



Connections—The Newsletter of Chapter 52, Columbus and Central Ohio, Society of Broadcast Engineers



There will be a combined meeting of SBE Chapter 52 Columbus and Central Ohio, and the Ohio Section of SMPTE on

**THURSDAY, MARCH 30, 2017 AT
MILLS — JAMES PRODUCTIONS
3545 FISHINGER BLVD
COLUMBUS, OHIO 43026
REFRESHMENTS AT 6:30,
PROGRAM AT 7:00 PM**



MILLS - JAMES PRODUCTIONS, 3545 FISHINGER BLVD., COLUMBUS, OHIO 43026 Driving directions: Traveling north or south on I-270 on the west side of Columbus, exit at Exit 13 at Hilliard-Cemetery Road. Go east on Hilliard-Cemetery Road toward Fishinger Blvd.—Upper Arlington. Travel approximately 0.8 miles on Fishinger Blvd., turn right into parking lot at Mills James, 3545 Fishinger Blvd.



March Speaker: Mr. Brian Claypool Of BARCO Inc.

Brian Claypool is currently the Vice President of Strategic Business Development for Barco's Entertainment Division as well as the Central Region Governor for SMPTE and divides his time between Ohio, Los Angeles and Belgium.

Brian has over 25 years experience in the broadcast and cinema entertainment industry, indoctrinated into the business as a projectionist in his hometown of Circleville, Ohio and as a production intern at WNCI in the early 90's.

Prior to joining Barco, Brian held positions in the Radio and Television broadcasting industry ranging from Program Director and Afternoon Drive on-air talent at WFCB in Chillicothe, to various engineering roles at WBNS TV in Columbus, Ohio. In 1998, Brian moved west and landed a position with Lucas film's THX division as a technical supervisor and over a 5 year period visited and calibrated over 1700 cinemas and mixing stages worldwide.

From the beginnings of Digital Cinema, Brian subsequently occupied positions with both Avica Technology as well as Christie Digital Systems before eventually moving to Barco.

At Barco, Brian is responsible for various advanced technology business initiatives including the global management of Barco's Audio technology group and has overseen the release of over 150 films in "Auro 11.1 by Barco" on hundreds of screens worldwide.

Brian attended Ohio University in Athens, Ohio where he majored in Engineering with a minor in Music Performance.

Agenda:

Brian will provide an overview of the latest advancements in immersive sound from both a standards perspective as well as a review of the current status of immersive sound in both the broadcast/ consumer and cinema markets.

See related press lease on following page.

Cinemark Inks Deal With Barco to Install Auro 11.1 Sound Systems



Cinemark has announced plans to install Barco's Auro 11.1 system in more than 150 of its "Extreme Digital" premium large format screens worldwide.

Barco got an important endorsement from Cinemark. Damian Wardle, vp worldwide theaters technology and presentation for the chain, said in a statement: "After independently testing both commercially available immersive cinema sound systems, it became abundantly clear that Auro 11.1 provides the best complement to the Cinemark XD experience."

"We firmly believe that the fullness and richness of Auro's height layer, coupled with the discreetness of the future and open standard object-based capabilities supported by Auro, will make for the best moviegoing experience possible," Wardle said. "It's backward and forward compatibility with existing cinema audio systems, in addition to the ease and economy regarding both implementation and operation, are also critical elements."

Theater owners and studios want standards to address the proprietary and incompatible immersive sound formats. Currently, studios have to do two separate mixes if they wish to release films in both formats. That has included DreamWorks Animation's *Turbo* and Sony's *Elysium*.

Barco and Dolby are each offering a different approach to this issue.

RADIO WORLD

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SBE 52 gratefully acknowledges the kindness of Mr. Paul J. McLane, Editor In Chief of Radio World for permission to reprint this article by Brett Moss. As you will recall Tim Anderson spoke to the chapter multiple times, most recently on May 15, 2015 on the topic of high fidelity radio.

Tim Anderson Flies GatesAir

by Brett Moss on 12.08.2016

Tim Anderson, CPBE/DRB, CBNE, who many in the industry know as the manager of Radio Product and Business Development at equipment manufacturer GatesAir, has left the company to pursue his dream to be a professional airline pilot.

Radio World managed to keep him on the ground a little longer to answer some questions.

Radio World: Are you really, literally, flying the coop?



Tim Anderson: I recently accepted a First Officer position with United Airlines' regional carrier CommutAir and have started training in Dallas. If all goes well, I hope to be "flying the line" out of Newark, N.J., by February (burr!!!). However, my wife, Mary Anne, and I will remain in at our home base in Northern Kentucky.

RW: What prompted this?

Anderson: My two passions are radio and aviation, but I'm just flipping the priorities for awhile. It's exciting, terrifying and I see it as a once-in-a-lifetime opportunity.

RW: How long were you with Harris/GatesAir? What will you miss?

Anderson: I've been with GatesAir (and Harris) for about 9 1/2 years. I started in August 2007

as the manager of Radio Product and Market Development, leading the conceptual product development efforts for the Flexiva, HPX and FAX Family of FM transmitters and HD Radio systems.

What I'll miss most about working at GatesAir are the great people. They are some of the smartest, most passionate professionals I've ever worked with. I'll miss my customers too, some of whom I've grown up with and known for nearly 40 years. Oh, and I'll really miss playing with the cool toys.

RW: *What did you do before Harris/GatesAir?*

Anderson: Prior to joining GatesAir, I served as a broadcast systems engineer with iBiquity, where I assisted in the development, testing and deployment of the HD Radio transmission system. Prior to that, I was a broadcast systems engineer for Avid Technology, served as a consultant, and chief engineer for several major market radio stations, groups, networks and production facilities.

RW: *How long have you had this "flying bug"?*

Anderson: I think I was born with it. I've been in love with the airplanes as long as I can remember. When I was about five years old, my dad took me to the airport where I got to sit in his friend's Piper Cub. Around 10 years old, I saw an ad in Look magazine advertising for TWA pilots with a captain in his uniform and sunglasses standing next to this beautiful, shiny jet with the caption, "Our Pilots Will Make One Million Dollars Over Their Lifetime."

Shortly after reading Richard Bach's "Johnathan Livingston Seagull" and John Gillespie Magee's inspirational poem "High Flight," I actually flew for the first time ... and I knew I was home.

In 1976 with a \$70 per week salary from my first radio job, I started taking flying lessons to earn my Private Pilot license.

RW: *Describe your flying experience/skill level.*

Anderson: Today, I hold a Commercial Pilot License with Airplane Land and Sea, Airplane Multi-Engine Land and Airplane Instrument ratings with about 1,800 total hours.

I've served in the Civil Air Patrol and the United States Air Force Auxiliary since 2004 as a Major and Senior Mission Pilot with several hundred mission hours.

RW: *Do you own a plane?*

Anderson: I own a 1970 Piper Cherokee 140. I bought "Baby" in 2005 originally to get me back and forth from my job at iBiquity in Columbia, Md., and home in Covington, Ky. We've been together ever since and I have close to a thousand hours in her. She helped me get my Commercial license and helped three friends earn their Private Pilot licenses. She's a great little airplane!

RW: *Do you work on your plane?*

Anderson: I enjoy doing the routine maintenance work that's permitted by regulation like changing the oil, cleaning/gapping sparkplugs, servicing the tires and struts myself. I have a great mechanic who lets me work with him or supervises me and signs-off on the bigger things when I have the time to do it. I've even participated in a couple of owner-assisted annual inspections where we essentially take the airplane apart and put it back together again. Those have been fun times and gave me a chance to really learn the airplane.

RW: How long will this training take?

Anderson: For about a month I've been studying to take the Airline Transport Pilot written exam. I'll be in the Airline Transport Pilot Certification Training Program (ATP-CTP) in Dallas for 10 days before taking my written exam. I head off to ground school for two weeks at Dulles beginning Jan. 3, then have three weeks of flight school in Seattle. If all goes well, I should be flying either the Bombardier Dash 8 Q200/Q300 or the Embraer ERJ 145 out of Newark airport or Dulles airport by late February or early March.

RW: But, wait, there's more ...

Anderson: I just want to take a moment and thank everyone in the industry for their support, friendship and the great interviews and articles we've done over the years.

This isn't goodbye. I plan to stay involved in broadcasting, doing consulting and contract work as time and opportunity will allow. To that end, I've re-established my consulting company, [TBA Communications LLC](#). And I'm still working on some projects; particularly working on summarizing some of the research I've done the past three years and hope to continue doing work with GatesAir and others on a consulting basis.

Ultimately, the plan is to retire to the Bahamas, Virgin Islands or some other tropical paradise, flying seaplanes between the islands and doing a little radio contract engineering by day and playing music on the beach by night. Gotta have a dream.



RADIOWORLD

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SBE 52 gratefully acknowledges the kindness of Mr. Paul J. McLane, Editor In Chief of Radio World and Mr. James E. O'Neal for permission to reprint this article. If you ever wondered what those suspicious antennas were for at 7020 Huntley Rd. in Columbus, you now know. It was not the Columbus listening post of the CIA. Mr. Moersdorf has recently moved his collection to his home in Delaware County. Hopefully we can have a showing someday.

Seriously Collecting Broadcasting's Big Iron

If it can't kill you when it falls over, he doesn't want it

ROOTS OF RADIO

BY JAMES E. O'NEAL

Some of us collect postage stamps; others coins or perhaps matchbooks. There are a few individuals who collect vacuum tubes. However, one Ohioan has set a somewhat loftier goal: amassing a collection of broadcast-type radio transmitters.

Gerry Moersdorf began rounding up such transmitters more than 15 years ago, uprooting them from their former workspaces and hauling them back to a large warehouse-type building in a Columbus, Ohio, suburb.

Moersdorf is quite selective, though; not just any broadcast transmitter will do. He's especially partial to representative examples from the likes of Collins, Gates, RCA and Western Electric — companies that once supplied transmitters for the majority of U.S. radio stations — and they must be vacuum tube-powered "big iron." He has no interest whatsoever in the compact solid-state high-efficiency pipsqueaks from the last several decades.

"My motto is never operate a transmitter that can't kill you if it falls over," said Moersdorf, a former software engineer, who created and sold off a couple of successful computer-related businesses before devoting his energies to rescuing broadcast rigs.

THE PATH FROM COMPUTERS TO BIG IRON

"My background was in digital electronics and software. My first company built a DEC-to-IBM interconnect back in the days when minicomputers were as big as a house. My second company built equipment used for telemetry. I started it in 1980 and spent 20 years building it up to the point where we had 380 employees, but my real interest was in radio, so I sold it about 10 years ago."

Moersdorf has winnowed his collection down from a high of about 30 transmitters to a more manageable (and eas-



Two of Moersdorf's set of five Collins 20V Series of 1 kW rigs. All have been modified for use on the amateur radio 40-, 75- and 160-meter bands.



Gerry Moersdorf shows off the oldest item in his large collection of broadcast transmitters. The Western Electric 443A1 1 kW Doherty dates to the 1940s. Moersdorf notes that it tunes between 550 kHz and 2,750 kHz, allowing it to be used in the old police band for one-way "broadcast" communications.

ily accommodated) 15, explaining that one factor in the decision was the lack of three-phase power when he recently relocated his collection and manufacturing business to Delaware, Ohio.

Asked about why he started collecting these behemoths from radio's heyday, Moersdorf responded: "It's a labor of love. I just couldn't stand to see them wind up in dumpsters. The earliest transmitter I have is a 1940s Western Electric, and it's an amazing piece of engineering. Seeing something like this pushed into a dumpster is a horror."

Actually, rescuing electronic items from recyclers and landfills is in Moersdorf's blood and goes back to his childhood years.

"I grew up in New Jersey, and we lived near a dump — actually in Jersey, everybody lived near a dump — and as kids, we used to go down to the dump to look for 'All American Fives' [five-tube AC/DC radio receivers] people had thrown out. We'd tie them to our bicycle baskets by the line cords — we might have had 50 at a time — and then we'd go to the local pharmacy with the self-service tube tester and test the tubes. We'd throw the duds out and put the working tubes into maybe 10 radios out of the 50 — actually, we never bought a single tube from the guy that owned the pharmacy. My mother used to give the radios away to neighbors."

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Not all of Moersdorf's transmitters are kept "stock," as exemplified by this now one-of-a-kind Gates BC-1F 1 kW model from the early 1950s. (Moersdorf has another with Parker Gates' factory paint job.)

8 of the **TOP 10** U.S. radio stations are Nautel customers.



nautel.com **nautel**

BIG IRON

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STILL ON THE AIR

Asked whether these massive yesterday rulers of the AM band were just for show, Moersdorf, who is a ham radio operator, was quick to show off the mods he'd made to allow the rigs to tune the amateur radio bands.

"The transmitters that I've kept, I've converted for operation on the 160-, 75- and 40-meter [amateur] bands," he said. "The amateur radio world's AM community is the best community. They have a lot of knowledge and love for transmitters like these, and they don't operate plastic radios."

Judging from the number of examples in the collection, Moersdorf's favorite broadcast transmitter line appears to be the Collins 20 V 1 kW series from the 1950s and beyond. It used 4-400 tetrodes in the modulator and RF output sections, and during its production lifespan developed a reputation for high reliability.

"I have two Collins 20V-2s and three 20V-3s," said Moersdorf. "One of these is [permanently] located on a West Virginia mountaintop. I'm a member of this group of amateur radio guys who go camping four or five times a year, and we have this campsite on a 3,000-foot



Moersdorf and his "Big Bertha" 1946 Collins 20T. It was designed for 1 kW operation and weighs in at a whopping 5,700 pounds. (That's less than 0.2 of a watt per pound.)

mountain there. With the help of a bulldozer, we hauled a shipboard container up there to use as our radio station and then hauled up a 20V-3. We have two diesel generators up there to power it."

Asked about "extremes" in the collection, Moersdorf singled out two units.

"The highest-power one is a CCA AM2500D which was made in the

1970s," he said. "It uses four 4-1000 tubes and can make 7,000 watts. The heaviest is a Collins 20T 1 kW model. With it, we like to talk about pounds-per-watt, not watts-per-pound. It came out in 1946 and weighs 5,700 pounds. It's built like an armored battleship."

Moersdorf has been known to travel long distances, if there's a particularly desirable transmitter that needs retrieval from the dumpster.

"I once went to Nevada to pick up an RCA BTA-1," he said. "We have a big truck [18-wheeler] we use for this. I got my commercial driver's license just so I

(continued on page 22)



Moersdorf's collection contains only one non-broadcast transmitter, this Collins AN/FRT-24 1 kW base station transmitter built for the U.S. Navy. It tunes 2-30 MHz and was constructed in the mid-1960s.



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BIG IRON

(continued from page 20)

could go out and pick up transmitters in the truck.”

SERIOUS AUDIO AMPLIFICATION

Moersdorf noted that the truck had also served as a mobile showroom for another of his enterprises, Audio Power Labs, which manufactured high-end audio amplifiers.

“The audio business came about because of my love of tubes and the sound of tube amplifiers,” said Moersdorf. “We built two amplifier models, a 150-watt monoblock that used the 833 [triode]. We also made a 50-watt that was based on the 572.”

Moersdorf observed that his audio products weren’t intended for those satisfied with an MP3 player and earbuds. While they were in production, a pair of the 833 monoblocks would have set you back a cool \$140,000, and the “low-end” 572 model sported a \$10,000 price tag for a single unit.

“We had one with an outrageous price point and one at a semi-outrageous price point,” said Moersdorf, noting that in addition to the six-figure outlay for the 833 monoblocks, the consumer likely would have had to pony up an additional sum for an electrical contractor. “You’d need two 20-amp dedicated outlets to power them.”

Asked who would be in the market for such amps, Moersdorf answered “eclectic people.”

“They were more for our age [translation: the older demographic], and the market was quite limited.”

Moersdorf manufactured the tube amps for about five years before discontinuing production in 2016.

Part of the problem in attracting buyers for high-end audio, he said, is the greying of America. “When you try to map out the intersection between people who are interested in high-end audio and those who are patient enough to sit in a room and seriously listen, you have a very small Venn diagram. My kids have the attention span of a gnat. They’re not going to sit around and listen; they’d rather just stream some audio off their phones.”

He now limits his manufacturing business to a much smaller and less-expensive device for monitoring AC power quality.

BLAME THIS ONE ON THE COW

One of Moersdorf’s most unusual transactions was a package deal consisting of a pair of 5 kW CCA transmitters and a 500-watt Raytheon rig.

“I actually bought an entire 5 kW radio station to get these,” recounted Moersdorf. “This was in southern Kentucky. The reason that I got to buy it



A portion of the collection’s 15-transmitter lineup. The 2.5 kW CCA “cow killer” is at the extreme left.

was that the station had been killed by a cow. It had its sticks out in a cow field and one of the cows nosed its way into a tuning house and managed to blow up the transmitter. The guy running the station wanted to get back on the air and bought the 500-Watt Raytheon and got the FCC to allow him to temporarily run at lower power. He then found another 5 kW CCA and took parts out to replace the burned-up parts in the first transmitter. However, these got burned-up too. He petitioned the FCC to allow [permanent] 500-Watt operation for something like four years, but wasn’t successful and finally gave up and went off the air, as he had an FM station too.

“The story is that the cow killed the AM station, but in the end, the station apparently killed the cow also. Two weeks after it blew up the transmitter, they found it dead in the field. I went in with a Gradall and removed all three transmitters.”

Moersdorf admits that restoring vintage transmitters isn’t always easy due to a lack of parts, and working on them involves a number of dangers — high voltage, mercury vapor rectifiers, asbestos, PCBs and X-ray radiation — but he really has no use for modern machines.

“I only collect transmitters with glowing objects in them — tubes!”

While Moersdorf doesn’t maintain his collection of transmitters as a museum, visitors are always welcome. Contact him



Until fairly recently, Moersdorf’s Audio Power Labs operation produced high-end high-fidelity amplifiers, including this 150-watt beauty. It was inspired by the 833 graphite anode transmitter triode. A pair of the monoblock amps cost \$140,000. If you want a set of your own, you’ll need to act quickly as only a few remain in stock.

via email (gerry@moersdorf.com) to set up an appointment.

Additional photos of Moersdorf’s collection are available online through the QRZ amateur radio website, www.qrz.com. After accessing the site, search for his amateur radio call sign KC8ZUL.

James O’Neal is a retired broadcast engineer who worked in that field for some 37 years before joining Radio World’s sister publication, TV Technology, to serve as its technology editor for nearly a decade. He is a regular contributor to both publications.

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Now on Facebook & Twitter! Check them out!

Robert Holden, SBE Chapter 52 Webmaster, has opened a Facebook and a Twitter Account for Chapter 52 to help to communicate better with Chapter 52 Members.

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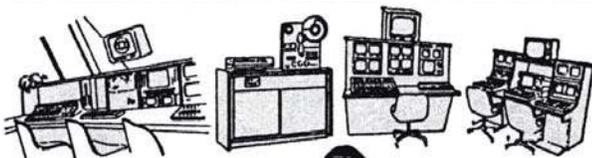


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