260 MONITOR
OPERATOR'S MANUAL

Gain at AUX Input: Control Maximum Frequency 1.0 kHz	28.0 dB
Gain at Line In: Level Maximum Frequency 1.0 kHz	14.0 dB
Power Output: Frequency 1.0 kHz	130.0 Watts r.m.s.
T.H.D. at Rated Power:	0.1 %
I.M. at Rated Power:	0.1 %
Frequency Response:	See graph
Input for Maximum Output: AUX Input: LINE Input:	0.60 Volts r.m.s. 4.20 Volts r.m.s.
Booster Output at Full Power:	2.2 Volts r.m.s.

GENERAL DESCRIPTION:

A monitor system is a high level system to be used for sound reinforcement on the stage. The monitor system on most locations is just as, if not more, important as the main system. If a performer can hear himself, not only loud but with a natural tonal characteristic, he will usually put forth his best performance.

The 260 Monitor system (see figure 1) is designed for the professional musician who requires a quality stage monitor system with the flexibility of feedback control and the capability of delivering high sound pressure levels. The 260 Monitor system contains a nine band graphic equalizer to aid in feedback control and a 130 Watt r.m.s. power amplifier to deliver the high dynamic range, full frequency response output signal to the speaker systems.

The 260 Monitor unit can be used as a booster amplifier with existing instrument amplifiers and PA systems. The unit is designed to accept a dynamic range that extends from microphone levels to high level speaker systems. The ability of the 260 Monitor unit to function in this wide range of applications put the 260 Monitor system in a class apart from most other units available today.

OPERATIONAL DESCRIPTION :

The 260 Monitor amplifier has two input sections. The AUX input is of the high impedance type (approximately 50 K Ohms) and is capable of an extremely wide dynamic range operation. Almost any input level from microphone to speaker outputs will drive the 260 Monitor to full output when the AUX input is used. The AUXILIARY LEVEL control adjusts the amount of signal from the AUX input jacks.

The LINE IN jacks are designed to handle high level signals only. A typical input would be 1.0 to 20.0 Volts r.m.s. The LEVEL control determines the amount of signal from the LINE IN jacks.

The AUX input and LINE inputs may be used simultaneously. A practical example of this mode of operation is when the 260 Monitor is being used with a high level source such as a tap from an existing speaker system and a microphone is plugged into the AUX input. This would allow the performer to hear a specific member of the group at the same time as the complete mix.

The equalization circuitry used in the 260 Monitor is the latest active filter design. High quality, low noise integrated circuits assure the user of obtaining maximum performance with minimum noise and distortion. All of the circuit elements are in parallel, which in the extremely unlikely event of I.C. failure, the entire unit will not be affected. All integrated circuits used in the 260 module are mounted in sockets to allow rapid repair and ease of maintenance.

There are nine bands of equalization, each capable of ± 12.0 dB of equalization. The type of integrated circuit used in the 260 Monitor is several orders of magnitude faster than those used by most manufacturers. The speed of the I.C.'s are one of the small but important facts which in the long run set apart quality equipment from middle of the road or average equipment.

The Booster Output from the 260 Monitor is a line level, low-impedance output which can be used to drive additional power amplifiers. The output impedance is approximately 600 Ohms and the level is approximately + 10.0 dBm.

The power module and power supply used in the 260 Monitor is designed to deliver a full Hi-Fi frequency response (20.0 Hz to 20.0 KHz) at 130 Watts r.m.s. The T.H.D. and I.M. distortion measurement are typically lower than most stereo equipment on the market today. From the specification sheet, it can be seen that the 260 Monitor can meet or exceed the specifications of almost any other equipment regardless of price range.

INSTALLATION:

In a typical installation, the monitor signal is derived from the mixing console. This configuration allows any or all of the mixer inputs to be sent to the 260 Monitor amplifier. Shielded cable must be used between the mixing console output and the 260 Monitor module input. Because of the high power output capability of the 260 Monitor amplifier, number 16 or larger lamp cord should be used between the monitor amplifier and speaker system. The minimum recommended load impedance is 4.0 Ohms. The usual load would be two 8.0 Ohm speaker systems in parallel.

An alternate mode of operation and connection can be used when only one performer needs to hear himself through a single or delegated monitor system. The best approach to this application is to plug the microphone directly into the 260 Monitor and use the booster output to the mixing console. If a low impedance microphone is used, an in-line matching transformer will be required for impedance matching purposes.

It is very important that shielded cable be used for all inputs on the 260 Booster. Shielded cable should also be used between the 260 Booster output and additional power amplifiers. Failure to observe this rule will most likely result in hum or noise problems.

TYPICAL MONITOR SYSTEM OPERATION:

The following procedure is a guide to the correct installation and operation of a high level monitor system. It should be remembered that this is a guide only and almost anything you do will vary the operation and performance of the monitor system.

STEP ONE: Connect the equipment as described in previous sections of this manual. Locate all interconnecting wiring in a safe spot and securely tape the wires to the stage or floor. Because of the great possibility of someone getting tangled up in monitor cables, it is best to not attach them too securely to the speaker enclosures. It is better to have one long cable that is unplugged than to have two short cables that are the result of someone tripping!

STEP TWO: Locate the monitor speaker at the exact null of the directional microphones. This is not hard to do. Simply turn the system on and adjust everything to an indicated flat equalization. The term indicated is used because there is no guarantee of anything actually having an accoustically flat response. Slowly bring up the gain on both the 260 Monitor controls and the mixer until a low level oscillation or feedback results. Move the speakers and microphones until the feedback stops. Do not stand in front of the speakers when moving them around. You will be surprised how little you have to move things to pick up a few more dB of gain before feedbacks. If possible, nail, weld, glue, or tape everything down. This is especially important when doing multiple act concerts.

STEP THREE: After carefully locating the correct positions for the microphones and monitor speakers for maximum gain before feedback, the process known as equalization can be undertaken. As previously mentioned, all equalization should be adjusted to an indicated flat response at this point.

Slowly increase the console monitor send level and the 260 Monitor gain until feedback occurs. Adjust each equalizer section until the feedback stops. It is important to always return the equalizer sliders that ARE NOT at the feedback frequency to the center or flat response. There will usually be two or more feedback points and each may be corrected by careful adjustment of the graphic equalizers. Over equalization will result in poor sound and should be avoided. Use the minimum amount of equalization that results in a natural sound and reduced feedback.

MONITOR SPEAKER SYSTEMS:

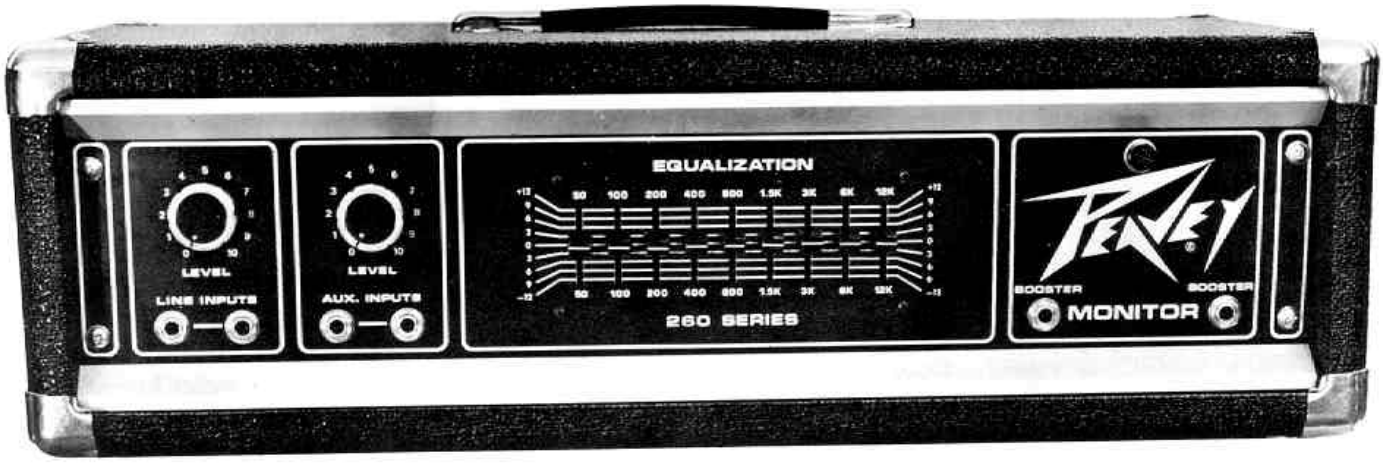
The speaker systems used for monitoring purposes should have a flat response and wide dynamic range. The flat frequency response will result in high sound pressure levels before equalization is required and a much more natural sound. The monitor speakers must also be able to take large amounts of power safely. The more efficient the speaker system, the less power will be required.

The 260 Monitor amplifier is designed to power any speaker system with a load impedance of 4.0 Ohms or greater. Recommended speaker systems are as follows:

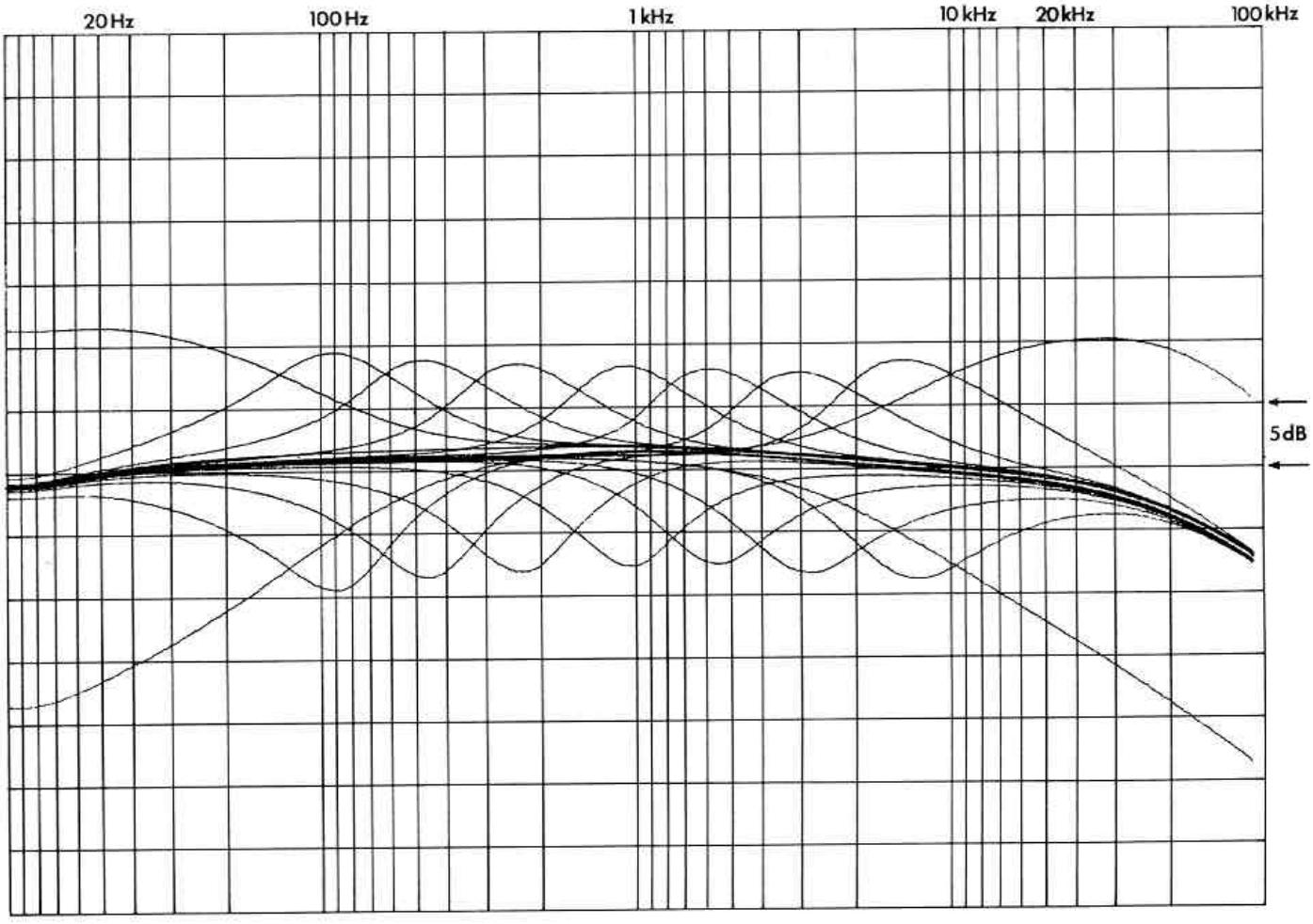
1. Peavey Model 112TS—Fixed angle monitor enclosure. Ported system with one (1) 12-inch speaker and two (2) piezo electric tweeters.

2. Peavey Model 112T—Adjustable angle monitor enclosure. Ported system with one (1) 12-inch speaker and two (2) piezo electric tweeters.

3. Peavey Model 212TS—Fixed angle monitor system with two (2) 12-inch speakers and two (2) piezo tweeters.



EQUALIZER FREQUENCY RESPONSE GRAPH



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