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**Case study on assessing audibility by "Perspicuity" for sounds added to factory noise, using different types of speaker in directional performance**

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Music and other sounds have been played to provide a pleasant sound environment for workers in a factory. In terms of "Sound Perspicuity" this case study was conducted to assess audibility of spatial sounds, which were adjusted in level without increasing total sound pressure level (SPL) at the workstation. Furthermore, the added sounds were not audible at other workstations. Three speaker systems, including line-array speaker (60cm in length), were used for the case study. The ratio of added sound (Signal) to factory noise (Noise) was analyzed at every measuring point on a grid of 50cm by 50cm. Audibility listening tests were performed for the added sounds, such as natural-environment sounds and musical instrument tones, with Signal to Noise ratios analyzed from three types of speaker. As a result, a sound is recognized as "Kiwadachi" by a Japanese adjective word even when the factory noise has higher levels than the added sounds. Audibility test results for each added sound are discussed with different Signal to Noise ratios.