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A comparative study of two alternative methods for
balancing type II FM systems with digital signal
processing (DSP) hearing aids

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ABSTRACT

Balancing procedures for using type II FM systems with analogue hearing aids were well established (Rowson and Bamford, 1995) before the development of digital signal processing (DSP) hearing aids. Recommendations for balancing these with type II FM systems were given by the manufacturers, but no empirical evidence was available to validate these. This study presents the data collected from a sample of nine profoundly deaf teenagers taught in a special school using a natural aural approach. They were wearing high power DSP aids combined with type II FM systems and were tested using the following three test conditions;

- aids only,
- the 'traditional' 65/75 dB balancing protocol,
- the recommended equal gain protocol.

It is shown that the latter provides statistically significant improvement in benefit when listening in noise. Analysis of the data also affords the opportunity to compare the FM conditions with the aids only condition and to consider the relative merits of closed set sound and sentence testing material. There were found to be compelling reasons for rejecting the use of sounds only in favour of closed set sentence material. A student questionnaire administered immediately after testing revealed responses that were consistent with the test data, suggesting that this is a valid method for validating FM provision for students with good levels of auditory awareness.

An aim throughout had been to propose a methodology that would be available to practitioners in the field without access to specialist facilities. Proposals are made for