Presented by:
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Podcasting Your Worship Service

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Cell Phones

- Please silence your cell phones

Opening Prayer

- We would like a volunteer to lead us in prayer for this important ministry
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Contacts

- www.howtosound.com for more information on HOW-TO Live-Sound or Recording Church Workshops
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Recording Media Types

- Cassette Tape Deck
- CD-R Recorder
- Direct to Disc on Computer
- Dedicated RAM
- Video Camera audio tracks

Signal flow inside a mixer
Cassette Tape

- Easy to use
- Tapes must be rewound
- Limited to 45 minutes recording time
- Real-time import into computer
- Tape hiss will cause MP3 artifacts
- Should clean and demag monthly

Cassette Recorder Hookup

You’ll need an RCA cable from the tape-out of the mixing board to the cassette deck inputs.
CD-R Recorder

- Media is now inexpensive (pennies)
- Decks are easy to operate
- CD-R can be ripped into computer

- Recording limit of 80 minutes
- Only 2 tracks available

CD-R Hookup

You’ll need an RCA or phone-plug cable from the tape-out of the mixer to the CD-R deck.

- RCA or Phone Plug Cable
- Microphone
- Mixer
- CD-R Recorder
Flash RAM Recorders

- Dozens of hours recording on a card
- Compact Flash Card available locally
- Replaceable Card adds more time
- Quick transfer of files into computer
- Can record as WAV or MP3 directly

- Small recorders can be lost or stolen

Marantz PMD 660, 560 and CDR-420 Recorders
**Computer Hard Drive**

- Any cheap XP computer will work
- Dozens of hours recording time
- Wav files are already on drive
- With I-O card can do 8 to 24 tracks

- Computer crash will lose files
- Other programs can cause glitches
- Level monitor meters may lag

**Computer I/O hookup**

You’ll need a USB or Firewire cable from the tape-out of the I/O box to the computer and phone plugs from the mixer to the I/O box.

![Diagram of computer I/O hookup](image)
Recording to your computer

- Mackie Onyx I/O interfaces allow you to record and output multiple channels with Mac or Win.

Video Camera Audio

- + Video cameras have stereo audio
- + Audio is synchronized to the video
- + Wav files can be imported from tape
- + 16-bit audio is CD quality

- Cameras have poor internal mics
- - Pro XLR inputs need mic level signal
- - AGC must be defeated for quality
**Video Camera Hookup**

- You’ll need a phone-plug to XLR cable from the aux-out of the mixer to a Beachtek interface and an 1/8” TRS mic input on the camera.

**DI Boxs for video cameras**

- You can link multiple DI boxes to feed audio to several video cameras.
- This sends proper level audio to each camera.
- Prevents ground loop hum or camera power supply noise from getting into the sound system.
Video cameras with 1/8” audio inputs can hook up to mixers using interfaces from Beachtek

www.beachtek.com

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**Recording narration**

- Talk at a 45 degree angle cross-mic to eliminate p-pops and ‘plosives
- Add a pop filter or windscreen
- Edit on 2.1 speakers with a subwoofer so you can hear any thumps or ‘plosives
- Use compressor on the mic input to stop any clipping and keep levels constant
- Use headphones on talent if possible
### Narration mics

- Needs a pop filter to minimize pops & breathing sounds
- Internal rubber mount minimizes floor noise
- Use the LPF (Low Pass Filter) on mixing board to remove HVAC noise

- Sennheiser E835
- Shure SM-58

### Narrator mic

**Acoustic panels reduce echo**

- 45 degree mic position pointed right at mouth
- Talk cross-mic to stop p-pops and wind blasts
Room & Booth Treatment

- www.acousticsfirst.com
- Many churches are too reverberant for amplified sound systems
- You can improve the acoustics with a variety of wall and ceiling treatments
- Acoustics-First offers in-house acoustic correction

Microphone Back Filters

- The Reflexion Filter from SElectronics can reduce unwanted echo from poor acoustics.
- www.seelectronics.com for more information.
Recommended Narration Mics

- Don’t use a laptop or table-top computer mic as there will be too much drive noise.
- Select a good pro microphone with cardioid pickup pattern. Shock mount it if possible and add a windscreen to stop the popping.
- For multi-person interviews, use a small mixing board with two mics rather than a single microphone in the middle of the table.

Cardioid pattern microphones

- Also called directional or uni-directional mics
- Pick up sounds best from the front
- Reject feedback best from sides and rear
- Don’t reject bass sounds
- Also available as both super and hyper-cardioid
Omni pattern microphones

- Omni-directional mics pick up sound equally well from all directions
- Do not reject sound from the rear or sides
- Not used for live sound reinforcement because they’re susceptible to feedback problems

Recording tips

- Record narration in a quiet area with soft furnishing and no hard reflections
- Bedrooms = good, kitchens = bad
- Stay close to the mic so it hears only your voice, not the room noise
- Watch the input level meters and try to hit between -12 and -6 dB VU.
- NEVER CLIP THE SIGNAL!!!!!
Selecting Headphones

- Find headphones that are comfortable for you to wear and seal you off from stage and room sounds
- Fostex makes phones for all budgets and listening situations

Compressor & Limiter theory

The key to any compressor are these controls:

- **Threshold** *  **Ratio** *  **Attack** *  **Release**
In-line processing hookups

- Use a Y Insert cable to hook up in-line dynamic processors such as a compressor, limiter or gate
- Use the insert jacks on the channel strips or subgroups

Hooking it all up

- You may have to reverse the input and output connectors if you have them backwards
- Multiple insert cables bundled with 4 and 8 channels are available from Whirlwind
What is compression-limiting

- 2:1 ratio lets the output get 1 dB louder for each +2 dB of input level
- 4:1 ratio lets the output get 1 dB louder for each +4 dB of input level

Compressor settings

- Threshold - Start at max and move lower to apply up to 12 dB compression
- Ratio – Start with 2:1 for vocals and up to 4:1 for bass guitar
- Attack – Pick 50 milliseconds to start
- Release -125 milliseconds or use auto-release for most material
- Knee – Use soft knee for most musical sounding compression
- Ratios greater than 8:1 are not very musical, but used as safety limiters.
PART B

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[Logos of various companies]
Advanced Recording

- It’s much easier to record to 24 or more channels than it is to record to only two channels.
- Adding a console split can allow you to do a totally separate mix for the video cameras or cassettes.

Mic splitter for second console

- To do a dedicated 24-track recording, you’ll either need a snake with a separate split such as this Whirlwind box and a second console for recording, or a console with a pre-fader sends.
- Transformer isolated splits eliminate ground loops between two consoles.
Recording to 2-tracks

- Recording outputs on consoles don’t have a way to balance loud and soft instruments for simple off-console recording
- Loud stage instruments won’t be in recording
- Use a post-fader auxiliary send to add loud instruments such as electric guitar back into the recording mix and not the PA system

Direct to 2-track recording

- Recording from a post-fader aux send will allow you to compensate for loud and soft instruments on stage
Editing Steps

- Record or import your narration
- Edit out any mistakes or problems
- Import your music intro/outro
- Slide track times to match events
- Adjust fade in and out
- Apply final compression to stereo out
- Export as an MP3
- Upload to RSS Feed

WAV Editing Applications

- Many inexpensive editing applications are available for both Windows and Mac
- Cubase LE – Steinberg (Win & Mac)
- GarageBand – Apple (Mac)
- Sonic – Cakewalk (Windows)
- ACID – Sony (Windows)
Exporting WAV files to MP3s

- Use 128 kbps Stereo compression for music and 64 kbps Mono for voice for best quality
- MP3 bit-rates below 64 kbps need squeaky clean audio without tape hiss or room echo
- Add author metadata tags during the MP3 export for file identification
- Add artwork after export by using iTunes
- You may need to rename iTunes modified files to simple names for QT playback
PART C

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- MACKIE
- Soundcraft
- TANNOY
- AcousticsFirst
- SENNHEISER
- FSR
- EBTECH
- BeachTek
- TECH 21
- whirlwind
- Pro Co
- Pro Co Sound
What’s a Podcast?

- Named after the iPod player
- Any MP3 file linked to an RSS feed
- Can be played on any computer or media device. No iPod required
- Usually radio programming format
- Short listening time is better (<30 min) but some podcasts are over an hour

Why Podcast?

- Listeners can subscribe and download your latest podcast automatically
- Can be listened to anytime, anywhere
- Many will listen in car, train, bus, plane
- MP3 files can be archived by keyword
- Youth will download and listen to podcasts rather than view websites
More Podcast Advantages

- Don’t have to burn and mail CD-R discs
- Cassette won’t be heard by youth
- You can enable your youth ministry
- Restore historic taped sermons
- Costs nothing but bandwidth

Things to Podcast

- Your weekly sermon
- Special seasonal messages
- Youth ministry messages
- Remote phone interviews from your missions in other states or countries
- Historical taped messages from important landmark events – breaking ground, new building, important guest speaker, etc...
ID3 Metadata

- ID3 Tag options show up on the music player
- They allow you to insert important copyright and author information right into the MP3 file itself

Insert your artwork with iTunes

- Drag 300 by 300 pixel jpg into artwork area
- Upload with FTP and rename MP3 file to short filename
Artwork for Podcasts

- Use 300 by 300 pixel JPG image with about 10:1 compression.
- Remember this will display on a small screen, so use BOLD text

Music for Podcasts

- There are currently no podcasting contracts available from BMI or ASCAP
- Create your own intro/outro beds using GarageBand (Apple) or ACID (Windows)
- Edit out any copyrighted songs from your podcast or use your own original material
- Get signed release forms from guest speakers allowing you to podcast them
Podcasts vs. MP3s

- A downloadable MP3 isn’t a podcast unless you add an RSS Feed
- Subscribers will automatically have your podcasts downloaded to their personal audio device or computer
- No iPod is required. Any computer with speakers can subscribe and listen

Really Simple Syndication (RSS 2.0)

- RSS is a format for syndicating news and AV media, including major sites like Wired and Slashdot, as well as weekly church sermons. But it's not just for audio. Pretty much anything that can be broken into discrete items can be syndicated via RSS.
- Once information is in RSS format, any RSS-aware program such as iTunes can check the feed for changes and automatically download it.
- RSS-aware programs called news aggregators are popular in the youth community. A news aggregator helps you keep up with all your favorite sermons and news by checking their RSS feeds and displaying new items from each of them.
Resources for podcasters

- FeedForAll lets you create Real Simple Server (RSS) feeds on your own website server
- PodCastAlley has links to RSS apps

Podcast Web Design

- Link podcast page from main website
- Keep archives of all old podcasts
- Promote in other media such as newspaper, radio, newsletters, flyers
Subscribing to Podcasts

- The podcast app will make a URL pointing to the MP3 file you uploaded to your website
- Listeners paste it into their players

Adding podcasts into iTunes
Final Thoughts

- Keep podcasts short – under 30 minutes
- Add music to keep it interesting
- Promote podcast on other media
- Write for target audience
- Don’t use copyrighted material
- Get release forms signed by guest artists

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