

Webinar
330

PowerUP Webinar

Audio in the Real World

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Photo by Jon Gay.

How NOT to shoot an interview — note the distance between talent (which is good, health-wise) and the camera mic. LOTS of room noise to remove during the edit. A wireless lav would be MUCH better – with equal health benefits.

Today's Goal

- ❖ Show how audio and video professionals are capturing and recording audio in the field for their productions.
 - ◆ This is a presentation for people who love gear.
- ❖ Photos were supplied by each editor and are used with their permission.

Comments & Photos Supplied by

❖ Björn Obenius

❖ Cliff Elliott

❖ Greg Popp

❖ Jason Nou

❖ Jeff Johnson

❖ Jon Gay

❖ Mark Hovater

❖ Michael Keeping

❖ Michael Powles

❖ Patrick Flaherty

❖ Philippe Neron

❖ Scott Newell

Björn Obenius

❖ Retired filmmaker

❖ Typical projects

◆ Recording natural wildlife sounds.

❖ "I have never heard an orchestra in the woods."

"My goal is to get the best possible sound when filming wildlife. To this end, I've constructed several custom audio setups."

Quote, by Bjorn, from Ingemar Lind.

Björn Obenius

- ❖ Sewer pipe
 - ◆ Wind noise “softie” (removed)
- ❖ Mid/Side stereo
- ❖ Mics (top down)
 - ◆ Pearl TL6C
 - ◆ Sennheiser MKH-30
 - ◆ Sennheiser MKH-50
- ❖ System design
 - ◆ Göran Alm, Sweden



MS = Mid/Side – invented in 1933 by EMI engineer Alan Blumlein. Collapsing Stereo to mono can cause phase cancellation.
Mid = center channel — Side = ambience and directionality. Spread can be adjusted in the mix, AFTER recording. Figure 8 side channel recording.
MKH-30 = 7” shotgun with figure 8 pattern (used for M/S)
MKH-50 = super-cardioid. More of a hand mic. Designed for soloists. Designed to pickup what’s in front of it.

Björn Obenius

❖ Mics

- ◆ (2) Røde NT 1a (front)
- ◆ (2) Røde NTG3 (back)
- ◆ Omnidirectional mic placed in front.

The second mic stand is located top center-right.



NT1A are large diaphragm condenser mics (front set)
NTG3 are super-cardioid 10" shotguns – designed for extreme pickup

Note photographer blind
in top center.



Bjørn Obenius Tip

- ❖ “I have been hugely inspired by British sound engineer Michael Williams who worked all his life to get the best possible sound when recording live orchestral music.”
- ❖ Read Michael's articles - and order his book - here:
 - ◆ <http://www.SengPielAudio.com/Williams.htm>

Microphone Pick-up Patterns

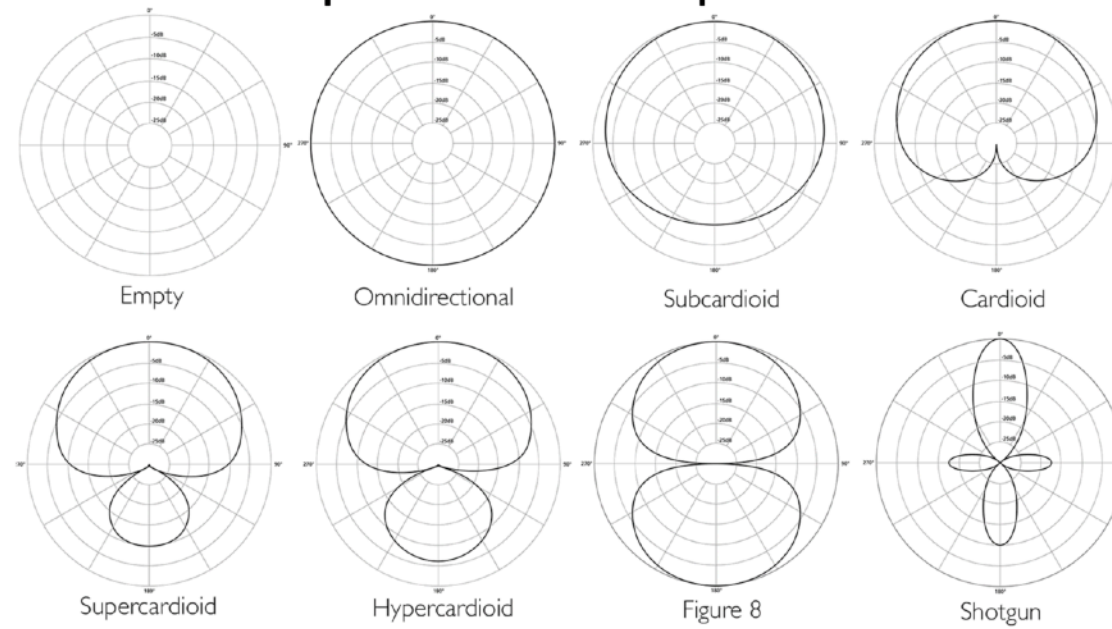


Image courtesy of the University of Texas at Austin

A digression on microphone pickup patterns.

Cliff Elliott

❖ CEVE Services

◆ www.ClensMedia.com

❖ Typical projects

- ◆ Medical training
- ◆ School-related
- ◆ Unusual sporting events

❖ "My biggest challenge is getting clear audio of whoever is doing the talking, there is always lots of background noise to account for."

Cliff Elliott

- ❖ Mics
 - ◆ Røde NTG 1
- ❖ RødeLink wireless system
- ❖ Recorder
 - ◆ Zoom F4 multitrack audio recorder



Note no mic cables – just power.

RødeLink – receiver/transmitter & Røde lav mic.

NTG1 = 8” super-cardioid, condenser shotgun

Zoom F4 4-mic, 6-input, 8-track recorder. Replaced by the Zoom F6 – 6 mic inputs, 8 tracks (timecode support)



Zoom F4 4-mic recorder — Two NTG-1 shotguns

RodeLink is a wireless transmitter/ receiver, comes with Rode lav, can work with other lavs with wireless connector
1/8" lockable TRS plug. Each transmitter pair supports one channel

The receiver is pictured, feeding the wireless lav into the Zoom F4.

Cliff Elliott

- ❖ Zoom H5 audio recorder
 - ◆ Camera-mounted
- ❖ (2) RødeLink GO wireless transmitter/receiver & lav



Zoom H5 4 input, 2 mic digital recorder.
RodeLink is one mic per receiver.



Two mics into the H5.

Blimps are hard shells providing both wind screens and shock mounts. Rycote is a leading brand.
Includes an integral RF shield to tune out radio interference.

Illustrated here is a Rycote “softie” – wind diffusion and noise rejection. 1/3 the price of a blimp.

Cliff Elliott Tip

❖ The Røde Reporter Mic is my go-to when you need to record the voice of your speaker clearly in very noisy environments.

I have used it to record an interview on the tarmac of a small airport with two propeller planes and a helicopter all powering up within close proximity.

It's magic but you have to make sure the mic is very close to the speaker's mouth.



Røde Reporter mic – hand-held, dynamic (no phantom power), omni-directional – optimized for speech

Philippe Neron

❖ Incredible Steps
Music & Film

❖ Typical projects

◆ I'm not commercial, so I create
personal music and film projects

❖ My challenges are room
acoustics, instrument
isolation and signal-to-noise
ratio.

Phillipe Neron

- ❖ AKG

- ◆ C4000B condenser

- ❖ Sennheiser

- ◆ Black Fire 531 (vintage)
 - ◆ MD 421 (cardioid)

- ❖ Shure

- ◆ SM57 (cardioid dynamic)
 - ◆ SM58 (cardioid dynamic)
 - ◆ SM81 (cardioid condenser)

MD421
dynamic mic



Sennheiser MD421 – cardioid, dynamic, supports high-pressure (loud sound) levels.
Designed for guitars and drums. Adjustable bass controls.



AKG C4000B Condenser Microphone



Philippe Neron's Tip

❖ The most helpful tips to improve audio

- ◆ Excellent preamps (I only use tube)
- ◆ Different types of microphones (cheap and expensive)
- ◆ Mic placement
- ◆ Room acoustics
- ◆ Smart DAW workflow

Greg Popp

❖ PoppArt

◆ www.gregpopp.com

❖ Typical projects

- ◆ Day job: TV spots with sports personalities
- ◆ Personal: Shorts, pitches and fund-raising videos
- ◆ My personal work is a one-man-band

❖ "I get great initial audio most of the time with my Zoom H6 and Sennheiser 416 properly close mic'd. I either utilize a C-stand with a boom holder, or I find a helper and teach them on the spot how to be a boom operator.... Then I clean it up in Adobe Audition."

Greg Popp

- ❖ Mics
 - ◆ Sennheiser MKH 416 shotgun
- ❖ Recorder
 - ◆ Zoom H6 4-channel



Sennheiser 416 is a 10", super-cardioid moisture-resistant shotgun. Freq: 40 – 20K, with an included wind-screen.

Condenser, which means it needs phantom power. Mic is mono.

Greg Popp

- ❖ “My audio doesn’t stand alone. I do a lot of sound design in Audition, as well as ADR.”
- ❖ Two wireless receivers are shown below, connected up to the Zoom H6.



Two wireless receivers feeding two mic signals into the Zoom H6.

Greg Popp's Tip

- ❖ "I've also come to depend upon ADR (easier than most people think), using either a traditional approach with headphones and an edited guide track with a 'beep beep beep' lead in; or a looser, more general re-record with Audition's incredible Automatic Speech Alignment function to match waveforms and then replace the inferior, compromised track."

Michael Powles

❖ Freelance Voice Artist

- ◆ Former BBC Newscaster

❖ Typical projects

- ◆ Audio magazine articles
- ◆ Books for the blind
- ◆ Personal video projects

❖ "My voice over studio - please excuse the bottles - is not film location sound as per your recent request, but does have blinky lights."

Michael Powles

- ❖ Mic
 - ◆ AKG-C414
- ❖ A/D
 - ◆ Mackie Onyx Producer 2-2
- ❖ Software
 - ◆ ProTools First
- ❖ Computer
 - ◆ MacBook Pro (2016)



Michael Powles

- ❖ I use my Android tablet for downloading and reading articles as they appear in the newspaper (at sight). For 'TalkBack', we use Slack to communicate with production staff. Articles are received by email.
- ❖ On the laptop I have a web page link to the audio edition production server where raw recordings (as in unedited files) are uploaded for sound editors to edit.

Jason Nou

❖ Independent Filmmaker

❖ Typical projects

- ◆ Narrative short films
- ◆ Event videography

❖ "In my freelance videography work, none of the actors wear mics, so I can't get audio from the soundboard.... So I have to rely on the shotgun mic attached to my camera."

Jason describes a worst-case audio recording situation. Actors on stage, no one wearing mics.

Jason Nou

- ❖ Mics
 - ◆ Sennheiser ME-66 with windscreen
- ❖ Boom
 - ◆ K-Tek KE-89CC
- ❖ Camera
 - ◆ Sony A7Sii
- ❖ Monitor
 - ◆ Atomos Ninja Flame



Mini-studio

K-tek makes a wide variety of aluminum and carbon graphite boom poles. Aluminum are cheaper, but heavier.

Aluminum is the boom of choice when you are using a stand

Graphic is ideal when you are holding the pole. Industry standard poles.

Sennheiser ME-66: No longer sold. Super-cardioid – condenser (phantom power) 40 – 20K Hz – Boom mic.

Jason Nou

- ❖ Me, recording audio from the back of a car.



This is typical. The camera op gets the prime seat. Audio rides in the back – with the cooler...!
And no padding.



Jason is holding a Tascam DR-680 recorder. 6 inputs, up to 8 recording tracks and up to 6 outputs.

However, personally, he uses a Sony PCM-D50.

Jason Nou's Tip

❖ “When recording events, the advantage of a hyper-cardioid microphone is the narrow pick-up pattern, so it mostly records what I'm pointing it at. My tip to improve audio in this situation is to follow whoever is talking on stage as much as possible.

“This also helps break up static shots by keeping the image lively by adding natural movement.”

Jeff Johnson

❖ RVing Today
Television Group

◆ www.rvingtoday.tv

❖ Typical projects:

- ◆ One-man-band field audio
- ◆ Small studio, low-budget product segments for the show

❖ "My VO 'booth' is a quiet, lower-level room. We have a quiet neighborhood, the room has carpet, padded furniture, bookshelves and two irregular walls so it's a satisfactorily dead space."

Jeff Johnson VO Booth

- ❖ Mics
 - ◆ AKG C4000B
- ❖ A/D Converter
 - ◆ Sound Devices USB Pre 2
- ❖ Software
 - ◆ Audacity
- ❖ Sound blankets
 - ◆ Harbor Freight



AKG C4000B – large dual-diaphragm (rich bass) multi-pattern voice mic. Released in 1999.
Target market: home and project studios. Phantom power required. Condenser.

Sound Devices USB Pre 2 — 2 input (line or mic) — 2 output with USB interface into the computer.
Includes peak limiters, high-pass filters, and input pads to prevent overloading — precision preamps, as well.

Audacity free, open-source 2-channel audio editor and recorder. Mac / Windows / Linux

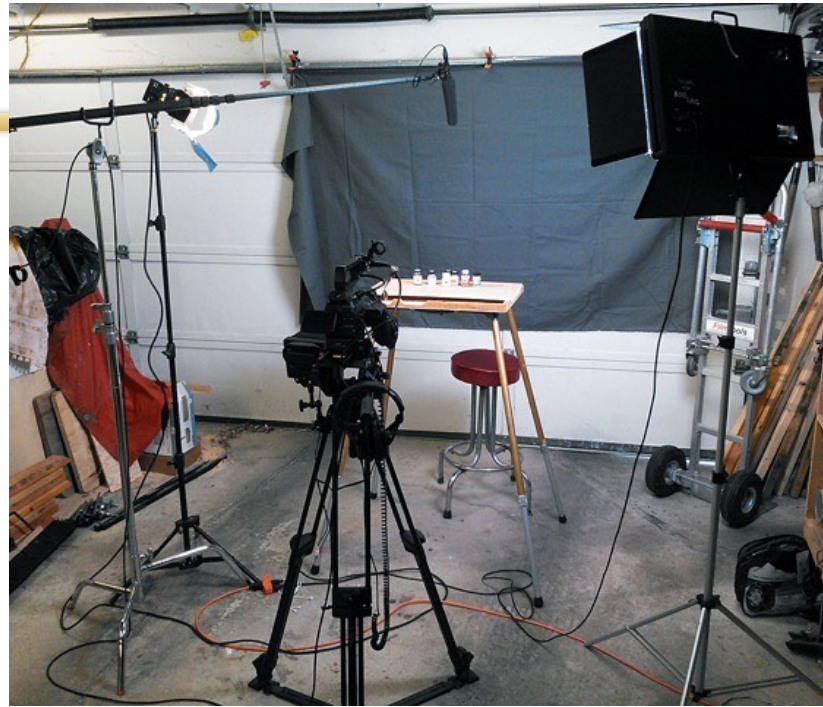
Jeff Johnson

❖ Mics

- ◆ Sennheiser MKH-416 shotgun
- ◆ Sennheiser wireless lav
- ◆ Lectrosonics wireless

❖ Camera

- ◆ Canon C300



Studio in the garage.

Lectrosonics is the transmitter/receiver package. They work with any mic with a 1/8" twist-lock connector
The gold standard for wireless – low noise, wide frequency spectrum support and fully digital, which reduces transmission noise and static and improves stereo separation and dynamics.

Shotguns with a “lobar polar pattern” – like the 416 – have the highest possible directivity
Rejects noise from the side the most. Supercardioid is somewhat less directional. Hyper-cardioid even more so

Jeff Johnson's Tip

❖ “Much of what I do for our show, *RVing Today TV*, is one-man-band and fairly low budget so you won't see a bunch of pro audio guys running around our shoots.

“I do all my audio post work in Final Cut Pro.”

Mark Hovater

❖ Video Producer

◆ www.youtube.com/zoomfx777

❖ Typical projects

- ◆ Interviews
- ◆ Run-and-gun shoots

❖ "I always tell people audio is the king of video production. I basically cut radio and then just cover it up with video!"

Mark Hovater

- ❖ Mics
 - ◆ Audio-Technica 875r shotgun
 - ◆ Tram TR-50 wireless
 - ◆ Sennheiser G-3 wireless system
- ❖ Mixer
 - ◆ Beachtek DXA-Micro Pro
- ❖ Monitor / Recorder
 - ◆ Atomos Ninja V (8 channels)
- ❖ Monopod



I love Tram TR-50 mics for men. Sennheiser wireless systems are more affordable than Lectrosonics. Audio Technica 875r. Inexpensive, 6.5" long, supercardioid, condenser (phantom power) 90 – 20K Hz Response (so, an octave less bass) but speech starts around 180 Hz.

Note the flag above the lens on the flexible stem.



Note all this gear is on a mono-pod – maximum portability.

This has GOT to look intimidating to talent ... !

Mark Hovater's Tip

The little rig does a great job with both video & audio and the monopod keeps me moving quickly.

Michael Keeping

❖ Traxstars Entertainment Inc.

◆ Facebook: [@TraxStarsInc](#)

❖ Typical projects

- ◆ Produce & direct multicam and single-cam TV projects
- ◆ Audio work is all Foley

❖ "The challenges in my Foley work is that many projects are lower budget, making it harder to create good quality sound.

"Sound in the real world is complicated so layering sounds can help reproduce that complex reality."

Michael Keeping

- ❖ Mics

- ◆ Sennheiser MKH-416 shotgun
- ◆ Røde NT-1

- ❖ "This is me doing Foley on a Hallmark Christmas movie."



Rode NT-1 in the shot. Large 1" diaphragm, condenser, cardioid – designed for vocals and instruments.
Built-in shock mount and pop filter.

Michael Keeping

- ❖ Um, if the shoe fits... wear it.



Foley is named after sound effects artist: Jack Foley. It is always capitalized.

He started at Universal Studios in 1914, and lead the team creating sound effects for “Show Boat” in 1929.

Mics in those days could pick up dialog, but not sound effects. His techniques are still used today.

Michael Keeping Tip

- ❖ I produce organic sounds in Foley as opposed to pulling sounds off a CD. So I can just grab a prop and add another dimension to the scene. You should ask yourself what *should* that object sound like, not what *does* it sound like?
- ❖ I recently re-created the sound of a grizzly bear eating salmon. (The camera op didn't want to get too close.) Salmon is expensive and smells. So, I ripped banana skins apart and used wet paper towels for chewing sounds.

Jon Gay

❖ JAG Broadcast Video

❖ www.JAGBroadcastVideo.com

❖ Typical projects

- ❖ Unscripted projects
- ❖ Interviews / B-roll
- ❖ Lots of handheld work

❖ "I'm really a frustrated audio guy deep down. And I mean that in a good way. I just like it."

❖ "The biggest challenges are to deliver the cleanest audio and video possible in the most efficient way, in concert with the Prod./Dir."

Jon Gay

❖ Mics

- ◆ Sennheiser MKH-416 shotgun
- ◆ Sennheiser MD-46 handheld
- ◆ DPA 4061 lavs
- ◆ Tram TR-50 lavs
- ◆ Audio-Technica BP-4029 camera mic
- ◆ Lectrosonic wireless system

❖ Mixer

- ◆ Sound Devices 633
- ◆ K-Tek sting-ray audio bag



Jon is the handsome dude running the camera.

Jon Gay

- ❖ For a sit-down interview, I will almost always listen for the sound of the room first, then think of the visual.

Sometimes you don't have a choice, so you do your best to fix the room with blankets.



Note how the sound blanket is making the air conditioning duct.



Booming top-down or bottom-up is a judgment call.



Audio must quickly access where the background sound is. Speakers in the ceiling? Or a tile floor?

Note, she is pointing the mic up.

Need to be careful that you aren't pointing to an air duct above and behind the speaker.

Jon Gay's Tip

❖ “Finding the best place to put a mic is always a challenge.

“Rycote Stickies changed my life. I almost don't want to share this tip.”



Use the stickies to attach mics under clothing.

Patrick Flaherty

❖ Carroll County Educational Television

- ◆ Video Production Manager
- ◆ www.carrollk12.org

❖ Typical projects

- ◆ Board of Education live meetings
- ◆ Videos to support the Superintendent's office

❖ "I am the videographer, lighting person , audio person and editor. This superintendent has put a bigger emphasis on producing short videos for social media but the pandemic makes visiting schools very difficult."

CCPS Podcast

Interview Show

Room chosen for convenience, rather than sound quality.

(2) A-T 4040 mics
(2) Gravity Short mic stands with goosenecks and Auray pop filters.
(1) Marantz PMD-706

Show is edited on Adobe Audition.



Notice all the solid, hard walls. This will be a very live room.

Marantz PMD-706 – 6 channel recording, 4 XLR, 2 line inputs. Provides phantom power.

Digital Production Buzz used a Marantz PMD-661 2-channel digital recorder for all its shows for ten years.



Thanks to Patrick for these images and annotations.

Carroll Educational
Television

Voice Over

Audio Technica
AT4040
on
Gravity Short
Mic Stand w/
Folding Tripod Legs
&
Auray Pop Filter w/
Goose neck

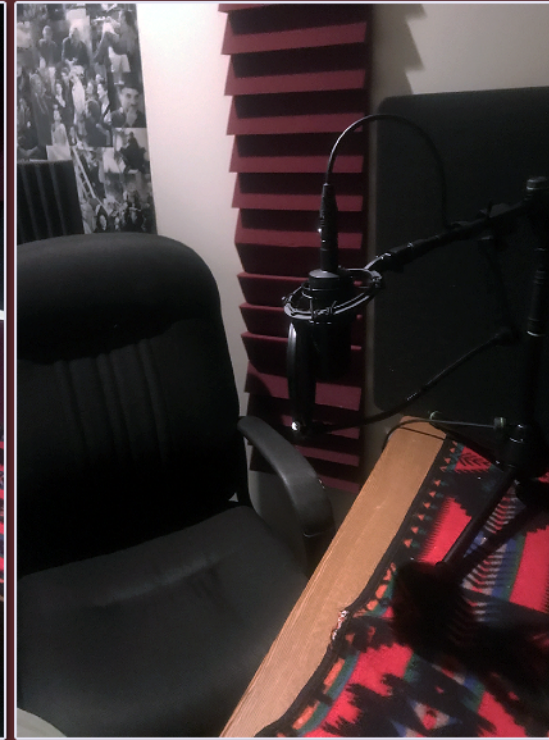


Audio Technica
AT4040
is connected to
Sony EX-1R
camera
for recording audio
on SxS cards
and then uploaded to
MacPro w/
FCP

CETV

Voice Over

Room has
some
sound
absorption
panels
Auralex
Studiofoam



CETV

**Voice Over
(taken from doorway)**

**Room has some
sound absorption panels
Auralex Studiofoam
and Auralex ProMAX
Acoustic Panels with
Floor Stands**



Patrick Flaherty's Tip

❖ “Many of my recording situations are someone at a podium so I always try to add redundancy by adding a wireless lav on the podium as well as a shotgun. Then I can decide in post how much of each mic to use.

“Also, I always use the limiter in post and I have recently started to use Fat EQ to enhance the voices.”

Scott Newell

❖ Scott Newell Productions

◆ ScottNewell.com

❖ Typical projects

- ◆ Shoot B-roll and interviews
- ◆ Corporate shorts for online
- ◆ Post-game pressers for NFL

❖ "My challenges are shooting in uncontrolled environments (i.e. factory noise, wind, bad weather). On improving audio: Use the right tool for the job and know what that tool is. Then, always have a backup plan and redundant gear."

Scott Newell

- ❖ Electro-Voice RE-50
 - ◆ Indestructible
 - ◆ Great for voice
- ❖ Sennheiser, Lectrosonics and Sony wireless systems seem to be preferred.



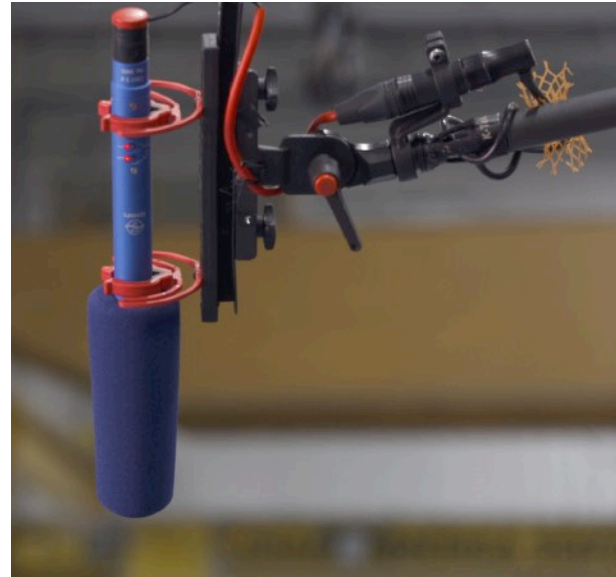
Scott Newell

- ❖ Recording room tone using a Schoeps CMT 5u mic.
- ❖ Note that the camera is shooting the mic so the editor knows which shot has room tone.



Scott Newell

- ❖ Schoeps CMIT 5u in action recording room tone
 - ◆ Schoeps is the premiere boom mic



The blue Schoeps CMIT 5u super-cardioid, lobar polar pattern
40 – 20K Hz – optimized for dialog – designed for high-gain mic preamps.
Three switches – boost highs, roll-off bass and a steep low-cut filter, with built-in RFI filter.

Scott Newell

- ❖ Brandon MacLean (Columbus, OH) using a Schoeps mic and booming an interview.



Scott Newell Tip

- ❖ The Electro-Voice RE-50 is practically indestructible and sounds wonderful for speech.
- ❖ Recording a few seconds of the ambient sound on location separately (room tone) is extremely important for editing, since silence in the environment isn't usually actual silence.
- ❖ Room tone gives the editor audio options during the edit.



Electro-Voice RE50B – designed for voice
Dynamic, omni-directional, shock-mounted — 80 – 13K Hz. Vocal range.

Popular Gear

❖ Shotguns

- ❖ Sennheiser MKH-416
- ❖ Røde NTG-1
- ❖ Schoeps CMT 5u

❖ Lavalier mics

- ❖ Tram TR-50
- ❖ Sennheiser MKE-2
- ❖ DPA 4061
- ❖ Røde Wireless Go

❖ K-Tek boom poles

❖ Rycote blimps & softies

❖ Digital Recorders

- ❖ Sound Devices
- ❖ Marantz
- ❖ Sony & Zoom

❖ Desktop mics

- ❖ Electro-Voice RE-20 & RE-50
- ❖ AKG C4000B

❖ Wireless systems

- ❖ Lectrosonics
- ❖ Sennheiser
- ❖ Røde



Questions

Larry's Webinars

- ❖ Mic: AKG C520 headset
- ❖ Preamp: Aphex Channel
- ❖ A/D: Focusrite Scarlet 2x2
- ❖ Recorded using Telestream ScreenFlow



Summary

- ❖ My thanks to all these creative folks for providing images and descriptions for today's presentation.
- ❖ What struck me in looking at these photos was that while these projects were diverse, the audio gear used was remarkably similar.
- ❖ These audio setups may look weird, but they all have the same goal: capturing and recording high-quality audio for video.

Which is why I liked showing "Audio in the Real-world."

Thanks!

Larry Jordan

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Thanks!

Larry

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