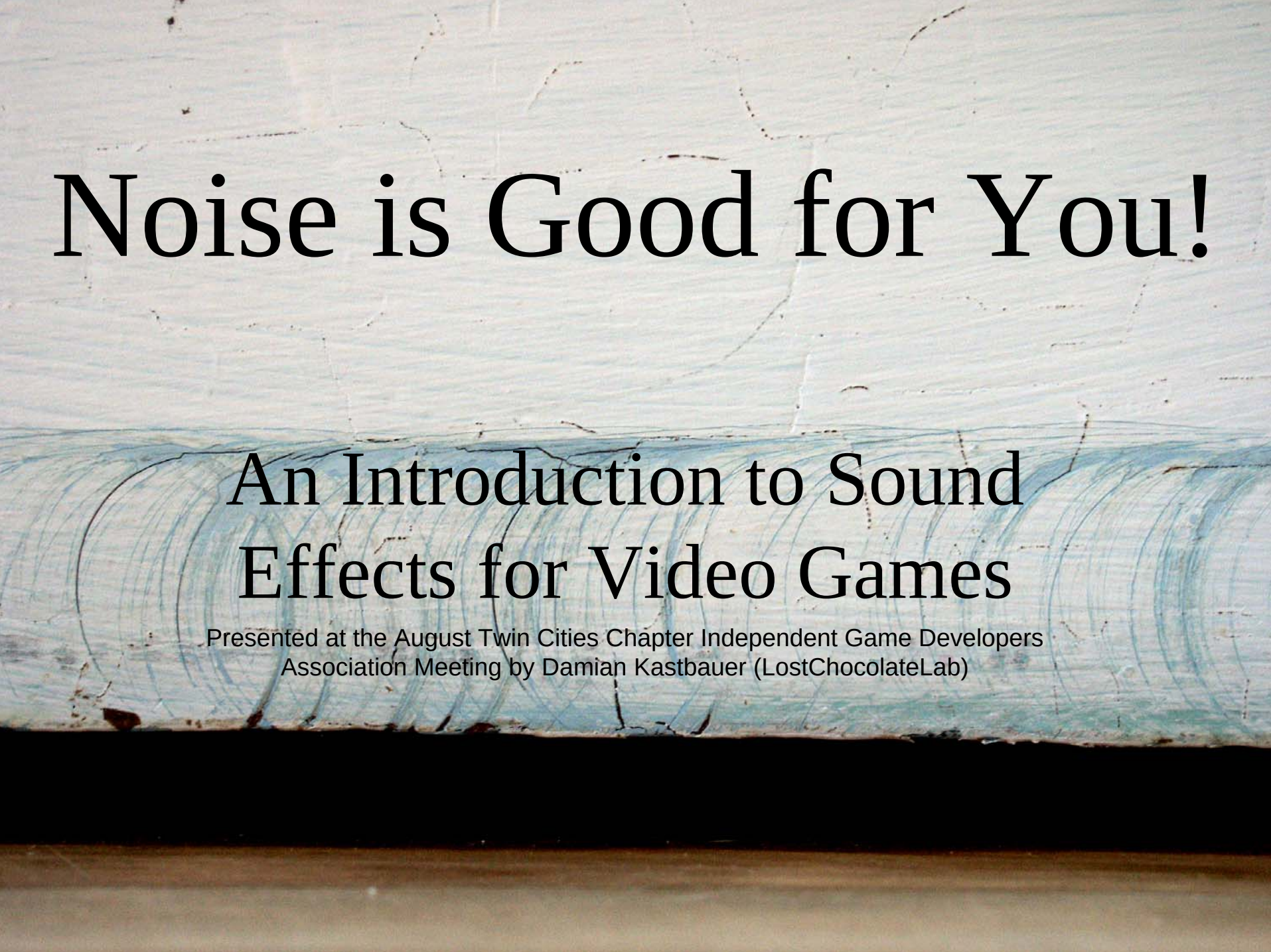

Noise is Good for You!

An Introduction to Sound Effects for Video Games

Presented at the August Twin Cities Chapter Independent Game Developers Association Meeting by Damian Kastbauer (LostChocolateLab)

Outline

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      - **Valandil**
      - **0.A.D.**
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          - **Priority**
          - **Intensity**
          - **Tools**
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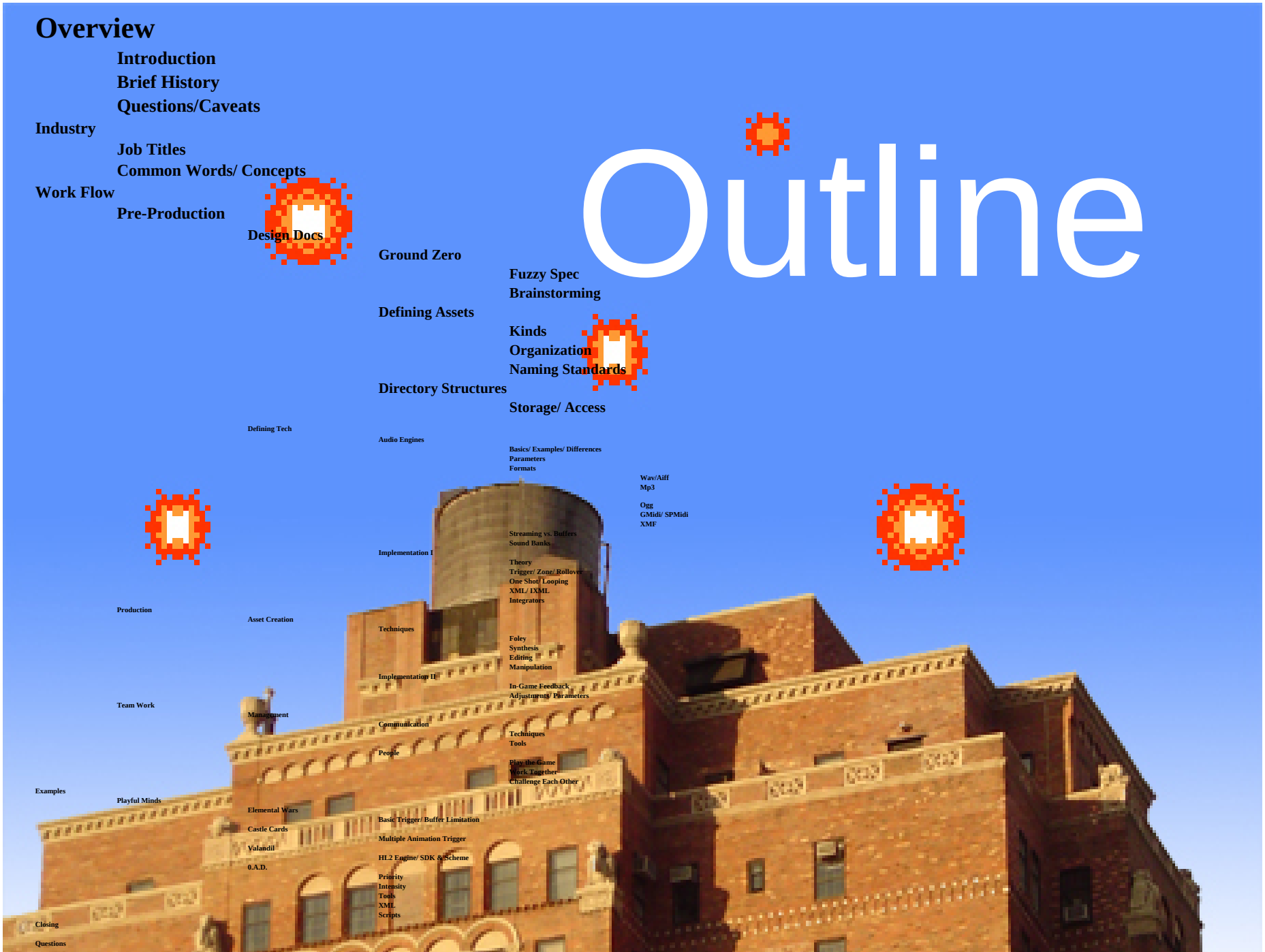
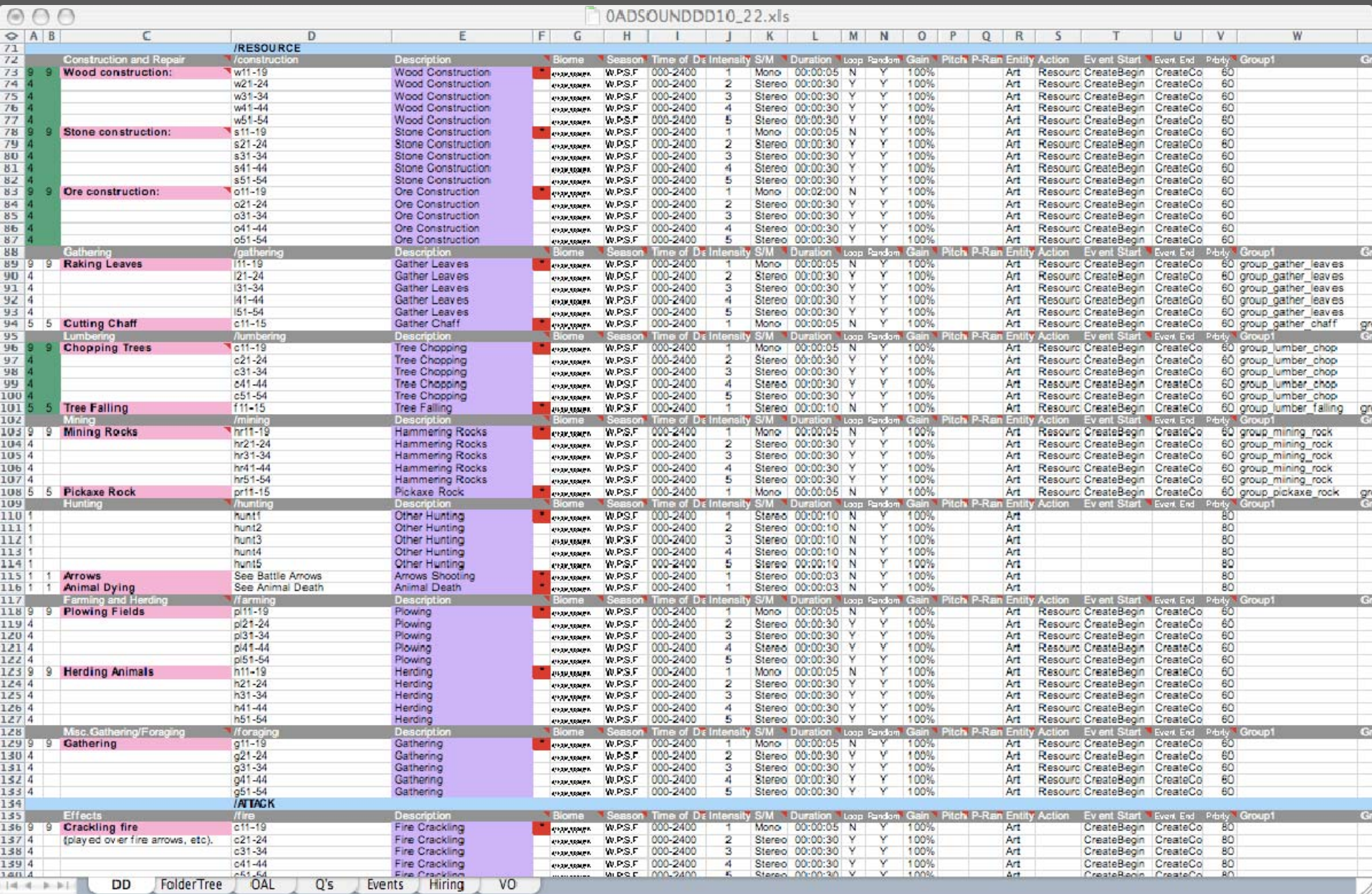
  - **Questions**



Industry

Pre-Production

Technical Design Documents



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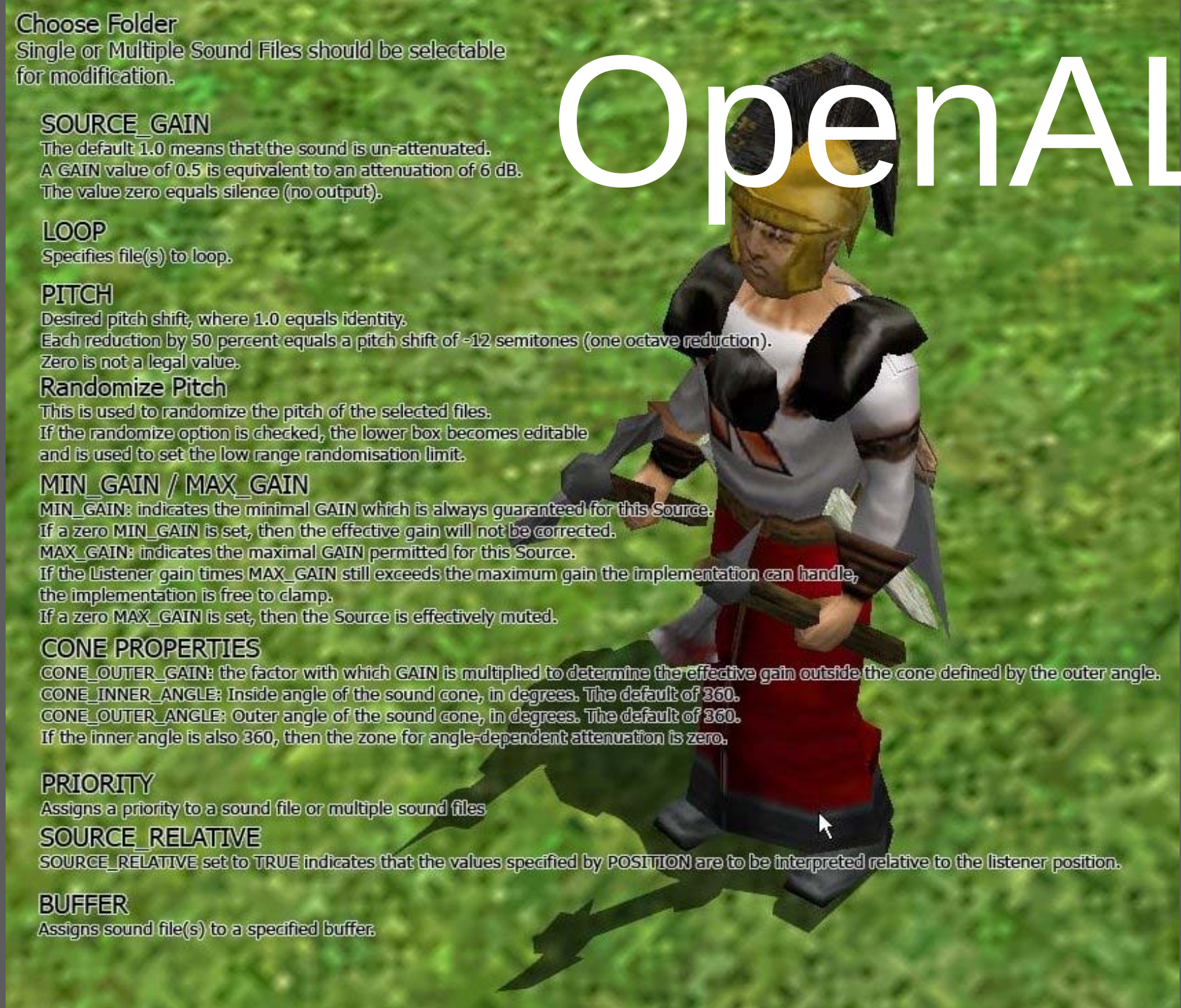
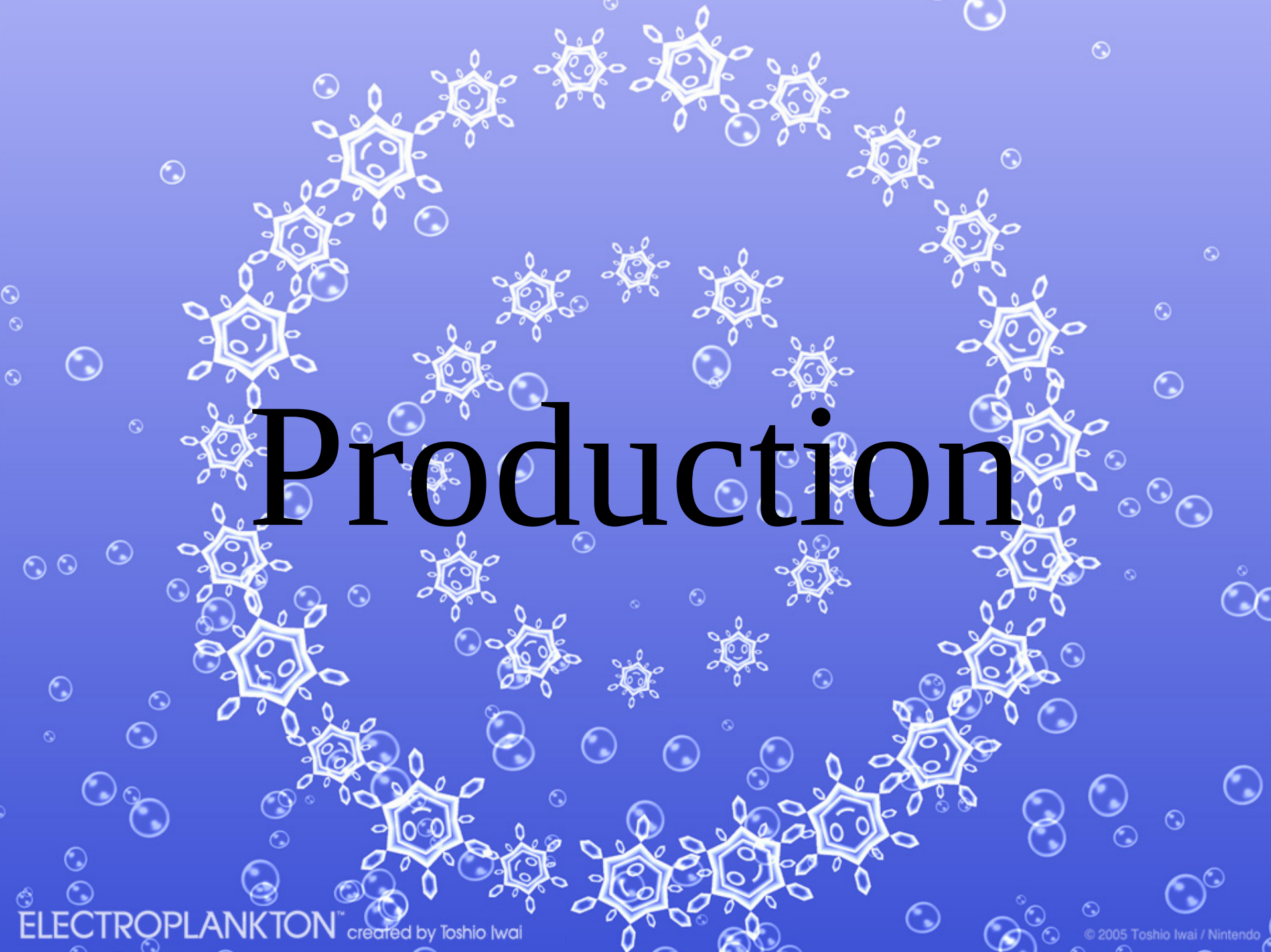
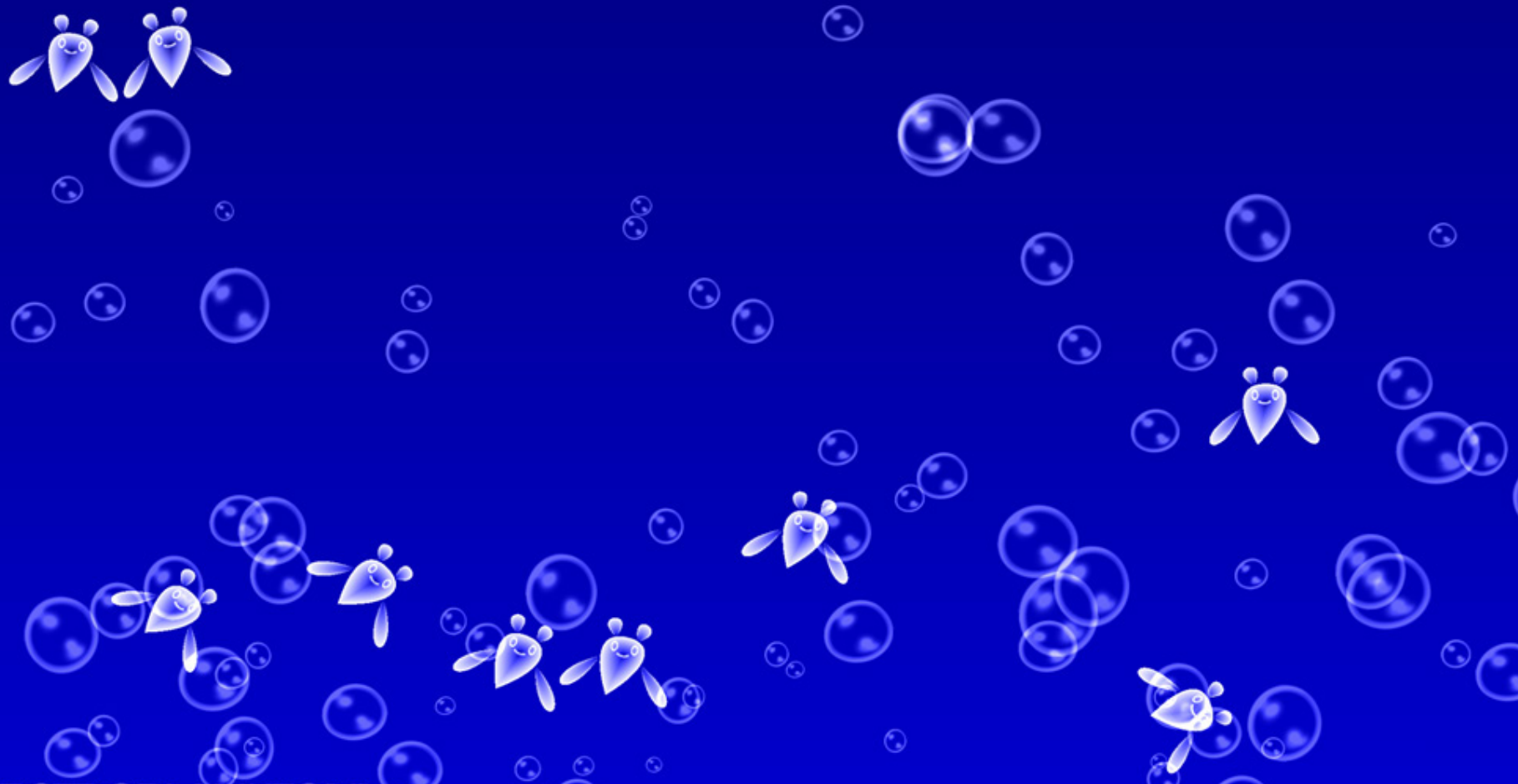
Defining Tech


Choose Folder
Single or Multiple Sound Files should be selectable
for modification.
OpenAL
SOURCE_GAIN
The default 1.0 means that the sound is un-attenuated.
A GAIN value of 0.5 is equivalent to an attenuation of 6 dB.
The value zero equals silence (no output).
LOOP
Specifies file(s) to loop.
PITCH
Desired pitch shift, where 1.0 equals identity.
Each reduction by 50 percent equals a pitch shift of -12 semitones (one octave reduction).
Zero is not a legal value.
Randomize Pitch
This is used to randomize the pitch of the selected files.
If the randomize option is checked, the lower box becomes editable
and is used to set the low range randomisation limit.
MIN_GAIN / MAX_GAIN
MIN_GAIN: indicates the minimal GAIN which is always guaranteed for this Source.
If a zero MIN_GAIN is set, then the effective gain will not be corrected.
MAX_GAIN: indicates the maximal GAIN permitted for this Source.
If the Listener gain times MAX_GAIN still exceeds the maximum gain the implementation can handle,
the implementation is free to clamp.
If a zero MAX_GAIN is set, then the Source is effectively muted.
CONE PROPERTIES
CONE_OUTER_GAIN: the factor with which GAIN is multiplied to determine the effective gain outside the cone defined by the outer angle.
CONE_INNER_ANGLE: Inside angle of the sound cone, in degrees. The default of 360.
CONE_OUTER_ANGLE: Outer angle of the sound cone, in degrees. The default of 360.
If the inner angle is also 360, then the zone for angle-dependent attenuation is zero.
PRIORITY
Assigns a priority to a sound file or multiple sound files
SOURCE_RELATIVE
SOURCE_RELATIVE set to TRUE indicates that the values specified by POSITION are to be interpreted relative to the listener position.
BUFFER
Assigns sound file(s) to a specified buffer.


Production
ELECTROPLANKTON™ created by Toshio Iwai
© 2005 Toshio Iwai / Nintendo

Asset Creation

Team Work



ELECTROPLANKTON™ created by Toshio Iwai

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Main menu

player name

human player
mana
board pieces

player name

human player
mana
board pieces

player name

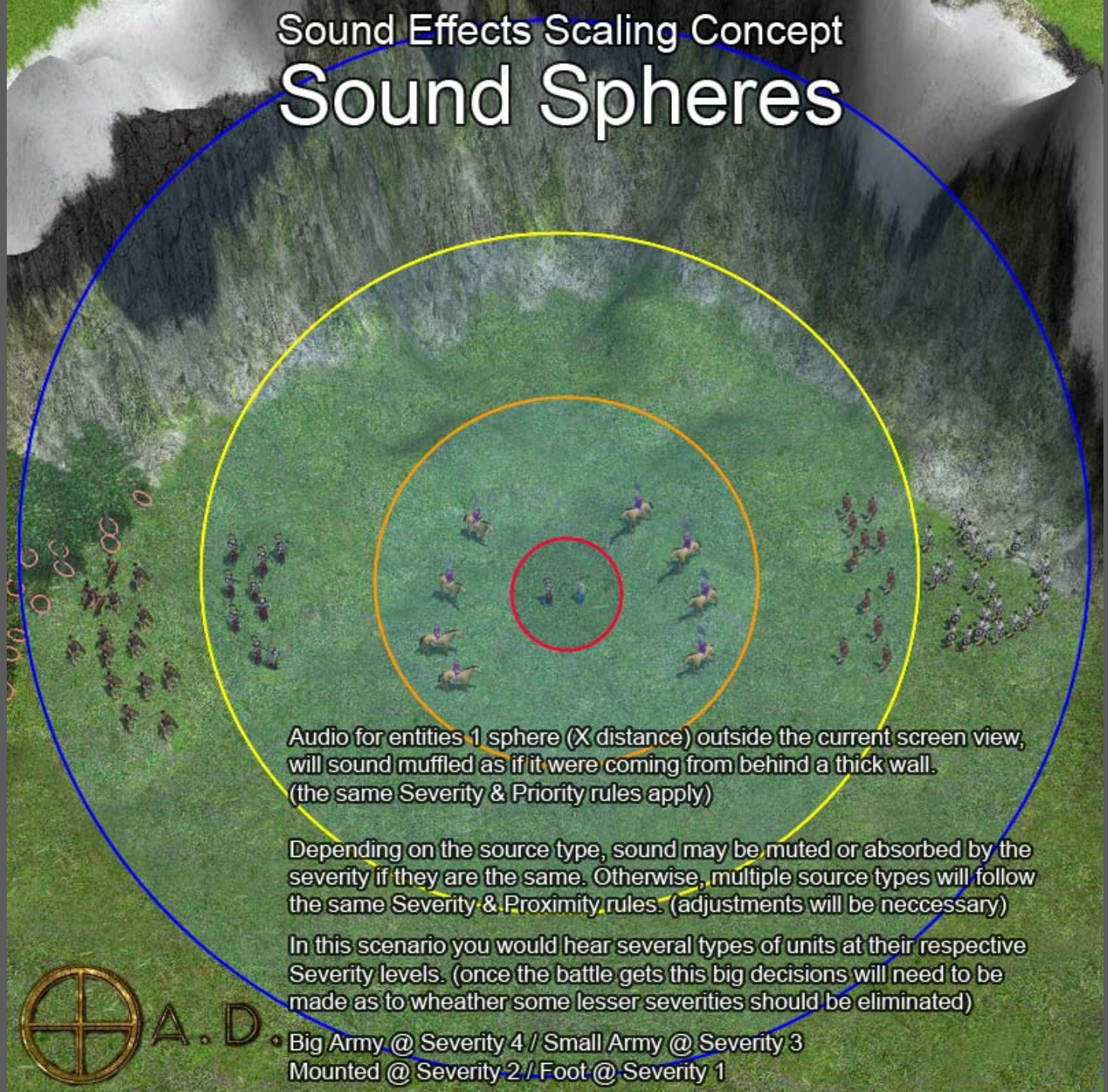
human player
mana
board pieces

player name

human player
mana
board pieces

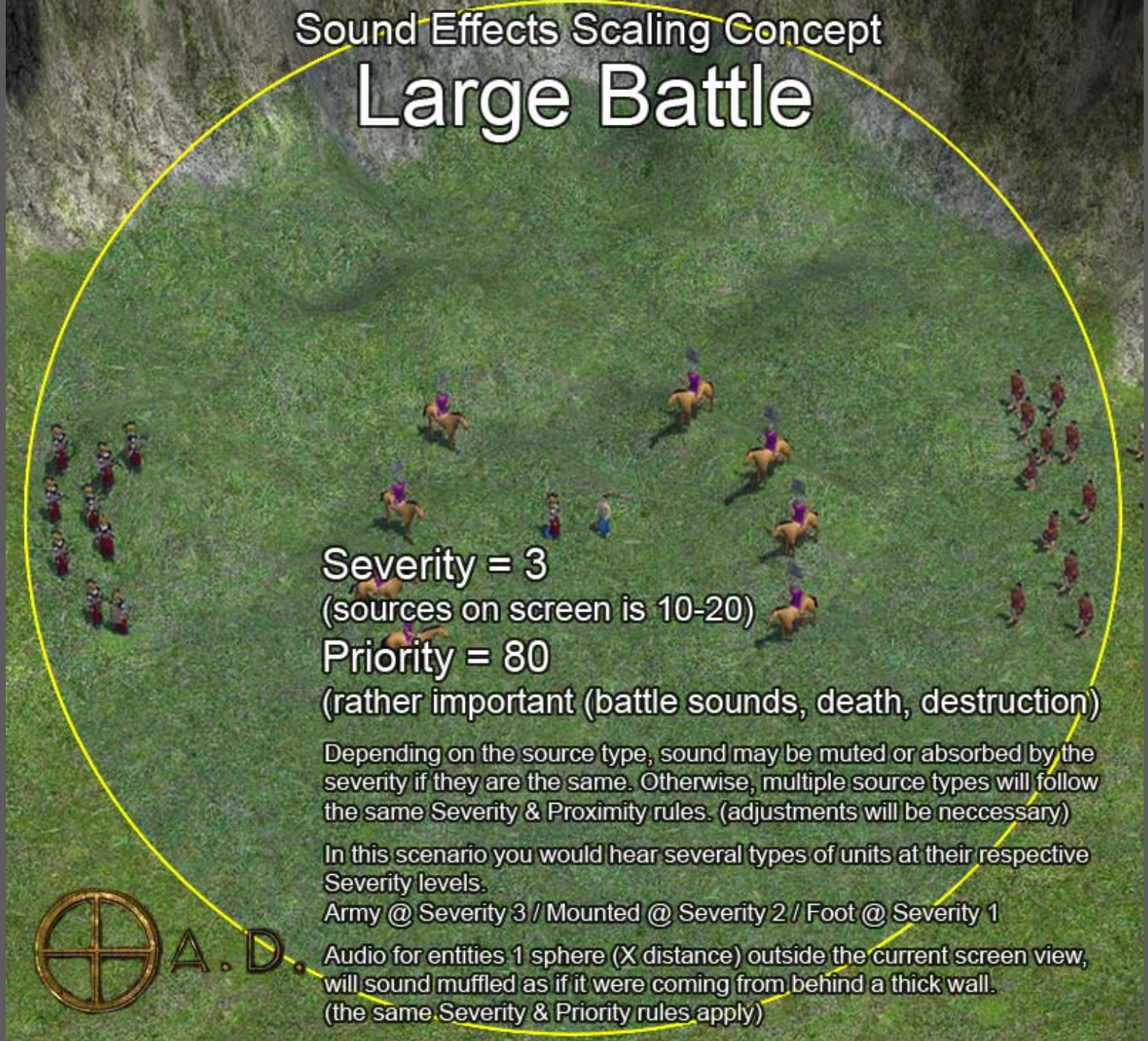
Darrin 1
Helen 2
Natasha 3
Marcus 4
Castle Cards
Knighted: Play 2 cards

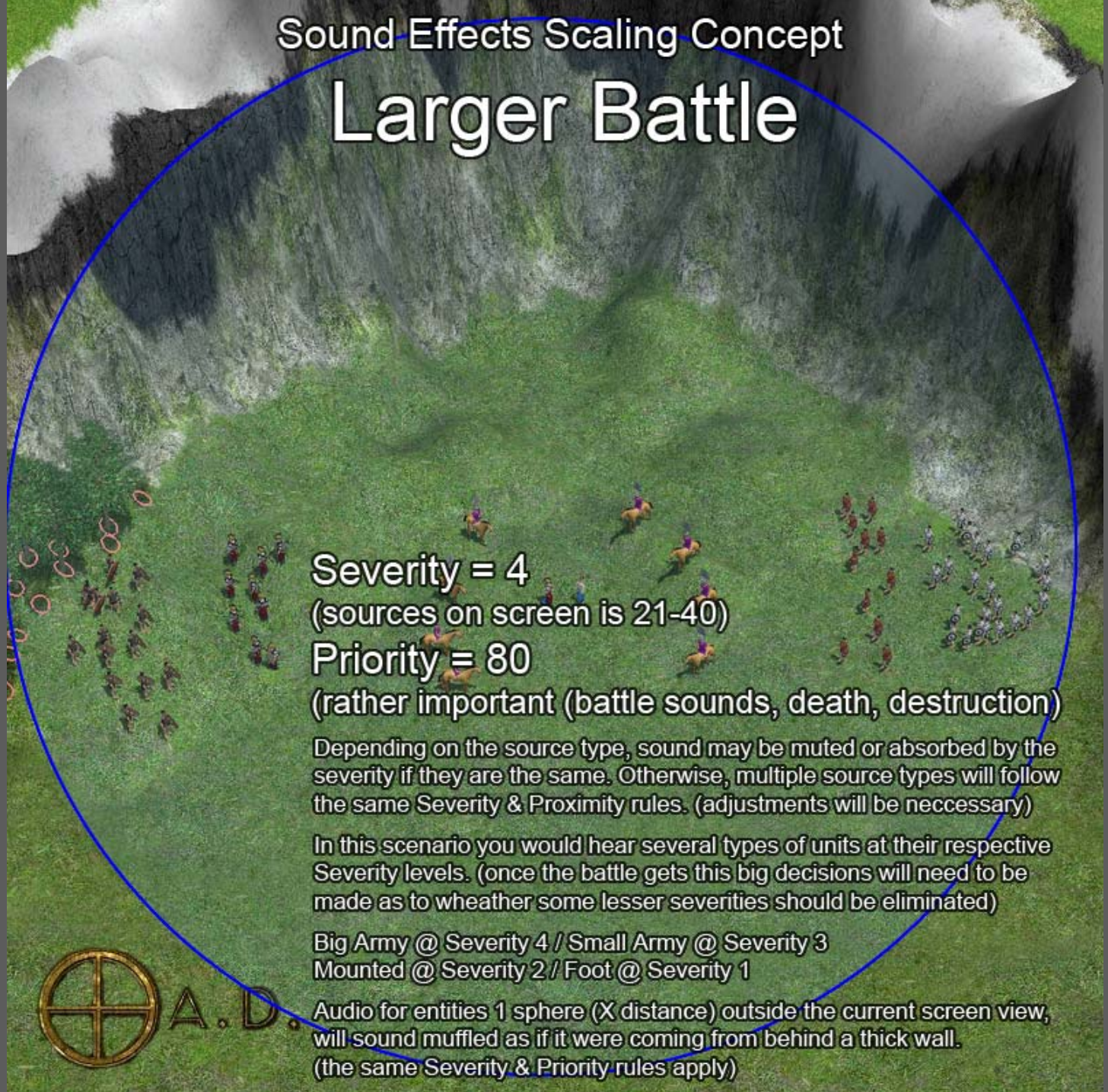
Age of Chivalry


Sound Effects Scaling Concept
Sound Spheres
Audio for entities 1 sphere (X distance) outside the current screen view, will sound muffled as if it were coming from behind a thick wall.
(the same Severity & Priority rules apply)
Depending on the source type, sound may be muted or absorbed by the severity if they are the same. Otherwise, multiple source types will follow the same Severity & Proximity rules. (adjustments will be neccessary)
In this scenario you would hear several types of units at their respective Severity levels. (once the battle gets this big decisions will need to be made as to wheather some lesser severities should be eliminated)
Big Army @ Severity 4 / Small Army @ Severity 3
Mounted @ Severity 2 / Foot @ Severity 1
A.D.

Sound Effects Scaling Concept
Small Tussle
Severity = 1
(single source sound for each entity >4)
Priority = 80
(rather important (battle sounds, death, destruction)
A.D.
Audio for entities 1 sphere (X distance) outside the current screen view, will sound muffled as if it were coming from behind a thick wall.
(the same Severity & Priority rules apply)

Sound Effects Scaling Concept
Small Battle
Severity = 2
(sources on screen is 4-9)
Priority = 80
(rather important (battle sounds, death, destruction)
Depending on the source type, sound may be muted or absorbed by the severity if they are the same. Otherwise, multiple source types will follow the same Severity & Proximity rules. (adjustments will be neccessary)
In this scenario you would hear both types of units at their respective Severity levels.
Mounted @ Severity 2 / Foot @ Severity 1
Audio for entities 1 sphere (X distance) outside the current screen view, will sound muffled as if it were coming from behind a thick wall.
(the same Severity & Priority rules apply)
A.D.


Sound Effects Scaling Concept
Large Battle
Severity = 3
(sources on screen is 10-20)
Priority = 80
(rather important (battle sounds, death, destruction)
Depending on the source type, sound may be muted or absorbed by the severity if they are the same. Otherwise, multiple source types will follow the same Severity & Proximity rules. (adjustments will be neccessary)
In this scenario you would hear several types of units at their respective Severity levels.
Army @ Severity 3 / Mounted @ Severity 2 / Foot @ Severity 1
Audio for entities 1 sphere (X distance) outside the current screen view, will sound muffled as if it were coming from behind a thick wall.
(the same Severity & Priority rules apply)
A.D.


Sound Effects Scaling Concept
Larger Battle
Severity = 4
(sources on screen is 21-40)
Priority = 80
(rather important (battle sounds, death, destruction)
Depending on the source type, sound may be muted or absorbed by the severity if they are the same. Otherwise, multiple source types will follow the same Severity & Proximity rules. (adjustments will be neccessary)
In this scenario you would hear several types of units at their respective Severity levels. (once the battle gets this big decisions will need to be made as to wheather some lesser severities should be eliminated)
Big Army @ Severity 4 / Small Army @ Severity 3
Mounted @ Severity 2 / Foot @ Severity 1
Audio for entities 1 sphere (X distance) outside the current screen view, will sound muffled as if it were coming from behind a thick wall.
(the same Severity & Priority rules apply)
A.D.

The End?