

Kjell Tore Innervik, research paper II

Evaluating the subjective effects of microphone placement on glass instruments.

A. R. Jensenius, I. Frounberg and K. T. Innervik. 2010.

Abstract

We report on a study of perceptual and acoustic features related to the placement of microphones around a custom made glass instrument.

Different microphone setups were tested: above, inside and outside the instrument and at different distances. The sounds were evaluated by an expert performer, and further qualitative and quantitative analyses have been carried out. Preference was given to the recordings from microphones placed close to the rim of the instrument, either from the inside or the outside.

A. R. Jensenius, K. T. Innervik, and I. Frounberg. Evaluating the subjective effects of microphone placement on glass instruments. In Proceedings of the International Conference on New Interfaces For Musical Expression, pages 208–211, Sydney, 2010.

[Sound Samples](#)



Table 1: Subjective judgement of attack quality for

Setup 5 (1=best), columns represent attacks, rows represent microphone placement

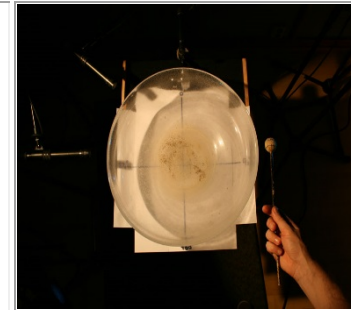
Table 1	A	B	C
Rim	2	2	1
Half-centre	3	1	2
Centre	3	2	1
Sum	8	5	4



Table 1: Subjective judgement of attack quality for

Setup 7 (1=best), columns represent attacks, rows represent microphone placement

Setup 7	A	B	C
Rim over	3	2	1
Rim outside	3	2	1
Rim inside	3	1	2
Sum	9	5	4



Setup 15

Setup 15	A	B	C
Rim over 270	2	3	1
Rim over 300	2	3	1
Rim over 315	2	3	1
Sum	6	9	3

Table 2: Subjective judgement of microphone placement for Setup 5 (1=best), columns represent attacks, rows represent microphone placement

Table 2	A	B	C	Sum
Rim	1	1	1	3
Half-centre	2	2	2	6
Centre	3	3	3	9

Table 2: Subjective judgement of microphone placement for Setup 7 (1=best), columns represent attacks, rows represent microphone placement

Setup 7	A	B	C	Sum
Rim over	3	2	2	
Rim outside	1	1	1	
Rim inside	2	3	3	

Setup 15

Setup 15	A	B	C	Sum
Rim over	1	1	1	3
Rim outside	2	2	2	6
Rim inside	3	3	3	9

Table 3: Quantitative features of microphone placements for setup 5
Rim Half-centre Centre

RMS energy 0.0049 0.0046 0.0012
Centroid (Hz) 2188 2539 3368
Spread (Hz) 33 51 79
Rollo (Hz) 2533 3710 5896

Table 4: Quantitative features of microphone placements for setup 7
Inside Over Outside

RMS energy 0.017 0.013 0.011
Centroid (Hz) 1693 1991 1707
Spread (Hz) 9.2 9.1 12.7
Rollo (Hz) 2552 2570 2528
Flatness 0.052 0.057 0.065

Figure 2: Setup 15 of microphones placed at 270, 315 and 360 degrees, and excitation at 90 degrees

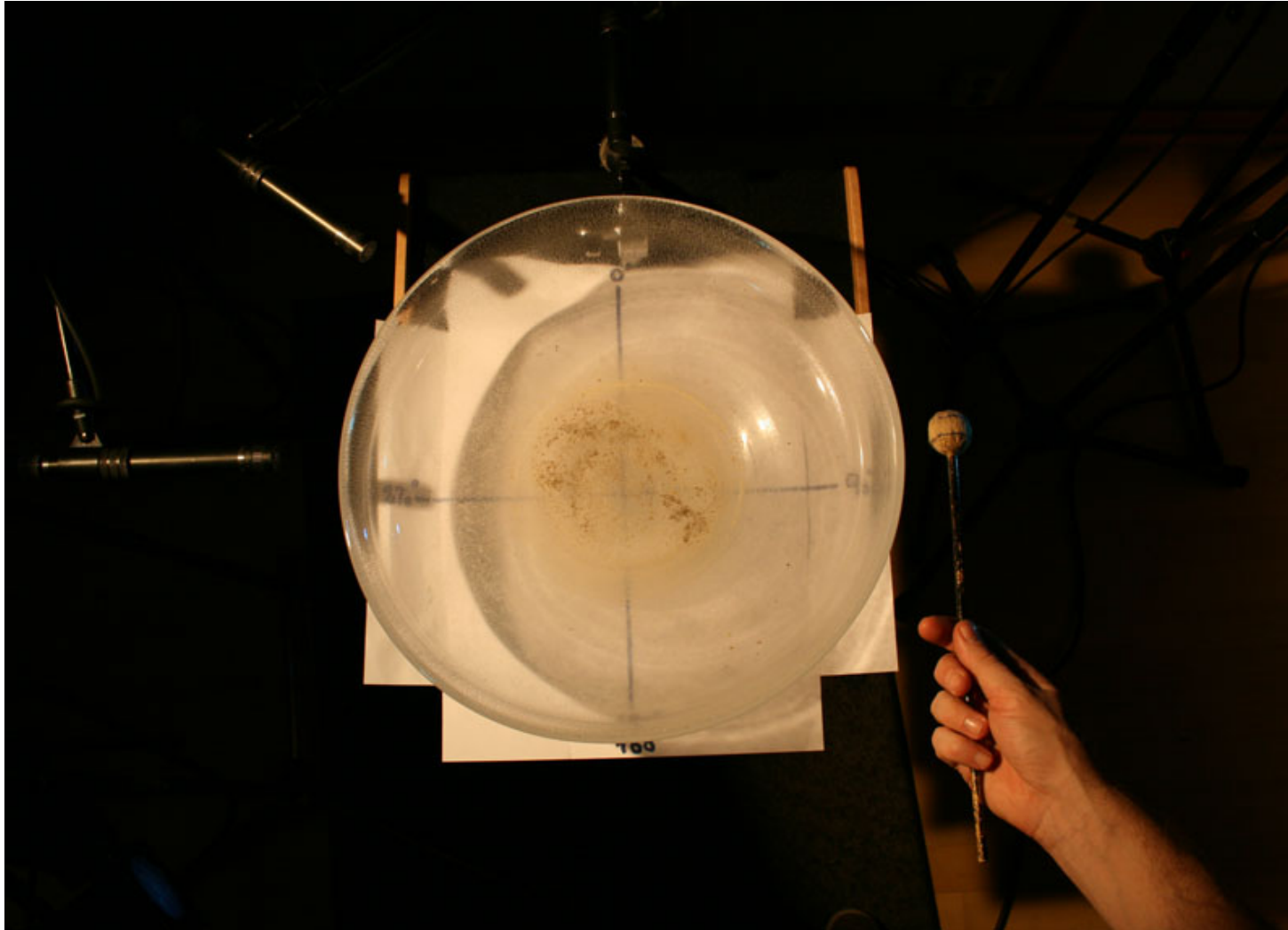


Figure 3: Microphone placement 0.5 cm above the surface, at rim, half-centre and centre positions.



Figure 5:setup 7, Microphone setup for recording sounds at the outside rim 270, 300 and 315 degrees.

Alle lydfiler til 5 og7

