

## A Proper Place for Old Analyzers

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For a person attempting to create a spectrum analyzer museum, the 40th anniversary issue of *Sound and Vibration* was pure gold. The article on spectrum analyzers by Joe Deery really struck home. I shall frame the many historical articles and include them in my collection.

Stepping back a bit to the reminiscing stage, my first interest in spectrum analyzers started while a graduate student at the University of Wisconsin, where I read an advertisement for the Federal Scientific 'Ubiquitous' analyzer. Little did I know that a few short years later and now a young faculty member at The Ohio State University I would have an industrial grant that would allow me to purchase one of the successors to that Ubiquitous analyzer as well as an original Spectral Dynamics mechanical impedance test system. I later became good friends with many of the individuals mentioned in Joe Deery's article (including George Fox Lang, the inventor of my favorite analyzer, the Nicolet 660B).

Over the years, we have had the opportunity to use more than 20 different analyzers. They have been incorporated into several of our undergraduate courses at OSU, and many of our graduates have gone on to successful careers in vibration analysis.

In 1999, I was wondering what to do with many of the older analyzers in our possession and decided that they were slowly becoming museum pieces, so I decided to become a collector. So, over the past eight years, I have been scrounging around for donations of old spectrum analyzers and other analyzer memorabilia. I have also introduced myself to eBay – it is amazing how many old analyzers show up for sale. I have succeeded in purchasing a few analyzers this way but have restricted my total outlay to \$100 per analyzer, which pretty much guarantees that I have not gotten completely functional devices.

I have tried to get a few of the analyzers working, but as one might expect, I can get some of the older ones partially working, but there is always one subsystem such as the display or only one channel of a two-channel box that works. With my lack of electronics acumen, I am not very good at fixing problems (even with the manual in hand), so if any of you have any experience with my list of analyzers, please speak up and I will be happy to send you an old time

analyzer to work on. A list of the museum's inventory is provided below. I have broken down the devices into hand-tunable and swept-frequency units, real-time, non-FFT and FFT analyzers. Thanks to an engineer at Shell, I got into collecting machinery maintenance boxes and have a fair listing of them (John Mitchell's January *S&V* article covers them in quite a bit of detail). Since my hometown of Columbus, OH has been a hotbed for machinery maintenance companies, I have created a display of some of the older products (IRD, Reliance, etc.)

### Tracking/hand-tunable analyzers

B&K 2107  
Balance Technology Vibropac 2  
Balmac 214  
Bently Nevada TK-8 (2)  
Genrad 736A  
Gleason 15D  
IRD 345  
PMC 206  
Reliance 641  
Spectral Dynamics 101B  
Spectral Dynamics 122  
Spectral Dynamics 131  
Spectral Dynamics 13185

### Real-Time Analyzers

B&K 2131 (1978)  
Federal Scientific UA6B  
Federal Scientific UA500 (1972)  
Genrad 1909-3000 (1/3 octave)

### FFT Analyzers

B&K 2033 (1980)  
Data Precision Data 6000 (1985)  
GenRad 2512  
Genrad 2515 (1983)  
Hewlett Packard 3582  
Hewlett Packard 5420A (1978)  
Hewlett Packard 5423A (1983)  
Nicolet 446A (1979)  
Ono Sokki CF880 (1991)  
Rockland System/90 (1989)  
Spectral Dynamics 311C  
Spectral Dynamics SD 350 (1978)  
Spectral Dynamics SD 360 (1974)  
Spectral Dynamics SD 375 (1983)  
Tektronix 2622  
Tektronix 2630  
Wavetek 5830  
Wavetek 5820A  
Wavetek 660B  
Wavetek 804A (1983)

I also collect old articles, ads, and brochures on older analyzers. I have pulled some stuff off of the web (like hearings on the Nixon tapes in which Federal Scientific was involved) and perusing old *S&V* issues has been most helpful. One of these days I will make a trip to Bay Village, OH to go through the *S&V* archives. Many of these have been scanned and put into Powerpoint electronic presentations organized by company, so if you would like to receive any of the presentations, please feel free to contact me.

When reading the anniversary issue of *S&V*, I became a bit curious about the current status of spectrum analyzers. I counted 19 ads that were marketing devices that computed the frequency spectrum. Over half of them seemed to be PC based, some had a spectrum computed on a sound level meter, and the smaller ones still functioned like older analyzers with buttons for selecting settings and functions.

So, how can you help?

- I am still accepting donations and can help with shipping if that is an issue. (I actually showed up in Williamsburg, VA to pick up one donation.)
- I would like to get the analyzers functioning and would like any assistance I can get to repair nonfunctioning or partially functioning analyzers.
- Ultimately, I imagine that we will get into a space crunch here at the university, so I will need to find a new, more permanent home for my collection. I have searched for other similar museums on the web and have had little success. If you have ideas, on possible homes, please let me know.

We have a display of some of the more interesting analyzers at the new home of our Mechanical Engineering Department. If you happen to be in the Columbus, OH area, please feel free to contact me. I would be most happy to show you our analyzers and I can also provide photos of the hardware in our collection.

Dr. Houser is currently director of Ohio State's Gear Dynamics and Gear Noise Research Laboratory. His research is directed toward the reduction of gear noise and gear dynamics through modifications to gear tooth surface design. This research is also aimed at measuring dynamic and static transmission error and friction and shutting excitations of gears as well as automotive noise measurements for sound quality evaluation. He can be reached at [houser.4@osu.edu](mailto:houser.4@osu.edu).