Lowell Benson Interviewee	Ryan Barland Interviewer	December 14, 2021 St. Paul, MN

INTRODUCTION

In 2019/20, the Minnesota Historical Society conducted oral interviews of numerous computer industry individuals with no end purpose other than to save history. The project's intent was to transcribe the interviews and save for researchers. Keith Myhre had provided a list of Sperry/Unisys candidates including Lowell. Unfortunately, the interviewer, Ryan Borland, left on maternity leave then COVID stalled the project.
Keith's transcript is on-line, https://vipclubmn.org/Articles/KeithMyhreOralInterview.pdf.
Earl Vraa's is on-line, https://vipclubmn.org/Articles/Vraa-EarlBio.pdf.
At least a dozen others were conducted – their transcription status is unknown as of June 2024.
The following are questions and answers from my interview.

Lowell Benson **—LB** Ryan Barland **—RB**

RB: Today is December 14, 2021. My name is Ryan Barland, and I am interviewing Lowell Benson here at the Minnesota History Center. Thanks so much for being here today. Start off with an easy question—what year were you born?

LB: I was born May 26, 1938, in a town called Sanish, North Dakota.

LB: I was discharged from the Army in June 1960. Went to an employment agency, signed a contract—$150 to "find me a job". So, I paid the employment agency the same amount as I paid for a car. Anyway, they sent me over to Univac. At that time that was Plant 1, across from Fort Snelling. I had a couple of things going for me. One, it was a technology company. I understood some electronics—not a whole lot. I understood some mathematics, and I had had security clearances. So, they made me an offer that was more than I had been making in the Army. Two weeks later I found an apartment by the university and had a paycheck in hand. So, I was an employee.

RB: What were your first impressions of Univac? Kind of those early projects it looks like Automatic Antenna Coupler Department and...

LB: Yeah, the Automatic Antenna Coupler Department was an electronic device related to radio communications. It basically adjusted the impedance matching of the fixed radio output connected to variable antennas in aircraft. During World War II when they had long-range communication, they used to have to hang a wire antenna out the belly of the plane. They used to call it fish, because it had a stabilizing shape like a fish at the end of it. And they would reel the antenna wire in and out to adjust for frequency impedance changes. Well, this was a piece of equipment that would adjust the frequency automatically, even with probe antennas. So, it was interesting. They hired me as a drawing control clerk. Hey, somebody's been working with the drawings—put them in the file drawer. Or the engineers—and the thing I found at the time, was it wasn't a nine-to-five job like, stocking grocery shelves or pumping gas -

You come in you do this or that, repeat the next day, repeat the next day. Rather, it was teams of people working on projects, and many of the people were veterans, from both World War II and a few from Korea. But it was teamwork, and they were doing designs of new devices, plus occasional changes to old ones, and they had a lab, and you got to know all the field service people. That was just about three years of commuting back and forth. So, I had been working about a year and got married in '61, the girl I'd met when I was home on leave from the Army, also from Alexandria. Anyway, management decided, for whatever reason, that that particular antenna coupler technology, even though some people described it as a cash cow, did not fit in a fledgling computer company. They decided to transfer that operation to the Sperry Marine, which was in South Carolina somewhere, and so the department went from some sixty people down to a dozen and finally it was down to about seven people. We were told, OK, we're just about done with all this transfer stuff, then I'd better find a job. I found a position for about six weeks in a technical writing department, where I was just doing document editing. Then I got a call from the former secretary of the group. They were looking for someone to do financial analysis and what have you in a different department. She said, you can handle this, Lowell. So, I transferred then down to a different plant, and was there about two months.

At that time UNIVAC, eventually Sperry, had a procedure process where they encouraged their people to get continuation education, or more education, so if you took a university class, you made application for it. When you finished the class and turned in passing grades, they would reimburse you for ninety percent of the tuition. Well, I knew right away when I got out of the active duty that I was going to need more education, so my first apartment was by the university, and I was taking night school classes. Well, after three years of night school classes, when I went in to get approval, my manager says—OK, when are you going to get a degree? I said, oh, it will be ten, twelve years. He said—why don't you go to day school? I said, I've got a wife and a child to support, and a dishwasher's salary doesn't do it. He said—I'll see what I can do for you, come in and see me tomorrow morning. The next day when I came in, he said—we're going to go talk to [Tut Runyon]. Who? Well, he runs the computer center, they had two computer centers in that building. There was a commercial computer center and the defense computer center. Well, they were looking for computer operators for second shift. So, three days later I went from doing financial analysis accounting work, to being a computer operator. Three weeks later I was enrolled with a minimum of twelve credits at the university. Three years later I had an electrical engineering degree. Good things come in threes.

LB: I started job hunting in February '66 when the degree was in sight—started looking around for jobs, what am I going to do now as an electrical engineer? Of course, I was working at the computer center, Tut, head of computer center, said—we'll make you a support software programmer, and we can give you a sixteen percent raise for that, which was a beginning programmer. Well, I had already been writing simple programs for the machines we were operating. There were a variety of them. Even had the initial Trans-Tech, which was the initial transistor computer that they had built for testing. had that in the back room of the computer center. Anyway, I thought that was pretty low for new engineers. Then I flew down to Iowa to visit Collins Electronics, and they were ready to make me an offer, because I had antenna couple experience and I had radio experience, and then I thought, well, OK.

The next day I went into work early, and I walked in through the front door and into the employment office instead of the employee door, where I said—hey, I'll be graduating here in a couple of months—what kind of engineering positions might be available to me? They looked. I said *by the way*, I've got just about six years' experience in this company. And Gordy Bourne said—oh, what can we do? He called up Findley McLeod, a department manager. We chatted for only 10 minutes then offered: Tell you what we can do—you resign that position. or you quit, and then the next day we hire you as an experienced engineer.

LB: So, I skipped the rookie engineer pay grade and started in computer testing, and when we were done with that Phoenix model, then I was assigned to a CP-901 design project, which was a government nomenclature, and for a computer to go aboard an airplane. The airplane would be the P-3C. If you ever read the book, *Hunt for Red October* or saw the movie, there is a plane flying over, detecting submarines—the computer went on board that airplane.

LB: After a year in the design team, when we had Serial Number 1 ready for delivery, they flew one of those P-3 planes into Wold Chamberlain, Minneapolis airport. We put the computer on board. A Field Engineer, Jack Anderson, and I got on board, and we flew out to Pennsylvania and installed it in their system there. When I read that book and saw it, I thought—I've flown on that plane.

LB: But the technologies onboard that plane are rather amazing, and that computer—and it was somewhat classified at the time—but that plane had - if you see it, it's got what looks like a long probe sticking out the back—that's a magnetic anomaly detector. Within the database they have the magnetic fields of the ocean mapped, and as they're flying over, they can compare what they're detecting versus what's in the database. If there's an anomaly, they know there's something down there that has changed. If it's a strong anomaly, then it quite likely is something large, even when cloudy or foggy...

RB: The magnets will still detect.

LB: The magnetic field is affected. It can detect large whales, but more so submarines that might be way underneath. So, anyway, that's part of the system that went on board. After we delivered the first one, then we had to take that computer through what's called environmental test, qualification testing. There are government specifications for ... Mil-E-16400 is the specification for ship-board equipment, because shipboard it has to undergo shock if a torpedo hits an adjacent compartment, why it's supposed to keep working. Aboard aircraft, it's a Mil-E-5400 specification. They're different vibration requirements based on the engine and vibration. If you fly on any commercial airplane, you can always find a few little vibrations. It had to operate through this various vibration levels, and what if that airplane happens to have landed and it sat overnight or a day or two in a runway in the Sahara, and you go and you turn it on, and it's 130 degrees, 55 degrees Celsius inside the plane. When you turn it on, that computers has got to work. What if you were up at Thule, in Greenland, and it's forty below? You turn that computer on, it's supposed to work. So, the design has to be such that the components will operate over a wide range. You have to go through testing of different models to prove to the government that it can withstand that, while it's sitting on a vibrating machine like this.

Anyway, I took that machine through the qualification testing, and if there was a failure, we had to track down, figure out what the failure was, if we had to redesign something. In the case of the CP-901, the frame that the chassis were mounted in were a riveted structure, and sure enough, you shake it long enough, the rivets started coming loose, so we ended up having to redesign the frame, for it to go to welded with gussets. That's mechanical engineering. But when things started to shake then, your connectors started moving, and then you've got intermittent in the circuitry, and you had to track down the problem.

Anyway, that was a couple of years with the CP-901, and then for some reason or other, the German Navy, part of the NATO forces, they had some computers, and they were looking at doing a new ship, the Germans were developing a "Schnellboot"—fast boat. They wanted a computer system to go on board it. So, they started looking around, and a Dutch company, [Hollendse Signaal Apparatan], which was the defense branch of Phillips Global Technik, and proposed a computer to them, the German Navy. One of our marketing guys somehow made an appointment and I ended up flying over to Germany in '69 with some marketing people - there were export controls on what we could export. And somehow the Navy said—hey, here's a computer, it's about four years old, or three years old—guess it was only about two years old, but—could that do the job? Said we'd have to repackage it for the shipboard requirements, and here's what we'd do, so ... we did a proposal, and they gave us the contract, so then we did the redesign, the repackaging. The tricky part of that was that this HSA Company was the system integrator working with Telefunken, and they said no, the radar interface and the displays—it had a Telefunken display—they all have an interface, peripheral to computer interface, that works exactly with our machine. But that's different from your machine. We looked at it and I said—if we use a differential drivers and receivers on all the lines, and. I if we put components we've been using into the interface on your end, and on our end it will work electronically. They had a twenty-four-bit machine, we had a thirty-bit machine. And theirs had address lines something like the IBM parallel daisy chain interface - I said, we have something that we call an externally specified index, so the machine can tell which one it is, and we'll go to different control words, so that's how we'll make it work. So, the German Navy believed it. Went back, we did the redesign and then they asked me to go over and install it. So, I ended up in Holland for five months, and then in Germany, where we put one up into their computer center. They ended up building, I think, about forty of those coastal patrol boats, and everything worked.

RB: Everything worked. And that kind of gets to an interesting kind of theme that I've found in a lot of these interviews where Univac always seems to be very committed to giving the customer what they wanted. Maybe that was part of Univac's success that they were able to say yes to these very high demands.

LB: In effect, I think, many engineers end up helping customers to solve their problem, is one way to put that. Sort of a sidelight, too, that after two years in Germany, then, came back and went to work on some supervising some other computers. But the US Navy was doing some experimentation with a hydrofoil built by Boeing, and they wanted a small ships command and control system, and what they were doing for destroyers. Someone suggested, hey, the German Navy has a small ship system. Somehow, they decided to put that aboard the first ship like that Pegasus, was the first hydrofoil that they had. The German fast patrol boats they had a dual processor, they had two processors set up that were interconnected.

But that way if they had a problem with one, they had live backup. Anyway, they put a single, when they took that computer from the German Navy, the Telefunken radar, the OTO Melara 76-millimeter anti-aircraft gun, it's mounted on the front bow, and you'll see those on a lot of Coast Guard ships. Anyway, that gun, controlled by the radar or with the radar and a computer. Apparently, they were out on the firing range out of [Port Hueneme], and they said that the system died, and the red light was on in a computer. Well, my first thing was—which red light? So ended up flying out to Port [Hueneme]; the field service engineer [Bob Herbster] and I got on board, and we went out. The plane came across towing a drone, they fired—sure enough, there were two red lights on—the program fault and the power fault. I asked to let me look at your power recovery program; they didn't have one. Well, that computer had been modified from the CP-901, it'd been designed to monitoring the input power, and if there's a glitch in the input power, there's enough residual capacitance in the power supply to keep it running for a millisecond or so, which is 500-some instructions. That allows you to, when you get that power interrupt, to take and save all of your operating state, so that when power comes back on you can resume where you left off, instead of having to hard restart.

Anyway, they didn't have one. So, I ginned up a little recovery program, and I plugged in the memory, using binary, because they didn't have a means of compiling and generating tapes on board. Plugged it in, said OK, that'll take care of at least the program fault. So, the drone came back, they fired, system blinked and kept running. Power fault light was on, but say the whole system blinked like that, and it kept operating. They thought I was a miracle worker. But, anyway, ah, the problem isn't done yet—why is there power fault? Well, in order to power the electronics, they needed an extra generator, and he had put it back on the fantail. We went back and we looked at the generator, on the deck we could see skid marks where the bolt's supposed to be holding it down. And there were some slots for it, we could see where it had skidded. It apparently was moving when they fired the gun, from the shock of the gun firing would cause that to go—whack, whack. We bolted it down, they fired again, and it worked. That's sort of ... I was a civilian on a Navy ship, but that's part of the Cold War.

RB: You obviously had the language skills as well—Russian and German—and I'm looking at some point here I know they became useful in your career as well.

LB: Well, to a degree, and it was classified at that time.

RB: Is it classified now?

LB: I think that since things have shown up in Wikipedia... Today, on a daily basis we use voice recognition through the telephone. Well, voice mail, was invented in the basement out at Eagan, and there's a story written by David B. Andersen (that's with an "sen") that he talks about that work. But at that time. they were actually taking electronic waves, and you could intercept them or convert them then to speech, so you could digitize speech. Well, what they found then was if you could digitize speech, then you could also generate messages. They had a classified contract that was called "word spotting," that didn't matter what the language was, but they wanted to do was if they were doing word spotting, and they were word spotting Soviet communications, then you might look for something like a general's name or you might look for certain things like [zhagon], which is *fire* a weapon.

Anyway, could they automate eavesdropping, and pick out some set of key words that means that a person should listen to the recording more carefully. Anyway, that was in the '70s, so that's a couple of years ago. As they were doing this, and they needed someone to provide some foreign languages, so I ended up there as sort of a support. My name doesn't show up in their story. But that was Cold War. In effect, we were listening, they were listening. We knew they were listening; they knew we were listening, but did we know how effective their listening was? To a degree we knew how effective our listening was.

RB: That's fascinating, and it looks like in the notes here it's about 1977 was that kind of, that voice mail project. Maybe I want to take a slightly wider view for a second, because at that point you had been working about seventeen years. How had Univac—I know the name kind of seemed to change almost constantly—that's an exaggeration, but—how had Univac changed over the years in terms of a place to work, as the company...?

LB: Somewhere along the line I also became responsible for supporting customers. We were dealing with mostly the Navy, but we had a few Air Force related projects, one of which was the Minuteman launch computers, which had a rather unique memory. You talk about technology—they used what was called a plated wire memory, and the reason for that is a plated wire memory is less susceptible to radiation effects, should a nuclear blast occur nearby. The core memories, the RAM memories, what have you, could be damaged or destroyed by it, but not a plated wire memory. And our Minuteman that were computers that were out by a multitude of silos had plated wire memory. The only reason I'm familiar with it is plated wire memory was also used in a commercial computer, the 9300, and we had one of those in Hengelo, Holland, in the computer center, for card processing and printing. There was a memory failure, so I had to troubleshoot the plated wire memory. Anyway, that's the technologies.

Where was I supposed to be going? OK, how did the company change. Well, we kept growing and expanding. Opened a new plant out in Eagan. Somewhere along the line we had various different projects in leased buildings around the Twin Cities as different departments grew. We had training departments to where we had people coming in for computer or systems training. We had, some cases, like when we were working the second anti-submarine warfare airplane computer that we did, was, we called it, that its nomenclature was the AYK-10, but we also called it, we just called it the S-3 computer, because the S-3 is a twin engine jet, carrier based, that does the fly-over, drops sonobuoys. They set up a complete software department out in California to generate the software for that system. For the P-3 aircraft, there was a software development center out in Pennsylvania that ... Naval Air Development Center out there. We actually had small groups of people working adjacent to customer facilities, and they built a new plant out in Eagan. They eventually closed the original plant that I worked in, the Plant 5, Minnehaha, where ERA had started. The commercial plant, in somewhere along the line, said if you were a defense contractor, their auditors are in there to make sure you aren't making excess profit, and they're in your books and in your books. They finally separated the defense operations from the commercial operations, just to keep the government from going into all of those books, necessarily. So, the commercial company, which was mostly in Roseville at the time, ended up reporting into Blue Bell headquarters out east. And the defense group was pretty much challenged here and centered in the Twin Cities.

When Burroughs bought Sperry to form Unisys, worldwide there were about 120,000 employees in the conglomerate. And about either 13 or 15,000 of those were in the Twin Cities here. The company kept getting bigger and bigger, and I think when Blumenthal orchestrated the buyout, that the company started going downhill. At least that's the viewpoint of many, that it quit being fun. You know, there was always a certain amount of loyalty to your employer, and I think that the company quit caring about the people and the people's loyalty started disappearing.

Then I ended up doing a whole lot of marketing support. Marketing wanted to go make this presentation and convince its customer to buy this or buy that. This was more, I guess, after our kids were out of high school that I was doing marketing support, more in the '80s. Because over a ten-year period I think I averaged twenty-one trips a year. Anywhere from you fly out in the morning, you fly back at night. It was not unusual for me to call Gloria at five after eight and say we've got a ten o'clock plane; could you meet me with a suitcase?

LB: There were a few long hours when we were working on a proposal, when I might call home at four o'clock and say—we won't be out of here until six or seven. But the unsung hero in many, many, many situations is the wife who takes care of the kids and the house and home and everything else. It was especially tough when we moved to Europe. I was over there, and she packed up the house. Some stuff that was going to be shipped over there, some went into permanent storage, some to maybe ship later, because I had rented a furnished house in Holland, and six or eight months later when we moved from Holland to Germany. We had some of our household goods, that she had packed up separately, shipped over, because we had rented an unfurnished house in Germany. And came back, and say for me, and for part of the time we were in Germany, and we were in Bad Gödesberg, which was where the American Embassy was, we had a contract up in Wilhelmshaven at the Navy's tech center. And for three months of that time, I would get on a train on be Sunday evening, do almost an overnight commute up to Wilhelmshaven, be five days on a job, on Friday afternoon take the train back to Bad Gödesberg. So, here's a woman with three young kids, two studying in the American Embassy School, and one in diapers yet. She was not shopping on the American Embassy. As civilians we did not have access to the government PX, as many retired officers could do, so she had to buy on the open market. The same thing was true when we were living in Holland. She bought and fed the family, and, well...

LB: For her it was more of a nightmare. For me, dealing with professional technology people and communicating with them, and a good part of the time in German language. I could speak a little bit of Dutch. Since we were living in Holland, we tried to understand, communicate in their language. Anyway ... and my wife does not have the same language skills, and it was very difficult, I think, for the family.

RB: My hat's off to Gloria. It sounds like she's an awesome lady. So, what were the '80s like? It looks like, kind of—you were saying a little earlier, as your kids got off to high school, got older, you did a little bit more marketing stuff. It looks like...

LB: I was a supervisor, as manager of department, and one fellow, [Dick Erdrich], made the comment, he said—you bag 'em, I'll skin 'em.

LB: We had a multitude of small contracts. When Burroughs bought Sperry, they brought in their own general manager. He had sort of a philosophy. That was he's going to go after the big production contracts. Before that time, sort of the philosophy was trying to work with the government laboratories, as they develop, and paid people to develop, do some experiments and research, that creates the technologies that go into the production. But that general manager that they brought in didn't want to do all that little Mickey Mouse small contracts. He wanted to just go for the big high profit.

RB: So that sounds like a big change, then.

LB: So that, to a degree, was a leadership philosophy change. It—what's the word? —rankled—a bunch of people. But you suck it up, and many people looked for other opportunities. Then, along came *perestroika*—reconstruction. *Glasnost*, or openness. To where the defense industry was shrinking, opportunities were there. And then it was sort of a culture of about every six months, as contracts were over, and so forth, they had surplus of people, or excess people. So, about every six months management would form a small team and start evaluating people—whom are the best set of people, going forward with the contracts we've got? Then you get—here's the cream of the crop. And the rest, then, get into sort of a pecking order of they're either onto or almost onto the lay-off list.

RB: It sounds like there were rounds of lay-offs, and you made it until 1994, I think.

LB: Well, we had a vacation scheduled in Hawaii. I told Gloria—while we're in Hawaii, I said, there's going to be a lay-off. I think I'm probably on the list. She said—well, how do you know that? I said—because for several years I've been on teams evaluating people. I wasn't on a team this past year, which means I'm probably being evaluated.
And three of the last five things that I've done, I've found chatting with other people in the cafeteria. Somebody needed help with this, this, or this. So that says that I'm being evaluated. And a couple days before we were leaving for Hawaii, I told my boss, Tony, "if my name happens to come up while I'm gone, I'll talk to you when I get back." He said—"you know I can't say anything like that, Lowell." I said, "I'm just telling you I understand the operating situation." As it turns out, I already had my resume out in the street. I been sort of looking around, because one of the projects I had started when I was out in Washington, DC. I spent about eighteen months out there working on the FAA's advanced automation program, which is air traffic control type, which is yet another application of technologies. There's one there that's very interesting, and I'll get back to it in a few minutes. Anyway, marketing hit an idea that was something called IHVS—Intelligent Highway Vehicle Systems. To where they had heard ... well, departments of transportation were trying to investigate technologies, and so forth. And at that time, because it was part of *perestroika*, our company was trying to find where we can apply our technologies for civilian applications. So, I'm working on the FAA's Advanced Automation System, and someone asked if I would do some things while we were out there in DC. I said sure, and I did a little bit of investigation.
That's what brought me back to Saint Paul, to look at a couple of things. I met the Minnesota Department of Transportation people, and the University Center for Transportation people, and we put together a demonstration system.

The demonstration system was that if your traffic control knew where congestion was, and if people subscribed, they could get a phone call saying—your route to work is clogged; leave ten minutes early. Well, we did a demonstration system of that, and we showed it at a conference. Well, that, in effect, gave me the contacts that got me an interview on a job. That's another technology, the Minnesota guys have a patent on what they call Auto-scopes, which is putting a camera looking down at intersections and counting traffic, keeping track of it. A lot of places you will see, when you're near a signalized intersection, you will see a square, rectangle loop. The initial control was loop detectors, magnetic anomaly detectors, if you will, in the street, and you'd see them placed back from stop lines, to where if there are vehicles over these, well, they can detect the differences and send signals and, in effect, count. Of course, the inverse of a complement of number of vehicles are the number of spaces. Anyway, called the Auto-scope, was a professor, [Panos Michalopoulos], came up with the idea of instead of digging up the pavement everywhere, what if we just had a camera looking at that, and you analyze the image, and within the image you lay a loop, and you can detect whether there's something there or not. That, in effect, came out of research at the University of Minnesota, which was part of the Center of Transportation Studies. They use the loop detectors, or the Auto-scopes, then, to monitor and measure traffic flow on the freeways. And if there's a lot of cars on the freeway, then you put the longer wait period at the ramp meter. If there are fewer cars, you put a shorter wait.
. Anyway, a lot of that traffic technology came out of the University of Minnesota. Minnesota was the leader in that type of traffic control.

RB: It looks like you were with the Center for Transportation Studies from '94 to '01.

LB: I was there from '94 to '01. I was there five years full-time and two years part-time. They hired me to put together a transportation research laboratory. And I got there because of a marketing supported demonstration. As things were going downhill at Unisys, I got the contacts at the University and MN Department of Trans;portation.

RB: ? Did you like it after all the years at Univac?

LB: It was a new technology, but it was also new sets of people, and it was a somewhat different culture. Professors like to do research, because the more research grants that they can get, the fewer classes they must teach, and they can sort of go forward with that. But it's a continual process of discovery, and each time you've got a research project, if you discover something new, then that gives you the impetus to write another grant request to proliferate your own job. The other part of the professors is they end up mentoring a lot of young students, a lot of students, in that if they get this grant, then they can put students to work doing different parts and pieces, gathering the data for them, processing the data. In a few cases, the professor gets all the credit, yet he's had a team of students doing some seventy-five-to-ninety percent of the work, even writing the papers, and then they edit them and so forth.

Probably the biggest misuse of that—oh, there's several—but when we were shopping around for jobs, *perestroika*, someone got the word that the Soviets had a technology that they were trying to shop around the US to see if, of course, they could get money. One of them was called aluminum circuit technology.

This was where they just take a plate of aluminum and they would sputter a layer, resistive layer, but they would end up putting circuits on a layer of aluminum, and then they could use that layer of aluminum for the sides of an electronic device. So, in effect, it was both the mechanical structure and the communication structure. They did that for a variety of power supplies and other high-powered equipment aboard the MIG-29. So, we were invited to investigate that technology to see if we could use it within our computers. I ended up being on a technology investigation team that went to the electronic research lab in Minsk, and we looked at that, we evaluated that technology to see could we use it. Well, the head of that radio technology institute had his name on about 460-some Soviet patents. His name was the first name on every one of those patents that had been done by his professors and the professors' students, and so forth. He probably didn't understand ... he may have understood one or two of them.

LB: Not because they did it all. It was all teams of people. Anyway, that's ... like I say, that was another interesting thing—we spent three weeks over there investigating. That was very interesting. The night before we left there, I planned with our hotel restaurant, putting together a dinner for our hosts and made all the arrangements "po Russkie," in Russian. Ukrainian language and Russian language are quite similar, like American and English are similar. There are differences.

LB: Because it was more of a macro technology, and all our newer components were going with embedded microprocessors that were so small. And that technology itself was not pluggable. If there was a failure, you had to take the entire thing. You couldn't just take a component out and replace it. Since even the 1100 Series had had racks, chassis, the vacuum tubes. We have always gone with a pluggable, modular-type approach, so that it could readily be maintained, unlike you've even seen where now even the iPhone, they're allowing people to know how to go into them.

LB: When I left the university in 2001, I had sort of phased out of environment with a couple of consulting contracts. But anyway, I had been doing a website for another organization associated with the U, and I had joined the retirees' club, and I thought they should have a website so people could find this and that, so I put together a proposal. I went to a board meeting, I said, hey, I'll do a website for you guys for so many dollars. They weren't interested in spending money. Then later, it was at one of the gatherings that we were at, probably a Syttende Mai luncheon, or one of the Unihogs luncheons that old-timers like to go to and socialize. That Ole had said that, hey, they needed some help because Lockheed Martin had been challenged with 2005, and they have been challenged with 2012 was the hundredth anniversary of Lockheed. From down above, they said, hey, all of you guys that are acquisitions, twenty-some groups, should write up your history, and so they were challenged within the company.
They came to the retirees' club. Well, I talked to Ole before and said, well, yeah, that sounds interesting, what that history is. He said, why don't we form a committee, I'll co-chair it with you. And one of the guys that came there is Dick Lundgren, and he declined an opportunity to talk here for his own reasons—but I had met Dick in Holland in '72, because he was an instructor that came over to teach a class, and I co-taught a couple classes there. Anyway, he said history is a focus at the Babbage Institute, and he had visited Babbage a couple times.

So, Dick set up a meeting in January 2006 with Dr. Arthur Norberg, who was the director at that time to "get some advice." Thus Dick, [John Skonnord], and I and who was working at Lockheed Martin met with Dr. Norberg. He said, well, if you guys could get 200 career summaries, you would have told the story. That was sort of our marching order. I said maybe if we set up a website, we could solicit through a website. Then Dick Olson, through John Skonnord, said, well, he would try to get people to write career summaries, and Dick said he would help and edit. So anyway, that's sort of how it started. I had a personal website at that time, so I just did a page on that and eventually merged that with the club website that was a Yahoo-type website. We had a free website for a few years until they quit giving away freebies. The VIP Club was originated by Millie Gignac, bless her soul—she passed away last May at the age of one hundred and a few months. Anyway, she was the first female director at Sperry. And that story is in various places. We started getting people to send their career summaries, we sorted as if it would be chapters in a book, and invited people to write their stories—you write it; we'll find a place for it. We've now been doing this for fifteen years, and I don't think we're quite done yet, because there's still a couple of holes. But we've got about two hundred ... no, we've got a hundred and ninety-six, if you will, career summaries that are almost stand-alone, but we've also got some additional, between three and four-hundred project stories or hardware stories, or stories of this, stories of that.

Here is, in one case, you could call it a computer line. It's almost like the DNA. Computers have something called an instruction set architecture, and it's based on the bit-length, so we've got a thirty-bit career, or list of computers with thirty bits, and then you've got thirty-six. Very early computers were twenty-four bits. And one of the reasons for that is because when you have an adding machine and you add two digits together, and then if you must do a carry, it takes a certain amount of electric time to propagate to the next bit, the next bit, the next bit, so on and so forth. It takes time to get there, and the reason some of the early computers where only twenty-four bits is because the circuitry wasn't fast enough. Then when they went through vacuum tubes to germanium, transistors, why they could do a little bit more in parallel, and then they converted from germanium to silicon, because they were a little bit lower power, and they were more reliable. That's the technology transition, and then somebody discovered that you could put all of these into a piece of silicon and call it an integrated circuit, to where you get multiple transistors, and you went through multiple levels of those. That's all the technology evolution, and there's something called Moore's Law that comes into effect.

RB: No, I do think the VIP Club website really is ... I mean, it's almost like its own Wikipedia at this point.

LB: But see we thought about doing ... it is to a degree Wikipedia, but we did not want to just blindly throw it open and have people plug things in, and I have literally edited or scanned every piece on that site. I haven't made an editorial change to it since this morning.

LB: There is not. I would think that John Westergren would bring another view of it, and I think the more views you have, you find different departments, and he, too, went from a—we call it a gunny, who is usually a sergeant in the Marines—they know how to take care of things and how to make things happen. And he was instrumental in getting all the artifacts that we collected at Lockheed Martin transferred into the Dakota County Historical Society, the Lawshe Memorial Museum.

There's a couple of people that deserve credit for making that happen. One of them was Chad Roberts. He's now president of the Ramsey County Historical Society. He was the Dakota County Historical Society (DCHS) executive director at the time that Lockheed Martin started to close in 2010. Two people on the Dakota County Historical Society board at that time - Bernie Jansen and Millie Gignac - brought Chad into the Lockheed Martin facility and showed him some of the stuff we'd been doing. Of course, he left DCHS and became president of the Ramsey County Historical Society.
When Unisys closed Plant 4 in Roseville, they have a set of shadow boxes, a little bit larger than a large screen TV. They've got this model, that model, going back to the 1103, big chassis with vacuum tubes. Now they took those shadow boxes from Roseville, and they moved them down to the current Unisys Eagan plant. If Unisys in Eagan hadn't taken them or kept them and moved them, then Chad was willing to take them for the Ramsey County Historical Society. The reason I know that, because I was in the interface, trying to make that happen.

RB: Nice. Since we're giving credit, I do want to take one last second to just talk about ... you mentioned Nam Palzer...

LB: Norm Palzer, P-a-l-z-e-r.

RB: Sorry, I can't even read my own handwriting. He was instrumental in getting the 1946 prototype drum memory to the Minnesota Historical Society.

LB: Because I think it was one of his sons. Norm passed away a couple of years ago. By the way, the retirees club has a newsletter—it used to be monthly, then it transitioned to about ten per year, and it's now every other month—but one of the things that we do in that, we ask our members, hey, if you learn of a retiree or a former worker passing, will you let us know. We have an obit section. Well, on the website, under the People, we have a Deceased. What we had done at one of the events, the Unihogs events, is we read, "here's people passed away in the last year". Well, we put them into a list, year by year by year, and then about a year, just about two years ago, one of the guys had put them together and alphabetized them. So, if we look at that we could see which newsletter Norm's obit was in. But if you look at the People Chapter and you click on the Deceased tab, then up at the top you'll see where you got the year-by-year PDF files, then you got the alphabetical file.
Anyway, the VIP Club is a social group.

EPILOG

My apologies for jumping around between technologies, projects, and people. My personal pieces of Information Technology history are https://vipclubmn.org/People1.html#Benson and https://vipclubmn.org/PeopleDocImg/Vol01Book1.pdf. I think these are much more sequential than these previous 11 pages.
Browse through https://vipclubmn.org/People.html then consider writing your career story if we don't already have it.
Thanks.