

**June 2022 Meeting Notice**  
**A Very Close Look at the**  
**Sound Reinforcement and Recording Systems**  
**for Woodstock 1969**  
**Presented by Bill Hanley - Hanley**  
**Engineering**  
**and**  
**John Chester - Independent Consultant**  
**and the**  
**AES PNW Section**  
**ZOOM MEETING 6:00PM PDT (UTC -7)**  
**Wednesday, June 22nd, 2022**

Woodstock Music and Art Fair, commonly referred to simply as Woodstock, was a music festival held August 15-18, 1969, on Max Yasgur's dairy farm in Bethel, New York, 40 miles (65 km) southwest of the town of Woodstock. Billed as "an Aquarian Exposition: 3 Days of Peace & Music" and alternatively referred to as the Woodstock Rock Festival, it attracted an audience of more than 400,000. Thirty-two acts performed outdoors despite sporadic rain.[1]

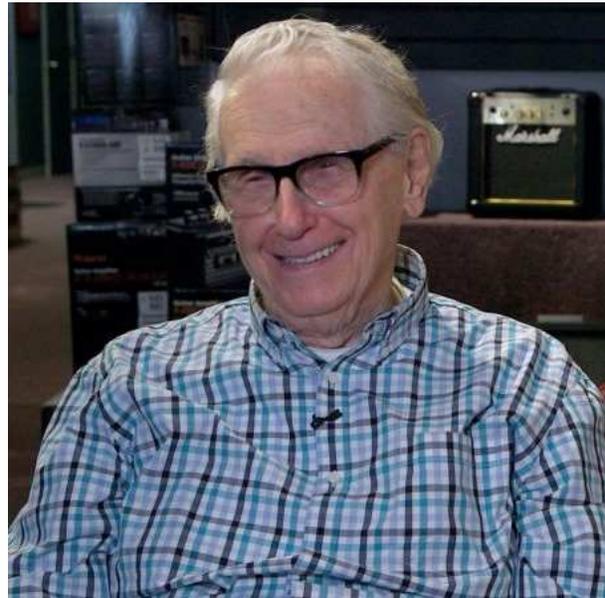


Photo courtesy of NAMM

The event was unprecedented, especially given the timeframe, nobody had attempted an event of this magnitude or scale. The promoters expected a crowd, perhaps 50,000 persons, but (of course) they had wildly underestimated what would happen. The site was wholly undeveloped, aside from what dairy cattle required: grass and dirt, there was no infrastructure of any sort.

Everything needed to be put into place: water, sanitation, first aid, staging, lights, sound, etc. This is 1969, and rock-and-roll staging was in its infancy. You couldn't just order what you needed; instead you had to design and build it. Concert sound systems could not be purchased off-the-shelf; you designed, you selected components, you built. It would be 5 years before mixing consoles remotely comparable to those found in recording studios would become part of the live sound industry. Finally, in 1974 Yamaha introduced the PM1000 mixing console. Compared to an Altec 1567A, it was an SSL (well... not quite, but the extreme comparison is apropos). *Everything* was being invented, in real time.

This is the story of just one part of the behind-the-scenes commotion that resulted in what is now called: *Woodstock*. Of all the systems that had to function during the festival, the sound system was the lynchpin. Attendees could hear clearly both the speech AND the music, and when other systems were failing (and they all did, to one degree or another), the sound system was the *glue* that held everything together.

At our June meeting, PNW committee member Dan Mortensen will discuss, with Bill, John, and possibly other guests who were there, the different portions of the Woodstock concert sound system, in as great a detail as can be done 53 years later. John Chester was at Woodstock, however not in an audio capacity. At that time, he was the sound chief at the Fillmore East and had gigs after Woodstock's sound load-in day, so at the festival, he worked on his friend Chris Langhart's crew (production manager) which did everything including well water distribution throughout the site, garbage pickup coordination and zillions of other things.

Thanks to John for graciously providing his work and analysis. Many of his slides, included in today's meeting, were prepared for previous presentations about Hanley and/or Woodstock.

footnote: [1] Wikipedia entry for Woodstock

## Topics to Discuss

Pictures that can be found will be shown and discussed to one degree or another.

1. Microphones
2. Mic Stands
3. Mic Cables
4. Mic Subsnares/Stage Boxes
5. Mic Snake to FOH
6. Mic Split to monitors?
7. Mic Split to Recording
8. Snake to recording
9. Recording Location
10. Recording mixer
11. Recorders
12. Recording processing and monitoring
13. Recording staffing

14. Handling and storage of recorded tapes
15. Post processing of recordings
16. FOH Location
17. FOH Mixer and processing
18. FOH staffing
19. Break music playback
20. Mix feed to amplifiers
21. Signal distribution to amplifiers
22. Amplifiers - brand-quantity-purposes-spares-location
23. Speaker cables and connectors
24. Speakers: boxes and components
25. Speaker location and coverage
26. Scaffold parameters
27. Monitor Mix Source
28. Monitor type and location
29. Comms & Locations
30. Weather protection for all locations:
  - o FOH
  - o Recording
  - o Amplifier world
  - o Speakers of all kinds
31. Transportation for gear
32. Transportation for crew

## **Bill Hanley - Hanley Sound**

Bill was born in 1937, in Medford Massachusetts. He is now 85. Bill and his brother Terry (b1946) showed an interest in electronics at an early age, this led to building crystal radios, and then amplifiers, then tube radios, and then bigger amplifiers. Both brothers had amateur radio licenses. This was quite common in the 1940's and later, as most ham radio operators had to build their own gear.

While growing up, Bill came to recognize just how poor public address systems really were, and by 1957 he started his sound company. His familiarity with the audio equipment of the era, and his electronics knowledge helped him understand what was happening, and paved the way to figuring out how to solve it.

Bill Hanley is credited with being, "The Father of Festival Sound."

## **John Chester - Independent Consultant**

- Live sound engineer (Chief Sound Engineer, Fillmore East, 1969-1971)
- Analog circuit designer and equipment manufacturer
  - o Chaos Audio, 1971-1990
  - o Modulation Sciences, Vice President R&D, 1980-1992

- Independent consultant for A/V, video conferencing, network and telecommunications, 1992-2002.

In 2002 John began repairing and upgrading tape machines. After refreshing his memory of magnetic recording theory, he then started on all the theory he'd never learned. John then learned how to use modern digital tools to improve the performance of vintage machines.

In 2007 he met Jamie Howarth, learned about Plangent technology, and began the design and construction of the next generation of Plangent hardware. He began doing Plangent transfers in his studio. For formats larger than 1/2", he set up Plangent equipment in a studio that had the appropriate tape machine and then supervised the transfer (e.g. Grateful Dead Europe 72 multitrack, done at Sonicraft). John is an AES Life Fellow.

## Bibliography

If this has your curiosity stirred up, then good! You can find additional references here:

<https://www.aes-media.org/sections/pnw/pnwrecaps/2022/jun2022/hanley.pdf>

## Map

A Google map showing the [location of the festival](#).

Copy Plus code: P429+PW Bethel, New York

Copy and paste the code into Google Maps.

**THIS EVENT IS FREE, OPEN TO ALL, AND AES MEMBERSHIP IS NOT REQUIRED**

## Election and Business Meeting

The June meeting is our annual election and Section business meeting. It is important that we have a quorum of AES members present at the meeting. A quorum must be present to conduct the election. This meeting will be held via Zoom.

For election info, including the slate of candidates, click

<https://www.aes-media.org/sections/pnw/pnwrecaps/2022/jun2022/bio2022.pdf>

## Coming Meetings

In the coming months, we look forward to presenting the following meetings. **August Meeting.**

This will be a special meeting, outside of our usual September to June schedule.

We are planning what we think will be an interesting and unique follow-up to this meeting about Woodstock and will present it closer to the 53rd Anniversary of the festival. We will announce details at our June meeting.

If you have a pet topic you'd like to see presented, or if you'd like to present a topic, please contact the Section Chair.

## **PNW AES Zoom Meetings and zoom URL**

We started holding our meetings via Zoom beginning with the April 2020 meeting. Zoom has dramatically increased our reach, well beyond our Section's geographic area. Since doing this, we've had attendees from Canada, and as far away as Indonesia, and Australia. Zoom gives the ability to record our meetings, and those recordings will be posted in our past meetings Archive. For now, video from our Zoom meetings can be found (mostly) at Dan Mortensen's [YouTube channel](#).

We use EventBrite to manage our free tickets to meetings. You need to RSVP for yours via the following link. EventBrite sends an email with the Zoom link 2-days, the morning of the event, and 2-hours before the event. Set your email program to recognize the email so it doesn't get shoved into your spam folder.

[RSVP here](#)

When you register at EventBrite and when you enter the Zoom meeting, please use your real first and last names so we can get to know each other. You do NOT need to create an EventBrite account to register.

### **Please Note**

In order to maintain decorum and avoid interruptions, even unintended ones, we have established a few ground rules for meeting attendees:

1. We want to see your full name on display in Zoom at the meeting.
2. All audience audio and video will be muted for the duration of the event.
3. The presenter will determine if they can accept questions during the presentation, or wait until specific Q&A times, and that will be announced at the beginning of the meeting. (We often use the "chat" feature to allow attendees to ask questions when they think of them, with moderators passing them on to the presenter at the appropriate time.)
4. Based on our experience with no-shows, we reserve the right to issue more tickets than available slots. We don't want to turn people away based on inaccurate estimates of attendance, but we do have budgetary limits to the number of slots we can make available. If we reach capacity before you log in, we regret that we have no way to expand capacity at the last minute.
5. It would be good if you watched the chat stream during the meeting. Not only is it a way to submit questions to the presenters, but it's also a way for others to contact you

personally. You have the option there to direct your comment to anyone who is part of the meeting as well as to one person in particular.

**Finally, in the rare instance of behavior by an attendee that moderators believe is disruptive, we reserve the right to immediately eject such attendees.**

## **Greg Dixon**

*AES PNW 2021-2022 Section Chair*

***n.b.** The material presented at our meetings is the opinion of the presenter and not necessarily that of the Society. You are encouraged to conduct your own research and to form your own opinions before adopting the presented material as Truth.*

Last modified 05/30/2022 0:54:3.

# Bibliography for Bill Hanley / Woodstock June 2022 PNW AES Meeting

revised 8/1/2022, rev c2.

## Books

Comments here are from Dan Mortensen.

***"The Road to Woodstock"*** Michael Lang with Holly George-Warren, ecco -an imprint of Harper Collins Publishers, 2009.

First person, doesn't get any more "horse's mouth"

***"Barefoot in Babylon"*** Bob Spitz, Plume -an imprint of Penguin Random House 1979.

Very good technical descriptions, best of all the books that I and John Chester have read (he told me about it).

***"Young Men with Unlimited Capital"*** Joel Rosenman, John Roberts, Robert Pilpel, Harcourt Brace Jovanovitch 1974.

The guys who financed the whole thing despite clearly getting ripped off at many points in the process and who made good on all debts from a festival with no ticket takers or gates. They were gems.

***"Rock Concert"*** Marc Myers, Grove Press 2021.

Similar format to Joel Makover's book and uses quotes from it, but lots of original research and interviews and has a nice Woodstock section.

***"Back to the Garden"*** Pete Fornatale, Touchstone, a division of Simon and Schuster 2009.

I don't remember much of this one but I enjoyed reading it and found things not in other places. True of every book.

***"The Last Seat in the House - The Story of Hanley Sound"*** John Kane, University Press of Mississippi 2020.

Comprehensive, well-researched, shows Bill's career and highlights many of his innovations which are used daily all over the world. Big Woodstock section.

***"Aquarius Rising -The Rock Festival Years"*** Robert Santelli, Delta Publishing 1980.

Modestly detailed look at early rock festivals, includes Sky River but completely leaves out Seattle Pops, which I was at and worked on ahead of time, so this book sucks despite being the first one to examine the phenomenon. Has a Woodstock section, of course.

***"Woodstock -The Oral History"*** Joel Makover, Doubleday 1989.

Really a great book, oral histories in their own words of people from all categories who were there, who put it on in some way, and who were affected by it. Everybody has indelible memories that they treasure.

***"Woodstock Back to Yasgur's Farm"*** Mike Greenblatt, Krause Publications 2019.

Another I don't remember much of this one but I enjoyed reading it and found things not in other places. True of every book in this list (and more).

***"Woodstock -50 Years of Peace and Music"*** Daniel Bukszpan, Hourglass Press 2019.

Many photos by Amalie Rothschild, good ones, too.

***"Pilgrims of Woodstock"*** John Kane, Red Lightning Books 2019.

Photos by a guy (not John Kane) who was there and took pictures but died before anything happened with the pics. All away from the stage. Interesting view of that part of the monster gathering, not much interesting to someone with a stage-related focus.

**“Woodstock -The 1969 Rock & Roll Revolution”** Ernesto Assante, becker&mayer! books 2018. Originally published as “Woodstock ’69: The Rock & Roll Revolution” by Whitestar Publishers. Another I don’t remember much of this one but I enjoyed reading it and found things not in other places. True of every book.

**“Live at the Fillmore East”** Amalie Rothschild with Ruth Ellen Gruber, Thunder’s Mouth Press. Published 1999-2000. Great shots of the Fillmore East shows and a complete list of shows and dates. Has a Woodstock section.

**“Woodstock - an inside look at the movie that shook the world and defined a generation”** by Dale Bell, with an introduction by Martin Scorsese, photographs by Henry Diltz and Barry Z. Levine. A Genuine Barnacle book, an imprint of Rare Bird Books. 2019. Allegedly 176 pages (the page numbering is sketchy)

A thin but action-packed look behind the scenes of the entire process of the making, editing, and distribution of the movie, which started about 2 weeks before the start of the festival and went through various permutations afterward, with first hand descriptions of who what when where and why. Details and photos not to be found elsewhere, with first-person accounts of what they did. John Chester was the first of our group to read and recommend it, accurately. There is a LOT of detail left out, including who people are in pictures and why the last 20 pages or so seems to be lifted from another source and color shifted and cropped to be more edgy without adding anything to the story, as near as I could tell. But despite the minor flaws, it tells a very believable story on an important aspect of the festival with focus and content that is not found anywhere else.

From Chris Myring

**“Small Town Talk”** by Barney Hoskyns, Da Capo Press 2016.

Mostly about the music scene in the town of Woodstock, it has a chapter about the festival and describes the effect on the local community of the influx of 'hippies' and, subsequently, of tourists trying to find the festival site.

## Videos:

Comments by Dan Mortensen

**“Taking Woodstock”** Ang Lee, Focus Features 2009.

DM: This is a controversial pick but it’s one of my favorite movies. It’s the whole festival from the (fictional on some levels and probably real on others) viewpoint of Elliot Tiber, who everyone seems to agree called Woodstock Ventures to suggest they have their festival in White Lake and use the permit he already had to play records outdoors for an annual community gathering.

When Michael sees Tiber’s family property is a swamp, he drives around and finds Yasgur’s farm. The last phrase is subject to argument about who actually found the site, but the phone call is widely accepted as fact and is the direct reason WV found the site. The rest of the story is about the growing up of a gay man, and while I like Demetri Martin as an actor in the couple things I’ve seen with him, he seems like he might be a lot more empathetic than the real Elliott. I have the book of the same title but haven’t read it yet. Ang Lee is an incredible director (“Crouching Tiger, Hidden Dragon”, “The Life of Pi”, and many others) and the movie is painstakingly true to reality with many visuals taken from photos at the time, while at the same time somewhat exaggerating reality for dramatic effect.

It vividly shows how it must have been to be in White Lake (on the road to Bethel) and have the people-flood come to town. It shows the positive and negative sides of humanity. Like I said, it’s one of my favorite films.

**“Creating Woodstock”** Mick Richards, Cinema Libre, 2019.

The most informative of all possible videos about the people who put the festival together, with extensive interviews with all the producers, many production people, a few fans, some artists. The only way it could have

been better is if it were longer than its 111 minutes. Lots of the footage seems to be amateur and the color grading could use some help, but it looks directly at length at the parts that we could only get glimpses in the background in the other videos. Highly recommended.

<https://cinemalibrestudio.com/creating-woodstock/>

From Chris Myring

**"Woodstock Diary 1969 Friday Saturday Sunday"** Pennebaker/Hegedus 1994 [single DVD]

**"Woodstock - 3 Days of Peace and Music, Director's Cut, Ultimate Collector's Edition"** Maurice/Wadleigh 1994 [4-DVD set]

**"Once Were Brothers"** Scorsese/Grazer/Howard 2019

CM: [presumably has Woodstock references - I can't remember!]