

My Experience at Tektronix

by Hal Lillywhite

I am perhaps a bit unusual for a Tek employee. When I was hired in 1974, Tek had about 10,000 employees. When I left in 1994, Tek again had about 10,000 employees. In between it had grown to, I believe, about 28,000. Divisions were added and sold off during that time.

I started in Marketing Training in Building 74. My memory may be hazy on the building number but it was on the south side of the railroad tracks. Then I moved into the integrated circuit (IC) department which at the time made discrete diodes and transistors, silicon integrated circuits, and hybrid circuits. It was a totally captive facility that only made parts for Tektronix instruments.

It was during my time in integrated circuits that I joined Portland Mountain Rescue, doing volunteer work that required cooperation from managers and co-workers. I much appreciated those who were willing to pick up the load on short notice so I could disappear into the mountains for a while. It may be worth mentioning that my first operation with PMR was the Oregon Episcopal School search which remains the largest mountain search in U.S. history, and had the second largest loss of life. It was a sad introduction to that work.

When I started in ICs, all production work was done in Building 48 though research and design was in Building 50. As we expanded that was not enough room so, like most of the engineers, I moved to Building 19 while

Tek constructed Building 59. That was an amazing building, state of the art for integrated circuits at the time. Concrete pilings went to bedrock and the second floor was on springs for vibration isolation. As the geometries for semiconductor devices shrunk, that isolation was necessary, even a small vibration could ruin a whole batch of silicon wafers. Though semiconductor technology has progressed through several generations, that building still serves as its purpose.

At about that time, the hybrid group split off into a separate department and moved, if I remember correctly, to Building 13.

While that was going on with the IC department, Tek was growing elsewhere. Management noticed that the bistable storage display, useful for many oscilloscopes, could also be used to display other information, especially for the computers of the day. They established the Wilsonville facility to make and market those displays, and even made some computers that were state of the art at the time. Tek also expanded to a facility at 185th and Walker Road, and to the Vancouver area. As a product engineer, I was the primary liaison with the instrument groups, so I got to visit those sites regularly.

A couple of products I particularly remember went into the 7612D digitizing scope. We worked with the hybrid and CRT departments to create a system that worked with 7000 series plug-ins to digitize what were then considered fast signals. The electron beam in the CRT hit an array of diodes, with thick and thin aluminum areas that either blocked or turned on current depending on where the beam was. That produced a digital signal

that told where the beam was. The signal went to another hybrid circuit outside the CRT for further processing. I understand that our main customer for that and the even faster 7912D was a certain government agency that took them to Nevada and dropped them down a hole to collect information just before a test bomb went off. We got no warranty returns on those instruments.

The semiconductor state of the art was advancing rapidly and we had to regularly update our processes and equipment. Unfortunately, each generation of equipment was more expensive than the last. It became impossible for us to keep up as a captive supplier, so we really had no choice but to market our products outside the company. That allowed us to keep up with the state of the art, but also led to our eventual "divorce" from Tektronix.

As that was happening, other technological advances ate into some of Tek's advantages, especially the advantage our CRT department had given us for so long. Tek had CRTs that allowed our instruments to work at high frequencies, to store displays on screen, etc. Then memory chips and other technologies started to perform those functions at lower cost and higher performance. The advantage of high speed CRTs and CRT storage disappeared, eventually taking with it whole Tek divisions, including the CRT department. The company shrank.

The IC department was also struggling. The Tek marketing and sales force had neither the specialized knowledge nor the customer contacts to sell our product, and we were not a big enough organization to create our

own marketing and sales force. In addition, it was obvious that the next generation of semiconductor technology was on the way and it would be more expensive than Tek could really afford. Something had to be done, and I soon learned what.

I scheduled a winter vacation, planning to ski up on the north side of Mount Hood. The evening before I was to leave, Jon Murphy, my manager, called. "We've been sold, the buyers will be here tomorrow and we need everybody available." I arranged to postpone my vacation and went in to meet with representatives of Maxim Integrated Products. Soon, I found myself working for them. They also agreed to become co-owners of the hybrid organization on a temporary basis. Eventually that co-ownership ended with a coin toss. Tek won the toss and bought out Maxim's half of the hybrid organization.

I had my celebration of twenty years with Tek just before we were sold, I believe that was the last such celebration in the Integrated Circuits Department.

Since then I have left Maxim and am now semi-retired. My wife and I served as missionaries in Mexico for a while and I remain active in Portland Mountain Rescue. They even allow me to go into the field on searches at my age.

I now consider myself a writer, having written several books available at Barnes and Noble and on Amazon. My writing career covers a rather wide subject area, from politics to biblical commentary to search and rescue stories.

The Most Visible Tektronix Building

With a rapidly emerging computer market taking off in the early 1960's, Tektronix was literally bursting at the seams trying to keep a steady flow of 453's and 545's going out the door. Engineering was being pushed, manufacturing was being pushed, and manufacturing engineering groups were being pushed.

Ground was broken in late 1964 or early 1965 for Building 50. It would become known as the Technical Center, or Tech Center, for short.

I recall the work to establish footings sufficient to support the five-level structure. Before concrete can be poured, steel pilings need to be driven into the ground, and the criteria for stopping is the amount of motion measured with each hit of the piledriver. In simple terms, the soil has to supply enough friction, or the pilings have to hit bedrock.

We might not often think of the "beaver" side of the name of Beaverton, but the entire area between Jenkins Road and Tualatin Valley Highway lying west of Cedar Hills Boulevard is a huge beaver marsh. The soil had been building in this marshland for hundreds, if not thousands of years. Simply put, there is no bedrock.

Steve Piazza, a former Tek evaluation engineer and son of a steel fabricator in Portland told me that there is between two and three times as much steel piling material under the Tech

Center than had been predicted during the initial soils study. I was also told that some of the piles were so long that it is thought some were able to

bend so as to form the letter "J." That delayed pouring of footings, but once done, the framing of the building went up quite quickly.

In order to make flexible use the above ground floors, the number of columns was held to a minimum, and that meant that steel girders were long. Reinforced concrete created the floors, and with the large spans, the floors were quite uneven, so extra layers of finishing cement were added. I recall being able to go into the building and seeing areas where as much as an inch was added to achieve that flatness.

Completely characteristic of the company philosophy, there was no "basement" – the model shop, the environmental equipment lab, all the vacuum equipment used to support the Engineering Tube Lab were located on the "First Level."

As we began building our own IC's it was clear that building vibrations could disturb critical processes and that use of the environmental lab's drip table could interfere, as well. Years later, when Building 59 was constructed, the necessary design criteria were far better understood, and it's most vibration elements were the mask-making equipment. More learning, more precautions and more expense!

The front steps of the building enter into the foyer in the second level, and initially, a stairwell on that foyer rose to the third level, creating a very impressive entry. Groups began moving into the building in late 1966, and the moves were done over a period of about six months. Most engineers were provided with a "U-Bench" composed of two benches (one for equipment and the other as a desk area), bookshelves and pegboard used to hold tools, probes and pictures.

Food Service set up a full cafeteria in the Fifth level area with dining tables to the north end and an executive lunchroom/conference room on the south end.

Building

50



From the Editor

I hope you're able to see some of the flowers that ought to be in wild bloom after a very wet April. My thanks go out to Hal Lillywhite, who has contributed an article for this issue. He's one of several writers who have been published, and I'd like to get an updated version of the list Bob Ross created in about 2006 that lists some 89 books written by Tektronix employees. (see vintagetek web listed below)

I've appreciated hearing feedback from several of you after my first issue as editor. Keeping this newsletter lively is fun for me, but all of you are the people who can help me make this labor of love entertaining. If you have any thoughts about articles you'd like to see, or comments on articles you read, please let me know. I want to keep a finger in this "stirring" of the history that we all carry with us. If you'd like to write some history, let me know and I'll work with you.

There's no single history of Tektronix, although there has been some marvelous writing. Miles Tippery wrote some very early history, and of course, there was the book **Winning with People**, done when the company was celebrating its 40th anniversary. At the 50th Anniversary, I was asked to join a team of folks to plan the celebration and to work on the creation of the company history exhibit that is still located of the lobby of Building 50.

Keep an eye out for information on the opening of the **VintageTEK** museum. There are a handful of dedicated people who are passionate about the early years.

Keep your cards and letters coming!

Bill Gellatly

Vintage Tek Museum
<http://www.vintagetek.org>

Death Notices

Allen, Faye J. -d12/31/2016 @Tek 6 years

Bigalow, Donna Jean (Hoyt) - d4/15/2017

Buchanan, Donovan Grant - d12/11/2015 @Tek 15 years

Dahl, Mark -d03/07/2017

Dietz, Roger Lee d2/26/2017 @Tek 32 years

Herron, Phillip Alan -d3/5/2017

Hopper, Elinor J. d11/1/2015 @Tek 26 years

King, DonaldR. -d3/29/2017

Laakso, Carl -d3/26/2010

Melinichuk, George -d2/9/2017 @ Tek 22 years

Moen, Dorothy French - d2/25/2012 @ Tek 22 years

Mooney, Ralph Douglas -d2/14/2017 @Tek 15 years

Nelson, Ronald K. d3/14/2016 @Tek 33 years

Olson, Oscar Henry -d4/12/2017

@Tek 30 years

Palmer, Gene R. -d5/7/2016 @ Tek 27 years

Rasmussen, Carol Sue -d4/25/2013

Sang, Emmanuel -d2/18/2017 @Tek 22 years

Scott, Mildred "Millie" d1/27/2017 @Tek 37 years

Sikorsli, James -d7/24/2017

Stevens, Leon Ramsey -d2/12/2017

Stotts, Betty Jean -d4/8/2017

Tatro, Edward J. -d4/20/2017 @Tek 11 years

Weber, Bradley Dean -d3/11/2017

TRVP News

Louis Sowa

Articles about your life after Tek whether professional or what you do for fun is encouraged.

For those of you that worked at Tektronix Wilsonville see the Wilsonville employee gathering article on page four.

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

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Beaverton, OR 97077 - 0001

Wilsonville Employee Gathering

On Saturday June 17, we are having a very casual gathering of exTek/Xerox/3D systems folks... basically anyone

who ever worked in or knows about Tek Wilsonville site is welcome.

We will start at McMenamin's Wilsonville at 12:30. At 1:30 or 2:00 we head to wine tasting. There will be choices, but we can have a tour at Adelsheim or go to any other wineries in smaller groups. Nothing pre determined at this time.

Everyone: PLEASE Email rose.marshall@innovationframe.com so we can update you on how to find us.

Cheers

Rosi

Tek Wilsonville Website

<http://www.tekwilsonville.com/>

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

503-649-2491

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

TERAC

6:00 p. m.

Round Table — Beaverton

Weekly on Friday

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tek-retirees@tektronix.com

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