TEK RETIREE ExTek NEWS

Tektronix Retiree Volunteer Program

Web Page: www.TekRetirees.com A Newsletter for and by Tek Retirees February 2019

Tek Invested in People

Tony Binseth

I'm not a "fellow" or a "principal engineer;" I'm just a guy (like 100's of others) where working for Tektronix made a difference in my life.

I came to Tektronix in 1979. But a little history before that will help provide context.

I was raised in a single-parent middle class environment in L.A. and Las Vegas. I was smart but not very disciplined. I did well in school but I rarely did the real work associated with it. I started college a couple of times but got bored and left to pursue more immediate revenues. I ended up in Southern Oregon as a millwright for a small cedar mill after spending a couple of years rappelling out of helicopters into forest fires for USFS. I married and we had one child and wanted to move to an area that was a better cultural fit for our family (we were living on 10 acres $11^{1}/_{2}$ miles up a dead end gravel road). I was offered a job by Intel in Facilities and by Tek in Equipment Maintenance.

I researched the two companies and felt that Tek would offer me the best opportunities even though the offered salary was lower than Intel (early profit sharing made up for the difference). I went to work in CRT (Building 47) in the Equipment Service Group. I was exposed to High Vacuum deposition systems and the physics related to it. I suddenly found myself in a situation where my brain turned on after years of atrophy and I had an insatiable desire to learn. For some reason, it took a practical application of science/physics to excite me, versus an academic pursuit.

I took every class I could find and I read voraciously to become as good as I could at understanding all things Hi-Vac, Glass Manufacturing and stainless steel component fabrication.

After working a couple of years in Equipment Service, the division started a management training program. I applied and after several months of tests, interviews and evaluations was chosen along with 5 others for a 2-year practical management training program.

About a year into the program, I became really interested in the new IBM PCs that were coming available (1982 or so) and wanted to explore how these new small systems could fit into the manufacturing environment. I bought an Osborne I (286, 64KB, 2-4" floppy drives and a 4" monitor in a luggable format) and started to pursue learning to program. I learned Basic and C and developed a "costing" program that would address one major manufacturing problem. The problem was that "Cyber time" was $2,000/hr and it took about 2 hours every night to run costing reports to provide managers information they needed on where they were incurring cost that could be addressed. I wrote a BASIC program that with about 2hrs of clerical input could grind out the costing report in a few hours of Osborne I time (I.e. dirt cheap). It was used in CRT for a few months but was mostly a proof of concept. It was a great learning experience and piqued my interest in all things computer.

I did several stints during management training at various positions from manufacturing management, inventory control, accounting, and HR. But my final assignment was with the Small Systems Engineering Group in the Computer Science Center (UNIX on Vax's). My task was to help with analysis of need and to help integrate the workstation work that was being done in Wilsonville and the SSSG/CSC. As my training time was nearing an end, I approached the group leader and worked out a deal whereby I would provide liaison services between Wilsonville and CSC and they would tech me Systems Engineering.

To make a very long story short, after about 5 years of 15hr days, I became an accomplished systems engineer. Again, I attempted to return to school to get a degree but found that the academic world moved way too slow. I could learn more at work in practice in a day than I could in a month of classes.

The workstations business in Wilsonville folded (that could be subject of another whole article) and a group started with the goal of integrating a "compute engine" with a vector graphics display (Tek loved its vector graphics). I moved down to Wilsonville to lead a systems integration group. We developed and released several products over the next couple of years. None of them ever really got market-traction though I believe they ended up profitable. In 1991, management changes were not compatible with my views and I found myself at constant odds with direction of the group. I migrated over to the Network Terminals (Penguin) group where I developed on-board debuggers and other system tools to help bring the Penguin to market.

In 1992, I left Tek to work for Sequent in their systems integration group and after a couple of years there moved to ADP Dealer Services where I managed an OS development group and ultimately ended up becoming VP of Development after spending 3 years in Canada running the development organization there. In 2003 I left ADP (not my choice) and vowed never to work for another corporation again! I've been running my own small consulting business related to E-commerce software ever since.

Tek provided me the opportunity to discover myself. They gave me education opportunities as well as practical on-the-job learning experiences that drove me to eagerly pursue my interests and provided me the forum to demonstrate my ability.

As I look back on my life, Tek was the turning point in my life that took me from being one among many to being able to excel in areas of my greatest strengths. I appreciate all the mentors who provided me guidance and opportunity along the way and am forever grateful to the values and institution that was once Tektronix.

Footnote: Just prior to my acceptance into the management training program, I entered a 30-day rehabilitation treatment center for alcoholism and drug dependency. Tek was instrumental in helping me get there and saw the value of the investment in me as a person. I've been clean and sober for 37 years. If it wasn't for the opportunity and sensitivity of Tek management at that time (long before it was a popular thing to do), I doubt I would be the person that I am today.

My Time at Tektronix

Norm Holtz

I was new to the Portland area but liked the city a lot. A friend told me that Tektronix was supposed to be a good company and they were hiring. I went to the Beaverton plant and applied and was hired right away. I lived out on East 168th and had a '58 Pontiac convert. I had to fill my car with gas every four days. The gas station loved me. I was about 28 years old at the time and it was late '66 or early '67. I had some work experience already and being a car guy, I was mechanically inclined, so when I started in the assembly area in building 19, it was pretty easy to catch onto the little Joe Boy jobs, my term for what I did. The supervisor was a good guy and I soon learned how to do most things in our area.

My dad once told me that if someone wanted you to learn something new and pay you as well, do it. We had a 6-station assembly machine that made a probe of some kind. If everything went ok, we made good parts quickly. But some of the stations had part feeders on them and they would get jammed up. Then the stop button might be three feet from where you saw something going wrong. By the time you got to the stop button, you had a wreck. I suggested that they put a stop button on a 6-foot cord so we could stop the machine from anywhere around the machine. They did that and I think I got a little raise. I thought that was nice and appreciated it.

One day at a review, my supervisor said he couldn't give me any more raises, but would try to help me get a job in another area. A few weeks went by and he told me about a job in the drilling and tapping area, and they wanted to talk to me. I got transferred to that department. By this time I was taking a basic machine shop course at Multnomah College in Portland. That later joined or was replaced by Portland Community College. So, now I was drilling and tapping holes in front panel parts used on a variety of instruments. Another job they did in that area was make delay lines. So that became one of my jobs as well.

Some time passed (I'm trying to look back about 50 years, now) and our department had kind of slowed down. I was thinking I might get laid off. It just happened that they were very busy in the building 19 machine shop. They didn't have time to do a good cleaning on all their machines. I was offered a job to go in and clean up all the machinery. I thought this was great since I was taking this course, I could learn a little more about the different shop machines. So again, after a while, I got everything cleaned up and was wondering what happens now.

One morning, the supervisor asked me if I could operate a vertical milling machine. Because of my shop classes at the college, I ventured that I was familiar, but not expert on this machine, and probably wouldn't lose an arm or fingers using it. So, one of the machinists would set up the machine and show me what to do. The jobs I did, the guys in the shop called "donkey jobs", boring repeat stuff. I was having so much fun and I think I got another raise in pay, so I didn't mind doing these jobs. Again, after some time passed, the supervisor asked me if I liked working in the shop. Of course, I said "yes". He told me that the machine shop in the electro chem building had an opening for an apprentice machinist, and if I was interested, he would put in a good word for me. The first time I went to the Electro-Chem building, we went up to a viewing platform, high up in the northwest corner of the building. Looking out over the plating area there, it looked like some kind of witch's caldron. Well, I got to transfer to that department and really started to learn more about machining. There I got to do some really interesting jobs. We made lots of fixtures for racking parts that went into the different plating tanks. I also operated the Edlund circuit board drilling machine. Once in a while, the machine tape control would get a mind of its own, and decide to move the table to its x=0, y=0 position. If this happened while the carbide drills were down, they would get broken off, all the hold-down fixtures would get torn off. The collision then called for checking and aligning, as well as salvaging or making replacement clamps, so we could resume drilling circuit boards.

In that shop, we also built a machine to salvage the loose gold off some circuit boards. It was all made of stainless steel, only material that the solution that washed the boards wouldn't eat up. Again, after a period of time, I got to do a little tool and die repair work. About this time, they started building that huge metals building (16). When it was ready to open, some of us transferred over to it. I stayed there the rest of my time at Tek. There were mostly machine builders and tool and die makers in that shop. The first time I built a multi-station progressive die, I thought, "boy, with the help of this company, you have passed a level I never thought possible." I worked there in that area until the summer of 1979 when our family moved to the Spokane, Washington area. We moved there for a better school environment for our kids. The last company I worked for, before I retired, had a similar philosophy to Tek. All the rest in between weren't even close.

So, to close this out, I can only say that I enjoyed my time at Tektronix: the great working conditions and their many benefits. Most of all, the nurturing atmosphere that allowed me and many others to succeed beyond our wildest dreams. I still have my name tag on a shelf so I can reminisce. There are not many Howard Vollums or Jack Murdocks in the world these days. Bless you guys for what you did, built and shared

RETIREE BENEFIT INFORMATION & ADDRESS CHANGE PROCEEDURE

Retiree Medical and/or Life Insurance

Anyone who is a past employee with Retiree Medical and/or Life Insurance will need to request information or make changes in writing to A & I. You must include your signature and Social Security number.

Tektronix Post Employment Services
A & I Benefit Plan Administrators, Inc.
1220 SW Morrison St., Suite 300
Portland, OR 97205-2222
Toll Free: 1-800-778-7956
Fax: 503-228-0149

401k Benefit

Anyone who has a 401k benefit must contact Fidelity for information or to change their address directly with them at:

1-800-835-5092

Cash Balance Plan

The Cash Balance Plan has been transferred to Danaher Pension Plan Processing Center with Hewitt. Questions or changes should be directed to:

1-800-580-7526

Tektronix Retiree Volunteer Program

M/S 13-400
PO Box 500
Beaverton, OR 97077 - 0001

Phone: 503-627-4056
Email Address:
Tek-Retirees@Tektronix.com

Death Notices

Ames, Ron -d11/24/2018

Au, Hawkin –d11/20/2018

Bonker,Dan --d12/29/2018

Bowman, Billie "Jo" -d12/2/2018 @Tek 19 years

Gaudio, Richard Eugene d6/5/2015

Healy, Edmond "Eddie" Alva -d12/2/2018 @ Tek 28 years

Jeureguizar, Valentina -d 4/9/2017 @Tek 21 years

Nash, Charles Michael 'Mike' -d11/24/2018

Platt, David Paul -d12/3/2018

Robinson, Patricia Ann d12/25/2017 @Tek 26 years

Schie, Ron L. -d12/18/2018

Thompson, Dorothy "Ann" -d11/2018 @ Tek 12 years

Wadzita, Michael Joseph -d11/1/2018 @Tek 40 years

Wold, Les D. –d11/30/2018 @ Tek 34 years

Tek Retiree News a

Editor Bill Gellatly
Publisher: Open Louis Sowa interim

TRVP Staff

John Addis • Pete Nelson • Randy Winkel • John Stoops • Bob Beville

Tek Retiree Newsletter is published quarterly by the Tektronix Retiree Volunteer Program. Send all correspondence to Tek Retiree News, M/S 13-400, PO Box 500, Beaverton, OR 97077

Office Telephone: 503-627-4056

Email: tek-retirees@tektronix.com

TRVP Web Page:
www.tekretirees.com

TRVP Office Hours Thursdays 10-3

Tektronix Retiree Volunteer Program
M/S 13-400, PO Box 500
Beaverton, OR 97077 - 0001

VintageTEK Hours

Friday - 10am to 6pm
Saturday - 10am to 4pm
Other times by request

TRVP Hours

Thursdays 10-3

TEK Trivia Quiz

What is the name of the animal group?

Buzzards
Camels
Owls
Jellyfish
Hedgehogs
Crows
Cobras
Mice
Lizards
Falcons
Mosquitos
Alligators

CALENDAR

Previous Tek-Employees Luncheon

11:30 a.m. 2nd Monday monthly
Peppermill Restaurant
17455 SW Farmington Road #26B
(Corner of Farmington
& Kinnaman Rd)
Aloha, OR 97007
Details: Annetta Spickelmier
503-312-8825

Redmond Breakfasts

8:00 a.m. 1st Monday monthly
Shari's Restaurant; Redmond, OR
1565 SW Odem Medo Way
Spouses welcome
Details: Nick Hughes 541-548-1201

TERadio Amateurs Club

Weekly on Friday 6:00 p. m.
Round Table — Beaverton
SW Beaverton Hillsdale Hwy and
SW Western Ave
Next door to Bi-Mart

READ YOUR TEK-RETIREE NEWSLETTER ONLINE

Would you like to help save postage and read your Tek-Retiree Newsletter on our webpage? Send your name, address, phone number and email address to:

tek-retirees@tektronix.com

We will send you a notice when the newsletter is posted each quarter. If your email is changed or rejected for any reason you will receive one phone call to request an update. If you don't respond we will return your newsletter to the US mail list. To preview the web page and previous issues of the newsletter go to: **www.tekretirees.org**

Please send questions, information or correspondence not involving the newsletter online to TVRP at **tek-retirees@tektronix.com**

TEK RETIREE NEWS

ExTek

Tektronix Retiree Volunteer Program

TRVP

Web Page: www.TekRetirees.com A Newsletter for and by Tek Retirees May 2019

From the Editor

With a message from Tektronix management, we are at yet another change in the Tek Retirees Volunteer Program Newsletter. In a move to improve cost effectiveness, there will be just this and one more issue that will be printed and mailed at Tektronix' expense.

To address this issue, you'll find a self-addressed survey in which we are asking you who receive the printed Newsletter in the mail to help us continue to reach you. I am quite sure that some of you have continued to receive the printed Newsletter because it is your preference. At the same time, I suspect a few of you do not have access to the internet, and consequently count on others to stay in touch with other retirees.

If you'll fill out the survey and mail it back to us, we'll do our best to find the most effective way to reach you.

To the Editor

Bob Meehan writes: The genesis of Gary Spence's need to modify the R7912's scan converter was a visit by the test director from Los Alamos in 1975. Ernie Brunholtz was the FE in Albuquerque who engineered the visit and we all sat around the Systems Marketing Conference room in Bldg. 55 to listen to his request. Be mindful that none in the room (except possibly Ernie) had "Q" Clearances to discuss anything related to the testing. Regardless, the director proceeded to discuss the R7912.

He opened with the praise to engineering about what a marvelous unit the R7912 was and generalized about how useful the instrument was to the testing programs. AS the Marketing Manager for digital systems at the time I took the lead in asking "What can we do for you, Director?" He said " Well, you get the sensor info out of the instrument and up to the trailers in 250 milliseconds...we need it in 8. Amidst the gasp of all others present I said "WOW! Why do you need it that fast! He paused for a moment then said "Because that's how long it takes 20 feet of concrete to evaporate." Everyone in the room (being wannabe Rocket Scientists) could see the value to the company with a ready-made replacement market for 20-30 instruments @ $30K after every test.

Engineering took it to heart and solved all the barriers to achievement producing the right instrument for the task.

Neil Robin writes: I was hired to take over the development of the 7912AD, 7612D and other system related products. This program had been dragging out and Tek management wanted me to get it back on track, which I did. The issues below with the R7912 may have been a part of the previous delay. Our emphasis was adding data output and programmability and maybe only a little interest in the R7912.

It was my understanding that two instruments were destroyed at the underground Nevada test site. Getting data out of harm's way has always been an issue with weapons testing, even back when bomb tests were made from towers. They had to string data lines like guy wires and it had to travel no slower than the velocity factor of the cable which approached the speed of light. Nowadays, they use optical pipes to transport raw data.

I would prefer that my article stand by itself since it's already written and is not intended to cover individual instruments or their issues but an overview of what goes on in New Mexico science. Links are included to explain things like HEMP which the reader can access.

The following link is a review of that trip and includes both scenic tours as well as interesting science. Click here to access. If reading the newsletter offline, the URL is: <http://robinfamily.us /Southwest/newmexico.htm>

The "Trestle" project has a 44-minute video which describes the work in developing this unique facility.

Bob Beville's Memoirs Available

The VintageTEK Museum website has posted the Bob Beville's memoirs entitled <A CHAMELEON OSCILLOSCOPE CAREER>. It is an interesting read. Here is an excerpt…

A FBI agent phoned the office. He wanted to meet with whomever called on Griffiss Air Force Base, Rome, New York. That was me. I arranged an appointment, meeting him in the Officers Club there. Among other missions, he explained, this was a logistics base, a warehouse stocked with a variety of items and equipment ready to be shipped out to other bases. A number of 581 scopes had disappeared from a loading dock. Shown a catalog, I explained this scope was not operational without a plugin. He wanted me to be on lookout for any of them. "Sure will"… (FILE THIS FOR LATER).

VintageTEK Hours

Friday - 10am to 6pm
Saturday - 10am to 4pm
Other times by request

TRVP Hours

Tektronix Retirees Volunteer Program

Thursdays 10-3

Death Notices

Alderman, Gilbert Newton - d1/18/2019 @Tek 22.36 years

Ballard, Richard J "Dick" — d3/26/2019

Buchco, Joan Carol - d3/4/2019

Butler, Diane -d12/2/2016

Freysinger, Gary -d2/20/2019

Hofeld, Lorne R —d3/20/2019 @Tek 31.63 years

Kalimanis, Thomas - d11/21/2018 @Tek 18 years

Kaser, Raymond John - d2/6/2019

Lee, Bong Hee "Bonnie" - d1/19/2019

Sjordal, Jane Ann -d9/6/2016

Thompson, Linda —d4/6/2019

Valentine, Roger Lee - d9/28/2018

Wohlfarth, Paul Dana — d4/24/2019

Zenger, Don Albert - d4/16/2019

CALENDAR

Engineering Breakfast

Wednesday 8AM Beaverton/ Hillsboro area. Lively discussion all subjects. For details contact Steven E. Rice pacemakerpete@hotmail.com

Previous Tek-Employees Luncheon

11:30 a.m. 2nd Monday monthly
Peppermill Restaurant
17455 SW Farmington Road #26B
(Corner of Farmington & Kinnaman Rd)
Aloha, OR 97007
Details: Annetta Spickelmier
503-312-8825

Redmond Breakfasts

8:00 a.m. 1st Monday monthly
Shari's Restaurant; Redmond, OR
1565 SW Odem Medo Way
Spouses welcome
Details: Nick Hughes 541-548-1201

Ex-Tek & Radio Amatuers

Weekly on Friday 5:30 p. m.
Giovanni's Restaurant
12390 SW Broadway
Beaverton 503-644-8767

RETIREE BENEFIT INFORMATION & ADDRESS CHANGE PROCEEDURE

Retiree Medical and/or Life Insurance

Anyone who is a past employee with Retiree Medical and/or Life Insurance will need to request information or make changes in writing to A & I. You must include your signature and Social Security number.

Tektronix Post Employment Services
A & I Benefit Plan Administrators, Inc.
1220 SW Morrison St., Suite 300
Portland, OR 97205-2222
Toll Free: 1-800-778-7956
Fax: 503-228-0149

401k Benefit

Anyone who has a 401k benefit must contact Fidelity for information or to change their address directly with them at:

1-800-835-5092

Cash Balance Plan

The Cash Balance Plan has been transferred to Danaher Pension Plan Processing Center with Hewitt. Questions or changes should be directed to:

1-800-580-7526

Tektronix Retiree Volunteer Program

M/S 13-400
PO Box 500
Beaverton, OR 97077 - 0001

Phone: 503-627-4056
Email Address:
Tek-Retirees@Tektronix.com

Dear Readers,

As you can imagine, the cost of printing and mailing the retiree newsletter on a quarterly basis has become quite expensive. Given that a much less expensive alternative exists, where individuals can opt to receive an email or access the newsletter on the website, we are making plans to phase out the mailed version. As such, August will be the last mailed newsletter. *

We intend to continue reaching any retiree or former Tektronix employee, and will seek alternatives. Your feedback will help us to make the best possible decisions.

If you are currently receiving this newsletter by our email notifications, you may disregard the survey. We have every expectation of continuing to reach you.

Bill Gellatly, Editor

MAILED NEWSLETTER SURVEY

- Do you have your own email account? Yes □ No □
- Can you receive attachments with your email? Yes □ No □
- Do you have access to the internet (read news from a public web browser)? Yes □ No □
- Have you tried reading the Newsletter from a common-use computer (such as in a library or care facility)? Yes □ No □
- *If you do not have internet access, and would still like to receive the newsletter by mail, would you be willing to pay a small fee to subscribe to the newsletter? Yes □ No □
- When did you leave or retire from Tektronix: _______________
- Any additional comments?

  ____

  ____

  ____

Tek Retiree News g

Editor Bill Gellatly

Publisher: Open Louis Sowa interim

TRVP Staff

John Addis • Pete Nelson • Randy Winkel • John Stoops • Bob Beville

Tek Retiree Newsletter is published quarterly by the Tektronix Retiree Volunteer Program. Send all correspondence to Tek Retiree News, M/S 13-400, PO Box 500, Beaverton, OR 97077

Office Telephone: 503-627-4056

Email: tek-retirees@tektronix.com

TRVP Web Page:

www.tekretirees.com

TRVP Office Hours Thursdays 10-3

Tektronix Retiree Volunteer Program
M/S 13-400, PO Box 500
Beaverton, OR 97077 - 0001

—— Fold ——

Place
stamp
here

Tek Retiree News
13-400
PO Box 500
Beaverton OR 97077

TEK RETIREE NEWS ExTek

Tektronix Retiree Volunteer Program TRVP

Web Page: www.TekRetirees.com A Newsletter for and by Tek Retirees August 2019

Our Retiree's Newsletter Will Always Be Evolving

Bill Gellatly - Editor

When I began as editor of the Tek Retirees Newsletter, I hadn't thought much about of the many dimensions of technical writing. I felt comfortable writing short technical articles, and okay about interviewing those who didn't feel comfortable writing their own stories. After a couple of years, and trying a variety of approaches, I began asking you what you like.

The earliest Tek employees read newspapers, had at least a radio and had a phone for local calls. We added television, color, from film cameras to Polaroid, added stereo records and FM stereo, 8-tracks to cassettes and from cassettes to CD's. It's pretty rare to get a personal handwritten letter these days.

For perspective, I thought you might enjoy a run through the early days of TRVP and of this newsletter, and by comparison, there is an evolution of writing and printing that is paralleled by the changes we've seen in the measurement business. More on that in the next article.

When the Tektronix Retiree Volunteers Program started it had several activities, and they were all aimed toward retirees. As I recall, Newt Espe, a retired manager of manuals writers edited the newsletter for the first several years. The early stories were often about what retirees were up to, and there were occasional references to Tek history.

Bruce Hollister offered retiree's a defensive driving course called "55 and Alive." Insurance companies began offering reduced premiums for taking a defensive driving class, and Bruce took the lead as a service to any employee or retiree.

Monthly luncheons were held in building 58 cafeteria.

Although not a direct part of the TRVP, many will recall the luncheons at the Beaverton Elks Club on Canyon Road. Long -time Plastics engineer Al Foleen had started them just ahead of the formation of TRVP.

In the earliest issues I recall, there were articles about how you are spending your retirement, pictures of gatherings, travel journals and a bit of news about things going on within Tektronix.

We tell some company history in the process of telling "people stories." It's not pure history, nor is it a biography of just one person.

My preference is to have you write or tell me your story. To publish it among peers means that someone else will also know at least a part of it. I miss on hard facts now and then, but I'm not a research writer either, so I try to use my experiences ask enough questions, and still be sensible with my time. the time I spend.

In the next issue, I'll talk a bit about my growing appreciation for the diversity of you as an audience. But, before I close, I'd like to comment on our current team. Louis Sowa was editor for years, and has also done the layout using Microsoft Publisher. I give him finished articles, and he lays out everything else that you see in the final print or PDF, whichever you receive Pete Nelson watches the snail-mail returned items, strives to get a new address for every email that bounces back as undeliverable, and adds any new retiree names he receives. Pete also adds retirement dates and length of service notes for the obituary lists prepared by John Addis. I really appreciate John's discipline to track down and corroborate all the death Notices.

The Computational Revolution

Bill Gellatly

Bruce Blair added a question to his reader survey. He wrote: **"How about an article telling about how digital took over the world of scopes?** I took the bait, and we exchanged notes as soon as I'd done a first draft.

Bruce was the manager of the group that designed the 2430, a digital scope released to production in about 1986. He writes, "My history at Tek started with Signal Processing Systems in 1976. It covered the transition of Tek analog scopes to digital scopes. The 7912 was the first waveform digitizer about that time and the 7612 came in the late 70s. Both were supported by PDP11 processors running SPS Basic for capture and analysis of the waveforms. I worked on the time base and memory for the 7612 before moving to Portable Scopes."

Reading his comment, I had no doubt that the PDP11 from Digital Equipment Corporation was performing computational work on the acquired signal. That is the notion I want to convey here. The computer he describes was literally getting data from the "front end" of the oscilloscope, massaging it and then sending the results for display on the CRT

The harbingers (or forewarnings) of computation were features like the 7000-series with its on-screen readouts of amplitude scale (volts/div) or for the time scale (seconds/div). With a Polaroid photo of the screen you no longer needed to write down the front panel settings. We didn't call this digitizing, but it was an indicator of future aspirations.

The earliest research and commercially-available oscilloscopes were qualitative. With the Tektronix innovation of a tightly calibrated (vertical) amplitude and sweep (time) signals, they became quantitative tools, but not yet precision approaching that of "traceable" standards for voltage or time. The many divisions that made up Tektronix were each finding was to do more with faster computers and cheaper memory. Here are some of those harbingers.

From TV Products

The product from Charlie Rhodes' group called a 527 Vectorscope used a display format that could be measured on a special graticule to assure that several characteristics of a transmitted color TV signal were within specified limits.

Charlie led a very imaginative and creative team whose innovations with broadcasters led to (pardon the acronyms) VITS and VIRS. They allowed the TV producers to lock-in on the transmitted signal. The knobs on your old vacuum tube TV no longer needed the HOR and VERT adjustments, and with better receivers and transmitters the "snow" was a thing of the past. We were delighted to stop chasing the little knobs hidden behind a door. The products were still analog, but even more sophistication was on the way for color TV.

From Lab Scopes

The next step is the addition of instantaneous signal measurements. High speed analog-to-digital converters could 'read' the level of a signal, and a clock would give the time of a pulse, and that data could be exported over and industry standard instrumentation interface called a bus. It was a standard from IEEE-488 called General Purpose Interface Bus. The same functionality was soon put into Portable scopes.

From Tek Labs

Two steps were needed to reach the next "harbinger" of computation. First was the use of the 1GHz- bandwidth 519 and a camera to capture a singly occurring event. The invention of the storage CRT allowed a single event to be captured and observed without the use of photographic film.

Those two innovations led to using the electron beam to write on a target, and a separate electron gun to read out what had been stored with the first. The first was relatively low resolution and must have been a challenge to calibrate.

A simplification was to scan the beam over an array called a charge-coupled device. Instead of the normal screen on your scope, imagine 1,000 boxcars on each of 1,000 tracks, and the means to count how many electrons had hit each car while a signal event happens. Now reassemble the train into a single train with million cars, and make a report showing the electrons in each car. With a high-speed computer, there are countless ways to analyze and present just what you want to know about that very complicated or expensive-to-test event that had been captured. You have just entered the arena of a computed display. It can be much, much morethan just the original waveform. Once you have the time related information, it can be studied with statistics to see how frequently a signal contains an error. You can also take time-related information and convert it into display format of a spectrum analyzer, otherwise known as the frequency-domain. It uses mathematics developed long ago by Fourier. As a side note, we can credit some later mathematicians with developing the discrete and instantaneous Fourier transforms. But enough of the technical jargon. Now, back to one last harbinger of the computational revolution.

More from Tek Labs

Lab Scopes introduced the 7104 Microchannel plate (MCP) CRT. It was a 1-GHz analog scope with night-vision light amplification technology adapted to enable multiplication of electrons hitting the channels to make very rare events visible. Analog scope wizard Rod Bristol and David Bates of Tek Labs soon planned integrating the same technology with a new CRT shoe-horned into a version of the upcoming 400 MHz 2465B Portable. With the MCP CRT, technology it was introduced in 1987 as the 2467A, bringing the best of the 7104 to a 400 MHz analog scope. It took over 15 years to replace it with the DPO7104, repeats the earlier 7104 number as a tribute to the original, and its name as a Digital Phosphor Oscilloscope suggests how computation and display technology have been combined to bring even more features to circuit, as well as the rare improper signal, and exploit color to display what percentage of the time

In a future article, I hope to get the scoop on how the same efforts to perform computations in Spectrum Analyzers bring parallel enhancements.

My thanks again, to Bruce Blair for the suggestion and I hope I've put a few markers down for the Computational Revolution. They're my take, and not a polished representation contributors and ideas were the key harbingers of the computational revolution.

I was heavily inspired by the TV series Connections, first aired on BBC to describe how scientific advances in the 1600's were interdependent. My goal was to tie events together in a similar fashion for this article.

Here's a link to the ten-show series:
https://en.wikipedia.org/wiki/Connections_(TV_series)

Finally, please tell your reactions. The many items I cut from this story will be in the next issues, and I'd like tell **your** stories. After this story, I'm ready to return to editing, and to get back to my wife's historically-significant non-fiction book set in 1964, just a year before I started at Tek.

Funding Changes for the Tek Retiree Newsletter

We're in the midst of another evolution; that of sponsorship for the Newsletter. The last issue described a Tektronix change that would have ended Tek's sponsoring the printing and postage for this newsletter with this issue. It was driven by what would strike most anyone as a sensible cost-avoidance measure.

Pete Nelson, Louis Sowa, Bob Beville and I sat down with two Tektronix representatives and pled our case to have at least an additional issue sponsored while we conducted a readership survey.

At this point, about 500 of you have replied to the survey in the last issue. They've been scanned, and the first hundred are giving us a subjective picture of your feelings. I'm very impressed with the number of unsolicited comments that describe preferences and needs. All were gratefully received.

Those replies represent a sample size of more than 6% of those receiving either printed copies or email notifications that a new edition has been posted on the TRVP website.

A summary of our findings will be shared with Tektronix management, posted on the TRVP Newsletter website, and published in the November issue. In God we Trust, says the motto, but as one of my favorite trouble-shooting consultants said, "All others (must) bring data."

Bill Gellatly, Editor
bgellatly@msn.com
(503) 867-6514

Death Notices

Baier, Arthur Louis – d9/10/2018

Boyle, Virginia Elsie Thompson-d2/2/2019 @Tek 25.14 years

Connor, David Thomas – d7/20/2019 @Tek 30.02 years

Johnson, John Waldemar –d7/21/2019 @Tek 30.20 years

Jumonville, Stephen Ansley --d8/6/2019

Kuch, Wayne W.-d6/8/2019

Matlock, Dorothy Alice Lamoreaux –d 4/26/2019

Mondell, Joe F. –d6/11/2019 @Tek 25 years

Morrison, Joe Colman -- d7/12/2019

Music, Walter Earl - d5/15/2019 @Tek 27.37years

Peterson, Bill V. – d5/25/2019 @Tek 34.19 years

Pichitino, John –d4/18/2018

Prichard, Edward L. – d5/20/2019

Reiney, Michael Goodwin –d6/4/2019

Rilatt, James 'Bernie' - d7/31/2016

Ross, Corrine J. – d6/26/2019 @Tek 24.42years

Rubin, Alise (Alyce) d5/23/2019

Senn, Ray --d6/4/2019

Sherbeck, Irvin Eugene – d3/26/1988

Wiemer, Theodore E. D5/6/2019 @Tek 20+ years

Wong, Marion N.K. - d5/25/2019

RETIREE BENEFIT INFORMATION & ADDRESS CHANGE PROCEEDURE

Retiree Medical and/or Life Insurance

Anyone who is a past employee with Retiree Medical and/or Life Insurance will need to request information or make changes in writing to A & I. You must include your signature and Social Security number.

Tektronix Post Employment Services
A & I Benefit Plan Administrators, Inc.
1220 SW Morrison St., Suite 300
Portland, OR 97205-2222
Toll Free: 1-800-778-7956
Fax: 503-228-0149

401k Benefit

Anyone who has a 401k benefit must contact Fidelity for information or to change their address directly with them at:

1-800-835-5092

Cash Balance Plan

The Cash Balance Plan has been transferred to Danaher Pension Plan Processing Center with Hewitt. Questions or changes should be directed to:

1-800-580-7526

Tektronix Retiree Volunteer Program
M/S 13-400
PO Box 500
Beaverton, OR 97077 - 0001

Phone: 503-627-4056
Email Address:
Tek-Retirees@Tektronix.com

Tek Retiree News e

Editor Bill Gellatly

Publisher: Open

Louis Sowa interim

TRVP Staff

John Addis • Pete Nelson
• Randy Winkel •
John Stoops • Bob Beville

Tek Retiree Newsletter is published quarterly by the Tektronix Retiree Volunteer Program. Send all correspondence to Tek Retiree News, M/S 13-400, PO Box 500, Beaverton, OR 97077

Tektronix Retiree Volunteer Program
M/S 13-400, PO Box 500
Beaverton, OR 97077 - 0001

Vintage TEK Hours

Friday - 10am to 6pm
Saturday - 10am to 4pm
Other times by request

CALENDAR

Engineering Breakfast

Wednesday 8AM Beaverton/ Hillsboro area. Lively discussion all subjects. For details contact Steven E. Rice pacemakerpete@hotmail.com

Previous Tek-Employees Luncheon

11:30 a.m. 2nd Monday monthly
Peppermill Restaurant
17455 SW Farmington Road #26B
(Corner of Farmington
& Kinnaman Rd)
Aloha, OR 97007
Details: Annetta Spickelmier
503-312-8825

Redmond Breakfasts

8:00 a.m. 1st Monday monthly
Shari's Restaurant; Redmond, OR
1565 SW Odem Medo Way
Spouses welcome
Details: Nick Hughes 541-548-1201

Ex-Tek Radio Amatuers

Weekly on Friday 5:30 p. m.
Giovanni's Restaurant
12390 SW Broadway
Beaverton
503-644-8767

READ YOUR TEK-RETIREE NEWSLETTER ONLINE

Would you like to help save postage and read your Tek-Retiree Newsletter on our webpage? Send your name, address, phone number and email address to:

tek-retirees@tektronix.com

We will send you a notice when the newsletter is posted each quarter. To preview the web page and previous issues of the newsletter go to: **www.tekretirees.com**

Please send questions, information or correspondence not involving the newsletter online to TVRP at **tek-retirees@tektronix.com**

TEK RETIREE ExTek NEWS
Tektronix Retiree Volunteer Program TRVP
Web Page: www.TekRetirees.com A Newsletter for and by Tek Retirees November 2019

An Unexpectedly Fast Newsletter Evolution: Introducing 'Reflections'

From the Editor

With this issue, I'm introducing what will be the next chapter in the life of a retiree and former employee communicator. If it rolls out as we envision it, we will be able to reach an even wider audience of people who were a part of the legacy of Tektronix.

Last month I discussed the range of activities that were once a part of the Tektronix Retirees Volunteer Program. Over time, the activities narrowed down to some outreach about encouraging students to get involved in programs for Science, Technology Engineering and Mathematics, or simply "STEM." This had some nice synergy with the vintageTEK Museum, but it had become a bit hit or miss. That left the newsletter. No doubt, the shifting interests of volunteers, and inconsistent interest on the part of local schools, it was time for us to review our mission.

I've had some amazing feedback that came with the survey, but the real key is based on being able to reach those who depend on the printed word, and who have been looking forward to that familiar name Tektronix on a piece of mail.

Let me assure you that we will move those who are willing, and that the new publication will be accessed from the web. With that statement, let me now make the "ask" that fundraisers are always ready to pitch:

We need to convert about 6,000 people to the web version, and find funding to reach the estimated 1,200 who need that bit of paper. It will take about $2,000 to reach the 6,000, and an additional $900 per issue to reach the declining mail-only audience.

Longer term, we'll work out bulk mailing and a not-for-profit status. Please mail any contribution (one that fits for you) to the Retiree's mail address. Thank you.

Highlights of My Sales Career With Tektronix

By Paul Lund

Selling Tektronix products was always a thrill. I sold Tektronix products from 1963 thru 1974, selling thru Tek's offices in the Washington D.C. area (Annandale office), Baltimore area (Towson office), Orlando area (Orlando office), as well as the San Antonio office.

As Tek's sales people, we were so proud of Tek instruments' performance, but equally proud of the inside of the scopes including color coded wiring, ceramic mounting strips, 3% silver solder, life time warranty transformers, and of course the precision Tek made CRTs.

On November 23, 1963, I was demonstrating a scope camera to several technicians and engineers for the Long Lines Division of AT&T in down town Washington D.C., when a supervisor interrupted the demonstration, and said they needed to use their equipment for the TV networks right away because the President had just been shot is Dallas. What a terrible incident this was to the government workers in the D.C. area. It seemed as though the entire city was shut down and exiting the D.C. area as I left. Later my family and I sat on the Supreme Court's steps as President Kennedy's body was brought into the rotunda of the U.S. Capitol building.

In Baltimore while demoing a Tek scope to researchers at Edgewood Arsenal, I learned that the scope would be hooked up to a goat that was strapped to a table and shot so they could monitor how its respiratory system performed as it died. It turned out that this particular goat's respiratory system most closely resembled that of a combat soldier, and they were studying how a combat soldier's respiratory system would shut down!

Most of my time in Orlando was spent in the Cape Canaveral/ Kennedy area. I witnessed much of the growth that NASA built and operated on Merritt Island. Tek instruments played a key role in the Apollo Program to get a man on the moon and safely returned. The RM 529 TV waveform monitors were used throughout the launch complex 39's LCC (Launch Control Center). The RM 561A/3A1/3B3 were favored throughout the global tracking network. Every Saturn V launch destroyed a 547/1A1 which was located on the launch tower and was part of the electronics that deter-mined burn quality. The 564 with 3A3/3B3s were used by NASA for testing the explosive bolts used on the various Saturn V stages.

Apollo 13 had a problem with the fuel sensor on the third stage of its Saturn V launch vehicle. I was called in with a 547/1S2 Time Domain Reflectometer to check the capacitive fuel sensor built into this stage. I entered the third stage with the 547/1S2 mounted on a Scopecart. A NASA Quality Specialist came along with the Douglas contractor engineer while we hooked up to the fuel probe, and drove the pulse into the sensor, and determined, that this was not the source of their concern. Several days later the Apollo 13 astronauts called Houston with the message "Houston we have a problem". But the third stage of the Saturn V performed as designed.

Also, while working out of the Orlando office one Saturday evening my wife and I went out for dinner at Freddie's Steakhouse in Maitland, just as we were getting our desert, two men approached our table and confirmed who I was (the girl watching our two sons had told them where we were) and then asked me to get out to the block house for the Titan IIIc rocket launch pad 41 because of a problem they were having with one of their Tektronix products during the launch count down. *(I had been there earlier in the day and showed them how to balance the vertical displays from the front panel of their RM565 with 3A3/3A3)*. That turned out to be the problem after driving the 50+ miles that evening, and the countdown proceeded and later the following day they had a successful launch of the Titan.

Also, while out of the Orlando office I covered Puerto Rico. My first trip there, I was accompanied by my manager, Chuck Bouffiou. Chuck and I got lost in the interior of Puerto Rico while looking for the Arecibo Ionospheric Laboratory. Finally, we ended up in a Peace Corps training camp, and the locals gave us instructions on how to find what was locally called "The Telescope." We finally found it, and what a massive facility! The metal reflector of this large electronic telescope's antenna was actually housed in a large valley. Trucks could drive under the reflector. The transmitter engineers sent out a single high voltage pulse, and the receiver engineers turned on the receivers to warm up while we went to lunch with them. After lunch, the receiver engineers started seriously listening for any possible reflected signals from the earlier transmitted pulse. Tek scopes were in use throughout the entire facility.

While working out of San Antonio, I became Tek's first military account manager, responsible for Tektronix sales to the U.S. Air Force. This involved coordinating sales via U.S. Air Force at installations around the U.S. One particular visit was to Offutt AFB south of Omaha. With the 55th Strategic Reconnaissance Wing, one of their EC-135 aircraft had multiple 555 dual beam oscilloscopes on board. These scopes had moving strip film cameras attached to them, which served as the time base for the dual X – Y display. The speed of these cameras was limited by the melting point of their film. These aircraft would fly close to enemy borders - teasing enemy fighter aircraft to converge on them. The on board 555s would capture the electronic signals transmitted by the enemy fighters and have the electronic signatures of the magnetrons used by the fire control radars of the enemy aircraft.

These are just a few of several memories during this fine sales job while with Tektronix.

Paul's time with Tek started in Test/plant 3, followed by his time in Tek sales, and then followed by his return to Beaverton, where he concluded his Tek time in Government Marketing. After leaving Tek, he sold for Fluke Corporation in the NW and Hawaii.

Comments on the August 2019 Issue

By Bill Gellatly

The last article in the August issue commented on the likelihood that printed and mailed copies would continue to have Tektronix funding. Despite the case our team presented, the decision was irrevocable. That has left us with no time to arrange an interim solution. Fortunately, many of you who replied to the survey expressed willingness to support the cost of printed and mailed editions.

Our first effort will be to take care of those who will be stranded because you've told me you have not, or no longer use a computer. We will be unable to send more than a handful, with the small donations sent in with the survey.

Tektronix (which now operates as a unit of Fortive) was adamant, and as we follow press releases, even more people are taking their retirement or seeking other employment. While most of us remember the thrill of high profit share, there were also low points, and the pattern continues today.

It is an acknowledgment of Tek's need to evolve that has also driven us to make changes, and we hope you'll enjoy the new roads we'll explore with our newsletter **Reflections.**

How vintageTEK Came Into Being

Paul Thompson

[This article first appeared in the November 2012 edition of the TRVP Newsletter and has been lightly edited for space. – Ed,]

The Grand Opening of the vintageTEK Museum of Tektronix oscilloscopes and related instruments was held the weekend of September 16 to 18, 2012. This grand opening was announced in an article in the Oregonian on September 17. There are now over 400 individual instruments on display at the museum, ranging from the 511 oscilloscope to the 11000 series instruments. The museum exists largely through the efforts of Stan Griffiths and Ed Sinclair. Here is a bit of history as to how vintageTEK came into being:

Stan Griffiths was first hired into Tektronix in 1960 as a calibration engineer, where his job was to calibrate oscilloscopes right off the production line, occasionally requiring minor repairs on the instruments to permit them to meet standard specifications. After a couple of years as a calibration engineer, he was transferred to field maintenance service in Beaverton and then spent two years as a field maintenance engineer at two different Tektronix field offices in the Los Angeles area. In 1966, he resigned from Tek, and he and another scope maintenance colleague formed Mobile Scope, a company offering on-site maintenance of scopes. In 1970, Mobile Scope fell on bad times, and Stan reapplied for employment with Tektronix and was offered a job as field engineer in Boston. After three years in the Boston area he transferred back to Beaverton where he ultimately became a field engineer for spectrum analyzers and other frequency domain instrumentation covering customers in Oregon, Washington, and Alaska.

The first glimmering of what ultimately led to the founding of the vintageTEK occurred one day when Stan was calling on one of the labs at the University of Washington. He spotted a non-working Tektronix oscilloscope being used as a door stop. He asked about it and was told that this was one of about 20 non-working scopes that needed repairs but were held up because of the costs. This played right into the hand of Stan who had developed a high degree of competence in the repair Tek scopes during his early years at Tektronix. Stan made them a deal: he would repair and calibrate one scope for them, at no charge, if they would give him three of the other non-workers. They accepted, and Stan repeated the offer until he owned about 15 non-working but for him, easily repairable scopes.

That got him started collecting used Tektronix scopes and other Tektronix instruments. At one point at an estate sale he bought 300 oscilloscopes for $800. His reputation as a scope collector spread, and soon there were other individuals and organizations who had unused and/or non-working scopes in their possession and who were glad to have Stan take them off their hands. In the February 2002 issue of the Tek Retiree News is an article in Stan's own words where he estimated that he then had about 1150 instruments. He states in the article, "More arrive here than leave. I am not anxiously looking for more instruments. I do not have the space. Even though my storage space is at a premium, I can always find enough room to save old Tek instruments from the “landfill." He also talked at that time about the possibility of setting up and running a museum of old Tektronix instruments.

Enter Ed Sinclair: Ed joined Tektronix in 1968 as a Field Engineer trainee. After finishing Field Engineer training, he was assigned as a FE to the Alhambra field office. In 1972 he was promoted to Tektronix Account Manager for the US Army where he was stationed at the Cherry Hill, NJ, field office. In 1977 he took a position in Beaverton as Accessories Business Unit Marketing Manager until 1983 when he resigned from Tek. In 1987 he returned to Tek as a consultant and implemented the Mobile Calibration service which provided customer on-site site calibration on Tektronix products and on other company’s products as well. He had heard of Stan's collection of Tek used instruments for a number of years; he finally viewed it in 2008, and "was awash in memories of my days as a Field Engineer." Almost immediately he and Stan set about to establish vintageTEK as a 501(c)(3) non-profit charitable museum.

vintageTEK was formed and registered with the state of Oregon and the IRS in 2008. Initially the primary purpose of the museum was to raise money to obtain property and build a suitable building for the museum. Shortly after announcing the museum and beginning to raise funds, more than 900 instruments were donated or lent to vintageTEK by other folks, largely other Tektronix ex-employees. At present, less than two dozen of the instruments on display in the museum are on loan from Stan or others -- the rest are owned by vintageTEK.

When first opened vintageTEK was located at in a small building generously leased from former Tek employee Gary Hoselton at SW 45th and Beaverton-Hillsdale Highway.

Death Notices

Barker, Phyllis Ann – d7/6/2019

Bamford, Charles Edwin "Chuck" -d7/1/2019 @Tek 26.31years

Beckett, Fredrick J. – d9/16/2017

Boone, Donald M. – d5/9/2019

Branda, Donald Peter – d11/25/2018 @Tek 22.63 years

Chinell, Gloria Ann – d7/30/2018 @Tek ~18 years

Denny, Joanne (Dickens) - d11/16/2018@Tek 11.79 years

Egle, Harold Werner – d5,12,2019 @Tek 19.67 years

Grady, Suzanne Ellen – d7/27/2019

Haag, Gary Jay – d3/28/2008

Huey, Wanda Chin - d3/10/2019

Isaac, Vernan L. – d6/24/2011

Iverson, John Oliver – d8/28/2019 @Tek 12.22 years

Lundeen, Nancy Anne —d10/10/2019

Lunden, Robert West – d4/13/2002

Nettles, Sonia – d5/12/2019 @Tek 26 years

Smithhiser, David – d10/13/2014 @Tek 27.49 years

Snell, Hebert (Jay F) d9/29/2019

Stevens, Caroline May (Ullrich) -d8/27/2019

Thomson, Guy L. – d12/23/2006 @Tek ~ 13 years

Unger, Peter J. –d8/29/2019 @ Tek 29.81 years

Winter, Michael G. – d7/9/2017

VintageTEK Hours

Friday - 10am to 6pm
Saturday - 10am to 4pm
Other times by request

Tektronix Retiree Volunteer Program
M/S 13-400, PO Box 500
Beaverton, OR 97077 - 0001

Tek Retiree News E

Editor Bill Gellatly
Publisher: Open Louis Sowa interim

TRVP Staff

John Addis • Pete Nelson • Randy Winkel • John Stoops • Bob Beville

Tek Retiree Newsletter is published quarterly by the Tektronix Retiree Volunteer Program. Send all correspondence to Tek Retiree News, M/S 13-400, PO Box 500, Beaverton, OR 97077
Office Telephone:

503-627-4056

CALENDAR

Engineering Breakfast

Wednesday 8AM Beaverton/ Hillsboro area. Lively discussion all subjects. For details contact Steven E. Rice pacemakerpete@hotmail.com

Previous Tek-Employees Luncheon

11:30 a.m. 2nd Monday monthly
Peppermill Restaurant
17455 SW Farmington Road #26B
(Corner of Farmington & Kinnaman Rd)
Aloha, OR 97007
Details: Annetta Spickelmier
503-312-8825

Redmond Breakfasts

8:00 a.m. 1st Monday monthly
Shari's Restaurant; Redmond, OR
1565 SW Odem Medo Way
Spouses welcome
Details: Nick Hughes 541-548-1201

Ex-Tek Radio Amateurs

Weekly on Friday
Time: 5:30 PM
Place: Round Table Pizza
10070 SW Barbur Blvd
Portland, OR 97219
Phone 503-245-2211

Retiree Medical and/or Life Insurance

Anyone who is a past employee with Retiree Medical and/or Life Insurance will need to request information or make changes in writing to A & I. You must include your signature and Social Security number.

Tektronix Post Employment Services Trust Fund: BeneSys
5331 SW McCadam
Portland OR 97239

Toll Free: 1-800-778-7956

Cash Balance Plan

The Cash Balance Plan has been transferred to Danaher Pension Plan Processing Center with Hewitt. Questions or changes should be directed to:1-800-580-7526

401k Benefit

Anyone who has a 401k benefit must contact Fidelity for information or to change their address directly with them at: 1-800-835-5092