

An Interview with
RICHARD VINCENT

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Conducted by Craig Solomonson

on

8 March 1983

Charles Babbage Institute
Center for the History of Information Processing
University of Minnesota, Minneapolis

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Abstract

Vincent reviews his involvement with computing from 1949 to the early 1970s. He relates how he first learned about computers in Air Force punch card operator school and ran IBM punched card machines during the Korean War. Vincent joined International Harvester after the war, operating an IBM 602A and later one of the first IBM 705 computers. He discusses the problems with the 705 and the field support offered by IBM. In 1959 Vincent joined Montgomery Ward, where he operated an early drum computer, the IBM 650. Vincent describes the difficulties of operating a drum computer. In 1961 Vincent joined Pillsbury, where he converted the company from an IBM punched card system to a General Electric 225 computer. He describes subsequent computer acquisitions at Pillsbury, including the 1965 acquisition of a GE 625, one of the early multi-processing computers. In 1969 Vincent joined Standard Computer Corporation, founded by engineers from the Call-A-Computer Division of Pillsbury, where he worked with Lazlo Rocozi on an IBM 7090 take-off, the IC 7000. In 1971 Vincent returned to Pillsbury and programmed the GE 635 in Cobol. Vincent discusses the problems of integrating different computer systems both within Pillsbury and with other companies. He concludes by discussing why Pillsbury uses GE (now Honeywell) instead of IBM computers.

DICK VINCENT INTERVIEW

DATE: 8 March 1983

INTERVIEWER: Craig Solomonson

LOCATION: Pillsbury Corporation (Minneapolis, MN)

VINCENT: You don't have to have a lot of smarts to be in the computer industry. I've said it all my life and I'll continue to say it you've got to have common sense. You got to have you know, some of the good sense the good lord gave you know right from wrong. How to add two and two on a piece of paper although your been binary machine so long and I can count as fast binary as I can decimal point damn near, up to 564 something you know 564,000 but just because you've memorized it and you've learned things over a period of twenty years you can do that. I had trouble getting out of high school. Not trouble getting out I was smart enough, but I was like the kids a lot of the kids said hey, the educational system I was anti. I hated my biology teacher, I hated the dean of boys.

SOLOMONSON: Where did you go to school at?

VINCENT: North High in Minneapolis. And I just--school bored me. You know but I didn't have any other direction so therefore I got a pass from Ridge Cal I think I went through high school with C's or something like that. I probably should have had at least B's and probably a lot of A's type thing. The Air Force the greatest thing that ever happened to me.

SOLOMONSON: Did you go right into the Air Force?

VINCENT: I got out of high school in June of 1948 went into the Air Force on New Year's Eve in 1949 which was December 31, 1948. Greatest thing that ever happened to me was the military. That's why I'm also an advocate of compulsory military training. Okay, that's neither here nor there but I am an advocate of it. In the Air Force I was lucky enough through some of the antiquated examinations that they gave you and tests that they gave you, screening tests and basic and things like that to get selected for the punch card operator school at ? Air Force base in Denver Colorado. It's a great school, probably one of the best the Air Force ever had. Hell, you had a six or

seven month waiting list. Got done with basic in April, did not start in school at ? Air Force base until like October. It's about a twelve or fourteen week class. I was pulling odd jobs, learned how to operate a movie camera and things like that at the base and KP and you checked in in the morning for you know dirt details you know some days you just sat around the barracks all day just waiting for something to do, until you get into school. The punch card class at Denver was great. I was so interested in that to pick up an 80 punch card, and you see those holes in it and I'd never been exposed to anything like this...

SOLOMONSON: You'd never seen it before that.

VINCENT: Was fascinated. I said my god, that's a real neat way of keeping track of things. And I learned it, you know you learned how to run the sorters and colliers and reproducers...

SOLOMONSON: What kind of equipment were they using then?

VINCENT: Those in those days were the 402s and 403 tabulating machines, IBM. 40 you the old 402s and 403 well they had a 405 before that but that was the old 88 keyboard machine used to call it used to have 45 alpha numeric character positions and 43 numeric only print positions on the right hand side so anything alphabetic you had to print on the left side of the paper and anything that was numeric you had to print on the right side of the tape thing you know like for ? for invoicing and you know some crap like that. But you learned how to wire them, you learned about selecting the basics of I call the common sense of logical flow, that's the best way that I can put it. Is that you're reading a card in, what do you want to do with that card, you want to read two fields, you want to calculate them, you want to extend them, you just want to accumulate them, you know you had coselectors and pilotselectors and all that jazz on them but it was just a matter of you could sit down and you know by going through the manual you could determine anything you wanted to do and you could damn near do it. It was the old 60 cards a minute they got as fast as 100 cards a minute and they would process them at that rate and just reading a punch card at that speed and printing out a calculated result you know it's just kind of fascinating, that's what started it all.

SOLOMONSON: Were you aware at that time then of computers at all?

VINCENT: Computers in 1950 as far as I knew were non extinct outside of the adam bomb. You know everybody had said that this thing was without the help of computers that the calculations that were necessary in making the adam bomb and that would have been impossible because of what the ENIAC and MINAC did back in 1943 you know they did in three hours what it would take a normal human being 2 years or something like that. And it was just slow as hell. When you really think back upon it but that was the amount of the time it would have taken for calculation.

SOLOMONSON: So then once you got the training here at Denver, what was next?

VINCENT: Okay, then I got shipped overseas. I got into a real good Air Force insulation 20 statistical services unit in Tokyo Japan far East Air Force headquarters. FEAF. Far East Air Force Headquarters. FEAF. And we had tabulating machines and that's statistical reporting unit, it was like a oh, it was like a big room and we had three 402s, had about a dozen sorters, three reproducers, three collators, and about ten keypunchers. Keypunchers in the literary term meaning probably six keypunchers and four verifiers type used to originate the punch cards that used to be done ? . And used to work with punch card files and I was one of the first one over there, I helped a guy on a what they called a locator file. Now if you can figure out how many people were in the Far East Air Force in 1950, '51, and '52, it amounted to, it seems to me about close to 200,000 personnel. That locator file was just to keep track of where all these people were. Name, rank, serial number, EPO number, what their military occupational service code was, date of last promotion, just the basic...

SOLOMONSON: How much?

VINCENT: 80 columns. One card on each man, woman, child that was in the Air Force at that time. And we used to take that file 200,000 cards and if you can imagine a tray of cards held 3,000 cards. How big that locator file was. And we used to send that file through 3 machines a day. That's how often you had to reproduce those cards and get new cards for the ones that wore out how often you had jams that you had to reproduce them because after so long those

cards disintegrated you know there like a piece of paper that's been put out in your driveway and stomped on ? and things like that. But that really got my attention that you could handle all that data, that 200,000, you know just keeping track of 200,000 some items as we called them they're really people which was keeping track of where the hell they were. Turning out reports, recaps by oh god you could sort those cards first some way and then you'd run a report and then you'd sort them the other way and you run this long on a 24 hour cycle. We used all three tabulators to do this.

SOLOMONSON: Same equipment the whole time then, through '52, same IBM equipment?

VINCENT: All punch card equipment. Two years, seven months, and six days. And at the time that I left, and I got promoted, I did you know all of that kind of good stuff. But I was interested, I took pride in it, I was interested in it, I got good promotions, I was Staff Sergeant when I left and when it come time to leave after two and a half years you know it's the old military routine they call you in the ask you hey you want to reenlist, extend your term duty over here for six months we'll give you another ? . I said no, I've seen enough, I just assume see a white woman. I want to get back, my eyes are becoming more slanted every day. I just want to get the hell out of here, okay. So I came back and went down to Randolph Air Force Base in San Antonio Texas, got discharged down there oh about four months later and that was when my dad died. I joined the Air Force for three years, and I was in Harry Truman's era where I got one free ? for three get one free type. Well, I got out three months early because my dad died and I was just screwing around the last six months anyway, hell we were working in a tabulating area down in Randolph just to sign temporary duty and I got out on September 22, 1952, I went to work for International Harvester in St. Paul in a punch card room over there in the parts depot on Eustus and University right off Eustus from the University in St. Paul.

SOLOMONSON: Is that the where 280...

VINCENT: Where 280 goes through now.

SOLOMONSON: And that was in 19...

VINCENT: '52. In 1952. I got discharged from the service on September 22 and went to work for International Harvester on October 6.

SOLOMONSON: Okay, what...

VINCENT: Punched-cards.

SOLOMONSON: punch cards. Okay. And what kind of equipment were they using then?

VINCENT: They had the normal data entry what we call it today the keypunchers and verifiers, colliers, sorters...

SOLOMONSON: IBM equipment?

VINCENT: IBM equipment. Straight IBM. The heavy calculators in those days were your 602As.

SOLOMONSON: Did International have that then?

VINCENT: Yes.

SOLOMONSON: 602A calculator.

VINCENT: Those were the old punch card calculators if you've ever seen one run it runs at about 20 cards a minute, reads a card it looks like an old automatic key puncher. Reads a card, senses it, calculates it, puts it over in a stack. Punches in all those same operations. Punches an extension model. That's all it did. Read a card use it for calculator or accumulator, depending on the card. You got programming--it was the former 604 which to me was really the first computer. We'll talk about the 604 after awhile but the 604 was the in my own mind, the first computer although it

was still a punch card machine. The 604 had plugged more tight easy instructions it was a first effort of IBM's in a true hexadecimal system, things like this. I worked there for almost four years in the summer of '56 International Harvester had decided that they wanted to expand into the computer business that they knew that they had to have grow, that they knew that they wanted to centralize some of their data processing activities; that they needed faster compute power and all the good things that went with it. International Harvester at that time went around the country and there were eleven parts depots such as the one I worked at. Then they gave tests which they called computer aptitude tests to get a selection process for twelve people to start the initial computer room, three of us the pick from the St. Paul parts company. A good friend of mine today that works at Pillsbury and I were both picked and a guy named Jay Nelson who is now vice president of data processing for I think it is Case Tractor and he may be in England.

SOLOMONSON: Who started the idea at International of computerizing like that?

VINCENT: Well there was the contacts out of the headquarters in Chicago I'm sure in a close affiliation with IBM and the punch card market and you know some people who had down in Chicago which I really don't know who they are Art Ramsey(?) was probably one of the instigators. Art was one of the old punch card people who worked in the Michigan Avenue International Harvester when the International Harvester when they make a change in a plugboard or a way of redoing some type of processing, Art would be the guy responsible for coordinating to make sure all eleven parts depots did it the same way. Make this change, send out the documentation, make this change, this is the way you do it starting March 1, that type of thing. Art was in that first computer group.

SOLOMONSON: So now where did the first group locate then?

VINCENT: Broadview Illinois. At the parts depot in Broadview Illinois. We went down there in the fall of '56 and went to IBM's 705 programming school and this was an IBM model 2 and we got out of there and it was just Thanksgiving 1956 and I drove back to Minnesota the very foggy night. Never seen so many horses and cows and pigs run across the highway in all my life. I was having a celebration and the night before and driving

leaving Chicago or La Grange Illinois.

SOLOMONSON: Now this school was put on by IBM for the group?

VINCENT: Yes, it was part of the training part of getting the computer and it was offered free and this was for training the people.

SOLOMONSON: Now this must have been one of the real early installations then for the 705.

VINCENT: Probably I would guess tenth in the United States. A mistake was made in the selection of those people which you will find out when I let you have this but that's where the first mistake was made. I can't say that for the three people I were--picked from St. Paul the parts depot, because I think we were all fairly young. It was Paul Hicks involved at that time and we got some older people where they didn't know where else to put them. We had about four people out of that group of twelve who had no business being in that computer group. They were people that were well over 50, 55 years of age, and they had been shuffled off into a place to keep them because they had some smarts maybe but they had old style 1930 ways. And they were awful difficult to cope with. For the what you call the young lions so to speak as a movie was made about. You cannot mix old blood and new--real old blood and real young blood and have an effective organization. Okay. You can mix all levels, if you read me. You know, you can put the older people with the middle people, with the middle younger people, with the very young people, and that's a very effective organization but you can't go to one extreme four on one end and eight on another end way down at the bottom and have an effective organization you just can't do it. I don't care what business you're in, you're going to have problems.

SOLOMONSON: So then the group the twelve then got the training and went back to their individual...

VINCENT: Oh, no. We stayed ...

SOLOMONSON: You stayed there...

VINCENT: And I was transferred down there, oh yes.

SOLOMONSON: Okay. And this was all new equipment then brought in and set up?

VINCENT: All new equipment brought in, we started programming in first part of December, 1956 and we probably put out our first applications got our computer in probably--I'm going to guess--January, 1957 put on our applications some of the smaller ones the easier ones in February, March 1957 with the majority of the ones we were initially doing put on before that summer, 1957. And those type applications were just a run of the gauntlet you know they were everything as ? stayed on their production, inventory controls was a big thing in those days the automatic ordering system, the back ordering, the invoicing, the statements for customers statements, at that time and they still are today International Harvester is still run based on a dealership type organization just like Ford, you know.

SOLOMONSON: Who put together the applications programs?

VINCENT: They were basically conversions of what was previously done on tabulating equipment. On the 402s, the 405s, the 403s...

SOLOMONSON: And your group made that transition?

VINCENT: Pulled them in from punch card equipment to computers.

SOLOMONSON: Okay. Now the 705 system that you had, what was the configuration of it, basically that the Unit looked like as far as hardware components?

VINCENT: The 705 that we had was a 16K bite machine. Occupied an entire room with 20 tape ? three printers,

a main frame, and a console. All the tapes were 200 BPI, 7 track at that time. It was a single job processor it was a batch machine, there were no remote entry of any type on it, you ran one job at time, and if you ran a job that only took three tapes, the other seventeen stood idle you that type situation. So it was a big scheduling problem you didn't run a ten or a fifteen tape job during the daytime hours you know there was program testing up till noon, you took and you ran semi production in the afternoon, some--the recompiles that were necessary and things like that in those days we were coding on autocoders they called it which was a oh a modified one step above the actual machine language early, you know the load a stories stuff type situation. But you we did a lot of data collection at those times in then we first started for crying out loud for two weeks I drove the van out to the airport because we didn't have anybody else to do it to pick up the cards that we being shipped in from all these parts depots around the country. And it was fun, I had to down and get a class B driver's license to drive the van, but it was great I made about 20 trips a day to O'Hare airport you know and you're working 16, 20 hours a day and you could of cared less because it was all fun it was all new stuff.

SOLOMONSON: They shipped the cards in you shipped the reports back.

VINCENT: They air freighted them in and hell we computed them and either called them the hot figures on the phone or shipped them back out as soon as we got the printed reports and everything. The processing and that was--you had no dual processing in those days, if you wanted to print a tape, you come off of the main computer with a printable tape you physically dismount it from a handler and walked over to the printer which had a tape handler a company had and put that tape on there and print it. You had no automatic printing or anything like that.

SOLOMONSON: How about in terms of languages now, the autocoding you say is one step above machine, did you do any in machine level or

VINCENT: You did all your maintenance and patches at those times, you could, what you would do to run a job you'd load in your compiled object deck, everything was wire object decks and everything were run from punch cards, binary punch cards and you could manually in machine language put in patches behind that and you would

overlay what was previously there. So when you compile a program you always allowed oh heck 100 or 200 extra words because you needed memory hat space. So when you want to patch something you'd transfer out and write you patches and what you wanted to do and transfer back that would all be done in machine language.

SOLOMONSON: What were the problems then, you've got this new computer system, hardware, you've got your old programming routines from the punch card equipment.

VINCENT: Programming routine.

SOLOMONSON: Alright, you've got your routines,

VINCENT: Okay, I'll buy that.

SOLOMONSON: Okay, now when you want to put these new applications into a program so--is that a good term program?

VINCENT: Yes, it was in the effect what you were doing is trying to take large amounts of data and run them through a program on the IBM 705 and come out with results with no interruptions that was the goal. Okay if you could process 11 parts depots activity in one applications in an hour or an hour and fifteen minutes, you know you'd have an advantage because it was taken each one of those we had a fast card reader but it was an advantage because you were taking three hours of eleven parts depots processing away from it. So you were substituting an hour an hour and fifteen minutes for 33 hours that was scattered work. That was the advantage.

SOLOMONSON: Okay, how about in terms of the hardware now the 705 hardware were there shortcomings of the hardware that made your job of this conversion difficult. Did you have to overcome or was the hardware adequate?

VINCENT: No, the hardware was adequate because it was the first we had seen. It was the greatest thing since green apples, it was--we were awestruck by what the capabilities were in those days it was easy for the eight people who were the younger lions as they call them, to comprehend and as soon as you comprehended that then you could go onto something better; you'll say hey, I know how I can do things faster now. Where you got bogged down is trying to explain this to the older people in the group and trying to satisfy their curiosity in an acceptance type mode.

SOLOMONSON: How about acceptance, was management real accepting of this when you first got it rolling?

VINCENT: Management was smooth. Most of management did not know the details of what we were trying to do. Art Ramsey was one of them because he had been in the punch card world. Art never learned program on a computer. He just knew what had happened and knew we could do it that much faster, and therefore it was a race against speed, you know it was kind of like putting yourself behind a 300 horsepower car and going and entering yourself in the Indy.

SOLOMONSON: Was IBM helpful during this period. Did they actually come in then while you were undergoing this conversion and getting it going initially?

VINCENT: Yes. IBM had some very qualified people. One especially I remember a guy named Norm Tarnoff, I don't know where he is today, but he was the smartest Russian Jew I have ever met in my life.

SOLOMONSON: Norman Tarnoff.

VINCENT: T-a-r-n-o-f-f. He was a guy that was interested in what we were doing. IBM had a lot of qualified people but to get access to them was not always easy in those days. It's not easy today to get to the person you need to get to to get a problem solved. In those days, IBM had enough foresight to put what they call the application engineering person that's what Norm was, on your sight. Where he was there at least four hours a day. We could

talk to him about problems, how best to do things, how to take advantage of computer speed, what was the best way to do things you know you were moving data from one area memory to the other and how you got from one bank of memory to the other and how long you're going to retain that data, and what kind of ? you're going to build and things like that. Everything was on mag tape, you had no drum, you had no disk, you had no other media for storage and tape. And that was what he was good at. And Norm was excellent he was--I don't know where he is today--but he was a brilliant guy, he really was; well educated just a honey to work with, he really was, I'll never forget the guy.

SOLOMONSON: How about the hardware itself. Did you encounter many problems with down times or getting repairs made?

VINCENT: No, we had a staff in those days of four IBM engineers, full time on our side. One 705 machine four full time engineers. Usually the engineers are made up of one guy who was the lead engineer who had ? who knew that machine better than anybody else and they had you know they probably had three rookies or guys that were learning type things. You had four guys and those guys were on call twenty-four hours a day you had a problem, you had a machine malfunction, in those days I thought compared to tape reliability in those days versus what we have today, the tape reliability in those days was just as good as it is today. IBM had some good tape ? they really did. Printers didn't have any more problems than we have today, any of the peripheral equipment, the there was an old tube machine and you know it took, hell, four big boxes the size of my refrigerator just to hold the memory, and another four boxes the size of my refrigerator just for processors, you know all hooked together and cabled together a maze of cables and everything, but when something went wrong, hell they could fix it in just about the same amount of time they could fix it today really. No kicks at all and the service, the reliability of the equipment, like I said we had one of the earlier machines that was out we upgraded to a model 3 about a year later.

SOLOMONSON: Now you call this one was a model...

VINCENT: This here was a model two.

SOLOMONSON: Model two and then you went to a model three.

VINCENT: The IBM the 705 model one was a derivative of the old IBM 702 which was a scientific machine. And it was the first attempt of IBM's to make a data processing computer. While the 705 model one had a not too long of life and it was mostly in a oh, alpha sight type arrangement where they put it out and they control the environments and things like that. We had probably the tenth or twelfth bata sight type 705 which were deliverable systems and ones that people were using it was to prove a product, it really was. The model three was just an extension of another sixteen K of memory some goodies with some high powered instructions that would do things faster the some advantages of their own internal processing methods as we called them in those days of being able to move data internally faster I would imagine even in those days back in the late fifty's people thought about you know why did it take four boxes of old 16K of memory bites where now you can get it on a damn chip that's about a quarter inch square. So those were kind of some of the things they were thinking about in those days. But the model 3 was strictly a speed type upgrade as we called it.

SOLOMONSON: How long did International stay then with the 705 system?

VINCENT: About the time I left--I left International in January, 1959--and I think that same year they upgraded to an IBM 7080. And the 7080 was the well, really refer to it as the true second generation computer smaller boxes, more memory, faster processing, you know things like that. I can not even remember even the memory speed of the 705 I could look it up in some of the old manuals I have downstairs, but the 7080 was like 6, 7, 8 times as fast. In those days milliseconds were popular and those were the first--that was the first time in the last 50s that I heard of microseconds being expressed.

SOLOMONSON: Did you save your manuals from the 705?

VINCENT: I'd have to look them up someplace, I've got them around.

SOLOMONSON: Keep them for a museum.

VINCENT: Right. No, its a--I try to keep most of that stuff, some of it I threw away you know dumbness I mean gees you become bored of carting stuff around after awhile. So I left IBM's world. IBM's world in the case of the 705 in January of 1959 and went to International Harvester, No, went to Montgomery Wards. And at that time it was a chance to move into supervisory work, it was a chance to utilize what I had learned in two and a half years since what I was in on what I call the original you know computer conversion it ran the gauntlet and did the long hours and paid my dues so to speak and I thought now I've got to get some supervisory experience, got to find out if I can handle people and things like that. Went to a punch card--in fact a punch card insulation at Montgomery Wards in a regional office in downtown Chicago.

SOLOMONSON: So you were then the supervisory of the punch card operation there, okay.

VINCENT: And that equipment was back to the old punch card line the biggest we had was a 604 calculator. Worked in a regional office consolidating mostly catalogs, sales, doing accounting statements at month end, the old long hour grind of pawning out the punch card stuff, at that time in the late 50s, early 60s during the 59, 60, 61 era Avil Haramon or Avery that was the chairman of the board of Montgomery Wards was a very funny guy. He liked to keep all the money of the corporation in his pocket.

SOLOMONSON: Safe place.

VINCENT: Well, Montgomery Wards is paying for it today, I just read an article the other night in the paper you know trouble and they were in trouble when I left I could see that. But I went there strictly for the experience of supervising and we graduated from that regional office into a central location that included my exposure to the old 650 IBM REMAC. That was IBM's first venture into a drum computer.

SOLOMONSON: Okay, so now that conversion took place while you were there?

VINCENT: Yes.

SOLOMONSON: RAMAC.

VINCENT: Yes, the old 650.

SOLOMONSON: What when on to prompt that change. Were you into that

VINCENT: Well, speed. Horrendous files at that time in Montgomery Wards catalog repertoire they had something like 350,000, near 400,000 different merchandisable products if I can say that. In other words they put out a catalog there was usually 200, 250,000 types of stuff in that catalog, you know clothing or what the hell whatever you want to call it. Horrendous files we still maintained the punch card unit because those are the ones that handle the inventory the accounting, and things like that, but we put some of our catalog control and that stuff on that old 650 and it was strictly for when we were updating inventory we wanted to be able to get to a catalog order number or a part number as we called them and wanted to be able to immediately update the inventory and to show us if we had enough inventory to fill that order, things like that. So we were running cycles of about four day of processing orders against this 21 reel catalog file inventory. Twenty one tape reels, 2400 foot tape, 200 BPI, 7 track tape. Twenty one reels in one file. If you could imagine anything so stupid.

SOLOMONSON: Why the choice of the RAMAC system then, what...

VINCENT: Speed, it was the best idea we had at that time without going to a full fledged computer. Speed mixed with economics. The 650 was in those days with Montgomery Wards about a tenth of the price of the 705, so therefore you know IBM said no you can do your job on a 650, we filled up the whole RAM file with the catalog and just the inventory you know, how many hat stored where, what the on order and then you process receipts and withdrawals from that inventory and you come out with status type reports and that was all we did on that damn thing.

SOLOMONSON: Did you get back into the programming at that point then?

VINCENT: No. Did not, it was strictly supervision trying to convert punch card operators into computer operators, trying to teach them from handling punch cards and how do you handle tape and care for tape and things like that.

SOLOMONSON: Were there problems then that cropped up with the 650 system in that conversion, or did it prove to be what you envisioned it to be?

VINCENT: No, there were problems because on a 650 we ran into a lot of tape problems and in the 650 was not a good data processing computer. The drum concept in computers had a lot of holes in it. The mechanics of spinning a drum at several thousand revolutions a minute and then trying to access data out of that you don't know big that drum was. I mean my god that sucker was three foot in diameter and four foot long and house that would look like a casket for sky high Lee. When that thing went down, it was down for days. And the reliability--it just was not a good concept this carries over into my early General Electric days the first drum on the General Electric 625 was not a good drum. Drums were eliminated from computers it was proven you just could not rely on them.

SOLOMONSON: What did you do when it went down for days then?

VINCENT: You didn't process. You were on the phone a lot.

SOLOMONSON: Did IBM have people out there...

VINCENT: Oh, yes.

SOLOMONSON: ...but they still could not overcome the problems.

VINCENT: Hell, it took them four to six hours just to replace a drum and then you would have to rebuild all your files from tape backup you know twenty one reels my god you know how long it takes to load twenty one reels of 200 BPI you can see you're talking about an 8 to 10 hour load you know you're talking about several days of processing through one--just through one pass--and then you've got to dump that drum periodically see that's what we did, we dumped that thing about twice a day so you accumulated a lot of backup is what you did. And that was type of problems we had. Is you know the reliability of the thing, it was a mechanical ? the 650 did not have along life in IBM, it really didn't.

SOLOMONSON: How long did you have it at Montgomery Wards.

VINCENT: Well, it came it initially right before I got there, it came in in 1958, I left in '61 and I think they replaced it with a 1410 in '62, the year after I left. That was my recommendation.

SOLOMONSON: Were you in a position then that where you could recommend equipment and were able to deal...

VINCENT: Only from an operational standpoint. We turned out a monthly progress letter as it was and you wrote down your complaints you wrote down why you were late on reports and why things didn't get out, problems in general and most of it for that two and a half years I was at Montgomery Wards from January '59 to August 1961, was strictly you were too damn machine dependent. You could get people and you could pay them overtime and heck that was the cheap part of it cause people were cheap then, so you didn't mind paying overtime.

SOLOMONSON: Do you think that prompted you to move on.

VINCENT: No, I moved back to Minneapolis strictly because I wanted to get back to Minnesota. I like Montgomery Wards I wouldn't trade the experience for anything I think they were backward and they were slow and they were awful tight but no more it's the same in all large corporations as far as I'm concerned. You face that same problem in

all large corporations. We were not overly bogged down with paperwork in those days, but you were bogged down with just the pressure of responsibility to get things out you just didn't have enough--the days weren't long enough--good thing there were Saturdays and Sundays. But that I guess after two and a half years that gets awful tiresome you forward to working three Saturdays a month and two Sundays it doesn't do anything for your ego.

SOLOMONSON: How many giants did you have on that system?

VINCENT: On the 650 there were four tape drivers. It was strictly two input drives and two output drives cause you swapped and put ? and you swapped and put ? and it was a batch machine you could only run one thing at a time and it took you on that twenty one reel tape file, it took it the best condition five hours around. You had four cycles a day. If you had trouble, you didn't get four cycles a day, it was that simple but that's what it was you had a back up frequently and that's what all the tape time was tied up in, you processed your input you would all be accumulated off line put on mag tape, you'd start your processing and.

SOLOMONSON: What kind of languages were you dealing with on that system?

VINCENT: On the old 650?

TAPE 1/SIDE 2

VINCENT: ...but I do know it was mostly a machine language it had the same concept you loaded your programs from object deck they were compiled and you had the ability to patch them and load the patches in with your object deck. When the deck got so big you made all your corrections in your source code and you recompile it. You didn't have room on the RAMAC to maintain your source so you had to have big card files outside of your source.

SOLOMONSON: Then in '61 back to Minneapolis.

VINCENT: I had an opportunity to come back, it was kind of ironic a little side note on that I worked at International

Harvester with a guy named Frank Paul. Frank Paul is now the vice president of data processing in Northwestern National Bank in the computer center in Minneapolis I've known Frank for I think its since 1956. He's a hell of a guy. About July 20, 1961, we had not had a particularly good day sitting down in that old sweat tab room at Montgomery Wards of Chicago the phone rang and I answered the phone and I said hi Frank without him saying anything cause I knew it was him; esp? He said how fast can you get to Minneapolis? And I said tomorrow morning eastern 4:20 I think they have a flight. He said I'll meet you at the airport at 6:00. I come up and interview with Pillsbury at that time as it was starting their own computer group was had at General Electric 225 on order and I flew back the next day, they made me an offer before I left that day which was 25 dollars a month less than I was making in Chicago, but I had had it at Wards and I wanted to get back to Minnesota that bad that 25 dollars didn't mean beans they were going to move me had agreed to help me sell my house you know a few things like that which meant quite a bit. Pay all my expenses moving I went back the next day gave my notice at Wards and I started to work at Pillsbury on August 7, 1961.

SOLOMONSON: Now was Frank the head of this group here?

VINCENT: Yes. Frank Paul generally Frank Paul and Jack Leder had been in systems work at Pillsbury for about three years before that was a manager in systems department and had been in different areas in systems. Jack Leder was a kind of a punch card guru of Pillsbury, Pillsbury operated very similar to Wards where they had several distribution centers around the country at that time we were running out of combination of punch card equipment and 305 RAMAC IBM type equipment, all IBM equipment. And we were going to start converting applications onto a General Electric 225. The GE 225 was the after runner of the GE 210 which I see the picture of...

SOLOMONSON: The one I had the fortune of getting a hold of part of a system here last summer.

VINCENT: But it was that I was scared to death when I first got exp[erience]. They told me what a GE 225 was I said fine I programmed one computer I can program any computer. And that's the way it really turned out to be. Once you get a certain amount of computer it doesn't matter what kind of computer your programming, it really

doesn't. I worked my first exposure to the GE 225 after about three days it dawned on me that this was a binary computer and I worked with a digital computer at IBM. IBM as far as I was concerned was digital.

SOLOMONSON: That's decimal.

VINCENT: Decimal digital ? with me. Yes, IBM had some hexadecimal gimmicks and had the over bits which created the alphabetical characters and things like that and that was fine I understood that but the GE 225 was a true binary computer. One, two, four, eight, sixteen, thirty-two, sixty-four, one twenty eight, two fifty six, five twelve, you know you had the ten twenty four forty eight, forty nine seconds to christ I just couldn't believe it it took me about three days to realize before we even sat into school I was at Pillsbury for about three weeks before school started and I was just looking through manuals and trying to get familiar with ? applications and it kind of dawned on me that I shouldn't think about this binary what are they talking about this binary. Didn't mean nothing to me. After you get it and you realize what they're trying to do it only took me about a day to realize what they were really trying to do it's the only way to go. Why do we have this decimal language anyway. Binary is the only thing that counts. Everything can be made from binary. Power too the greatest language ever. So we started school in it was the latter part of August in General Electric sent up an instructor to Minneapolis and we also had twelve people in that group ironically twelve people were enhanced by the three manager structure that we had Jim Rudy was in charge of the group, Frank Paul and Jack Leber worked for Jim and we had at that time what they called divisional representatives. Pillsbury company at that time was broken into four divisions and there was a computer liaison person from each division that was part of our group. These guys were not programmers, they were business smart type people. Controllers, ? things like that. That helped tremendously. We all went to school learned the programming at that time on a GE 225 which they called GMAP. Not with the E on it. And what it was General Electric's machine applications programming or some damn thing like that. M ? story, receive, transmit, you know it was a mnemonic language had a repertoire of instructions probably they probably had a full 64 but we probably only had to know 40 or 45 of them. The rest of them were internal I/O movements and things like that.

SOLOMONSON: So was this conversion to the 225 now was this a conversion for Pillsbury into their first computer

system.

VINCENT: Yes.

SOLOMONSON: Okay, and previously they had been...

VINCENT: They been on IBM equipment 604 type sorters, collators, you know calculators, tab machines, tab machines 402, 403

SOLOMONSON: This is old hat for you know, third conversion

VINCENT: I've been here before this is just right up my ally you know make 800 dollars a month I'm living in king's heaven. This was right up my ally. I really had fun in those days. We had a group of people about twelve people that started were all we can call them young but we didn't have any older people. We had--I was 31 at that time when I can here in 1961 the oldest person in the group was probably 34 or 35 the youngest person in the group was probably 24 or 25. Man what a group of workers that was.

SOLOMONSON: Was Al in that group, or did he come later?

VINCENT: No, Al was with General Electric as an engineer he was probably still in the Air Force at that time. He came to General Electric in about like '63 or '64 and was come from the engineering side where we first made acquaintance with him in like '65 or '66. It's not Al it's E-L.

SOLOMONSON: It's El. What's the E-L stand for now?

VINCENT: Elton.

SOLOMONSON: Elton. I've often wondered if it was Alvin or...

VINCENT: Elton. E-L-T-O-N. Elton Bold.

SOLOMONSON: I never knew that until one day I went into his office and I finally saw his name there.

VINCENT: Everyone calls him Al Bolden...Bolton...Bold one.

SOLOMONSON: Next time I see him I'll pronounce it right.

VINCENT: I ? giving him some hell about something.

SOLOMONSON: El and I talked a little bit about his early UNIVAC days. And the final computers he worked on he was telling about Monday morning he turned on the switch and you sit back and you just look for smoke. Then they would go out and start replacing tubes and fix the shorted out pieces.

VINCENT: Well, we had that on the 705 too back in the International Harvester days we never turned that computer off cause when you turned it off as you occasionally did on a Saturday or some Saturday night if everything was going good and then you fired it up early Monday morning, hell you always blew a dozen tubes. Invariably. So the engineers were the guys that powered it up. You couldn't turn the machine on. An operator did not go in and turn the machine up the engineers powered it up. Cause they had to replace a half a dozen or a dozen tubes in it ? diagnostics and things they had to do.

SOLOMONSON: How about at Pillsbury now, how did the conversion go over there, smoothly or otherwise?

VINCENT: The original conversions I think went remarkably well. We converted applications from the IBM punch card systems to a binary General Electric computer in a batch environment cause the GE 225 was a single processing

type environment, we loaded data bases, we replaced the 305 RAMAX and the distribution centers because we were able to keep all the inventory locally. We had hooked to the 225 a ? 30 which was my first exposure to a front end type situation of communications lines that we collected data and we that 30 this data was transferred to the drum file the old DSU 204 which was a 20 platter disk system which I have one out in the garage and I think I gave you one.

SOLOMONSON: The big one.

VINCENT: Yes, it's about three foot in diameter.

SOLOMONSON: Yes, I've got one.

VINCENT: I'm going to make a coffee table out of the one like that in the garage.

SOLOMONSON: If you need another one I've got a few extras.

VINCENT: The 204 was initially a pretty reliable disk system for disk it was the first...

SOLOMONSON: Now was that Honeywell or GE?

VINCENT: No, the 204 was really it was General Electric.

SOLOMONSON: It was General Electric, okay.

VINCENT: I think that General Electric did not manufacture the 204. I think Control Data manufactured the 204 but then General Electric had a purchasing agreement with them as best I can recollect at least. But that was the first data base. In 1962 in a weak inverted applications to replace the old IBM 305 RAMAC type situations and the distribution

centers and where the combination of the punch card systems that were being run in the distribution centers and at the old office payroll, inventories, invoicing, orders, transmission orders, or the Daynet 30 going out to your first teletype equipment the old KSR 35 machines, you know the old 10 characters a second clackers as we called them and I had one for many years in my basement, not here, but in the other house but it was the just the combination of things the main things interesting for so long you know four or five years, it was just fun. We ended up the explosion in business toward computers took place in the early '60s. We couldn't do enough fast enough for Pillsbury in the early '60s to satisfy everybody's needs.

SOLOMONSON: Who's everybody now?

VINCENT: Well, all the different people that wanted things done.

SOLOMONSON: Okay, so you...

VINCENT: You had twelve programmers in that original group, my god we started exploding and hiring people outside as fast as you could and these were where some of the mistakes were made. You started hiring people who hopefully had some kind of computer programming experience but the big thing especially when you got into the mid late '60s was the emphasis on gees getting college degree people you know personnel and that stuff. That's where the downfall started, in my estimation.

SOLOMONSON: Now, when the explosion, you know you said there was so much they wanted to do are you talking about like the branch offices, or the management people or...

VINCENT: Everybody.

SOLOMONSON: Everybody wanted...there work done.

VINCENT: People were computer nuts from 1963 to 1967. They were computer nuts. If you didn't have something run on a computer you were nobody. And it was it seemed like it was more of a prestige type thing rather than an economical thing. If you didn't have your business systems automated, you were nobody.

SOLOMONSON: What would be an example of that now, what...

VINCENT: Well, accounts payable department. Where you used to have a battery 20 or 25 gals processing invoices, typing out checks, and so fourth, to put that on a computer probably took 6 months effort of a programmers time, two or three months debugging and satisfying auditing needs, time and then a conversion to be able to get bills in and process at that time punch cards cause you didn't have any kind of remote on line data entry as we know it today where everything is you know punch cards have been eliminated and the amount of money that was spent in those days did not justify the systems. In other words I could you still had to have five gals just to do the auditing and the checking and the customer replys and things like that in your accounts payable system well so we replaced fifteen or twenty people. Fifteen or twenty people in the mid 20s and are in an account type clerk people oh they were probably making mid 60s, 5, 6 thousand dollars a year, times twenty, one hundred thousand dollars I bet it cost three hundred four hundred thousand dollars to put that computer application on the computer.

SOLOMONSON: Was there available software for your system, now is this still on the GE system at this point? Is there commercial software available at that time?

VINCENT: Not at that time. Commercial software and programming houses made their entry into the market in the late 60s. They did not make it very dramatically. Commercial software today is not universally excepted. Pillsbury like any other large corporation I hope you used the word Pillsbury very discretely in whatever you're writing up. Since I still have about three, four years to go. You, we do not have canned software as such running but ? on less than five percent for a total applications within a corporation. Because the canned software that is available, does not meet the corporations needs.

SOLOMONSON: How about GE now? Did they have software available for this system? Now IBM on the other

hand had code available or didn't they?

VINCENT: No.

SOLOMONSON: You couldn't go out and buy a system and have a lot of your application programs supplied with it at that point?

VINCENT: In the mid 60s, no. A lot of them told you they could but they really couldn't. If you wanted to change your corporations accounting procedures you could, Pillsbury today is looking at a general ledger package. We've been looking at it for three years trying to get it incorporated. We haven't been successful yet because it does not meet the corporation's accounting needs.

SOLOMONSON: Were vendors in that era? Like did IBM come to you in the middle 60s and say hey we can put a system in and do supply some of programming needs for this explosion that took place. Did you get those kinds of offers?

VINCENT: Yes, yes.

SOLOMONSON: But never took them up on it.

VINCENT: Cause we knew they were lying. IBM today can not supply those kinds of needs. Strong statement, okay.

SOLOMONSON: Okay, that's what I'm...

VINCENT: If your new corporation alright, Greg, if you had your own business.

SOLOMONSON: Craig.

VINCENT: Right, Craig. Sorry about that, my wife told me about that...

SOLOMONSON: That's alright.

VINCENT: If I was to set up my own business today, and I didn't have any previous experience in computers, I would go out and do it with all canned packages. I would design my needs around what was available. Your old established corporations there are very few of them running any canned packages. Canned packages I'm talking about as software available for running. Payroll, general ledgers, payables, receivables, stock status, inventory control, the whole ball of wax. You see articles, you read trade magazines today that are just full of that stuff. For new business they're great. People that have never had anything before. But you are not going to change the mechanisms of large established corporations in any way, shape or form.

SOLOMONSON: So what dilemmas did you go through then if you had to make a hardware change you're really tied to the software you have aren't you?

VINCENT: Well, in the mid 60s you weren't tied to any software, cause in programming and I still say today you tell me the job you want done and I'll do it. Okay, I can program anything you want. There's no job that is impossible to do, if you can conceive in your mind what you want to do, and you can explain it to me in an english language and you can document it and I have something that I can make a flow chart out of or something like that, I'll program it and I'll get you 95% of the results on the first try. The--go back to what I was saying a minute ago, you know if I was a say I'd say I was going to computerize the Sheriff's department, or the County of Isanti's and they probably have computers and hell I don't even know cause I'd stayed away from it and I won't get my nose in it I'd probably be sick the money they're wasting. But if I was to computerize it, I'd computerize it in the fashion that would be with probably a corporation like IBM that I could buy software for that would do everything I wanted to do and I could install it in two months. The guy would be dumb not to because I could install it with two or three people, I wouldn't

have to go out and hire seven or eight people, because today people are more expensive than computers. In the mid 60s computers were more expensive than people. That trend switched sometime around '73 or '74 is when that switch took place. The break even point was in the early '70s and that's what it was all tied to. Okay now you get into a problem of you got everything on computer we got our first computer at Pillsbury in 1961. 1962 really January although we were running on a system in Phoenix Arizona. You get into an area that you build computer programs, you build them at probably the rate of 2 a month, you run from 61 to the late 60s eight, nine years, two month, twenty four a year times ten years say 240, 250 computer applications running you're going to convert now to some canned software, isn't going to happen. The users have become accustomed to what they're running, you change it, we'd have a revolt. Management all their concerned with the people that sit in the ivory tower, their concerned with cost although their concerned with timeliness and reports. That's the big thing. They don't like the costs, but they ignore it. That's the true facts of life in large corporations. That's the way it's been, I don't see that change.

SOLOMONSON: Well, what hardware changes did Pillsbury undergo now...

VINCENT: Evolution the new computers. Went from the 225 in 1961 General Electric came out with a 235 in 1963 which was a timesharing computer which had the emphasis on not the only difference between the two machines was that the 235 was basically a first forerunner of a multi-processor machines in that it could handle multiple users on a dial end basis to do time sharing type application they got into in the middle and late sixties the advent of each person dialing in having your own fragments, programmings, procedure segment accord around Data segment accord and things like that and what your job was as a operation system on the 235 was to keep the core filled up to get the maximum usage and keep as many people on the line as you could at one time.

SOLOMONSON: Did you make that upgrade in '63 then?

VINCENT: No. We ended up with three 225s in 1965 we had a 235 because at that time Pillsbury went into the timesharing business with they ventured into as subsidiary company called Computer as you probably heard.

SOLOMONSON: I used it in 1968 probably, at Southwest State University we dialed up Pillsbury's computer and ran some Fortran programs.

VINCENT: Yes. The worst thing that ever happened was a Fortran programming logging.

SOLOMONSON: We're going to talk about that in a little bit.

VINCENT: Talk about language some other day. Cause I have very bad things to say about Fortran. Pillsbury stuck with the 225s we got to a point where at about the latter part of 1962 early part of '63 one machine wasn't enough so we bought a second one. Got that in there it was only about a year later where we had so many applications running on two machines and they were equal machines, 225s I think that had two banks of tape units, four tapes on each controller, eight tapes units on each one two printers on one, one printer on another, and it was about two years after we've had a computer business we decided we needed a third one. But at the same time we needed a third one, we decided that, hey, General Electric's coming out with a new super computer and that's really what we've got to be looking. That was the year of General Electric introducing the 625 which was your first, one of the first truly multi-processing multi- computing computer. Share logic, big core, expensive, ironically enough they had a drum on the son-of-a-bitch. They had auxiliary disk space.

SOLOMONSON: What year was that?

VINCENT: 1965. Terrible. Bad year. We got a General Electric 625 in shop in 1965 and we did not expect it until 1967. Two years, we debugged the third generation computers. Data base concept, IDS, integrated Data Store. I think Pillsbury did as much for data base concepts as any corporation in the United States, cause we debugged it. It was a true random select type operation all done in Cobol, Cobol 64 at that time, which wasn't bad but created, generated large amounts of ? .

SOLOMONSON: Was that your first use of Cobol then?

VINCENT: Yes. Cobol 64. Started out with Cobol 60, we weren't on that for more than about 6 months then we went to the Cobol 64. Cobol 58 was the predecessor. That was the first one, and then they went to a 60 and then its Cobol 64 is the one we used primarily. At that same time in those mid 60s, in the mid late 60s, that's when the evolution of programmers changed definitely. Where you started getting college educated Cobol programmers, we hired them, you hired them with a sense of how many lines of code could they turn out a day. Bad mistake was made. We didn't have adequate standards, you talk about standards I could talk about standards all day long, standards changed so much since I've been in the computer industry that it--they're ridiculous. You mine as well forget about standards, let everybody do their own thing because that's what everybody did anyway. But the people that you had writing Cobol there were the college graduates they call themselves programmers, really didn't want to be programmers. They had no more pride of authorship than the man in the moon. All they wanted to do was work in programming two or three years so they could go get themselves a better job that said that they had computer experience. Worst thing that every happened to the industry. I go back to the old core of the people that were in in the late '50s and early '60s were what you called a bit ? . We knew what was going on, when you wrote program instructions you wrote them for a purpose because you usually used the one that would do the job the fastest for you and Cobol that all went away. At the mid '60s and late '60s computers were still very expensive, but core memory was unlimited really in the sense that you start talking about 64K machines, 128K machines, these were word machines at that time, 6 characters per word you know nobody could conceive anybody every writing programs that would take that much core. What you generated in large compiled programs was 60 and 70K word kind of programs, 300,000 character programs. And you only get to run two of those at a time at 128K machine. Went through about a year of that that they realized that hey with this damn Fortran programmers we got that everytime they write a program they can't generate anything while some 80 or 90K and you're never going to get more than one of them to run cause you have to have an operating system in there that takes 20 or 30K and you got a 428K machine you're running as a batch processor. Oh, hoe, lights come on. Jesus, brilliant deduction here, we went through about a two year period in the late '60s, '68, '69 of saying that no program will run on a machine that's over 16K. And we did that and we started to get some people conscious of breaking large applications down, running them in segmentation as it was called in those days, functionality come into the picture, by god you were going to take a bunch of data in you were going to

process it but first pass is nothing but editing that data, preparing it for the next activity that would then run that would try to process it against some master file of some type and then by god that was all you did and the next activity then was merge out with your history file and put out a history tape you know so you take a 60 program down you break it down in about 3 20K segments that's when activity for ? come into play so you know that's what you did to take advantage of the hardware capabilities, you couldn't afford to run 60, 70, 80K programs. Somebody's modelling job these Fortran nuts turned out were 80 and 90K, that's what I call them, Fortran nuts or programmers they called them in those days. Operations research, theorists and no sense at all for what was real world ? . All they could dream of was building six dimensional cubes and wondering how many arrays they could get going each way you know and things like that. It was mind boggling. Good business application programmer doesn't have time for that jazz, that's your theorists that's why I had Gordon that isn't on tape though.

SOLOMONSON: Well, it might get on there, but we can leave it off. What-- how many languages were you capable of using then with that system?

VINCENT: Machine language? You were still capable they had a G map language which they call a machine language. The first one was you could ? . The guys that did maintenance you still had the option of being able to call object deck off the disk and then reading it from a card reader patches that went into the object ? still ? you had a machine language which was a load A store A type mnemonic stuff you could program in Cobol, you could program in Fortran, you could program in basic, basic was worse than Fortran cause all you did was generate horrendous programs. Christ you couldn't write a program on basic that was less than 40K if you wrote six statements. You know simple little let I equal 1 to 10, print I and next I and all that kind of stuff, got to be 40K.

SOLOMONSON: Why was that, what made it get so big so quick, the operating system?

VINCENT: No, the software gen--the compiler generators in those late '60s were not efficient and that's what the problem was they generated horrendous of code. That was when I was the manager of computer operations in 1967 through that initial conversion when we finally after they had had the thing two years and another one got done I

didn't have anything to do with it because they were about ready to go on when I went down there, down in the basement but it was the support played a big part in it what we got from General Electric they do not have an overabundance of qualified either engineers, application engineers, software people, things like that. I think Pillsbury did more for General Electric in developing IDS and data base system in concept than anybody else, really. General Electric finally got out of the computer business when they sold to Honeywell and when the hell was that, early '70s I think, '70, '71.

SOLOMONSON: Well what new pieces of equipment came into Pillsbury then after the GE era?

VINCENT: Well, the GE 225 that we had, the original one was run on those little 204 type disks and that big RAM drum on it.

SOLOMONSON: And that just went out recently.

VINCENT: That went out a long time ago, we got rid of that drum before I left Pillsbury and went with Coler Computers, in '69 we got rid of that drum and converted everything to disks cause that drum gave us a lot of--the drum on the GE 225, was one of the main problems there for hardware, along with the tape units the early tape units that General Electric had that caused a lot of problems, I forgot what they called them but they were the old bin scramblers where you packed up in a vacuum tube two or three hundred feet of loose tape. And that's the way it was designed and then what it did it sucked this loose tape up through but they were very unreliable, it was a first venture into the 800 BPI era in the mid '60s and late '60s, a lot of problems with it and like most large corporations you had a problem of upgrading your tape quality, tapes we'd been using on the 225 since early '60s there were milestones made in the 1960s in the preparation of or the physical characteristics of magnetic tape such as what 3M come out with you know in their Scotch 777 brand. That tape that you could buy in the late '60s for oh probably 30 dollars a reel and the bulk we bought it was ten times as good as tape we had bought in the early '60s for 40 or 50 dollars a reel you know from all of IBM or who the hell ever would prepare it because there were many dynamic changes made in the quality of tape, the physical quality of magnetic tape. Lot of tape problems in the mid and late '60s, the drum

problems the industry got smart enough to eliminate drums from computers in the late '60s, they finally woke up and been there ever since IBM had it on their 650 and 305s back in the late '50s. It took them 10, 12 years to wake up but the drum never flew.

SOLOMONSON: Should we talk a couple minutes about Fortran?

VINCENT: No.

SOLOMONSON: Why not?

VINCENT: I want to finish first of all in 1969 I went to Standard Computer Corporation that's in here. And that's the best thing that ever happened. I went to Standard Computer Corporation in California as part of the Call-a-Computer subsidiary of Pillsbury in December 1969. The Standard Computer Corporation was in Santa Anna California founded by a bunch of IBMers who had extensive design engineering and development expertise on the IBM 7080, 7090 series, and they said they wanted to design a machine of their own, it was a take off of that old machine and Call-A-Computer in those days was interested in getting on a faster, larger processor that would handle many more formlines and things like that.

SOLOMONSON: Now Call-A-Computer, that's a Pillsbury...

VINCENT: That was a Pillsbury wholly owned subsidiary.

SOLOMONSON: Okay. Now when you say you went to them, you went to them...

VINCENT: I worked for Call-A-Computer.

SOLOMONSON: You worked for them.

VINCENT: Yes.

SOLOMONSON: Okay.

VINCENT: I was on loan to Standard Computer in Santa Anna California for a year and a half, from December 1969 till July of 1971. I travelled, I was out in a-I commuted to California 19 days in Santa Anna California and 9 days at home. Four weeks . You worked 19 days in a row and you had nine days off theoretically. I didn't have 9 days off because I was in the office out here, but that was development on my first exposure to software systems. The IC 7000 as Standard Computer called it was my first venture into really understanding what a separate CPU can do and what a separate IOP,(input, output processor) can do. And how the two communicated back and fourth and that's where the whole world is.

SOLOMONSON: Who started this now? Who was the head of Standard Computer Corporation?

VINCENT: The brains behind it were from a guy named Lazlo Rocozi who was chased out of Hungary in 1956.

SOLOMONSON: I got to get this, Lazlo

VINCENT: L-A-Z-L-O.

SOLOMONSON: L-A-Z-L-O.

VINCENT: Rocozi. R-O-C-O-Z-I. I think today he works for TY Insure in California. Lazlo Rocozi was a computer genius. He was the first guy that I think ever understood what should be in a micro computer. And that the IC 7000 was built on the principle of micro programming in that there was a sublevel of programming hardware wise that took place when you wrote a machine language one instruction would generate six instructions, things like that. He was the forerunner of saying things should be made easy at the top but get the most efficiency out of the machine at the

bottom. But the guy was a nut and a hell of a guy he was a brain and the most common guy that you ever known and he was chased out of Hungary in 1956, by the Russians. And he had a dream that Call-A-Computer fell for and it was a good idea except that we ran out of money. Pillsbury didn't have the patience, I think that if we had stayed in the business bla, bla, bla, bla, bla, we'd have made fortunes of money today and been a leader in the industry. I learned more in that year and a half writing software, putting in the initial operating system on that machine and that's where I first really worked close with Al Boden, I roomed with Al out there and Al worked more in the communication side, I worked in the IOP and we working with CPU guys and we had a crew of about eight guys for developing software and that was a flying machine.

SOLOMONSON: What happened to it?

VINCENT: Pillsbury lost patience with them, refused to any more money into the corporation, Standard Computer couldn't sell the product cause they didn't have a strong enough marketing staff, then they went on the rise.

SOLOMONSON: Now the IC 7000 was a system then that was built.

VINCENT: It's not extinct. It was a take off of the IBM 7090, it was the forerunner of today's largest multi-processing system that you...

TAPE 2/SIDE 1

VINCENT: We didn't have enough people to do the job. We had the time frame that it was allocated for.

SOLOMONSON: Well now when did Call-A-Computer originate?

VINCENT: Call-A-Computer originated back in about 1964 as a time sharing service out of Minneapolis with a GE 235. Jim Rudy and Bob Brack and those type people were just a time sharing service it was a take off of the software

the old Dartmouth basic system which was a first basic system ever developed from Dartmouth University. There was some canned software put on, put on some engineering applications that gave us a host of construction companies to be able to go in and use canned routines to figure out price analysis, stress analysis, things like that...

SOLOMONSON: You were selling to colleges too weren't you at that time?

VINCENT: Oh, yes, yes.

SOLOMONSON: How many users did you have in the let's say '64, '65.

VINCENT: The original Call-A-Computer days I think we had data centers in Boston, Raleigh North Carolina, Chicago Illinois, and Los Angeles California, and Minneapolis. We had five data centers we probably serviced I would guess 50, or 60 customers out of each one of those.

SOLOMONSON: And this was on a...

VINCENT: Daily basis.

SOLOMONSON: ...daily basis and they paid for the amount of CPU time and was this a...

VINCENT: These school system for instance may have had ten or twelve city of Minneapolis could have had 10 or 12 different terminals located in different high schools around the cities but that was all just one contract and all we asked them to do was to say hey, two of you get on at 8:00 and get off it by 10:00 the other two of you get on at 10:00 get off just kind of spread the load type situation for their computer classes and what they were trying to do, that was all we asked.

SOLOMONSON: What was Pillsbury's objective in doing that to help defray the cost of the system, or utilize it more, or...

VINCENT: Make money.

SOLOMONSON: Make money. Who's idea was it?

VINCENT: Jim Rudy's. In those days with the costs in the mid '60s to what the cost of computers they were so darn expensive, that anyway that you could attempt to show a profit, in other words in running a service bureau type organization was a feather in your hat, and that was strictly economics.

SOLOMONSON: Now who serviced the users then when the users had problems and they?

VINCENT: We did. We had a staff in Minneapolis that was the headquarters for Call-A-Computer of probably six programming nuts who could solve any problem that any user would ever have. Out in the regional offices you not only had your operations manager the guy who was responsible for the running of the machine, but he was usually pretty smart, he had canned packages that he was selling to the various users or his clientele and he had access to any one of the six or seven people back at the home office. Call-A-Computer was an organization that probably had 30, 35 people. Okay, I went with them in 1969 they probably had 50 people in their organization. I went with them strictly on the IC 7000 development, that that was going to be the replacement of the 235 at that time in the late '60s there were how many service bureaus and how many getting into the time sharing business, got they were a dime a dozen. And Pillsbury recognized that if we were going to stay in it we had to have something bigger something faster, something new, something innovative, something that somebody else didn't have.

SOLOMONSON: How many other timeshare bureaus were around let's say back in '64 when it started, '63?

VINCENT: A dozen.

SOLOMONSON: It was quite innovative in itself.

VINCENT: That's right. But in 1968 there were probably 300. You know I showed you how many guys had the same idea they recognized that there was a buck to be made, failure of the UNIVACs and the CDCs and IBMs and General Electrics and Honeywell hell they were all trying to get in. That was the growth of the '60s was the mad era of computers as I said before and we couldn't do enough for our own users, let alone go out and take on an outside venture you know with the people we had but we had it in hell, 1966 we went into the software expertise business of another subsidiary of Pillsbury management information systems. Fellow named Don Grey headed it up and they had about a dozen employees and they went around and did software application develop and design and development for corporations like hell, Ralston Purina, in St. Louis.

SOLOMONSON: How were they connected now to Pillsbury?

VINCENT: They were a subsidiary.

SOLOMONSON: Did you work with that group at all?

VINCENT: No, not the PMIS group although I knew a lot of those people and I knew what they were doing. Because of the you could see how the plot thickened, Pillsbury had enough foresight to expand although they were certainly you know keeping a tight draw on the pursestrings as such, we had management information systems, we had Call-A-Computer, where we took and we put what I call all our good resources in to those ventures to make them successful. Both those ventures folded. While both those ventures were trying to make a go of it in the late '60s, '68, '69, '70, '71 era, the inhouse Pillsbury establishment had to go out and hire all kinds of new people just to keep their work done because there was a never ending demand on what you wanted to do in house and that's when we got flooded with the programmers as such that different institutions were turning out along with college graduates Brown and all these people that really didn't understand any of the background of what Pillsbury you know had been doing what they had tried to do, what they set up these principles and things like that. That's when all the--the crap hit the fan so to speak.

SOLOMONSON: So you saw them that the computer the in house computer really went from servicing the internal needs to a profit making venture on Pillsbury's part.

VINCENT: Yes.

SOLOMONSON: What's its status today?

VINCENT: We no longer have subsidiary's, our main role today is trying to satisfy the in house users needs as cheaply as we can. That's strictly Pillsbury's profile we've had a change in the chairman of the board in those 60 years was Terry ? and now has his own business, you have a new, you know you got to have a revolution in the company pretty near to get Terry out but he was the one that had the insight to see the expansion that was going on in the computer industry and it became a matter of how much money can you show the stockholders you're making you know and when you're starting to loose money and you see a subsidiary out there costing you millions of dollars a year you get rid of it. Oh, Pillsbury was into chicken business in the early '60s and middle '60s with raising chickens and that with what the farms operations as they called it down in Arkansas and Georgia. They lost money for four years and we sold it. We were in the wine business 10 years ago with some of the old silver cellars out in California and we thought that was a good venture looked profitable we lost money and for two years in a row and we sold it.

SOLOMONSON: Were there other computer related ventures outside of what we got, Call-A-Computer and Standard Computer Corporation and MIS we got those three essentially, were there others?

VINCENT: No, not that I know of. No. Pillsbury will not ever again go into an outside venture in computers. They have established that they are a base food manufacturing conglomerate, we own Burger King, we own Steak and Ale restaurant chain, we own Green Giant the canning process, it's strictly going to be food oriented, I doubt very much that Pillsbury will ever again go into anything outside of the food oriented business, and that's probably smart.

Because if you don't get the support from upper management to take the flings and you don't have the support and dedication you're going to lose money, I don't care what it is.

SOLOMONSON: Well I think at this time I'm just going to...

VINCENT: Okay, 19--July 1971, I knew Standard Computer Corporation in California was going on rocks, Call-A-Computer was going on the rocks, I didn't know if I had a chance to go back with Pillsbury or not, I got the dear John phone call on Friday night and the guy from Standard Computers said well you don't need to show up Monday got two weeks pay coming and I said the heck with it, by that time I just got home and I said I don't care if I do anything for a couple of weeks ? look for a job.

SOLOMONSON: Was it the financing or was there just too...

VINCENT: They ran out of money.

SOLOMONSON: And were there a lot of others in competition at that point?

VINCENT: Yes, not as many as there had been, but it was strictly economics. But Pillsbury contacted me and they wanted me back, and I went back to work for them the next week, July, 1971, got into the technical programming area where at that time Pillsbury wasn't doing a lot on timesharing, and by that time I had a lot of timesharing expertise and I worked for a gal named Sara Reed who is probably one of the most common sense people I've ever met in my life, and I had the responsibility teaching all of our inhouse programmers how to use timesharing effectively to do their Cobol programming development. So I wrote a couple packages in machine language and this was at this time on a General Electric 635. I developed a couple timesharing packages which allowed them to maintain their source file in timesharing, to let them run a Cobol compile on timesharing, to bring out the errors in their Cobol compile and a timesharing file that they could list out without getting a computer listing back, things like this, it was all the interaction I had been to years really in the guts of a system and knowing what a programmer had to get back to let

him know what was wrong before he got a clean compile listing, and there's no sense in getting a compile listing if you can look at the statement that's wrong with the error indications and things like that with two or three inches of timesharing terminal output you know rather than getting a hundred of pages of a Cobol listing back that says hey, fix me and recompile me, things like that. So it was trying to cut down on computer testing, terminal turnaround and we successfully implemented a program, I wrote a couple of conversion routines from ? to BCD and BCD back to ? cause the computer worked in BCD and timesharing worked in ? and to be able to translate the information back and fourth and get it displayed in a way that meant sense for programming people. So we got that implemented and that I think was a great advantage of Pillsbury. What it did in the time that we were in the early '70s this was the time that programmers "programmers" became more expensive then computers. And this happened in '72, '73 and in that era. So the object of the game in that era was that the more you could get out of programmers the more productive bids you could make them was advantageous economically, and that's what big corporations are concerned with the economics of the thing. So what it did it allowed them to develop programs faster but it also created a crutch for them to fall on in that they didn't have to think as much cause they new instead of taking two months to design a program, three months to code it, three months to implement it at a normal hold cycle as we were familiar with it you know six months or eight months to turn over a job they said that heck I don't need design it always take one month for that and heck I don't have to worry about mistakes cause the computer's going to take me--tell me about my mistakes so I don't have to worry too much about the coding so I'll only take a month and a half, or two months to do that, and heck I'll have it implemented in one month or two months. Well what you ended up doing was implementing programs that were compile bugfree but that were logic not sound. Now if you can understand that bear with me, you had a great influx in the late '60s and early '70s of college educated MIS students who knew Cobol programming but they didn't know what was really in the guts of a system. The theory was in those days that they didn't have to know what was in the guts of a system cause people were more expensive than computers, you could afford people software inhancements that allowed them to do their job faster and that was the right way to go; well that was the wrong way to go. Because what you had was a lot of inefficient code generated, programs that were larger than they should be generated, programs that maybe did the job but they did them in a fashion that was costing money. It was the evolution you went through. We did not have enough what I'll call bidfiddler expertise at the time on sight that were involved in the day to day applications development that was going

on to stop what was happening. I seen it coming you know but hell, I couldn't do anything about it cause I couldn't get anybody's attention everybody was designing queries systems and we were program big data base management systems and you were worried about what the next computer was if you were going to be ready for it and you didn't have time to take care of what was actually happening on a day to day basis to prevent yourself from getting into trouble five, ten years from now. We're paying for that today. We're paying for it in Pillsbury because we've got systems that were developed back in the early '70s the mid '70s that are running but not running efficiently that are running out of JCL type language job streams that are driving those systems that were designed in the mid '60s that are not taking advantage and have not been enhanced of the newer JCL developments that have happened in the last seven, eight years. So therefore, we're probably running systems today a hundred percent of the time that should be taking 50 percent of our time to process because we are not taking advantage of the new higher speed technology's mini coding that has taken place, the sorting techniques, the software that has been developed, the data base concepts that have changed on how to access your integrated data storage techniques, things like that you just don't have time to ever go back and correct and update applications. We've gotten on division of the corporation in the consumer division seventeen hundred jobs running on a monthly basis, some of them daily, weekly, monthly, everything like that. Those jobs may have on the average six activities a piece. It doesn't take a mathematical genius to tell you you're writing a hundred thousand activities a month probably 60 or 70,000 on a daily basis. That's a lot of activities through a machine. We're using a lot of tape techniques that used today that should be used in disk techniques. Disk is so cheap today it's ridiculous. Tapes are nothing but a headache. We run up to and converting our data center to 6250 density tapes, FCI's as they call it, I can't figure out what the FCI stands for. Flux Characters per Inch or something ? told me one time but I just don't understand this but you're talking about density that's eight times as great as the 800 density BPI that we had been used to. We used a 16 for quite awhile and we still have 16 but you're still talking about four times the density you're talking about 20,000 tapes in a tape library system. Some tapes are 15 years old, you're talking about economic pressures let's say you hire operators that can are robots things like that that don't--can't recognize a fifteen year old tape from a tape that was purchased a year ago and you just create problems for yourself that are horrendous to operate in today's life. One of the major problems we have had in the last five years is buying Green Giant in 1978. Where they also had a 6000 series Honeywell computer and Pillsbury had a 6000; Green Giant had a completely different philosophy of operating their computer. Small rural

community versus big city downtown Minneapolis, if I call it a big city, and I've worked in Chicago. Green Giant had everybody lived within a mile or a mile and a half of the computer sight; whereas Pillsbury has everybody lives within 30 miles of the computer sight and I happen to live within 47. When something went wrong in their nightly processing Green Giant's philosophy was don't have your control clerks or your production people try to analyze it, have them call a programmer or the analyst that's responsible for the system and get them in the middle of the night to fix it. Well hell, a guy could jump on his bike, peddle a half mile to work and get in and fix it and be home back in bed 45 minutes later; doesn't happen in the city. Were you got to get a guy out of bed at 2:00 in the morning he gets up and he's lucky if he gets down there at 3:15 and works on the problem an hour and he may get home and get back in bed at 6:00 and hell it's time to turn around and go back to work or he's just stays on there when he goes in type situation. Trying to mold those two production systems into one is a unconquerable situation. You have the problem of closing a computer shop in a rural community trying to get all those people to move up into an urban community which they resent and hate, think they're getting shafted so we have a lot of internal problems that are unique and a computer industry type thing which is one of our major problems today that's causing us the most grief.

SOLOMONSON: What about these inefficiencies then that were cropping up in the early '70s in terms of programming, is there a solution to that, are there steps being taken to redo that code that's inefficient you talked about you know 100,000...

VINCENT: No.

SOLOMONSON: ...things a day that it was processing.

VINCENT: No, because you had the ever increasing demand from your businesses to do new things, you're going to acquire a new company so you have to look forward, you don't have time if the old ones run let them run the way they are.

SOLOMONSON: Has hardware become cheap enough and efficient enough then to overcome the cost factor.

VINCENT: No. I say no to everything. Hardware is much cheaper than people today on a grand category. I think we have missed something in the programming world that is the love of the profession if I can say it that way. Is that you know longer have the young dedication, you no longer have the pride of authorship, people want to come in and write programs today and two years from now they want to be a manager or supervisor and get out of it; they say hey, I've got computer experience and use it for other beneficial means. The pride of authorship to me in the old computer nuts in which we have we're getting fewer and fewer everyday, are a dying breed and now this is a revolution I think the whole computer industry is going to be in trouble. I think the emphasis in education is got to be on software systems. The profession is upgraded I think enough so that it pays accordingly but there is just not the mechanical means in place that teaches operating systems concepts. You do not have those people coming out of college today. They are futurists or else their robots. I refer to them as robots as yes, they know how to program FORTRAN or COBOL but they have no idea what's going on in the guts of the machine. As long as corporations have money to spend on hiring that kind of people, we're fine. You know, if they show a profit and show that kind of waste, they're fine. I would never hire one of those people.

SOLOMONSON: Is the inefficiency still there in terms of programming?

VINCENT: Yes.

SOLOMONSON: Techniques. Is there things being done internally to...

VINCENT: Not with Pillsbury and not with any other large corporation. Not within the industry is my opinion. I do not think that anything significant is being done that I can see. Hell, everyday I pick up the paper, all you read about is new things. Makes me sick, we've got so many old problems you know and we're going to pay for it some day. Opex paying for theirs right now. It's a funny equation that's what I'm talking about. You're going to have to bite the bullet some day. Industry is not putting enough emphasis on bit fiddlers. They really aren't is the operating system

people, the people who are going to write your own COBOL compilers. I laugh at National Standard that all these big fancy committees and all that that are going on in Washington and that's a waste of money, it's a waste of money. What you really need is a common way of interchanging data and let each shop, or let each industry do what they want to to get the benefits out of what the computer is designed to do.

SOLOMONSON: To what degree does Pillsbury follow standards?

VINCENT: None.

SOLOMONSON: So the COBOL standards are...

VINCENT: We could no more take our COBOL you know we'd--we use COBOL 68 and we use COBOL 74 try to convert to COBOL 74 which is already nine years out of date and somebody tells me there's a COBOL 80 which I don't think we'll ever get to. Do the job. We're not going to run on anything but the equipment we've got in housed. You know hell, if we're going to run on an IBM piece of equipment we're going to write our own translate anyway to convert those programs so what's the big sweat? Why should you worry about conforming to any industry standards, the only time you have to worry about them is when you're trying to send data to another corporation that's got a different piece of equipment. It's going to be machine coded then anyway, I do those all day long. I can create an IBM tape that they'll think it was created on an IBM 4331, they won't know the difference. ? one machine. You know so why worry about it. The standards that are you talk about standards and techniques all day long, the standards that you employ within your own corporation today aren't going to be any good six months from now, cause we keep changing that dramatically.

SOLOMONSON: Who's in charge of determining within Pillsbury what standards will be used. Your own internal set?

VINCENT: Each on of the individual freestanding businesses supposedly has guidelines documented. They are not

kept up to date, they are not enforced, they are not anything, every six months somebody says hey, we should look at these and revise them to what we're doing today. Those aren't standards, that's documentation. Those aren't standards all large corporations are the same, you don't have standards, there's no standards in the industry today. I'll laugh at them when they tell me.

SOLOMONSON: I'll keep that in mind when I hear about standards now.

VINCENT: They're crazy. There is no such things as standards. You do what you have to do to get the job done in the shortest time and the most economical means you can get it done. That's the way business is today.

SOLOMONSON: Why doesn't Pillsbury use IBM computers? With most large corporations using them.

VINCENT: Well, IBM has got what, 80% of the market? Is that what the trade magazines say?

SOLOMONSON: I think they've got them down to 50 some percent now.

VINCENT: Back in the 1959, 1960 era at Pillsbury, Pillsbury set up a four man team which was Terry Hallo, Jim Rudy was on it, Frank Paul, Jack Lever, there were probably a couple of others. That they went around and it was called a computer feasibility team. And they went around all the vendors and talked to them about where they had been, you know Pillsbury had been a hell an IBM user from years ago, asked about where they had been, where they were today, and where they were going, and what it was going to cost, and evaluation of that team was that General Electric looked like they had what we wanted.

SOLOMONSON: Was the fact that you'd have to lease from IBM a factor, you think?

VINCENT: No, you could purchase...

SOLOMONSON: You could at that point.

VINCENT: Yes. You had to pay maintenance but it was--I'll tell you something about IBM users, I was an old one and I was born and bred IBM, but since I had been with a non IBM equipment I had been the I too IBM users group meetings. I was the one in Madison Wisconsin at a IBM users convention put on by the University of Wisconsin, it was a seminar educational type thing convention for three days, and those users had more problems if not only if not as many but more problems than any other computer in the business today. IBM is not infallible. They have problems in their operating system, they have the same problems keeping their hardware maintained, keeping their operating systems going, doing enough work and passing it through as any other vendor has today. It's the name, the magical letters IBM that attract people, the people going into the business they want something that's reliable and they think because IBM has been in longer than anybody else that their the most reliable and that's a fallacy. It's pure hoax is what it is.

SOLOMONSON: Have you seen a lot of pressure from salespeople in other computer companies like IBM or CDC or that to get their foot in the door there?

VINCENT: We have IBM equipment in house and we always said that. Not much not as compared to the Honeywell, the big computer...

SOLOMONSON: In terms of your mainframe system, let's say back in the '60s when you had your GE system, were you getting a lot of people coming in from IBM or CDC or...

VINCENT: They always come in. That's continual hazard--that's an occupations hazard. Just like word processing today you know there are a million vendors out there, you continually have IBM sales people calling and whenever they get something new, we have probably not any other large computer vendor although Blumenthal who is the Chairman of the Board of Control Data is on the Board of Pillsbury and he can't understand why we don't have Control Data equipment. Mike Blumenthal is the ex-secretary of the treasury..

SOLOMONSON: Now isn't your front end machine down at Pillsbury, that's CDC isn't it?

VINCENT: No, those are all Honeywell.

SOLOMONSON: I thought Al said there was a CDC machine they were using for communications...

VINCENT: We have a CDC 1700 as a message switcher.

SOLOMONSON: Oh, okay that's what he was referring to.

VINCENT: We are replacing that with a Honeywell level 6 message switcher. With canned software by the way, which is a software house which I'm kind of responsible for because the guy working for me is the project leader on that but which we're going to install in about six months, the CDC 1700 is the 12 year old machine that was brought in in 1971 for a life span of 5 years which has run successfully for 12 years switching messages and traffic, data from the high speed Honeywell computer out to the remote users and back with data entry type. We're going to replace it with a Honeywell piece of equipment that gives us much more flexibility and interfacing to international carriers and things like that. Which CDC is pretty much out of the front end of the . Good machine.

SOLOMONSON: Al asked me well I guess it was the last time I was down there I don't remember what I stopped in for but he wanted to know if I had enough room in the garage for a 1700 and I said I'll make room. I don't know the physical size of that machine I can't picture what where it's at in the room even.

VINCENT: You could put it all in this kitchen.

SOLOMONSON: Okay, I'm assuming that's the one that's kind of in the room beside the tape room.

VINCENT: Yes.

SOLOMONSON: Is that the one then.

VINCENT: You been down the data center over there?

SOLOMONSON: Yes.

VINCENT: When you come down those stairs you come out and the big computer is to the left, it's right around to the right.

SOLOMONSON: Yes, okay, now I know which one it is.

VINCENT: I removed that from the basement on December 4, 1981.

SOLOMONSON: You mean from downtown. Yes, I remember that moment.

VINCENT: That was a night to remember, unplugged it at 3:00 in the afternoon and had her up on the ? next morning.

SOLOMONSON: I remember the next week that's when I came in, after they had moved that system out, picked up the remains of the data net 30 and the tape handlers and I have to switch this off for a second.

END OF INTERVIEW