

Sound System Equipment Upgrade Report

I wanted to send out an update about the progress for the new mixing console and sound system equipment upgrade. In addition to changing to a new digital mixing console, there are several other system changes and updates that are being done at the same time. These are: 1. Hearing assistance system, 2. Additional monitor speaker channels, 3. Audio rack in the sound closet up front (also, lighting in that room) 4. Additional speaker monitor jacks and re-numbering of mic jacks up front and 5. New Handheld wireless vocal mics. Additionally, some of the mic stands were having problems and those have been repaired or tossed out. The monitor speakers at Rob's keyboard are acting up and the high frequency drivers will be replaced in the near future.

Schedule for the Project work:

Many of the projects on the list have been completed or are close to being finished. We will be able to choose a full changeover date in the near future as the final steps are completed. It is likely this could be in the first half of August.

The New Mixing Console

The new mixing console is the Behringer X32 Digital console. If you are interested in finding out more about the mixer you can search for this on the internet. There are a variety of resources out there including YouTube videos. If you are a manual reader, you can easily find a PDF version of the with some internet searching.

Hopefully, some training sessions will be set up here at Emmaus as well.

There are a variety of differences between our current mixer and the X32. Below are a few things to begin thinking about:

- 1. The mixer has 16 input control sliders. These function as volume controls for channels 1-16. By pushing a function button, they change to function as volume controls for channels 17-32. Another function control allows these controls to become volume controls for each monitor output channel.
- 2. The EQ and gain controls, as well other adjustments for individual channels are located in the upper left of the mixer surface. There is only one set of physical controls for these adjustments. By selecting each channel with a button, you can make adjustments and then move on to select other channels and make adjustments for those.
- 3. The console allows settings to be saved and recalled. While this is an advanced feature, this will be useful down the road for creating a basic template for Sunday morning.

Hearing Assistance System (Williams Sound)

This new equipment is located in the small oak shelving on top of the equipment in the mixer area. It has an antenna rising above the equipment case. This equipment will receive the same audio that goes out the main speakers to the congregation. It transmits a radio signal into the sanctuary which can be received by any of the four belt packs that are located in charging stations next to the transmitter. There are a

variety of headsets that are located there which can be used by the congregants with the receivers. Batteries are rechargeable ni-cads, so don't change these batteries, but do make sure the beltpacks go on the charging stations at the end of Sunday morning.

Additional Monitor speaker channels

We will increase our monitor channels from 3 to 6. Each of the four monitor wedges will have its own output channel from the mixer (#1-#4). The monitor speaker at the electronic keyboard will continue to have its own output channel (#5) and its power amp that is currently attached to the chair will move to the equipment rack in the sound closet. The Shure (brand) wireless in-ear monitor transmitter that we have had for some years and which has been located in the small oak shelves at the mixing area will receive audio from output channel 6. We purchased an additional receiver beltpack, so we have two receivers. Our idea is that these in-ear personal monitors can be used by the bass guitar and percussion performers.

New audio rack in the sound closet

To accommodate some of the new equipment for the sound upgrade, we have installed an equipment rack in the sound closet. While working in there, carpet was added to the floor and an electrical outlet and lighting was added. New equipment going in the rack are the wireless mic receivers (5), power amp for the additional monitor channels, the current power amp for the keyboard monitor speaker, and the new "digital snake" that will be connected to the new mixer. This digital snake will be set up to provide input jacks for mixer channels 1-8 at this location in the sound closet. The 5 wireless mic receivers will plug to channels 1-5. An audio snake running from the closet to the piano area will provide input jacks for channels 6-8 at that location by the piano. The digital snake will also provide output signals to the monitor amps in the audio rack (#3, #4, #5). The connection between the mixer and digital snake box is a single standard computer cable (CAT 6) to provide all the audio channel information.

Additional speaker monitor jacks and re-numbering of mic jacks up front.

With additional monitor channels for the front of the sanctuary, new speaker jack locations have been provided. A permanent speaker cable for monitor channel 3 runs from the rack in the closet to the piano area for connection to the floor monitor by the piano. Behind the cross wall on the left and right sides are speaker jacks for monitor channels 4 and 5. Monitor speaker 4 will be available for use by guitarists or other instrumentalists and monitor speaker 5 will be the one located at the keyboard. Monitor channels 1 and 2 continue to have speaker jacks in the existing floor pockets and will normally be used by the vocal performers.

The existing mic jacks in the platform area will be renumbered. The digital snake will use numbers 1-8, so the existing jacks with the same numbers need new numbers! Assigning the typical Sunday morning mics and instruments into the first sixteen channels of the mixer will result in streamlined operation of the new mixing console and some renumbering of jacks to provide logical position makes sense.

New Handheld Wireless mics

These mics will replace the existing three handheld wireless mics and should provide better quality and performance. The receivers for these mics are located in the new equipment rack in the sound closet at the front of the sanctuary. There are four handheld mics, increasing the number by one. The receiver for the pastor's wireless lavalier mic/ headworn mic will be located here as well. These five wireless mics will go into channels 1-5 on the mixing console.

Sound Upgrade Drawing

There is a sound system upgrade drawing that you can view to help see the details in that format and the drawing is located at

<http://www.stolaf.edu/people/bjorklun/Projects/EmmausSound/EmmausSoundUpgrade.pdf>

The Sound Upgrade drawing shows the routing and numbering details that will be made for the upgrade. Additionally, the new monitor speaker jacks are shown as well as the audio rack in the sound closet. A mix input channel layout and mixer output layout is shown on the drawing as well.

I hope this provides some useful information about the physical equipment changes that are part of the upgrade to the sound system in the sanctuary. Figuring out a smooth and successful transition for all for the use of the new mixing console will need to be done in the near future and each of us needs to be part of that transition. More to come about that from others in our group!

Thanks for all your work in the sound area! Send questions or comments!

-Brian