ideal
- Three is acceptable, if room allows
- Four or more should be avoided

Speed & Timing

- 160-180 words a minute is recommended
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Managing Content

- Consider creating caption channels, similar to audio channels
 - Direct speech
 - Background speech
 - In-game chat
 - Sound effects
 - Music
 - Sounds/words coming from specific sources

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Font Best Practices

- Colored font can be problematic as 1:12 men, 1:200 women are colorblind
 - Adjustable colors are ideal
- Avoid using color as a primary differentiator

Sound Directional Indications

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