

THE ACOUSTIC TEST ROOM (ATR)

The Acoustic Test Room is fitted out as a sound control room, such as would be found at a broadcasting centre. Its purpose is to enable the acoustics of such rooms to be investigated in detail. The experiments required could not be carried out in an operational area.

On the walls are modular absorbers. These reduce the reverberation time in the room or, put more simply, they make it sound less like a bathroom and more like the open air. Several types of modular absorber have been designed at Research Department, of which two are present in this room. The type with a heavily perforated front is designed to absorb over a wide frequency range and the type with a slightly perforated front is designed to absorb at low frequencies.

In the ceiling are some experimental acoustic diffusers. These are currently being developed at Research Department. Their function is to break up floor-to-ceiling reflections which would otherwise give the room an unpleasant 'honky' sound.

The room has recently been used to investigate the interactions between different elements of acoustic treatment such as the ceiling tiles, the carpet and the wall treatment. The results of this work should increase the reliability with which the required reverberation time is achieved in new or refurbished studio areas.

The room has also been used to investigate the influence of room size and layout on the low frequency response obtained from a loudspeaker. Computer software has been developed to make predictions for different loudspeaker and listening positions, and experimental results show encouraging agreement.