CUESOU07A Apply a general knowledge of audio to work activities

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit describes the foundation skills and knowledge required to complete a range of general audio-related tasks in a live venue environment. It includes the need for an understanding of the role of the audio technician, overall audio system layouts and basic equipment recognition. Tasks would generally be completed under supervision.
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Application of the Unit

Not applicable.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

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Element	Performance Criteria
1 Make preparations for audio set-up	1.1 Extract key information from audio installation plans and confirm requirements with supervisor
	1.2 Correctly identify preferred rigging and positioning points for audio equipment
	1.3 Correctly identify cables used to connect different audio components
	1.4 Correctly identify and sort equipment and accessories in preparation for set-up, ensuring appropriate handling and taking account of equipment differences
2 Complete tasks using audio equipment	2.1 Correctly connect, disconnect and position audio system cables, including microphone, speaker, multicore and power feeds, in accordance with supervisor's instructions and safety requirements
	2.2 Wire the audio system in correct sequence and confirm with supervisor
	2.3 Set start up and operating settings in correct sequence and correctly use features of audio desk in accordance with instructions
	2.4 Identify any problems with equipment promptly, take action within scope of individual responsibility or report to supervisor
	2.5 Use positioning and equalising techniques to create optimum sound quality
	2.6 Communicate appropriately with other technicians, performers or customers during the completion of tasks

Required Skills and Knowledge

Not applicable.

Evidence Guide

Underpinning skills and knowledge

Assessment must include evidence of the following knowledge and skills:

the general scope and potential of audio operations within different live production contexts, e.g. theatre, music, corporate

the relationship between audio operations and other technical and performance areas, including lighting, vision systems and performance

typical roles and responsibilities of audio technicians in different contexts, including different career paths

fundamentals of sound in a circuit, including understanding that microphone level is -40 to -60dB line level

features and meaning of a typical sound system signal flow chart, including signal chains, gain structure and levels

decibel levels and basic sound pressure level measurement, including that frequency is measured in Hertz, understanding the differences between 100Hz and 1kHz

understanding of phase, including phase cancellation, and that at 180 degree phase difference signals do cancel each other out

common terminology used in relation to audio

key features, purpose and basic operating procedures of major types of audio equipment, including different types of loudspeakers, audio mixing consoles, signal processing equipment, input source equipment and common accessories

different types of cable, their usage in different situations and how to care for them, including:

microphone cables; how to run safely and neatly and where to store excess

speaker cables; how to run safely and neatly and avoid lighting components

multicore cables, how to run safely and neatly and where to store excess

power cables, how to run safely and neatly and where to store excess

requirements for the storage of audio equipment

Occupational Health and Safety requirements and legislation that relate to audio personnel, in particular with regard to working safely with electricity

literacy skills sufficient to extract key information from audio installation plans

numeracy skills sufficient to sort and count equipment.

Linkages to other units

This unit underpins and has linkages to general technical units and all other audio units, and combined training and assessment with those units may be appropriate, eg:

CUFSAF01B - Follow health, safety and security procedures

CUETGE11A - Handle physical elements safely during bump in/bump out

Critical aspects of evidence

The following evidence is critical to the judgement of competence in this unit:

recognition of sound equipment, including key features and purpose

understanding of signal flow through the audio chain

completion of audio-related tasks in accordance with health and safety procedures.

Method and context of assessment

The assessment context must provide for:

practical demonstration of skills through the completion of a range of preparatory and set-up tasks with industry-current audio equipment

project or work activities that allow knowledge to be applied to specific production contexts and situations.

Assessment may incorporate a range of methods to assess performance and the application of essential underpinning knowledge, and might include:
direct observation of the candidate completing audio-related tasks
evaluation of equipment which has been set-up by the candidate
oral or written questioning to assess knowledge of equipment and audio theory
review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate.

Assessment methods should closely reflect workplace demands and the needs of particular groups (e.g. people with disabilities, and people who may have literacy or numeracy difficulties such as speakers of languages other than English, remote communities and those with interrupted schooling).

Resource requirements

Assessment of this unit requires access to:
a range of sound equipment as identified in the Range Statement
a sound system
an environment in which an audio system can be run.

Key competencies in this unit

Key competencies are built into all workplace competencies. The following table describes those applicable to this unit. Trainers and assessors should ensure that they are addressed in training and assessment.

Level 1 = Perform
Level 2 = Administer and Manage
Level 3 = Design and Evaluate

Collecting, **organising and analysing information** (**1**)

Reading audio plan to determine equipment required.

Communicating ideas and information (**1**)

Discussing work requirements with supervisor.

Planning and organising activities (**1**)

Positioning and placing equipment appropriately ready for installation.

Working with others and in teams (**1**)

Liaising with other technicians during set-up.

Using mathematical ideas and techniques (**1**)

Calculating the number of cables required.

Solving problems (**1**)

Amending positioning of equipment to remove feedback problems.

Using technology (**1**)

Wiring the audio system.

Underpinning skills and knowledge

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Using mathematical ideas and techniques (**1**)

Calculating the number of cables required.

Solving problems (**1**)

Amending positioning of equipment to remove feedback problems.

Using technology (**1**)

Wiring the audio system.

Range Statement

The following explanations identify how this unit may be applied in different workplaces, sectors and circumstances.

Equipment must include:

loudspeakers

audio mixing consoles

input source equipment.

Sound equipment may include:

stereo 3-way PA system for audiences of different sizes

microphones of different pickup patterns and types

amplifiers to suit the system

speakers as part of the system

analogue FOH mixing desk of at least 24:8:2 format

effects rack

CD player

computer DAT

mini disc

hard disc recorder

signal processing equipment.

Accessories used in live audio may include:

DI boxes

insolation transformers

active splits

SPL meters

white or pink noise generators

spectrum analysers

analysis software

continuity and phase testers.

Equipment differences for loudspeakers may include:

size of paper cone loudspeakers

features of high frequency compression driver types.

Equipment differences for audio mixing consoles may include:

how front of house consoles differ from stage monitor consoles, particularly the difference between pre and post fade auxiliary sends.

Equipment differences for input source equipment may include:

devices in the main signal chain, e.g. equalisers, CD, cassette, mini disk

devices inserted over individual channels, such as noise gates, limiters, compressors, preamps.

Correct sequencing of wiring would include:

connection of adequate mains to all components and understanding of power isolation

safe and neat positioning of cables and multicore

patching to create a complete signal chain from input to output.

Correct start up sequence and operating settings for an audio system would include:

ensuring all output faders on console are down (at minimum settings or muted)

ensuring all amplifier volume controls are down (at minimum settings)

powering up all front-of-house equipment first

powering up amplifiers last

winding up amplifier volumes after all equipment is powered up.

The following explanations identify how this unit may be applied in different workplaces, sectors and circumstances.

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powering up amplifiers last

winding up amplifier volumes after all equipment is powered up.

Unit Sector(s)

Not applicable.

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