5.1 INTRODUCTION

To a large extent, today’s high-level monitor loudspeakers had their origins in motion picture traditions that began in the late 1920s. Subsequent development of high-frequency (HF) compression driver and horn systems during the thirties provided an art that has remained largely unchanged in its fundamental aspects for more than half a century. Recent years have seen remarkable developments in areas once thought to be the domain of consumer high fidelity, and it is now possible to design monitor loudspeakers using direct radiator components, that have high output capability with reliability and low distortion. The base of measurement has broadened substantially in the last decade, and we now find monitor loudspeaker designs that have been refined in areas scarcely thought of earlier.

Of course there is no single philosophy of monitor loudspeaker design, and different approaches seem to favor different musical requirements. There are, however, certain performance attributes that all recording engineers would agree are important. It is the ranking of these attributes and system requirements that leads us in different directions, according to our respective monitoring needs.

Figure 5-1(a) shows a signal flow diagram for a typical monitor loudspeaker system. The dividing network contains low-pass, band-pass, and high-pass sections, which divide the program spectrum so that each transducer in the system receives only those frequencies intended for it. Level controls, which are optional, provide some degree of adjustment of the system to the environment. Photographs of typical monitors in several power classes are also shown. Note that many loudspeakers are labeled as monitors by their manufactures when, in fact, they may not be generally used as much. Let the buyer beware.
Figure 5-1. Typical recording monitor loudspeaker. (a) Single-line diagram for a three-way monitor system. (b) A three-way "bookshelf" monitor with 300-mm (12-in.) low-frequency transducer. (JBL data). (c) A two-way coaxial system with 300-mm (12-in.) low-frequency transducer. (UREI data). (d) Cutaway view of a coaxial system with 380-mm (15-in.) low-frequency transducer (Tannoy data). (e) A pair of two-way monitor systems, with 380-mm (15-in.) low-frequency transducers, utilizing a uniform-coverage high-frequency horn (JBL data).