**stories**

**Personal Stories Part 1**

**A Data communication Historical series**

**By Bob Pollard**

**A few Personal stories: By Bob Pollard**

Seattle, Washington, November 1953 – September 1957: In 1953 -1955 Western Union was still using the Morse code system to communicate with some of the small towns in Washington. It was interesting how some of the individuals using the key and sounder could operate as if it was a second nature. I just barely learned to use Morse code for trouble shooting purposes and I was very slow. Gradually we started using teletype machines instead of Morse code for communicating with the distant party when testing facilities and equipment, so I never did improve much.

The reason I brought this subject up was because of a particular individual that worked some of the small-town communication lines for sending telegrams via the Morse code. He liked to talk about sports so we would get into various conversations concerning sports. Anyhow, one day he was sitting at his normal assigned position in front of a typewriter and Morse key and sounder on a desk and I was standing by his side.

While we were talking a call came in for Seattle and he answered with the Seattle call sign and began listening to the message on the Morse sounder (click-click-click). At the same time he began to type the message on the typewriter and continued to talk to me. I guess what fascinated me was his ability to listen to the Morse sounder, type what he heard and continue with our conversation all at the same time.

I guess this ability would be similar to an interpreter translating between two people talking a different language and typing the conversation all at the same time. END of story.

Seattle, Washington, November 1953 – September 1957: During this period, I was working as a Wire and Repeater Technician in Seattle along with three to four other individuals on the day shift. One day the following event occurred that I thought was pretty interesting.

One of the older men, who had been around many years and had a lot of experience in trouble shooting land line problems, was working on a crossed line problem while I observed. This problem was on a circuit (lines) that handled a carrier system, which required a pair of wires.

The normal procedure is to work down the line having each office where the circuit is routed through perform a loop-back. This allows a technician to check the line in sections until a point is reached where the shorted pair of wires shows up. The loop-back is merely a function of patching the faulty circuit to a good circuit, which forms a loop. The testing technician then can check the loop to see if it is clear of any interference. This continues until a problem is encountered, which narrows down the problem between two offices. When testing a pair of lines (wire) this loop- back could also be performed on the faulty pair of wires only. This is all determined by the type of problem encountered and the best method for locating the problem.

Another method of locating a circuit failure problem is to check a voltage feedback surge on a crossed line(s). This could be in combination with the loop-backs described above or as a stand-alone test process. Usually this voltage feedback check involves applying a quick voltage surge (pulse) on the circuit and then checking the level of voltage returned. Both voltage level and time period of return can be used. But since the intent of this little story is not to conduct a training course, back to the story.

This individual went through the various testing procedures and located the problem right down to the adjacent mile post along the railroad lines. Most land lines followed the railroads in past years. He then called the lineman, who did the wire repair work, and told him where the problem was, mile post number, and based on the readings obtained during the test phase the problem was a pair of long-johns hanging across the pair of wires.

The lineman just laughed because as far as he was concerned there was no way this could be true. Well guess what, the lineman found a pair of long-johns hanging across the pair of wires.

What had happened before the testing all started was the old gentlemen had seen the long-johns hanging across the wires on his way to work. So, he figured he may as well have a little fun with the lineman. I’m not sure when he told the lineman the truth, or if he ever did. END of story.

Seattle, Washington, November 1953 – September 1957: During the 1930s through the 1960s Western Union provided a sports ticker service. The ticker tape machines used for sports and the stock market were basically the same, except sports ticker machine reported events in a narrative form where the stock ticker used symbols and numbers. It was a matter of what information was input to the receiving ticker tape machines. These sport tickers were used for various purposes, which could involve gambling or reporting the activity of a game in progress.

Sports announcers in small cities would announce or report the games as if they were at the ball field where the game was being played, but in reality, they were actually reading the game activity off a sports ticker tape. A person listening to the radio could not tell the difference because the sports announcer talked about the game as if he/she were at the actual game.

The receiving ticker tape printed information that came from an individual who was actually at the game and was typing the information as the action occurred. The advantage in handling it in this manner allowed one individual to report the game activity to hundreds of different cities at the same time. All types of information was provided, such as strikes, balls, walks, fly ball, hit to left field, grounder down the right side, over the left fence- home run, etc., all as the various events happened.

The local radio announcer would read the ticker tape as it was being printed and could directly report the game as it progressed. Crowd noise, music or other sounds could be dubbed in as necessary. In some cases, the announcer would hit a pencil against some object to make the sound of a bat hitting a ball, then report what resulted following the hit ball, all from the printed information on the ticker tape. END of story.

McClellan AFB, Sacramento, California, 1962: The computer communication equipment was delivered a short time after the arrival of the original Western Union group. RCA was the manufacturer of the equipment and was responsible for testing and getting the equipment ready to go on-line. Western Union personnel were to take over the maintenance responsibility after the system was cut-over and placed on-line. Since RCA was in charge of all the testing activity, and were responsible for the equipment in the beginning, we were told to look and observe, but don’t touch. We did take care of other important matters, like emptying ashtrays. Although, RCA didn’t object when we worked on Western Union owned and installed equipment. That wasn’t as much fun though since it didn’t involve computer equipment! As time went by W.U. personnel began pushing their way into the RCA realm and did get to participate (a little) in the testing activity. Gradually the controlled turmoil reached the cut over day and the great AUTODIN (Automatic Digital Network) system celebrated by going on line. Seems this occurred in December of 1962.

During the early testing period one of the RCA supervisors gave me a ‘Cross’ pen and pencil set with the RCA emblem on them. Apparently, this was given as a bribe to keep me away from the CDP (Communications Data Processor) console. It didn’t work! They tried to take the Cross-set back, but I was good at arm wrestling, so they lost again and decided to allow me to crowd in.

After RCA left the various areas of responsibility were assigned to WU personnel according to the training received at Cherry Hill and during the test phase, or as dictated by the Site Manager. We all became experts (quote, unquote) in our assigned areas and ‘dumber’ in the non-assigned areas. The definition of an ‘expert’ will not be stated at this time.

During the normal humdrum existence at an AUTODIN Site an interesting problem occurred on one of the Communication Data Processors (CDP), a selected problem from the hundreds of normal problems, in which I happened to be involved.

An intermittent problem was occurring while writing to a magnetic tape device from one of the two installed CDP(s). The problem didn’t seem to show up when communicating with other Input / Output devices. Some brilliant CDP personnel (including me) jumped right in to take care of this minor problem. Well, about a week later it was decided by others, that brilliant should be changed to trainee, since the problem still existed. We couldn't get the problem to keep occurring and everything in the magnetic tape transfer channel (port connection) seemed to check out just fine. About 8 or 9 days (who’s counting) into the problem another supervisor (unknown) and me along with a couple technicians (unknown) were sitting at the CDP console poking buttons, with not a care in the world. Then we happened to notice the BAC (arithmetic) register was counting down while writing to a magnetic tape device. The ‘light bulb flashed’ because this was not a normal happening so naturally being ‘brilliant’ people we replaced the appropriate circuit card. Lo and behold it solved the magnetic tape problem.

After that the Site Manager, being a nice guy, decided we could have our brilliant status back. Also all the non-CDP people quit telling jokes about the CDP people. END of story.

McClellan AFB, Sacramento, California: One day, while hiding from the Site Manager, I decided to write a troubleshooting Drum diagnostic. The original storage device was a magnetic surface drum not the familiar disk used today. It seemed like a good idea and a fun project. Off I went with pencil and paper in hand and started putting down 1s and 0s (good ole machine code). I figured I could accomplish this simple task before the Site Manager found me. This simple task seemed to take longer than anticipated and it was very difficult to hide in a switching center for a month, but after being caught, the Site Manager felt sorry for me and let me continue; a little tongue in cheek scenario!

I decided to use alternating 1s and 0s test patterns and composed about six different matrices. After many pages of 1s and 0s (coded instructions and data patterns) were completed it all had to be punched in a paper tape. A punched paper tape was one method to get programs recorded on magnetic tape via the CDP. This paper tape had to be input on the Paper Tape Reader connected to the CDP. This is where all the fun began. The tape couldn't be read into the CDP because the data patterns caused parity errors (BTPE). The Paper Tape Reader did not like those alternating bit patterns. After correcting the problems in the tape reader logic electronics, the memory started registering parity errors. After the memory problems were corrected the Magnetic Tape Units started registering parity errors while attempting to put the diagnostic on magnetic tape. After correcting the write to magnetic tape problem, the diagnostic couldn't be read back from tape because of parity errors. After correcting the read from tape problems it was finally time to try the diagnostic on the Magnetic Drum Unit. The result was basically the same, read and write parity errors. All of the errors were caused due to the gain or loss of data bits.

After correcting the drum parity problems, the diagnostic seems to run ok except it took over five minutes to run, which was an excessive run time. The problem was due to the use of consecutive sector addressing, which caused the drum to make a complete rotation before picking up the next sector address. It was necessary to alternately skip a sector address each time because the instruction decode and sector selection electronics were not fast enough to address the next sector immediately in line. After doing a little program rewrite in order to alternately skip the next sector address and jump to the second in line it worked fine. It reduced the run time to about two minutes.

The diagnostic tested the entire addressable surface of the drum. It turned out in order to run this drum diagnostic, input from magnetic tape and all other devices had to be in good order. At least I learned a lot from this little adventure. I think they ended up calling it Test and Maintenance (T&M) 600.

I might add, this activity occurred prior to the availability of ‘AAMPS’ (AUTODIN Automatic Maintenance Program System) the maintenance routines that were developed for testing the hardware. END of story.

Norton AFB, San Bernardino, California: I was permanently assigned to Norton the first part of 1965 and they told me I could play Site Manager if I didn't cause too much trouble. You see I escaped from McClellan in the middle of the night after hearing all the tar and feather rumors floating around.

During some of my previous visits to Norton I developed an understanding of the problems the people at Norton were experiencing. Norton received the first system from Camden New Jersey, which was the over abused system, directly from the test bed facility.

A short period of time, after my arrival, we decided to take some drastic steps. We decided to vibrate every plug-in circuit card (hundreds) in the entire system, primarily in the CDP (2 each) since they were causing the most problems. We obtained a little hand electric vibrator with a shaft sticking out the end with a rubber tip on it. We cut a notch in the tip so it would fit on the end of the circuit cards.

We did get approval from Major Clark (OIC) and the operations supervisors prior to starting this activity. We promised to try and hold to a minimum the number of gray hairs and nervous breakdowns that may occur in their group. I will have to admit we did not maintain the required 99.9% on-line time during this card vibrating period, but we were not maintaining this level of efficiency prior to starting this activity, so about the only way operating efficiency could go was up.

Prior to using the vibrator, it was decided to take a less drastic approach first. We started out by tapping each circuit card, one at a time with our fingers.

Even though this caused a few sore fingers we did get results. We started causing system failures (off-line of course) when some of the cards were tapped. We found vibration sensitive circuit cards, little pieces of wire across the wire terminals in the back of the racks, loose wire connections and some left over, previously applied, RCA tape on circuit card pins. We corrected the problems as we discovered them. After we had finger tapped every circuit card in each CDP, we decided it was time to use the electric vibrator since no one had a nervous breakdown up to this time.

We basically started all over except now we used the electric vibrator on one circuit card at a time. We created more problems and again found more sensitive circuit cards, loose wire connections, loose pieces of wire across the terminals in the back of the rack, and more tape on circuit card pins. We felt sorry for Walt Vanokur, the Technician repairing the circuit cards, because we gave him a lot of work, but in the end, it was probably all worth it.

All of this error creating activity did worry a few people because it took several weeks to complete, and one CDP was down most of the time (sometimes two) while we were accomplishing this task. But after it was all over the Center OIC and Air Force Operations personnel were very happy because future system restarts and reloads became almost non-existent. Also, it gave the Maintenance personnel more time to play games on the CDP.

One little glitch occurred in our scheme while returning circuit cards to the CDP after they were repaired. The procedure we established was to return one circuit card at a time and make sure the repair was satisfactory. This was to be done whenever the CDP was stable and at idle times. One individual, on a night shift, decided he would save time and reinstalled about 12 repaired circuit cards all at once, scattered in different areas of the computer. Naturally ‘Murphy's Law’ was instrumental in the result, a massive failure. Then to top it off he didn't remember where he installed the circuit cards. O' well all the CDP personnel gained a little more experience and, of course me being such a nice guy, I didn't say much to the individual who created the problems!

The end result of all this turmoil not only created much more stable CDP(s), but a much better attitude on the part of the operations personnel after they decided we weren't crazy after all. END of story.

Norton AFB, San Bernardino, California: I believe most people who worked in the AUTODIN Centers, especially in the earlier years, remember how difficult it was to locate seldom used replacement parts stocked at each Site.

We decided an effort should be made to simplify finding the replacement part number in order to locate the part physically in the storage area. I picked a supervisor, George Cameron, to perform the task of labeling every part in one of the Power Unit Cabinets. The idea was to have him look up each part as he had time, get the part number from the parts catalog file, then place a label, indicating the part number, next to the part in the rack. We used a standard labeling gun to make the labels.

The day came when he told me he had finished labeling the rack. I checked the rack to see how it looked and if it was going to be worthwhile. It turned out he had not labeled all the parts, apparently overlooking a few, so it was decided he should complete the task. During our discussion concerning this matter he expressed his lack of interest in this labeling activity. I still decided he should continue and applied a little pressure (‘OK’ a lot of pressure).

He finally informed me the labeling was complete so I proceeded to check out the rack again. He had labeled all the parts this time and in addition had labeled the screws, nuts, hinges (using the words ‘screw’, ‘nut’ ‘hinge’) and anything else that could be labeled. Apparently, he did this to get back at me for forcing him to do this labeling task and I suppose he hoped it would irritate me a little. The problem was I though it was really hilarious and laughed about it, and I had fun letting everyone know about this funny stunt.

I guess George never did forgive me, but anyway he did a good job and did get everything labeled. We continued this effort where it was feasible, although someone else did the labeling. END of story.

Norton AFB, San Bernardino, California: Power failures or power stability was always a problem and some failure was always lurking in the shadows. We had an interesting power failure at Norton in 1965 or 1966, can't remember the exact date. This was one of those total failures where everything crashes without warning.

What happened? We all wondered when everything went dark and quite and then we shifted into the panic mode. After a pause of a minute or two the fallback Diesel generators came on line and we started powering all the equipment back up.

It appeared to be a local Center power failure and nothing else on the Air Base was affected. In researching what caused the failure it was discovered an electrician was doing some work in the power distribution room and was forcing some large circuit breaker closed with a piece of two by four. I guess the circuit breaker he was closing was the wrong one because it totally exploded when it closed. If I remember correctly, the electrician was not harmed (maybe his feelings), because he was far enough away from the breaker.

We restored everything in the Center to normal operation on the power provided by the Diesel Generators. We had all settled down to our normal routines and waited for the electricians to repair the main power facilities. I don't remember the exact amount of time that elapsed, maybe an hour, before we had another total power failure. The Diesel Generators quit running this time. After reviewing the reason for the Diesels shutting down it was discovered the electric fuel pumps on the Diesels were connected to the main power source and not the Diesel power source. The Diesel Generators had what was referred to as a surge fuel tank (not sure of size) that had provided fuel for a short period of time before running dry. Under normal conditions the fuel pump would pump fuel into the surge tank and would maintain an adequate fuel supply.

Apparently, in the past, this problem did not occur because the Diesel Generators had not been on-line during a power failure a sufficient length of time to cause this problem. It was a great life! END of story.

Western Union New York Headquarters: In September of 1967 I transferred to NYK Headquarters to play the role of General Maintenance & Operations Supervisor and was still involved in AUTODIN. I don't know how many Westerners there were in NYK’ but I found out later that a westerner doesn't fit in NYK City. In the beginning I actually enjoyed working in the head office and even accepted the long round trip commute from New Jersey, where I lived, to Manhattan. There were five of us in a car pool so we drove and parked in a parking lot about a block from the WU building. This way I did get to avoid the buses and subways (cattle cars) during the rush hour. Of course, when it rained or snowed that was another matter, we either increased our round-trip time by one to two hours or didn't go work at all.

Well after enjoying myself for about a year and a half in that position I decided I would accept a Directors position in the Finance Department. You have heard the saying ‘you can reach your level of incompetence’. Well I got to my level of incompetence because the Finance Department and I were like mixing oil and water.

After a short stint in the Finance Department I moved to the position of Director over the System Analysis and Programming Group (SA&P). I got to team up with Don Holtzclaw again (from the Norton days). This was fun for awhile until the traveling back and forth between N J and Manhattan finally got to me. Although in 1969 I was spending some time in Mahwah N J, which was about ten miles from where I lived and I could drive to work. But I was ready to move back to the western part of the States. I terminated my employment with WU around the end of 1969 and went to work for the Control Data Corp. in Santa Anna, Calif. The westerner was able to go home! END of story.

Warrenton, Oregon, 1975 – 1980: During my Hardware Store adventure I encountered an interesting situation. An elderly gentleman purchased a Smoke Detector and later brought it back to the store and stated it didn’t work. I guess most individuals are familiar with the type of Smoke Detector that has a high-pitched squeal when smoke is detected in the area, or the test button is pushed.

The returned Smoke Detector had the battery still installed so I pushed the test button to see if it worked. A loud high-pitched squeal emanated from the Smoke Detector for a few seconds after the test button was pushed.

The elderly gentleman was watching me and when I pushed to test button he stated “see it doesn’t work.” So, I pushed the test button again and a loud squeal occurred again. He stated again’ “see it doesn’t work.

I explained to him that it was working, but apparently, he couldn’t hear it. I also suggested he get one of the Smoke Detectors that emit a lower pitched buzzer sound. He then stated “I wondered my wife kept yelling at me to quit pushing the test button.” END of story.

Yukon, Canada, Early 1980’s: If you are a fisherman you will appreciate this little tale. We were fishing along a river, near the highway, and the river could be approached from either side. While we were fishing a man and wife along with a young daughter pulled up on the other side of the river. There were more trees on their side along the river bank, which made it a little more difficult to get to the river and to fish along the river edge.

To set the time of day it was just before noon. The man pulled out his fishing gear and proceeded to put on his waders and fishing vest and got his fishing pole all ready. He then worked his way down to the river and tried to find a spot where he could use his fly rod. He was having a difficult time finding a decent spot and then finally seemed to find a spot he could cast his fly lure into the water. This all took about fifteen minutes.

At that moment his wife walked down as close as she could get to the river bank and yelled. “Lunch is ready.” END of story.