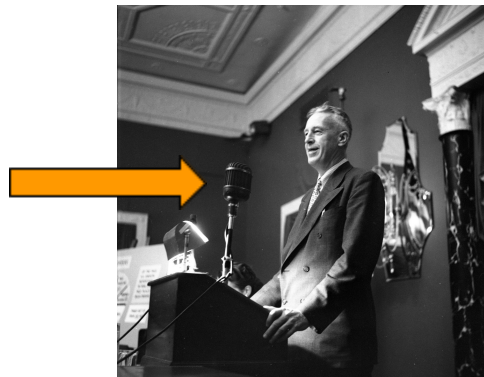


# Unified Meeting Technology and Management

## Recommendations from AA Members

The interior architecture of churches and theaters have always been designed to carry un-amplified sound from the pulpit/stage to the congregants/audience based on the **acoustics** of the sanctuary/room. Using sound reinforcement (amplification) in larger A.A. rooms has been a part of in-person meetings since before the 1st General Service Conference in 1951. On 12/24/1915, the first “Public Address” system (Magnavox) was used at San Francisco City Hall to broadcast Christmas music and speeches to a crowd of 100,000. From the Grateful Dead “Wall of Sound” to a single **wired microphone**, attached to a podium, and connected to a single **speaker**, amplified sound has been a central part of “one to many” communication. When that message is a matter of a life and death program of recovery, hearing that message clearly is essential. Most of this technology is only “need to have” for large rooms and many attendees. Most unified meetings do not cross the threshold into the realm of large systems and or need a large crew.



**Bill W. Speaking in XXXXX 1935**

## Goals

- Preservation of anonymity
- Clarity of speech both online and in the meeting room
- Absence of feedback
- Quality of in-room experience
- Simplicity of operation
- Budget constraints

## Links (jump to)

Equipment list for conference room, small, medium, large, and xtra large rooms

Broadcasting/streaming to small, medium, and large audiences.

Unified experiences in A.A. ([links](#))

Unified experiences of commercial applications ([links](#))

Catalog of gear/prices

References

## Essential Glossary

- Sound Reinforcement - amplified sound
- Public Address System (PA) - colloquial for equipment for sound reinforcement
- Unified meetings - an alternate name for hybrid meetings

There is a lot of data that suggests that the clarity of speech affects both the ability to hear messages and the ability to feel (empathize). The Speaker has a part to play as well as the technology. The audio technology for hybrid meetings needs to meet the standards for broadcast media as well as sound reinforcement. The quality of the former is the product of the audio “stream” and how it is broadcast. The quality of the latter is a product of the room’s acoustics, size, and the number of participants, as bodies absorb sound. In an in-person meeting, a small meeting doesn’t need a podium mic but 200 people in a huge space needs more equipment and folks to take on service positions. A podium mic doesn’t need a special worker, a full sound system needs a sound engineer.

A “hot” room is one in which sound bounces off of walls uncontrollably. A “tight” room is one in which sounds are absorbed by those same surfaces. Feedback occurs when the sound from the speakers feeds back into the microphones. A [super-cardioid](#) (tightly focused) mic pointed directly at the source is resistant to feedback because the risk of “bleed” from the speakers is minimal. The clarity is affected by the type (and cost) of the mic. An [omnidirectional](#) mic will pick up a much wider width but efforts must be made to lower the risk of feedback and, with this kind of mic, clarity is affected by the acoustics to a greater degree.

Stage shows such as concerts typically place the microphones behind the speakers to reduce the risk of feedback. Another technique is to use an equalizer that enables the sound engineer to remove narrow parts (frequencies) of the sound based on the acoustics of the room. The simplest way to reduce the risk of feedback is to turn the volume down; however, this can affect the clarity when the listener is farther away. There are other types of audio equipment that enable the sound engineer to increase the clarity of the sound and reduce the risk of feedback.

The first two things to consider are the distance from the microphone to the presenter and the technique of said presenter. Using a hand-held microphone in the correct way (pointed close to the mouth) is a good choice as it balances cost and clarity, whilst reducing the risk of feedback. An expensive ["shotgun" mic](#), when pointed at the presenter from a considerable distance, will only pick up the sound from the direction at which it is pointed. The clarity, then, is a product of the distance to the presenter.

The size of the room and number of participants dictates the amount of reinforcement (speakers/volume) needed. The quality (cost) has a direct effect on the clarity of the sound. The final consideration is that, in a big tight room, if there is enough volume from the front of the room for the back row (denial aisle?) to hear clearly, it may be too loud for the front row. If this is the case, another set of (delay) speakers should be placed halfway down the rows of chairs.

## Examples of Experience

### A.A.

[Organizing a Hybrid A.A. Meeting – Eastside A.A. \(eastsideaa.org\)](#)

[Technology – Eastern Area of Missouri \(eamo.org\)](#)

[oth\\_Hybrid\\_AA\\_Meetings.pdf \(aanorthdakota.org\)](#)

[CityAtSeven\\_Hybrid \(saltlakeaa.org\)](#)

### Non A.A.

[6 ways the equipment setup for a hybrid meeting is different than in-room or virtual meetings | Think Outside The Slide](#)

[The comprehensive hybrid event equipment checklist | Airmeet](#)

## Equipment Suggestions

| Room Size   | Participants | Equipment                                                                                                                                                                                                                                                                | Own/Rent | Training                                                                                      | Internet                          | Software                    |
|-------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------|
| Table       | Up to 20     | Laptop with audio/video<br>Small powered (computer) speakers<br>1 ea omnidirectional mic with table stand (or conference mic)                                                                                                                                            | Own      | Basic audio and laptop training                                                               | $\geq 5$ Mbps Wifi                | Zoom Pro or equivalent      |
| Small Room  | Up to 25     | Laptop with audio/video<br>$\geq 24$ " computer monitor<br>$\geq 42$ " LCD TV or mini projector/screen<br>Medium powered (computer) speakers<br>1 ea cardioid mic (chair/lead)<br>1 ea wireless cardioid mic (sharing)<br>4 channel mixer<br>1 ea video camera or webcam | Own      | Basic audio, video, laptop, and room management training                                      | $\geq 5$ Mbps WiFi                | Zoom Pro or equivalent      |
| Medium Room | Up to 50     | Laptop with audio/video<br>$\geq 24$ " computer monitor<br>$\geq 42$ " LCD TV or mini projector/screen<br>Small PA speakers<br>1 ea cardioid mic (chair/lead)<br>2 ea wireless cardioid mic (sharing)<br>4 channel mixer<br>1 ea video camera                            | own/rent | Novice audio, video, and room management training.<br>Basic tech (mic runners) training       | $\geq 10$ Mbps Wifi and backup    | Zoom Pro or equivalent      |
| Large room  | Up to 200    | Laptop/desktop with audio/video<br>$\geq 24$ " computer monitor<br>Multiple large format LCD<br>Multiple small PA speakers<br>1 ea cardioid mic (chair/lead)<br>2 ea wireless cardioid mic (sharing)<br>8 channel mixer                                                  | rent     | Special workers e.g. sound engineer, and other volunteers based on amount/type of microphones | $\geq 20$ Mbps Wifi and 2 backups | 2 ea Zoom Pro or equivalent |

| Room Size        | Participants | Equipment                                                                                                                                                                                                                                                                                                     | Own/Rent | Training                                                                                                                                    | Internet                                | Software                    |
|------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------|
|                  |              | 2 ea professional video cameras<br>Video switcher                                                                                                                                                                                                                                                             |          |                                                                                                                                             |                                         |                             |
| Extra large room | 200+         | Laptop/desktop with audio/video<br>2 ea $\geq 27$ " computer monitors<br>Multiple large format LCDs or large room projector(s)/screen(s)<br>Multiple medium PA speakers<br>1 ea cardioid mic (chair/lead)<br>8 channel mixer with external effects<br>Multiple (ENG or above) video cameras<br>Video switcher | rent     | Special workers<br>e.g. Sound engineer, video engineer, and setup crew chief<br>Many setup/show call volunteers<br>Some heavy lifting req'd | $\geq 25$ 25 Mbps<br>Wifi and 2 backups | 2 ea Zoom Pro or equivalent |

# Equipment

1. Microphones - The [type of microphone\(s\)](#) that are used are a product of the [acoustics](#) of the meeting room, the number of participants, the degree to which they need to physically be “operated”, and the budget. A mic with a large area of coverage (pattern) increases the risk of feedback and can reduce clarity based on the variable distance from the Speaker, the Speaker’s volume and their enunciation. You rarely find excellent clarity except in a studio, using studio grade microphones, and external sound processing.

Most types of microphones can be bought as wired or wireless. A wireless mic has the same elements of quality and cost but adds a number of specifications related to radio signals and competition from other wireless mics. In addition, the relationship between quality and cost is more dramatic when considering a wireless solution.

A hand-held wireless microphone can be mounted in front of the chair/lead/speaker and then passed to each person as they share. Typically a “runner” passes the mic from speaker to speaker. For a larger number of participants, more than one mic/runner reduces the “dead air” between shares. This is a great way to reduce the amount of equipment needed and still increase clarity and reduce feedback. This does; however, transfer the onus to the Speaker to use the good mic technique. Including simple, clear instructions in the format/script seems to be a good suggestion.

Conference room microphones are designed to capture the audio of an enclosed room and are designed to minimize feedback. They are typically rated by square footage of coverage. Typically more expensive the comparable types of mics, the price is directly proportional to the clarity of the sound.

- 2.
3. Sound Control/Mixers
  - 3.1. Number of channels

- 3.1.1. Input
    - 3.1.2. Output
  - 3.2. Effects
- 4. In-room sound reinforcement
  - 4.1. Speakers
  - 4.2. Stands
  - 4.3. Amplification
  - 4.4. Cabling
  - 4.5. Rent or own
  - 4.6. Training
- 5. Video
  - 5.1. Anonymity
    - 5.1.1. Full face Video
  - 5.2. In-room projection
  - 5.3. Multiple cameras
  - 5.4. Lighting
- 6. Sharing the message online
  - 6.1. Audio/video output to broadcaster
    - 6.1.1. PC or Mac
    - 6.1.2. Dedicated Broadcaster
    - 6.1.3. Network Bandwidth

# Software/Services/Tools

## 7. Software

### 7.1. Meeting software

#### 7.1.1. Anonymity

##### 7.1.1.1. Participants full names on Zoom

#### 7.1.2. Zoom

##### 7.1.2.1. Rooms

##### 7.1.2.2. Webinars

##### 7.1.2.3. Zoom to other broadcasters

###### 7.1.2.3.1. Youtube

###### 7.1.2.3.2. Google Meets

###### 7.1.2.3.3. Facebook

###### 7.1.2.3.4. Twitch

#### 7.1.3. Microsoft Teams

#### 7.1.4. Google Meets

#### 7.1.5. Open Source

### 7.2. Audio mixing

### 7.3. Audio Playback

### 7.4. Video Switching

## 8. Services (special workers)

### 8.1. PA/video rental

### 8.2. Internet Service Providers

#### 8.2.1. Wired networking

#### 8.2.2. "House" Wifi

#### 8.2.3. Wifi Hotspot

##### 8.2.3.1. Dedicated

##### 8.2.3.2. Phone/Tablet

##### 8.2.3.3. Wired

### 8.3. Streaming Services

# Managing the Meeting

## 8.4. Anonymity

- 8.4.1. Limited video field of view
- 8.4.2. Use of full names
- 8.4.3. Participants' backgrounds

## 8.5. Operations/Support

- 8.5.1. Hands off design - does not require anyone to attend to each mic, sometimes called "set it and forget it".
- 8.5.2. Hands on design - requires an operator to physically control each mic in real time, pointing towards the speaker and avoiding feedback.
- 8.5.3. AV Playback
  - 8.5.3.1. Readings
  - 8.5.3.2. Speaker tapes
  - 8.5.3.3. Volunteers/Special workers(crew)
    - 8.5.3.3.1. Setup/Strike
    - 8.5.3.3.2. Show call
  - 8.5.3.4. Sharing

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**The following is from another summarization attempt and includes many comments from Forum posts.**

## Equipment

- Bluetooth speaker with a good quality microphone placed in the center of the room. The phone that is connected to the Bluetooth speaker will be using the dial in phone number for the zoom meeting. This protects everyone's anonymity and allows everyone to hear and share with everyone else no matter if they are in person or online.
- A laptop with hotspot internet connection and at 32" monitor - laptop allowed half the room to be on camera and half to be anonymous, mike picked up everybody and self-adjusted levels, laptop camera provided enough detail and picked up anyone who wished to be on camera, monitor speaker provided enough volume to reach anyone physically present.
- USB Blue Yeti microphone plugged into a laptop, set to 360° and placed in the center of the room (about \$100)
- A <\$20 Bluetooth speaker/mic in the middled worked perfectly on both ends.

- We plan on purchasing a 50" FHD TV this week with all the bells and whistles for our Alano Club.
- Bluetooth speaker/mic in middle of room. Laptop on Zoom. Big screen Smart TV with mounted camera/mic in corner.
- I use my laptop to host Zoom in our meeting room. It's speakers are small, so I use a Bluetooth speaker so the room can hear the Zoomers. I have an old Android phone with the Zoom app that is used solely as a mobile microphone. Swipe right to the page that says "Touch to talk" (there is no video). To be safe only one person touches the mic moving it close to the f2f person speaking. I have to mute the Bluetooth spkr to prevent feedback when the mic is in use then mute the mic & unmute the Bluetooth spkr when they're done talking. To make it feel more like the Zoomers are attending the live meeting I have a tablet connected to Zoom (muted) for video of the room. It's just something extra that the Zoomers like, plus the f2f members can see the Zoomers when they talk.
- i used an OontZ Angle 3 (3rd Gen) - about \$25 on amazon - it has been successfully for several different types of AA meetings and service meetings - the speaker is loud and the microphone will pick up voices up to 15 feet away with my computer - however i used it with a second laptop that i have and it didn't seem as quite as loud or to pick up voices as well - may depend somewhat on device and sound system it has - but we never did have to pass it around - just put it in the center of the room - does need to be plugged in to some usb power or it shuts itself off after so many minutes of just listening and we were on Zoom
  - i am updating a previous post about an integrated speakerphone for hybrid meetings - we have moved from the OontZ to a Jabra 410 - the OontZ worked ok but did have problems picking up soft-spoken members and we had to remind them to speak up - but it was what I had when this all started - after playing with several different speaker/microphones - and separate microphones and speakers we finally landed on the Jabra as the best performing - the drawback was the price - new they list for over \$100 which seemed a little prohibitive - until I found one used like new for \$43 with free shipping - that was within our price range - we have upgraded from "works ok" to "works well" in a hybrid setting
- the ANKER conference 6 mic or 4 mic works well in our environment... and it is really portable... no issues yet
- i use a OontZ Angle 3 (3rd Gen) combo speaker and mic that i got on amazon for \$26 - it picks up sound from over 30 feet away - works on either bluetooth or usb - we just use different member's computers for now
- What the club did was use a donated laptop that can be checked out from the front desk for a member of the meeting to log into Zoom prior to the start of the meeting. The Club has mounted a monitor up on the side of the room to view those attending and speaking. There is a podium and microphone at the front of the room for the Secretary, Leader, and members sharing to use to take turns so those attending via Zoom can hear.
- Our setup is a laptop with HDMI cable to a big screen TV, a new \$40 hi def wide webcam, and one iphone also joined to Zoom from the in person meeting. The webcam captures the whole room and we use the iphone to put in front of whoever is sharing in the room to "spotlight" the current person sharing. I mute the laptop mic and TV

speakers while using the iPhone to spotlight the person sharing in the room to prevent audio feedback between the iPhone and TV speakers.

- <https://static1.squarespace.com/static/559f240ce4b07a4915495c39/t/5f09b9a8b35453569b2122ae/1594472872491/Hybrid+Meetings+Experience+%26+Suggestions.pdf>
- [https://aanorthdakota.org/nodak52aadocs/oth\\_Hybrid\\_AA\\_Meetings.pdf](https://aanorthdakota.org/nodak52aadocs/oth_Hybrid_AA_Meetings.pdf)
- The equipment our group uses, is a laptop, a webcam (with a wide screen setting), a decent sized (ours is 42") TV, and an omnidirectional microphone.
- We used individuals' phones or laptops, but the sound quality for online participants was poor.
- We've purchased a Samsung tablet to use with Zoom and an omnidirectional mic/speaker (Avaya brand, for conference calls, works with Bluetooth).
- It's still not great but better.
- Tablet cost \$200; speaker/mic \$100.
- I bought a \$10 phone mount on Amazon that mounts to a tripod.
- I found a nice used tripod on Facebook marketplace for another \$10. I set the tripod just to the left front side of our podium. The church's Wifi was pretty poor and I had to use a cell signal which thankfully was a full 5 bars.
- With the phone being 3-5' away from the speaker, the audio was just Ok and I had concerns that a different or older cell phone might not yield the same results.
- I decided to pick up a shotgun mic and tested it out today. It worked awesome and should greatly improve our audio.
- I also had to order an 8' extension cable and an iPhone lightning to 3.5mm adapter. The 3 items cost a total of \$59.
- You can use multiple JBL Flip Bluetooth speakers wirelessly connected to each other spread around the room. They use JBL Connect+ technology to connect and keep the speakers synced together.
- At my group we use a USB mic with an extension cable and connect it directly to the laptop. Zoom allows multiple mics, and when someone shares we switch to the mic in the back of the room.
- This is the mic we use for our hybrid meetings at Longboat Island Chapel and at the District Business meetings. I received complaints that those on the hybrid couldn't hear the people that were attending in-person. No more complaints about not hearing those in the room. Now I get complaints about that it picks up too much!  
<https://www.bluemic.com/en-us/products/yeti/> 7 it picks up whispers in the back of the room and is great for hybrid meetings. Set to omnidirectional with a high gain...
- We sit semi circle, generally 12 seats, with a compact omni directional mic at approx 4'h "centered" on the semi circle. We project onto a wall, the Zoom meeting via a portable projector so that everyone at the church can see what's happening at home. All devices connect to a laptop that serves as the church camera. Mic is a Samson Meteor USB Mic SAMTRSD. Everything connected to the church's Wi-Fi.
- We have had several hybrid meetings with some failures and learning experiences. Syncing which speaker or mic is active is usually the most difficult. The speaker/mic varies but has mostly been a Plantronics conference device connected via USB and able to be positioned anywhere in the room but also able to be walked up to without being

touched. We keep a power brick nearby in case but they have about 6 hours of use available. Cameras are nothing fancy and bought from Best Buy for \$30. We are currently using a two phone hotspot (one for projecting in the room for the room participants as a Zoom logged in user and one for the microphone/speaker/camera connected to the Host). A 1.5 hour Zoom meeting uses about 1.2 gb of data per device. Projecting was done onto a semi-smooth wall which was sufficient for video(not so much for text) but we are working on options of a mobile screen using 3 large foam boards from a hobby store orientated vertically or we will project onto the wall painted with HD Paint at \$65 for a 8x5 area.

## Internet Access

Facility wifi or wired internet

Phone/tablet hotspot

- One member set up a hotspot for the hour-long meeting; there was only one connection to it - the meeting room laptop. It used ~1.4 GB.

## Zoom Account

Who owns the Zoom account?

## Room Setup

Anonymity concerns

Position the camera such that there is seating for people who do not want to be on-screen

## Meeting Management

The meeting is led online by the chairperson and zoom host who are both still operating from home. Those meeting face to face in the park are sharing a common laptop or using their phones to join in the zoom meeting. If any of the members in the park are concerned about their online anonymity, they can simply stay out of range of the laptop camera.

## Meeting Types

Speaker – no discussion

Zoom device (phone/tablet/laptop) facing speaker

# Hybrid Meeting Considerations

These questions are designed to help groups think through the challenges of hybrid meetings. There are no right or wrong answers, just points of discussion for groups to consider.

## Audio

- How will people in the room hear the virtual people? Is the speaker loud enough to hear?
- How will the people in the room be heard by the virtual people? How is the mic shared?

## Video

- How will the people in the room see the virtual people?
- How will the virtual people see the people in the room?
- How does your meeting handle people in the room who do not want to be on camera?

## Internet Connection

- How are you connecting to the internet?
- Does your meeting place provide a wifi or wired internet connection?
- Is the signal strong enough to run your meeting during the time of day you usually have it?

## Equipment

- Who owns the equipment you're planning to use? Is it group equipment, facility equipment, or personal equipment?
- Where will the equipment be stored?
- Who is responsible for maintaining the equipment, and what happens if some of it is damaged?

- Who is responsible for the setup and teardown of the equipment?

## Meeting Service

- Is the meeting using a personal account for the virtual meeting, or is it a group account?
- Who is responsible for managing the online meeting from the in-person meeting?

## Meeting Format

- How is the group ensuring that in person and virtual participants have equal opportunity to share? Does the format need to be rewritten to reflect that?
- How is the group adhering to local and facility guidelines on capacity? What happens if the meeting reaches capacity and additional people show up?

## General

- Will a hybrid meeting best serve the needs of our group? Is there merit to maintaining separate virtual and in-person meetings?
- Is one person required to be at/involved with the meeting for everything to work? How is the responsibility shared?