

5:17 Church

Sound and visual quick tips

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Setup procedure

1. plug in mics (located in the PA / music cupboard)
2. turn on mixer (set all levels to 0, or neutral)
3. turn on speaker
4. set levels (refer to Mackie instruction manual)
5. plug in and turn on projector

Pack up procedure

1. turn off projector (leave to cool down)
2. turn off speakers
3. turn off mixer (set all levels to 0, or neutral)
4. unplug mics
5. pack up projector
6. lock up mixing desk & put everything back in the cupboard

Basic Theory

Correct mixing is vitally important. It is the difference between great and terrible sound. Start by getting the basics right (in setting volume levels, find a balance which allows you to hear all instruments & vocals at appropriate levels). Ensure there are no weird noises being produced by instruments or computers due to grounding issues. Then look into adjusting the EQ to compensate for voices which have a strong bias. (eg. for someone with a deep voice, reduce the amount of low frequency, and increase the mid and high frequencies). Set the levels at an appropriate volume so that you can hear the singers and instrumentation above the congregational singing, but not so loud as to discourage people from singing.

Wireless mics

Wireless mics can be great for the speaker allowing them freedom to move about out the front. But they come with a few caveats:

1. Ensure batteries have sufficient charge. (I basically bring a spare set of batteries for every occasion when I think wireless is going to be used)
2. Turn off phantom power on the mixer. When phantom power is engaged, the wireless receiver will initially work, but over time the signal will build up with noise and become unintelligible. Note. This means you can't use phantom powered DI boxes and wireless mics concurrently.

As a rule of thumb, if using wireless it's good to have a wired mic ready to go as a backup. If possible mix from both sources.

Connecting a PC

There are a two main reasons why you want to be connecting a computer: to playback or record sound. Either way, if you are using a laptop, more than likely it will introduce noise into the system. To mitigate this, we can use an isolation transformer in between the computer and mixer. Ours looks a bit like the below:



Recording sermons

There are many ways to do this. Either by using a dedicated hardware device, or by using a PC and software such as Audacity. A few suggestions:

- Test, test, and test. Get the levels right so that a good level of signal is recorded, but not so much that it peaks (distorts). Software and hardware devices have many ways of showing you this. Your end product can only be as good as the initial source recording, not better.
- Use an isolation transformer (as per the previous tip). This will get rid of most of your noise issues. Software tools include the noise gate and filters, but filters have a tendency of filtering more than you want.
- Cut and compress. Cut out all the dead time at beginning and end of the recording. Then compress to a podcast friendly size (less than 20mb).
- Publish sensibly. Manually editing a website every time you upload a sermon will quickly get tiresome. If you're using wordpress, create a special RSS feed or blog category which allows you to easily upload, and for others to easily keep track of new podcasts or even download automatically (for rss subscribers)

Guitars

Guitars can be amplified in a variety of ways; Microphone, Direct Injection (DI) box or plugging straight into the mixer. Probably the easiest is to use a DI box as this will output a signal at near line level (requiring the least amount of gain adjustment). We have one passive DI (no power needed), and 2 active DI's (require batteries or phantom power).

Foldback

When there are more than a few musicians, foldback can be very helpful. The Mackie supports 2 foldback channels (AUX 1 & AUX 2) which let you mix the foldback separately from the main mix. Currently we use spare guitar amplifiers and a realistic power amplifier for foldback. But this is an area where we could definitely invest more money with large gains.

For further reading

- Mackie manual (find under sound desk)
- SoundKing manual (also under sound desk)
- Houses of Worship by Tim Vear

http://www.shure.com/idc/groups/public/documents/webcontent/us_pro_audiohousesworship_ea.pdf

- Guide to Sound Systems for Worship [Paperback] [Jon F. Eiche](#) (Author, Editor)

<http://www.amazon.co.uk/Guide-Sound-Systems-Worship-Eiche/dp/079350029X>

Suppliers

Jaycar - for random bits and pieces like isolation transformers, passive DIs, components for repairs, etc.

Lightsounds Brisbane - <http://www.lightsounds.com.au/brisbane.htm>. Our Sound King gear comes from here.