
Overview

This standard is about using a wide variety of stereo microphone operational techniques. It is about the importance of positioning microphones and the effects that this may have on the sounds of voices, images create or recorded and instruments being recorded.

This standard is about the recording of non-amplified acoustic performances using stereo microphone techniques in a suitable performance space.

This standard utilises the multi tasking skills expected of today's recording engineers, editing engineers, mastering engineers, mix engineers and programmers.

Good practice and operation:

You will have an appreciation of the requirements for finding the 'sweet spot' of an instrument along with an awareness of the alteration of tonal colour and room reflections which occur as the microphone is moved in relation to the sound source. You will be able to identify the differences between the sound signatures of some well known microphone types including reasonable quality dynamic and condenser microphones.

You will be required to participate in evaluating the difference between the sounds of microphones in different positions as well as the sound quality of different types of microphone.

You must know how to position microphones around a standard drum kit so as to maintain as much separation between different microphone parts as possible.

The use of DI boxes will be used in order to maintain an optimum quality of signal from the sound source onto a recorded track. Comparisons will be made between the use of a microphone to record an electrically amplified instrument and the same instrument DI'd straight into the desk/recording device. You will use microphone to monitor sound from amplified electric or acoustic instrument or source. You will also use DI box to monitor sound from a direct source.

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Performance criteria

You must be able to:

- P1 use psychoacoustic processes to locate sources of sound
- P2 use psychoacoustic processes related to common stereo microphone techniques
- P3 aurally evaluate stereo recorded acoustic sound
- P4 aurally evaluate live acoustic sound
- P5 aurally evaluate stereo imaging and mic placements
- P6 produce recordings with voice/guitar/percussion, string quartet, spoken word play
- P7 produce recordings with coincident, near coincident, spaced pair, decca tree, mid-side (sum and difference) mic'd pairs
- P8 set up stereo microphone systems to record acoustic performances
- P9 set up and record live performances
- P10 operate recording systems and monitor stereo techniques
- P11 record several differing acoustic stereo performances
- P12 evaluate and monitor all stereo recordings

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Knowledge and understanding

You need to know and understand:

- K1 psychoacoustic processes used in common stereo microphone techniques
- K2 the characteristics of common transducer types
- K3 how to critically evaluate stereo acoustic sound principles
- K4 appropriate settings for record live performances
- K5 the functions of common transducer types
- K6 how directional characteristics of common transducer types are achieved
- K7 the criteria used to evaluate stereo recorded and live acoustic sound
- K8 the influences on differing stereo sound recordings
- K9 microphone placement for stereo sound
- K10 factors affecting microphone choice for stereo recording

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Date approved	April 2012
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Validity	Current
Status	Original
Originating organisation	Creative & Cultural Skills
Original URN	CCSMT38
Relevant occupations	Maintenance engineers; technical support; Live sound Engineers; artists; Recording Engineers; recording Producers; mix engineers; assistant engineers; programmers; Mastering Engineers; editing engineers; OB/post engineers; writers; co writers; tape ops; Studio managers;
Suite	Music Technology
Key words	Moving coil; capacitor/condenser; RF condenser; bass tip up/proximity effect; Interaural amplitude differences; interaural timing differences; role of the pinna; Decca Tree, Stereo width; mono stereo compatibility; natural reverberation reproduction; random energy efficiency (RE); direct to indirect sound ratio; Drum kit microphone array including bass drum mic; snare mic; toms;, overheads, hi-hat; lead guitar cab (mic up amplifier); bass guitar cab; keyboard cab; vocal mic; ; bandwidth; Polar response charts; scale in dBs and degrees; cardioid; hypercardioid; omni-directional pick-up patterns; transformer balanced; microphone; mic; direct inject DI; sound; music; music technology;