

AES Proposal 1

Classification of PA and Monitor Systems

By Rob Gainey



Introduction

To whom this may concern; my name is Rob Gainey and I've been a Live Sound Reinforcement Engineer for almost 30 years. During this time, a great many advances have taken place in our industry and created a variety of systems that we as engineers are asked to work with. While most of us would readily agree that is only one type of true "professional" PA and Monitor system, there are others that are being called a "PA" and have blurred the lines of distinction between them. To those of us who have worked with all of these types of systems, these distinctions are glaringly obvious; however to many people who are just getting into the world of audio, there are still many misconceptions as to the true definition of a PA and Monitor system. I have spent some time looking for classifications of various types of PA systems, but have yet to run across any. It seems a bit strange that no one has spent much time defining the distinctions between them in a way that can be easily understood by anyone with a basic knowledge of them.

While writing a book for musicians regarding stage sound, I felt it necessary to establish the differences between the various systems that they will work on as they become more successful, particularly when it comes to the stage monitors they will be working with. The differences in capabilities between some of the systems has been a source of misunderstanding between the musicians and engineers for a long time and I feel it would be of great benefit to all if these distinctions were more clearly defined.

There can be no doubt that the capabilities of a "single mix rehearsal PA" are completely different from the possibilities of a "small club system"; even more so for that of a "large arena system". And with In-Ear monitors becoming more prevalent, the combinations have further increased the possibilities of each. I would like to submit a proposal to establish a System of Classification for these distinctions that is open-ended and will accommodate future advancements as they become available. I believe I have isolated some very important aspects about each type of system that will allow them to be easily identified and defined and would like for you to consider these distinctions between various types of PA and Monitor systems. I found these to be very helpful when discussing PA systems with those who aren't engineers.

Thank you very much, Rob Gainey

Rob Gainey
Engineer/Musician
Author



Classifications of PA and Monitor Systems

The purpose of this document is to establish the criteria in which PA and monitor systems are classified and to more clearly define their distinctions in a way that can be understood by anyone with a basic understanding of Public Address Systems. Since most of these systems in operation have similar attributes, many engineers will find them to be logical and common sense. Some of the criteria used in this document is based on the following:

- 1. The quantity of mixes available for useage.**
- 2. The number of engineers required to operate each type.**
- 3. The capabilities of the mixing consoles.**
- 4. The capabilities of the Main and Monitor output systems.**

It is my proposal that PA and monitor systems be divided into 4 distinct groups using the above points of evaluation:

Type I- Based on the simple rehearsal PA system used by the vast majority of players throughout the world, a "Type I" system should be defined as having the following attributes:

Type I PA System

1. A single stereo or mono mix available for use.
2. No engineer is required to operate this system; set it and forget it.
3. A small format mixing console. All mixing console facilities are available for use, regardless of capabilities.
4. One or more cabinets run in either a stereo or mono configuration and directed towards the audience and away from the stage and limited to one zone of coverage.

Type I Monitor System

1. A single stereo or mono mix available for use.
2. No engineer is required to operate this system; set it and forget it.
3. A small format mixing console. All mixing console facilities are available for use, including Channel EQ.
4. One or more cabinets run in either a stereo or mono configuration and directed towards the stage and away from the audience and limited to one zone of coverage.

Note* Item #4 is the only distinction between these two systems.

Type II- Based on the small club PA system used by a large number of small venues throughout the world, a "Type II" system should be defined as having the following attributes:

Type II PA System

1. A single stereo or mono mix available for FOH use.
2. One (1) engineer is required to operate this system for both Mains and Monitors.

3. A medium format mixing console capable of mixing both FOH and Monitors.
4. Multiple cabinets run in either a stereo or mono configuration and directed towards the audience and away from the stage. This can be of any size and type, but rarely more than one zone of coverage.

Type II Monitor System

1. Multiple stage mixes from the FOH console that share a common gain structure and processing chain.
2. One (1) engineer is required to operate this system for both Mains and Monitors.
3. A medium format mixing console capable of mixing both FOH and Monitors. There is No EQ on the monitor sends.
4. Typically, but not limited to 4 onstage mixes and generally through floor wedge monitors. May include a single In-Ear monitor mix.

Type III- Based on a typical arena PA system used by large venues throughout the world, a "Type III" system should be defined as having the following attributes:

Type III PA System

1. One or more FOH mixes or zone systems.
2. Two (2) engineers are required to operate this system; FOH and FOB (monitors).
3. A pair of medium to large format mixing consoles; one in the FOH position and another for onstage monitor mixing duties with separate signal paths.
4. Medium to large arrays of cabinets run in either a stereo or mono configuration and directed towards the audience and away from the stage. There can often be more than one zone in the system.

Type III Monitor System

1. Multiple onstage monitor mixes with separate EQ and independent signal path.
2. Two (2) engineers are required to operate this system; FOH and FOB (monitors).
3. A pair of medium to large format mixing consoles; one in the FOH position and another for onstage monitor mixing duties with separate signal paths. There is Channel EQ available for monitor sends.
4. Multiple onstage monitor wedges including sidefill cabinets and directed towards the stage and away from the audience. May include up to two (2) In-Ear monitor mixes.

Type IV- Based on the arena PA system used by the majority of high-profile acts throughout the world and having In-Ear monitors incorporated, a "Type IV" system should be defined as having the following attributes:

Type IV PA System

1. One or more FOH mixes or zone systems.
2. Two (2) engineers are required to operate this system; FOH and FOB (monitors).
3. A pair of medium to large format mixing consoles; one in the FOH position and another for onstage monitor mixing duties with separate signal paths. There is Channel EQ available for monitor sends.
4. Medium to large arrays of cabinets run in either a stereo or mono configuration and directed towards the audience and away from the stage. There can often be more than one zone in the system.

Type IV Monitor System

1. Multiple onstage monitor mixes with separate EQs and independent signal paths.
2. Two (2) engineers are required to operate this system; FOH and FOB (monitors).
3. A pair of medium to large format mixing consoles; one in the FOH position and another for onstage monitor mixing duties with separate signal paths. There is Channel EQ available for monitor sends.
4. Multiple In-Ear monitor systems and may include any number of conventional monitor wedges or sidefills.

Note* The difference between Type III and Type IV is the predominant use of In-Ear monitor systems for its performers.

Future Classifications

This format allows inclusion of systems that have not been established to date and present a distinct difference between any shown in this proposal by using these four points of criteria:

- 1. The quantity of mixes available for useage.**
- 2. The number of engineers required to operate each type.**
- 3. The capabilities of the mixing consoles.**
- 4. The capabilities of the Main and Monitor output systems.**

Should new technologies present additional considerations in classifying PA and Monitor systems, it would be wise to incorporate them into this doctrine or one of similar nature and intent.

Please submit your thoughts!

Hello everyone! I would like to know what you think about this proposal. I'm only one person, so I couldn't possibly see things from all angles. Many of you are much more informed on matters of AES, high-end touring systems and installation techniques than I, so I'd like to hear any suggestions you may have in regards to the content, presentation and objectives of this proposal. It's doubtful that I would be able to go to the AES alone and have this implemented, but if enough engineers and musicians agree that some form of classification of PA and monitor systems would be a worthy idea, we may be able to make this happen.

Since we are all in this business together, I'm offering everyone the opportunity to make any suggestions they like in regards to this proposal. I certainly couldn't ask anyone to support anything they didn't truly believe in, so please let me know what you think about this.

*To those of you who ask "Why do this?", I reply "Why not?". Would it really hurt anyone to be able to quickly assess a PA and monitor system, whether by this standard or any other? Would it help people who aren't engineers understand the nature of a system they're working with? I think so! At the very least, it would bring to their attention that **THERE IS A DIFFERENCE** between various PA and Monitor systems.*

So please take a minute to look this over; even if its of no concern to you, let me know what you think! If you would like to add to this proposal, feel free! I'm going to need all the help I can to get something of this nature in presentable shape. If you like this idea and would support it for AES consideration, please send your contact info and a short sentence stating this. I would like to submit as many endorsements as I can along with this document. I think the only way it'll receive any attention is if it's a collaborative effort.

Looking forward to hearing from all of you! Rob Gainey

Currently Endorsed by

1. **J Rob Gainey**- Engineer/Musician/Author-Los Angeles, CA
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2. **Atma Anur**-Professional Drummer (San Francisco, CA) *"I must say that after more than 25 years of professional experience this classification looks to be quite correct to me. The things you specified in the categories look exactly like what I have encountered in each situation you talked about. I am not an expert, only a sideman with a very wide range of experience...this looks great! I can't add anything, I only wish you luck in getting this to be a reality with AES. The whole thing is a very good idea and will make "talk" much easier in the future for all of us..."* blessings, Atma

3. **Justin Bond**- Aspiring Musician (West Hills, CA) *"As a gigging guitarist in the Los Angeles area, I have access to a wide variety of venues to perform at, and I like to always know what kind of situation I'm getting into before booking a show (how big is the stage, any backline instruments we have to use, etc.) If you can add a basic PA classification to the mix, that would take a lot of guess work out of booking a venue, especially if it's as in depth as this. Thanks!"*

4. **Danny 'Danyal' Lee** - Engineer/Mixer (Albany, NY) *"I'm a FOH engineer/crew member for a smaller arts venue. In my experiences at this venue, we had acts of all types from relatively unknown locals to international acts. In dealing with such a broad range of acts, you also receive the full gamut of technical requirements, stage plots, riders, etc. With Mr Gainey's proposal, I believe it would greatly benefit artists AND venues/engineers to be able to so effectively simplify such documentation while simultaneously conveying all essential information. Simply put, it's a VERY well thought out system which allows for modification and additions as technology grows/changes and is long overdue in this industry."*

5. **Nick Ruggiero** - Engineer (Albany, NY) *"By having PA Systems described like this, you will know how big the PA is and the crew required to operate it (load in and load outs). Plus venues are able to advertise what setup they have in-house. This will make it easier for people on tour."*