THE JOURNAL FOR LIVE EVENT TECHNOLOGY PROFESSIONALS JANUARY 2020 | PROSOUNDWEB.COM

LIVESOUND INTERNATIONAL

INSIDE

MORE CAN BE MUCH MORE

Loud, proud, and unmediated audio reigns with the Black Keys.

SIMPLE YET VITAL

Best practices in developing input lists and stage plots.

by Eric Ferguson

In the world of live audio, no documents are as ordinary as input lists and stage plots. Every day across the world, artists, management, and production technicians create, share, and employ these seemingly simple documents to prepare for concerts and other live events.

Unfortunately, as commonplace as input lists and stage plots are, they are regularly lacking crucial content, are filled with misinformation, or are difficult to decipher. As a college educator who instructs young sound engineers, I do my best to communicate best practices. What follows is my current list of suggestions on how to fashion the all-important input list and stage plot.

GENERAL ADVICE

My first recommendation is to avoid the temptation to combine input lists and stage plots together. This approach is frequently seen on documents created by Stage Plot Pro, a popular plot construction program used by many in the industry. While in principle I have nothing against a combo doc, it rarely works out well in reality. Some important information is inevitably left off in order to save room, or because a software template doesn't include it. When an effort is made to include all data on a single page, the document's text often becomes too small to be readable.

Speaking of readability, it's important to remember your audience. Technicians come in all ages and with all manners of visual acuity. Many will read your docs under dim stage lights. As tempting as it is to use small, cursive, or otherwise creative fonts, always employ standard block text in a larger-than-normal size.

Related to this, please use a computer to prepare documents. It's the information age, and professionalism demands attractive and easily discernible documentation. Computers live in our pockets, and the days of cocktail napkin stage plots have passed. Learn from "Spinal Tap" and never expect chicken-scratch drawings to deliver precise measurements.

It's also important to share these documents as PDFs. While cross-platform file exchange is not as bad as it used to be, PDFs are the most universal file format for text and graphic sharing. I regularly encounter this issue with my students, who frequently submit unreadable assignments created on random applications or operating systems. If we want our docs easily read by all, use PDFs.

Also be wary of cloud-based applications in which your readers will need internet access to view the documents. While Google Docs and other solutions are immensely powerful in office environments, stage technicians don't always have reliable internet or spare minutes on a job site to remember a password and sign into a server. Simply export them as PDFs and you're good to go.

AVOID FRUSTRATIONS

Nearly all audio professionals have worked a gig in which the information they received in advance was incorrect and/or out of date. It's almost a cliché in our industry for a backline company to provide musical equipment and/or a local crew to set up a stage, only to find out when the artist arrives that the setup is based on a previous tour's documentation. Often this occurs because production information is emailed to promoters by booking agents far in advance of a show.

While we can't stop oblivious office staff from spreading ancient information, there's a way for us to send a coded message to tech crews of future gigs. A simple date or title such as "Summer Tour 1969" can alert technicians to the exact vintage of the information enclosed.

Going a step further, a better solution might be to place an expiration date on your docs. A warning such as "This Input List Is Only Valid Through 1/15/2020" will do the trick, and you'll want to follow it with instructions as to whom to contact after expiration.

Regardless of the chosen document-dating approach, contact information *must* be provided on all stage plots and input lists. The inclusion of the name, email, and phone number for the front of house engineer, production manager, or other artist representative is a necessity for helping local technicians answer questions and avoid assumptions.

Of course, it's the responsibility of venue staff and other local techs to double check the information provided to them. If you work in this capacity, be sure to always "advance" the show by contacting artist/tour representatives. During the advancing process, double check the docs that were previously provided to you by emailing them to your tour contact. This simple confirmation of accuracy can save many headaches.

GETTING STARTED: INPUT LISTS

Inputs lists are easy to create. The most basic list informs the reader which sound sources require reinforcement. Simple input lists, such as those used by small town bands, may not even specify the types of mics to be used. More complicated versions are usually drawn up by an artist's FOH engineer, and are in a particular order, require specific microphones, and offer other information such as mic stand type, sub snake patching, and console outboard requirements.

As mentioned earlier, always remember your audience when making production documents. Anything that can be done to make an input list easier to read will lessen the probability of wiring and other mistakes. An improvement to the traditional text-based input list is to build the document around a table. Tables allow grid lines to be present that make it easier for the reader to see information associated with a specific input.

Taking this a step forward, I recommend shading every other line in the table. This further assists the technician in reading the document. **Figure 1** offers a sample input list, demonstrating shading and other suggestions.

Therapy Cage – Fall 2019 Tour
Fader Finger – FOH Engineer & Production Manager
(555) 867-5309 • fingerf@bigtourtech.com

Input	Sub-Snake	Source	Mic	Stand	48V
1	Drms 1	**Kick In**	Beta 91	N/A	
2	Drms 2	**Kick Out**	D6 or Beta 52	Short	
3	Drms 3	**Snare Top**	MD 441 (2nd Choice: SM57)	Small	
4	Drms 4	**Snare Btm**	Beta 98	Small	
5	Drms 5	**SPARE**	KM 184 or other SDC	Medium	X
6	Drms 6	**Rack Tom**	e604 or Beta 98	Clamp	
7	Drms 7	**Floor Tom**	e604 or Beta 98	Clamp	
8	Drms 8	**SPARE**		N/A	
9	Drms 9	**OH Left (Stage Right)**	SM81 or other SDC	Tall	X
10	Drms 10	**OH Right (Stage Left)**	SM81 or other SDC	Tall	X
11		**Bass DI (Geddy)**	Artist Provides	N/A	X
12		**John Electric Guitar (SR)**	SM57	Short	
13		**George Electric Guitar (SL)**	SM57	Short	
14		**John Vocal (SR)**	KMS 104 (2nd Choice: Beta 87)	Medium	X
15		**Geddy Vocal (Center)**	Shure KSM9 Wireless (Artist Provides)	Medium	X
16		**George Vocal (SL)**	KMS 104 (2nd Choice: Beta 87)	Medium	X
17		**SPARE VOCAL**	Shure KSM9 Wireless (Artist Provides)	Medium	X

Monitor Mixes:

Mix	Name	Comments
Mix 1	Rhythm Guitar – John (SR)	Single Wedge
Mix 2	Bass – Geddy (Center)	Two wedges
Mix 3	Lead Guitar – George (SL)	Single Wedge - Vocals Only
Mix 4	Not Used	
Mix 5/6 (Stereo)	Drums – Ringo	IEM – PSM100 (Artist Provides)

Figure 1: A sample input list generated by the author.

Opinions vary greatly regarding mic selection and technique. I won't tackle these topics here but will voice my opinion regarding the order of sources. The most common approach is to start an input list with the kick drum on input 1 and move upwards through the drums, bass, guitars and keys, and finish off with the vocals on the highest numbered inputs. I call this the "K•S•H" method, after the tradition of the first three console inputs being kick, snare, and high hat.

Ironically, back in the days of large-format analog consoles, this method didn't always work, as important elements such as the kick and vocals, could end up on the extreme left or right sides of a big mixing console, making fader riding difficult. For this reason, some engineers rearranged their input lists to put lesser used inputs (cowbell) on channel one, and more important sources (lead vocal) near the center of the desk (channel 16).

While I appreciate creative and problem-solving workflows, I stick to the standard kick-on-input-one approach. Except in the world of major tours, most shows rely on local crews to patch the stage – asking these techs to patch in a strange manner (such as patching the drums in reverse order) is just asking for trouble.

Another important technique is to build input lists with fader banks in mind. Modern digital consoles seem to be shrinking, with 12 or 16 input faders increasingly common. To see more inputs, the engineer must switch between banks/layers of faders.

When creating a list, arrange sources to avoid like-elements spilling across banks. It's annoying when two drum overhead mics fall on different layers, or a pair of keyboard direct inputs (DIs) must split across banks. Related, it's best to make sure paired inputs start on odd-numbered channels. While many modern desks have no issues with ganging stereo pairs across even-odd channels, many older consoles only allow odd-even (e.g., 15-16).

Why does this matter? Grouping stereo inputs into a pair allows EQ and other settings to be easily shared. When EQing the overheads, the engineer need only adjust one side, and the other channel automatically matches.

THERE'S MORE

Interrelated is the age-old debate between drummer's perspective and audience perspective. For those unaware of this dispute, the question at hand is on whose left (stage left or audience left) does the left overhead sit? Whatever your opinion, clearly labeling input lists so the stage crew is informed of your preference. If they don't know, the techs will either cable it backwards (Murphy's Law) or pester you during setup for an answer.

Building spare, unused inputs into the list is also advisable. Things always change, such as an additional guitar being added, or a snake line found to be broken. Placing an empty channel here or there on the list grants flexibility.

Additionally, an empty channel might help a stereo pair fall on odd-even inputs or like-instruments reside within a fader bank. Placing a spare vocal mic somewhere on the list is also

wise. The lead vocal is often the "money" channel, and failure is not an option. This is especially important when a star vocalist relies on a wireless mic, which is by nature, less reliable.

Although you and/or your artist might be attached to a boutique mic, it can be problematic to request uncommon models on an input list. Not every sound company or venue has a wide selection of mics. If something specific is required, be sure to travel with it, and mention on the list that it is provided by the artist so the local sound company doesn't need to expend effort hunting down an esoteric model.

In general, I suggest input lists spec common, meat and potatoes mics. The easiest solution is to accept ubiquitous Shure models such as the venerable SM58. Better still, request the "fancy pants" mic on the input list but offer an easier-to-find alternative as well.

How sound sources are named is also important. While most input lists keep instrument and source names short, such as "Guitar 1" and "Guitar 2", it can be helpful to include additional information as well. A more detailed source name, such as "Electric Guitar 1 – John", can help local crew better understand the setup and show.

Other information is frequently included on input lists. Many engineers specify mic stand type and size. Sub snakes or other patching might also be mentioned, especially in festival situations. Also common is listing the mics requiring phantom power. For professional engineers this might be unnecessary information; I work regularly with student engineers, however, and the noting of phantom minimizes problems while simultaneously helping newbies learn their mics.

Although somewhat unrelated to inputs, I also like to include a list of monitor mixes as well as important monitor mix notes on input lists. Further, although sound system requirements are usually voiced in an artist's rider, I place specific front of house needs on the list as well, as technicians are less likely to read a rider.

GETTING STARTED: STAGE PLOTS

Building an effective stage plot is more challenging than input list creation. While a simple word processor can effectively note mic requirements, a graphics program, inevitably with a learning curve, is required for constructing a stage plot. Any drawing application will work, but specialized software makes it easier. Programs and websites such as Stage Plot Pro, Stage Plot Designer, and Stage Plot Guru are inexpensive or free and worth experimenting with.

The first thing to consider is the plot's perspective. I advise keeping to standard 8.5- x 11-inch paper size, but format it in landscape mode with the stage wider than taller. In this manner, the audience is at the bottom which is the norm for most stage plots.

Whatever orientation you choose, it's best to label the location of the audience, so no one is confused of the position of this all-important landmark. **Figure 2** provides an example stage plot that includes many of these suggestions.

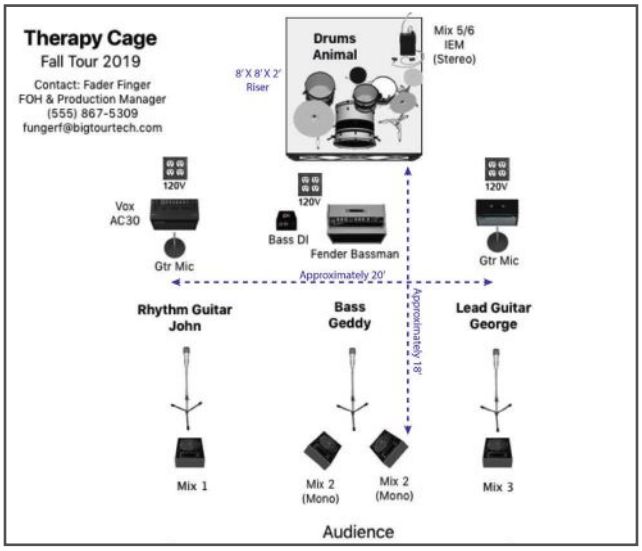

Figure 2: Example stage plot that includes many of the author's recommendations.

Avoid graphics in mixed perspectives. While it can be creative to use random images from the web to build a plot, this can send mixed messages to the stage crew. If illustrations are not precise, a drum tech might put up the wrong drum kit. If a plot mixes top-down and from-the-front perspectives, equipment might be set up incorrectly.

If possible, draw plots to scale. I remember a gig years ago in which I provided a plot that was terribly out of scale. When arriving at the venue, I found the local crew had diligently set up the stage incorrectly. It was embarrassing and annoying to have the techs move and rewire everything again. If the plot can't be drawn to scale, which is often the case, at least note this fact on the document so the crew will expect changes.

ADDITIONAL FACTORS

A variety of items should also be included on stage plots. Essentials include location of monitor wedges, instruments and amplifiers, along with placement and dimensions of risers, carpets, and other scenic elements. If music stands are necessary, mention them on the plot. Position of power drops is also important, and if touring internationally, be sure to spec voltage requirements of these drops.

Expanding beyond the basics, it can be useful to indicate where mics are located and what sorts of stands they require. That said, I generally avoid displaying drum mics and stands. They can clutter a plot, and the information is included on the input list already.

Similarly, some folks denote the input number of each microphone on their stage plots. While this can work, it can be confusing, especially if a similar numbering approach is used for labeling stage monitors. In general, I don't recommend numbering mics and DIs, as this can make synchronization with the input list difficult. Who wants to update the stage plot every time the input list changes?

However, I definitely advocate placing vocal mics on plots because this information is crucial. Be sure to label who's located where and what instrument they play. This helps the local crew, often unfamiliar with the artist, communicate effectively with the musicians. Simply label each vocal position with name of the musician and their instrument, for example: "George – Lead Guitar". Labeling stage monitors, usually by mix number, is a must as well.

The question at hand is on whose left (stage left or audience left) does the left overhead sit? Whatever your opinion, clearly labeling input lists so the stage crew is informed of your preference

Over the years I've witnessed a litany of different stage plot designs. Some plots go overboard with details, many of which are unhelpful to local crews working only once with an artist. It's best to follow the old adage of "K.I.S.S." (Keep It Simple, Stupid), and only include the essentials.

For example, it's unnecessary to place backline minutiae on a plot, such as required guitar amp types, pedal board details, or drum kit specifics. These specifics are better handled in a backline-focused document. It's also superfluous to provide mic details, as this is the purpose of the input list. Simple but accurate stage plots always work best.

Compared to other complexities involved in modern event production, crafting input lists and stage plots is a relatively simple task. That said, many production documents passed around in this business are confusing, out of date, and incorrect. It's simply not hard to follow best practices, create effective documents, and help others around you have a smooth gig.

As a last thought, I'd like to add that I see the best practices discussed in this article as dynamic and flexible. If you feel I've overlooked an important aspect or would like to offer an alternative perspective, please share your thoughts with me. LSI

Eric Ferguson *is an assistant professor of Live Sound Production at the New England School of Communications at Husson University in Maine. He also has extensive experience in the studio and with sound reinforcement, including world touring with artists such as Lee Ritenour and James Ingram. Reach him at fergusone@husson.edu.*