21M.380 Music and Technology
Sound Design

Lecture №15
Research and model making

Wednesday, March 30, 2016

A	B	C	D
▬	▬	▬	▬
▬	▬	▬	▬
▬	▬	▬	▬
▬	▬	▬	▬
Steam whistle	Rail joints	Steam engine	Warning bell
Doppler	Distance attenuation	HF absorption	Panning

Table 1. Student groups

1 Review: Sound design process (Farnell 2010)

1. Requirements analysis

2. **Research** (subject of today's class)

3. **Model making** (subject of today's class)

4. Method selection

5. Implementation

2 Model of steam train drive-by

- Based on our requirements analysis from some class meetings ago:

    - Sound sources: Engine, whitle, rail sounds, warning bell

    - Acoustic effects: Doppler, HF absorption, inverse square/distance law, panning

- Now let's interconnect these

- What does the geometry of the scene look like?

- Parameterization: What are meaningful parameters that the user should be able to set?

- Let's assign individual subtasks to different groups (cf., table 1)

3 Group work: Steam-train drive-by specs

For both, the sound source and the acoustic effect assigned to your group:

- Which abstractions are required? Keep things generic, so that elements can be used for other drive-by fly-by examples!

- Specify creation arguments, inlets and outlets

4 Class discussion: What the final patch will look like

- Specification of all abstractions, inlets, outlets, creation arguments

References and further reading

Farnell, Andy (2010). "Strategic production." In: *Designing Sound*. Cambridge, MA and London: MIT Press. Chap. 16, pp. 243–65. isbn: 978-0-262-01441-0. mit library: 001782567. Hardcopy and electronic resource.

21M.380 Music and Technology: Sound Design
Spring 2016