

An Interview with

Ovid M. Smith

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Conducted by Mark Coir, Anne Frantilla, and Mary Lou Rowe

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Ovid M. Smith Interview
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Abstract

Smith reviews his 46 1/2 year career at Burroughs Adding Machine Company (later Burroughs Corporation).

Subjects include: Burroughs calculators and accounting machines; Burroughs competitors, especially Moon-Hopkins and Felt & Tarrant; the Comptometer; Burroughs' marketing strategies; and the work environment at Burroughs.

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Burroughs Archives

Transcript of an Interview of

Ovid M. Smith
(Burroughs Employee from 1918 to 1965)

by

Mark Coir and Anne Frantilla
Burroughs Archivists

November 7, 1985

Mark Coir: "We are here at Burroughs Archives today talking with Mr. Ovid Smith who worked for the Company for 45 years."

Ovid Smith: "46 and ½."

MC: "46 and ½ years. My name is Mark Coir. We are here with Anne Frantilla and Mary Lou Rowe from the Archives staff. Mr. Smith, thanks for coming down today. We really appreciate this."

OS: "It's good to be here."

MC: "Good. I'd like to ask you first some questions about your personal background just so we know who you are and how you came to the Company. Can you tell us a little about your life? Where you were born?"

OS: "Well, I grew up in central Indiana. I was born in Illinois but I grew up in central Indiana and I was on the farm about twelve years. I was always interested in mechanical things and my dad never let me handle horses but he always had me take care of the farm machinery. When I was just finishing high school, a friend of mine worked for a small telephone company and he asked for a raise. They gave him a raise of one dollar a month. He got a little bit disturbed about that. He had a brother in a bank who was familiar with Burroughs. He wrote Burroughs in Indianapolis, asking for a job. They turned him down because of his age. He gave me the letter in 1918 and I wrote to Burroughs and they said yes, they were interested in new people for the Mechanical Division. But I had planned to go to school for the summer, so later in the year I wrote them again and they said they had my letter on file. And then on September 9th, 1918 I went to Indianapolis and took my mechanical test and they put me back in the corner on the bench for training."

Anne Frantilla: "How old were you then?"

OS: "I was eighteen years old."

MC: "Now you said your friend was turned down because of age. Was he too young or too old?"

OS: "He was too old."

MC: "Too old. How old was he?"

OS: "He was probably in his early forties."

MC: "I see. So they wanted young men?"

OS: "They wanted young men because of the time of training and to follow up on the training."

MC: "When you wrote to the Company did you write to the Home Office or did you write to the branch in Indianapolis?"

OS: "No, there was a local hardware store that was owned by friends of mine. I had noticed an old typewriter sitting up on the shelf there. I asked them one day about the typewriter. They said they just didn't use it and I said that I would like to take it home and clean it up and see what I could do with it. I took it home. It was a Blickensdurfer(sp?), made in Germany. There was on the typewriter a wheel very similar to the ball typewriter today, except that it was a cylinder rather than a round ball. I cleaned the typewriter up and I wrote a letter to the Indianapolis office branch. And that was done on that typewriter."

MC: "Can you tell us a little bit about your training with the Company? Did you go to school in Indianapolis?"

OS: "This was of course during World War I and I went to school for eight weeks. It so happened that the service manager of the firm took a liking to me and used to spend a lot of time with me at my desk where I was studying. At the end of eight weeks he came out to me on Saturday morning (in those days we worked a 47 and ½ hour week and we worked Saturday mornings.) He came out to me and he said 'We're having a meeting and you will have to go out and do some work'. So the first call he sent me on was to the Indianapolis Star. Somebody had pushed the machine against the wall and bent the paper holder. Of course anybody could have fixed that. I took a hammer and straightened it out. That was my first call. The service manager also gave me a shaft for the

carriage of the standard bookkeeping machine. I followed up with a call at the Indiana National Bank. There I put a shaft through a carriage that was broken by abuse. That was my second call. I was supposed to have three months training. At the end of ten weeks the boss came to me and said 'Bring your suitcase and pajamas. You are going in the field to work.' So I went to southern Indiana where I worked with another man and worked from then on. I was called into Detroit later for special training on the bookkeeping machine. That was in 1920. In 1927 I came to Detroit and was put into the factory and built and billing machine for the Bell Telephone Company. The Company had secured orders for billing machine for all Bell offices throughout the United States. Each branch that had a billing office was to send a man into Detroit for training. I was selected for that training. Luckily we had three machines in Toledo and one of them was the machine I built. So I took care of that for quite a long time and got a lot of experience in billing operations. Then we also sold the gas company and the water company. So I had a lot of experience in billing."

MC: "Your training. Let's get back to that. What kind of classroom experience did you have? Did you meet in a classroom and were you instructed by ..."

OS: "No. What the original training was -- they gave us a machine with the case off and they would point out two or three parts. We were to write down the purpose of those parts and all of the connecting parts and what happened when each part operates, what the result was of that operation. We did that on all of the major parts of the machine. We studied each one individually, what it was for and how it worked and what other parts moved when that part moved.

MC: "What that for all classes of Burroughs products?"

OS: "All classes."

MC: "So you went through class by class and became familiar with each machine then."

OS: "Now we were not given all these at one time. Later the men had to do that. They had a longer session. We only had class 1, 2, 3, 4, 5 and 6 when I started. One of the things that interested me was that in 1919 I was working in Indianapolis. The Nordeck-Marmon, which was a well known automobile company, had built a plant especially to build Liberty motors for the government during the war. The plant had closed but there was a

lot of equipment over there. I was out in Nordeck-Marmon on inspection when they sent me over to this new plant and sent a man with me. He followed me all through the plant and took me through the offices and I inspected these machines. When I was working he told me a story. He said that he had worked for a company in St. Louis that made a machine that multiplied. I just thought, well that's a dream. Two years later Burroughs announced the purchase of that machine from the Moon-Hopkins Company."

MC: "What did you think of that machine the first time you saw it?"

OS: "Marvelous, because we had been in competition with them. A few times I had been with a salesman and we talked about a duplex machine that had two totals. One particular company, the Wayne Works of Richmond, Indiana said 'Well, we have got a machine that multiplies and has four totals. And typewrites.' Well, that was a dream. See, they had sold a few of those to special companies around and to railroads. They had no advertising material. They had no instruction books. What they did, they would go into a city and they would write letters to the principal business concerns and announce that on certain days they would be at a certain place and demonstrate the machine."

MC: "You are talking about the Wayne machine now?"

OS: "That was the Moon-Hopkins."

MC: "Oh, you are talking about the Moon-Hopkins Company."

OS: "The Moon-Hopkins. They sold strictly from demonstration and taught the operators how to use the machine, which was a rather simple machine to operate, really. You could do anything right on that machine that you could do with a pencil in your hand."

MC: "It was a posting machine, basically?"

OS: "No, it basically started out as a billing machine. You put the bill in, you typed the heading, the quantity, the description, the price; push the black key for price and printed the total of multiplication. Then those totals all accumulated if there were several items. Then you would print that total. You retained it in the machine. Then you could multiply that total to get a discount or a freight allowance or postage. You could subtract from it or rebate or credit or anything and come out with a net bill.

There was a regular typewriter keyboard and then there were ten red keys and ten black keys and about six control keys. You put one item on the red keys, the other items on the black keys and the machine multiplied. Now, the machine operated once. It operated at the speed of 130 a minute. And it operated once in multiplication by 0 or 1. But in multiplying by 2 through 9, the machine operated twice. Of course the 130 ..."

MC: "Are you talking about revolutions?"

OS: "Revolutions. We called them cycles. The reason for this, you can understand, is ... well, let's say it this way. Ciphering one could be multiplied by any number and there would be no carry. Nine times one is nine. Two through nine, you may get a carry. Nine twos are eighteen, nine threes are twenty seven. However, two threes would be six; you wouldn't need a carry. But the machine operated twice anyway. So there were two cycles for any number above one. One and zero, the machine only cycled once. It was a very fast operation. The fact that you had the typewriter for description ... an interesting thing was that this was a blind typewriter. Like the old Remington where you raise it up. You know, when you analyze that, it was not a bad feature."

MC: "Why is that?"

OS: "If an operator is watching her work, how can she see your copy? She should have confidence that she is doing the right thing."

MC: "That's a big assumption these days. (Laughter)"

OS: "You sense an error and you correct it. If you are billing from this bill, you are not going to be watching the machine. You are going to be watching this bill."

MC: "Did you ever hear a story in the Company as to why Burroughs bought the Moon-Hopkins Company rather than develop a machine on their own?"

OS: "No, I never heard any comment on it. See, the Moon family, as I understand it, were financial people. They financed a lot of things. There was a Moon motor car. Hopkins was the man who did the inventing and Moon financed him. I imagine that in all probability they were not a strong corporation and it was an attractive buy, because Burroughs bought all the parts and all the machines that were in stock. They bought everything and moved it to Detroit."

MC: "We do have some photographs in the Archives of an early machine that was invented by Lundgren, an inventor working for the Company in 1911, who came out with an adder with a separate alpha keyboard. You could do some typewriting on it, although it was not like a regular typewriter. That obviously didn't work as well. Otherwise, they would not have gone outside the Company to acquire another machine."

AF: "What were the main competitors in that period to Burroughs?"

OS: "Competitors were very minor. There was a Wales. There was a Standard, which died early. There was a Dalton. And there was a Pike but Burroughs bought Pike out from New Jersey. But the competition we had up until the thirties in the adding machine business was the Dalton. American Can made a machine for \$54 which we jokingly said was made out of scraps of the tin can. (Laughter). The side frames of the machine, instead of having screws or nuts or pins on them, had a shaft that was flattened on the ends, outside the side frame ..."

MC: "What about the Felt & Tarrant Comptometer?"

OS: "The Comptometer was a big seller. Their strong selling point was the 'keylock' keyboard protection. They, like most equipment companies, maintained an operator training program. Several operators told me that they were informed in a very diplomatic way that no assistance would be given them in seeking employment if it was found that the operator had at some time worked for an employer that had used other types of machines. We felt that this was directed principally at Burroughs. The machine calculation was a direct result of the depression of any particular key. A key that was not completely depressed before release would not register the full amount as indicated by the key. The Comptometer was constructed so as to lock the entire keyboard against further operation if at any time a key had not been fully depressed before release. A 'release' key unlocked the keyboard and the operator could start over. The Burroughs calculator did not have a lock construction. Compensators were built into the keyboard to cause a slight resistance at the very start of the key depression and then the key actually seemed to drop away without effort. Burroughs sold hundreds of those.

MC: "Now, the Comptometer did not print out anything?"

OS: "No, 'Comptometer' was a copyrighted word. A 'computing meter' --that is what it was. It was a copyrighted word. A lot of people took a look at a Burroughs calculator and said 'Oh, you have a Comptometer.' Well, it's like looking at a refrigerator and saying, 'You have a Frigidaire.'"

MC: "Mary Lou just the other day got a letter from somebody asking about the Burroughs comptometer. Remember, we had that experience?"

OS: "This was a common error that people made, using a trade name to describe a type of machine. They sold big. They were a good machine, there is no question about it."

MC: "But they did go out of business."

OS: "They merged with somebody else and finally went out of business. The Willys-Overland had a lot of Burroughs calculators. In 1926 the Cleveland branch sold them five payroll machines. They were writing 25,000 checks a week. They had a lot of calculators. Calculators were perfect for payroll work and department stores bought them extensively. In department stores they would take the sales book, when the girls got a sale, and they would add the sales ticket and check the total. They would add the next one to see if the girl made any mistakes. Then they would add them all to see if the girls' total for the entire book was correct. So, they sold big in department stores and payroll departments. Now, a Burroughs salesman would not go into a filling station and try to sell a man a calculator. Some fellows would fool around there, but a calculator was like a typewriter. You had to an operator to get results.

MC: "Speaking about typewriters, you do remember when Burroughs came out with their typewriter?"

OS: "The man came down to Toledo. They called me in and I spent three days with it, taking that typewriter all apart and laid it all over the table and put it back together. So I had training on the original machine.

MC: "That came out in 1930, I think."

OS: "Somewhere around there. I have got a Burroughs typewriter at home, an electric carriage."

MC: "Which was an innovation, we understand."

OS: "It was and I will tell you another interesting thing. If there was anything wrong with Burroughs typewriters is that they were too good. They were built too good."

MC: "What do you mean?"

OS: "Too well mechanically. I was living in Toledo at the time. Lima was a part of our branch. I went down with a salesman to Lima Locomotive, which now is having problems with the tanks. General Dynamics - that was originally Lima Locomotive. They made 10 or 12 copies of billings and they had been using Underwood typewriters. Believe it or not, a girl would break 3 or 4 of those typewriters a week. Hammers would break off. We sold them electric Burroughs and they would break a bar once every 2 or 3 months. An interesting thing happened. I went down with a salesman. He got an order for additional machines. We were sitting in an office talking to the purchasing agent and he said, 'By the way, Mr. Hoffman, when do we get these machines?' Mr. Hoffman said 'In about six months.' He said, 'Hell, we can build a locomotive in six weeks.' (Laughter)"

MC: "Well, what happened? Why did Burroughs drop out of the typewriter market?"

OS: "Near as I can tell you, there were several reasons. One, when the war came on, Burroughs was restricted in what it could manufacture. We couldn't make any standard adding machines. The only machines we could make had to have calendar features, something to indicate that they were accounting machines. We couldn't make small adding machines at all. I think they cut us on typewriters. I am not sure about that, but there was another thing like this: if you were selling Cadillacs and the boss said 'We're going to put a line of bicycles in here and I want you to sell bicycles in your spare time,' you wouldn't sell many bicycles. A good Burroughs salesman was out looking for a three or four or five thousand dollar bookkeeping machine sale. He wasn't looking for a hundred dollar typewriter sale. Adding machine sales were pretty much automatic, in a way. One time I remember in Toledo, the sales manager made up a list of machines that were owned by one of the biggest banks and he marked all of the machines that were over ten years old. He went over to the bank and said to the vice president, 'These machines are over ten years old and ought to be replaced.' The vice president said 'Make up an order and I'll sign it.' We had a lot of business like that."

MC: "I see. Did you eventually go into sales?"

OS: "No, I worked with salesmen very closely. I might point out that I got interested in accounting. Why does a customer use his machine? What does he do with it? I liked to go in and find out what they did and where we could sell machines. I went into the Toledo Trust one time. I was in the trust department and a

fellow I knew really well was sitting there at a big typewriter, typing something up and adding things on an old adding machine. I said to him, 'Ray, you should have an accounting machine on that job'. Well, he said, 'We've been looking at Underwood.' I said, 'Don't do a things until to you have seen our class 7.' This Underwood machine you operated just like a typewriter. It did calculations. When you got to the point where you wanted your money, the machine came in to a place where there was a little counter about the size of a matchbox and you used the same keys for accounting that you used for typing. If you wanted to subtract, you used a complimentary number. You are familiar with complimentary numbers on a machine?"

MC: "No."

OS: "Take an adding machine. If you wanted to subtract \$2.25 from an amount, you put 7, 7, 5, and nines all the way to the left and it would subtract the amount of dollars. And that's the way they did this on the Underwood machine. Another thing about the Underwood machine, you had all these little dials across it - they could put on several counters - and when you got to the balance column, you looked at the balance column in a little bit of a dial they had up there and you had to decide how many columns of figures there were. Then you pushed a tabulator key like you would on a typewriter until you got to that particular column. Then you read this amount: '1, 7, 4, 9. 00 *.' And if you didn't take the right figures out, the * key wouldn't go down. But you had to pick all those out. When we got to our column, you pushed the total key and that was that."

MC: "In your opinion, what were the primary machines, the major machines that Burroughs produced. What were the key machines in the Company when you worked for Burroughs?"

OS: "Do you mean from the volume of income?"

MC: "I mean from innovation as well. If you had to select the major machines that should go into a museum, what machines would you include?"

OS: "The bank bookkeeping machine."

MC: "Which was what class?"

OS: "Class 6 and then it went into class 20. That was a latter development of the same machine. The basic difference was that in the early machines, as I told you before, you put the ledger

card in like a typewriter. In the class 20, the platen lifted up and you took the ledger card - it was called the front sheet - and you slid it in that way, down to the printing line. In the others you had to put it in and roll it in. The minute the machine printed the balance, it released the card and the operator could grab it. But it was the same basic machine as the class 6 except for the carriage."

MC: "But why would you choose the class six?"

OS: "The class 6 was the big seller from the time it began up until the mid-1920s."

MC: "Was there anything else on the market that came close to this?"

OS: "I don't ever remember seeing any other machine that could do bank checking."

MC: "What else would you select for the museum?"

OS: "Class 7."

MC: "Which was?"

OS: "The billing machine and the class 78 which was the accounting machine. It could add and subtract."

MC: "It could actually add and subtract?"

OS: "Oh, yes. It had the same construction generally as the billing machine, except that it had a subtract key. Later on, it had a carriage control subtract position so that in certain columns, if there were any amounts in them, they would subtract. Then came the 77. You have probably seen the 77?"

MC: "I have heard of it, but could you describe it?"

OS: "The class 7 had 3 or 4 and up to 10 registers on a shaft and one back here. This one was used to transfer numbers from back there to here."

MC: "You are talking about a shaft in the back of the machine."

OS: "Yes, it was like another adding machine. Below was the subtract mechanism and the multiplying which produced an answer in this extra adding machine, which then could be transferred to

any of these. The control of the machine ran front to back and any one of the 10 would move this way into place. They were limited there, so they made the class 77, which had a mechanism something like a ferris wheel with 20 accumulators on pins. There was a dial on the front of the machine and a key control and a carriage control. If you wanted register 10 you selected it and the end of that turned around to 10 position."

MC: "The 'ferris wheel' would turn?"

OS: "The wheel would turn. This register was transferred from here into the accumulator position and as soon as the amount was added it went back into storage."

MC: "Do you recall when that machine came out?"

OS: "That came out in the 1930s. At one time we sold 18 or 20 of them to Fisher Body. Another thing we could do with them was to put as many as 14 wheels on them and divide them so you could get 40 totals. You could put an amount down on one side and another on the other, so the two amounts would go on the right and left side of the accumulator. You could get 40 totals. That was a big seller. The class 72 was the biller, the 78 was the bookkeeper, and the 77 was the multiple rotary. There was a 76. It was a plain adding typewriter; no subtract, no multiplication. That was the one I mentioned was sold to banks as a transit machine. You typed the customer's name, the last endorser, and the amount of the check. It was strictly an adding typewriter.

MC: "Along with these machines, did Burroughs sell forms and a whole system for office supplies?"

OS: "Not until later on. Forms came in in the 40s, I would say."

MC: "Is that so?"

OS: "We always sold adding machine paper. In the 30s, we came in with carbon paper, typewriter rubber cushion keys, and other supplies. We even sold the ribbons they used in hospitals to take a baby's footprint.

MC: "Wasn't there something called the Business Systems Department here?"

OS: "Yes. That came in I believe in the 40s."

MC: "There was one that we know of that was operating here out of the old Home Office as early as 1907 or so. Do you recall anything about that department."

OS: "No."

MC: "What did the Business Systems Department do?"

OS: "The later one sold ledger cards, statements, journal sheets, all kinds of printed forms, and standard forms."

MC: "Prior to that, then, in the 20s and 30s, people would simply buy Burroughs machines and adapt them to their own records and business forms?"

OS: "They bought the forms from outside. There were several third-party vendors. There are some interesting stories here. Paper has a grain in it. Did you know that? We used to have a lot of trouble. Customers would borrow or buy (inferior) supplies of ledger cards. One ledger card would be standing up, another would be flopped over, and another over this way. The companies that made them just cut them out of paper anyway they could. If they were properly made, the grain was always vertical so that the cards stood up straight. We also experienced problems if the forms were too stiff. The machine wouldn't close properly. Good quality paper didn't have to be so heavy."

MC: "Let's get back to identifying machines for our imaginary museum. You mentioned the class 6, the class 7, the 77, 78 and so forth. What other machines would you put in that museum?"

OS: (Pause)

MC: "What about the portable?"

OS: "The class 8 was a big seller. The reason for the class 8 was this: we were selling a five-column adding machine for \$125, perhaps as much as \$150. Five columns of keys with the capacity of \$9000.00; it had six wheels. Victor came out in Chicago with a machine made strictly from tin. It was an eight-column adding machine that sold for \$100. They hit the shoe shine parlors, the corner groceries and all that - which we were losing. So we came out with the class 8."

MC: "Which was the portable machine?"

OS: "The portable machine that kept that market. I think in Toledo we had 30 billboards full size (advertising the machine). All over the country they did the same thing: a picture of the machine and '\$100.' Burroughs grabbed that. As I say, the

purpose of the class 8 was to combat this market - the corner grocery store, the shoe shine parlor and all that - but as soon as we got the machine, the sales manager walked right over to the largest bank and sold one for every teller. The result was that after about two years we began to experience trouble with those. The Company started an improvement campaign and ironed out all the problems and we got rid of all of them. So it was a perfect machine. Naturally everything was done to reduce the cost of manufacturing the early machines. The parts were not case hardened. Everything of that kind that could be eliminated was eliminated to reduce cost."

MC: "What do you mean by 'case hardened.' I have heard the term before."

OS: "It's a chemical process wherein they heat metal to a certain point and they put it in a chemical. It has a coating on the outside just like enamel - it's very hard, just as hard as glass - but if you break through that, the metal on the inside is soft. It is just case hardened, just the outside. The parts that operated the adding machine wheels were run through the process. You could see them getting red-hot and that hardened those teeth to avoid breakage. But the metal was a softer metal. In the portable, a lot of the earlier parts were not case hardened. The field men were amazed by something else. In 1907 or '08 Burroughs bought Pike. There was cylinder in there, which was the success of all adding machines in the early days. It was like a door-check, a cylinder with oil in it. That controlled the speed of the machine."

MC: "Yes, the dash pot, in other words."

OS: "Dash pot. The dash pot in the Pike machine was at about a 45 degree angle and the oil poured out. Every so often, depending on how frequently the machine was used, we had to add oil to it. So the Company re-engineered it, put in a larger dash pot, and made it run again. Then they came back twenty-five years later, made the class 8, and put the dash pot in again like that. Two years later, they replaced had to replace them. (Laughter.) Sometimes engineers are engineers and that's what they are. They called me in one time and told me they had a machine they wanted me to look at. They had a portable adding machine hooked up with a cable to a steel cabinet with a ???

. The thought was that when I went into a bank with my pay check, the teller would put the amount of the check on the adding machine, press the motor bar, add into the machine and then hand me a roll of money with a band around it, the amount of the pay

check with the change. They called me in and gave me a demonstration of it. They had a little machine at the side - it wasn't as big as that. During her spare time, the teller would take twenty dollar bills (and other denominations) and lay them on the machine. The machine would grab the money so quickly you couldn't see it, roll it up and put a band around it. I went up and I looked at it. I said, 'Nope.' They said, 'What's the matter?' 'Well,' I said, 'anybody who walks away from a bank teller's cage with a bunch of money rolled up with a band around it is stupid. Not because the bank teller is dishonest, but people make mistakes. Am I going to walk away from that cage with a roll of money with a band around it not knowing how much is in there?'"

MC: "Without counting it."

OS: "Without counting it. 'So what do I do? I stand there at her window, I tear the band off, throw it on the floor and count the money. And I take more time than she would have taken had she counted the money first.' They never sold the machine. They came up with another one one day and they called me in because I had been in the field for 25 years. They had a spray cleaner for typewriters. You would spray the type, let it set about two minutes, then you would take a napkin or kleenex or something and wipe it clean. They said, 'Do you think it will sell?' I said, 'No.' They said, 'Why?' I said, 'Well, here's a girl going to a party. She comes in dressed up. She sits down at a typewriter, and I don't care who makes it or how careful you are with it, you spray that and it splatters. And she may be in a little hurry and she may start typing before it's real dry. She may spoil whatever letter she is typing.' I said that I could not recommend it. We had this experience. We sold a cleaner that would take the old ink off your hands."

AF: "Oh, a hand cleaner. I have seen ads for that."

OS: "But if you get it on your cloths, you have got a white spot. So, some of these things are perfect but not practicle. And this was true of the bank cashier's machine and, as I say, with the dash pot in the portable. The fellows designed it, it worked, but it quite wasn't what it should be. They corrected it, all right. It did not cost the customer anything. We would go out, we had a little jig that we put under that one part, drilled a hole in it, and put a new dash pot in. It was all right."

MC: "All Burroughs machines had dash pots. Is that correct?"

OS: "The class 7 did not have. The class 7 billing machines, bookkeeping and rotaries, did not have dash pots. Motor speed controlled the speed of the machine."

MC: "Are there any other machines that you can think of from the early years that you would include in our museum?"

OS: "The duplex; what we called the duplex, the class 2. I have brought you an ad, I think, from a magazine that shows the class 2. That was a very versatile machine. People really went for the duplex."

MC: "Can you explain why that was the case?"

OS: "The duplex had two accumulators. You could add in either accumulator by selecting the register. You could add in the upper accumulator, print a total, and transfer it to the lower one."

MC: "Which had the display. Is that true? Did it have a display at the bottom of the machine that one could see through the glass?"

OS: "You could see only the upper counter. The lower counter you couldn't see. The upper counter items were just plain figures. The lower counter figures had a little square at the right hand side of them. So you could always tell which item was in which counter. You could add any number of items. For instance, in a bank in the early days they had wide sheets of paper on which they listed all the checks in columns, usually about six columns. When they came to a customer who had eight or ten checks, they would run those eight or ten checks and transfer them down to the other counter. That way they got a total. There was an extra roll of paper on the duplex besides the journal paper. They could take this off and put it on the checks, so when the bookkeeper got it he wouldn't post (the entry) as one check. There was a key called 'LST.'"

MC: "Standing for what? List?"

OS: "List. Up until about 1925, or maybe a little later, for many banks throughout the county, it was not a question of which machine to buy but whether or not to buy a machine. 'We're getting our bookkeeping done without a machine.' 'We may not buy a machine.' There were duplex machines which would add the old balances in one (counter) and new balances in the other. The difference was the difference of the day's transactions. (In some places, the machine was used to keep track of) wholesale, cost and selling prices; in a lot of places, numbers and amounts; and the machine could be used with the shuttle carriage, which moved the carriage from one position to another, to cause one side to add or both sides to add. We had the counters' 'NORMAL' key, which allowed the carriage to remain in a fixed position. A lever shifted every machine

operation so that the first amount was in the upper counter, the second in the lower, the third in the upper. That way you could list old and new balances vertically."

MC: "What is the function of a non-add key?"

OS: "A 'non-add' key allowed you to print an amount without accumulating it. It printed a little cross beside the figure to indicate it. There is an interesting thing about the competitor Wales. Wales sold a few machines. They made a big point that they did not have to print a total * at the beginning to show that the machine was clear. We always taught the operator, 'The first thing you do is take a total and then go on with the rest of it.' If the machine was clear, their first item printed a little circle beside it. That said the machine was clear. But you guessed, you went ahead and did your work and then you looked back and the circle wasn't there. The weakness of that was that any time you put figures in that exceeded the capacity of the machine, then that little circle didn't print. Any safety device that only works part time isn't worth anything. Wales didn't last very long."

MC: "Burroughs did sell for twenty years or so a cash machine, used in stores and so forth as a register, like an NCR machine."

OS: "Yes, they sold a cash register."

MC: "Why did they decide to go into that business? Why take on someone as big as NCR?"

OS: "I don't really know ... Accounting machines was the field; that is where the money was. To fuss around with a fellow down at the corner who wanted to buy a machine at a discount or at a reduced price - which was the cash register (market) - that was horse-trading. I don't think the men had their heart in it. It was a good machine ... it forced the other companies to do some things that they hadn't done before. For instance, National Cash Register for years and years and years, up until the middle 30s or 40s ... had three panels that came up ... There were three panels that came up for \$1.75: '1, 7, 5.' But on the other side there was '5, 7, 1' - it was reversed. (Laughter). On the Burroughs machine both sides read properly. Another thing ... National sold until not too many years ago a cash register which had totals at the top. The paper ran backwards. It started at the bottom, the paper ran down, and your total is at the top. Well, that has never been accepted in any accounting system in any place that I have ever been. Burroughs kind of forced that issue. Then they got a machine in from Germany, you know. Do you know about that?"

MC: "No I don't."

OS: "That was called the Anker."

AF: "Oh, that explains the machine in our collection."

MC: "Oh, yes, all right. What is that?"

OS: "The Anker was made in Germany. 'Anker werke ...' or something like that."

MC: "That's right."

OS: "The Anker was a good machine, but as I understand this - and I know some of these facts are true - when they began to get these machines, they only sold them in a few states. It seems that this company had customers all over the world. We could not have gotten enough machines to give each salesman two machines a year. So he wasn't going to spend time promoting it. I think we were limited to 3,000 machines a year."

MC: "So Burroughs worked as a licensee of Anker? They distributed the machine?"

OS: "They had 'Burroughs-Anker' on it. 'Burroughs, Anker.'"

MC: "Did Burroughs own the company?"

OS: "No, I don't know whether they had any stock in the company. It had the Anker emblem on it and the Burroughs name on it."

MC: "The sensimatic obviously was a great machine - I am jumping ahead several years now to the late 40s when that came out. But that was in development since the mid-30s. Did you know 'Moe' Butler who worked on that machine?"

OS: "No. I will tell you why this had to be done. The machine we started out with, we kept adding on to. We started out with the adding machine, added the duplex, the 600 - we kept adding until we had over 2,000 things that you could do with this machine besides adding. In other words, automatic memory devices, automatic check counter, automatic dating features, and automatic totals. They kept adding on to the machine. Well, now the construction of the machine was a wide carriage pulled by a spring like a typewriter. We started out in the bookkeeping machine with three cams: a non-add, a date control, and a subtract cam. They kept adding until we had seventeen of those. When you pressed a cam you operated the mechanism. The machine was not operating

The control roll on the sensimatic carriage, through mechanical linkage, actually moved the subtract lever to the subtract position. When additional cams were operated at the same time there was added resistance to the carriage movement. If there were several cams active at the same time and the columns on the forms were close together, the carriage moved into position very slowly. The sensimatic control panel consisted of a series of metal plates programmed with pins of various lengths. At the start of the machine operation a series of 'fingers' (levers) were moved upward from individual cams to 'sense' or feel for a control pin to determine the function to be performed. The normal operation was for the machine to 'non-add.' If an add control pin was active in that position the machine would add the amount. All controls were activated from the motor operation and were not dependent on the carriage movement itself. The sensimatic was very fast, could perform approximately 140 operations a minute, and it did not have a dash pot. There was a subtract pin, a total pin, and different length pins for each particular function. In the earlier machines all controls were activated mechanically from the carriage movement. The carriage movement was spring powered. If the spring was too strong, it caused excessive strain on parts during long tabulations and if the spring was too weak, it would not overcome the resistance of multiple controls on short tabulations.

MC: "Is it true that the sensimatic sold well from the time it hit the market?"

OS: "Oh, yes. It was a perennial seller. When a customer bought the sensimatic, he could use the same forms that he had previously used. Customers therefore didn't have to assume that additional expense. ... Another thing was that ... Burroughs had watched the intermediate markets. (Customers) didn't have to be General Motors or the corner grocery store: they were the fellows in between and there were a lot more of those than there were the big ones ... Burroughs thought about the middle man who was not in the market for a 2 million dollar computer ..."

MC: "You have talked about the Second World War and the fact is that the government restricted Burroughs from making certain models and machines. It is my understanding that the class 3, for instance, ceased to be made by the Company during the war. Can you talk about other models that ceased to be made?"

OS: "The class 3 was discontinued because the class 8 took the place of it. The 8 was a desk model - you are familiar with the 8 --that didn't take up much room, had much less weight ... (end of side one, tape #1)

MC: "We were talking about the class 72 machine and got sidetracked on the Sensimatic."

OS: "I think the class 72 must have been the death of the class 4. The only reason the class 4 was bought was because it featured multiplication, and the class 72 was so much faster and had other features. The class 4 was the favorite of the dairy people. The class 7 was perfect for them because they could bill all kinds of work on the class 7. No one was going to use the class 4 (after that). I don't know whether you know this or not, but during the war the customer had to get permission to buy a machine."

MC: "No, I didn't know that."

OS: "They had to get certain forms from the government. They had to list the equipment they had, what they wanted to buy, why they needed it, and the age of their old equipment. Once they obtained permission from the government, they would submit an order to us. We would file the order and every so often we were given permission to make so many machines. We would try to handle the most important orders, not necessarily by the date the order was received. I recall one instance in which a bookkeeping machine was delivered to a customer about 90 days after the order was received. This was unusual. Another customer who knew of this delivery, and who had an order on file much before the machine that was delivered, complained to us asked for an explanation ... It came down to the point that I eventually delivered a machine to the disgruntled customer ..."

MC: "During the Second World War, Burroughs landed a major contract to produce the Norden bombsight. Burroughs was not the only company that made the bombsight, but I understand that we were a major supplier and produced many thousands of units for the Government. Were you familiar with the contract?"

OS: "No. However, I remember they had one in the lobby for a long time."

MC: "Yes, we have a couple of them in the Archives."

OS: "I recall once going through the factory on a tour. The girls who worked on the bombsight parts did so under a cellophane tent stretched over the work on their benches. They assembled the parts in this manner so as not to breath on them."

MC: "Oh, I see."

OS: "There was no chance for moisture or anything of that kind (to contaminate the units). One of the fellows jokingly told a story

about all the precision they went to in assembling and testing the machine. The government came in and tore them all down and packed them up in boxes and shipped them out. (Laughter)"

MC: "So they were reassembled elsewhere?"

OS: "They had to be done again."

MC: "No kidding?"

OS: "I never new the extent of this contract or much about it. But I was through the factory one time and they were making the bombsights."

MC: "Where were they made here?"

OS: "Right here on Second Avenue."

MC: "Can you describe where in the building they were manufactured?"

OS: "Most of it was done over along ... the south side ... on York Street, which was where they later made the class 8, 9, and 10 machines. A lot of the work was done over there."

MC: "Can you describe how machines were made in the factory? For instance, were all the parts milled here or did we buy parts from suppliers?"

OS: "When I started with the Company, the Company had its own printing department - they operated almost independently. Everything they made."

MC: "So raw materials came in and machines would go out."

OS: "Yes. They had a steel storage room over here on Third. They had a rolling mill of their own. The steel came in - I don't think any of it was over a foot wide - and this rolling mill was used to bring it down to a precise thickness so that any number of parts assembled together would not have a variation of thickness. We had one unit in the machine that had 130 wheels on the shaft with bearings in between. That could not vary as much as .005 of an inch. If the materials was not of an exact thickness, we would have trouble. So they rolled their own steel for all the precise parts ... The heavy punch presses were on the ground floor on York Street. You could hear them thumping and almost shaking the building. They made the bigger parts. The little parts were made all over the place. During the War, there was an extra story put

on the section right in here (gesticulating to the middle unit). That was the paint shop. The painting was all done on conveyors, by spraying. I saw a lot of key tops made here, but later on John Coleman, I think, let the key top contract go to a California company. I think John Coleman also got rid of the Printing Department because they had a lot of old obsolete machinery and lot of older, high-priced printers. They decided to buy their printing from elsewhere. They cut their own rolled paper - they were always very fussy about that. Burroughs cut their own rolled paper."

MC: "Was that done here?"

OS: "That was done here."

MC: "Were machines hand assembled by one assembler?"

OS: "Up until the war. I was in the M.A.E. Department - Mechanical Accounting Engineering. We wrote the specifications for all the machines. From time to time they would come along and say, 'We want to build 500 class 324s.' That is all there was on the order: '500 324s.' The factory had the specifications for 324s. So 500 copies of this order made up. A copy of the order was put in a big pan and all the parts for that machine were put in there."

MC: "By whom, a stock man?"

OS: "By the stock people. When a man was through with a job on the bench, he would go to the tool room and they would give him an order. He would get this tray of parts, go back to the bench, and start it up. From ground up."

MC: "One person would build a machine."

OS: "From the ground up. That was why we had ... departments in here that didn't know why we made 8s, 9s, and 10s and ... bookkeeping machines. 'Why don't we make all class 4s.' You sort of get an attitude - you get it every place. When the war came along, it was impossible to get enough people to build machines. So they put in ... metal plates on all the work benches and they had dollies. A man would be given the base of a machine and a blue print. He would just put the main shaft in, fasten it down, and after testing it, would shove it to the next man. The next man would add his part and so on."

AF: "When did they start doing that?"

OS: "During the war, World War II. At the end, the machines came to a final inspection. Men took that machine and went through all the tests."

MC: "My father, who worked here before and after the war, described the fellows who tested the machines as being older men who knew a lot about the machines. They used various tools to slip inside the machines to bend parts, reset springs, and so forth. He mentioned that very rarely did machines work as they should when they reached the final inspection station. Almost every one required some adjustment."

OS: "There were certain men who were called in if the main sections were slow or biting a little bit. These fellows had the touch of bending parts a certain way to (straighten the alignment of the mechanism). But after final inspection ... the machines went to commercial inspection."

MC: "Which was done out at the branches?"

OS: "No, in the same building. For adding machines, they would just run certain sets of figures ... in every possible combination. That was all put in with every factory order and kept with the machine until it was ready to be delivered. For all the accounting machines, a girl would take the forms that the customer had purchased and do actual bookkeeping, sometimes spending two or three days per machine, working in every combination that she could think of. That way they tried to iron out all the little bugs that might be in there."

MC: "Mr. Smith, when you joined the Company it was during the First World War and, of course, a lot of men were out fighting. We know that women were working in the factory here. During the Second World War, many women worked in the factory as well. Between the wars, were there many women in the plant?"

OS: "There always was. There always was ... a lot of women because of (their faculty for working with) small parts ... There was all kinds of work like that (assembling small pieces), which was very desirable. The girls were, I think, more patient than maybe men would have been with it. There was always a lot of girls that worked in assembling and testing small parts."

MC: "Were there any women in engineering?"

OS: "I don't recall any. I don't believe so."

MC: "What about in the inventions department?"

OS: "I don't think so."

AF: "What about in sales or on the service force where you worked?"

OS: "The only women that were in the sales organization up until the time I left were very few. There were two women in the Detroit branch who went out and spent time with customers - as much as they required - installing new equipment. But there were no girls working in the service department at the time I retired and I didn't know any in the sales department. We did have these women who went out to help install machines; the salesmen didn't have to stay there with the machines. They had women like that in most branches. I did run across women in a Florida branch assembling panels for sensimatics after I retired. But at the time I retired there were no women in the branches that I know of working in the mechanical department."

MC: "What about blacks? Did you meet any blacks working in the Company?"

OS: "We had one black fellow, who was a charming fellow. He was just so good that salesman would ask for him."

MC: "He was in the service department?"

OS: "Yes. We had one black salesman who was a brilliant fellow. In the branch at the time I worked with the salesmen rather closely ... I got a call one day from a customer who was getting some accounting machines. So I made out a slip and put it in a salesman's box, which happened to be the black salesman. He went out the next morning and came back at noon. He said, 'I went out there and the fellow said they had had a meeting and they had changed their plans a little bit. They are not interested yet for a while.' About an hour later I got a telephone call from the man who said, 'Don't ever send that black man out here again.' That is the only complaint I ever got from customers on that basis."

AF: "What year was that?"

OS: "That was in the early 50s."

MC: "When did you first encounter blacks at Burroughs? Do you remember the year?"

OS: "I went to the branch in 1950. They had a black man on the staff then. That was the first one. Now, they had a number of black employees in the building here. Not in manufacturing."

MC: "In what?"

OS: "Maintenance. We had one fellow, a marvelous old gentleman, who was suppose to come in at 4 o'clock to work the night shift on

the cleaning crew. He would come in sometimes in the morning and come to our desk to shine our shoes. He spent most of the day here. The fellows all paid him good money. He was a brilliant fellow and the Company retired him before retirement came into effect. They gave him a little retirement and I suspect he came on before retirement came into effect."

MC: "Can we talk a little bout who you reported to? I mean, within the branch. Did you report to someone out of the branch?"

OS: "The setup was, when I went to Indianapolis, they had a sales manager, a service manager, and an office manager. Now the sales manager was accountable to Detroit. The service manager was accountable to Detroit. The office manager was accountable to Detroit. However, the office and service managers respected the sales manager's authority. He was responsible for keeping the office open. In other words, if everyone was sick, he was supposed to keep the office open. My responsibility was to the service manager. However, theoretically, he could not hire or fire me. He had to have Company approval. If he complained, the Company brought me in and said, 'Send Smith to Davenport, Iowa.'"

MC: "Was that the regional office?"

OS: "That would be a branch, you see. They would transfer me to another branch. The Company figured that they had trained me and maybe it was just a personality clash. They gave fellows all kinds of chances. That has been the setup as long as I worked for the Company. In 1943 I was a supervisor of a crew of service men for industrial clients around the entire city. We had two supervisors: I had the industrial and another man had the downtown commercial. One morning I received a notebook with about thirty names in it, Company executives and department managers. A new policy had been instituted and the supervisors were to visit all these people. I was instructed to begin visiting agencies on Monday morning and to talk with employees if they were not busy. So I went through this routine, which took about ten days. About two weeks later, my boss called me in and said, 'We got a letter from Home Office. They would like to call you in to engineering.' Well, in fact I had seen every accounting system there was in 25 years, I had seen every mechanical device for those, I knew what the customers liked, I knew what the operators liked, and I knew the sales problems. They discovered in my file that I had had typing. That's essentially why they had wanted me in engineering. So I decided to go to engineering. If I had stayed in service, the next week they may have asked me to go to San Francisco. If I went into engineering, they probably would have me stay in Detroit - which they did until I retired. That was the line of authority.

In the field there were three divisions. Service men were responsible to the service manager, salesmen to the sales manager, and the office to the office manager. Every so often, the auditors came down and checked all the records. That was the office manager's job, to keep things straight. When when I went into engineering, we recieved all orders, from all over the world. There were ten of us. Each man was allotted the orders from certain agencies, alphabetically. It was my job to process those orders and to see that they were delivered. If I signed the work order and noticed there was a problem with it, I wrote to the branch salesman and explained the trouble, get his answer, and finally I would send him blue prints with instructions of what I had designed for him. He would approve it and then we would build the machines. I was in there from '43 to '53. They called me up one day and told me they wanted me for a meeting. They said they had made an analysis and found that 90% of the orders came in from about six major cities in the country. So what they wanted to do was to establish this sort of an operation in those cities. Rather than write back and forth, which caused delays, work right with the salesmen. They asked me to go over to the Detroit branch for a test. So I went to the Detroit branch and worked for a year under this Home Office plan."

MC: "That was over on Woodward Avenue."

OS: "On Woodward Avenue. I worked directly with salesmen in the state of Michigan. They would come in from Lansing, Grand Rapids, Jackson. I worked with these fellows, worked out their problems, and made their layouts for them, and got everything all ready to get the order. They sent a man to Philadelphia, one to Boston, one to Chicago, San Fransisco, Los Angeles. So they established this, what we called M.A.E., system in each of these big branches. That's the way it turned out for the last twenty years I worked for Burroughs. After the first year I went to work for the branch, then I was under a sales contract, just like a salesman. I was required to devote my lifetime strictly to their business, nothing else. I used to go out to the customers. I spent a month with the city of Adrian, where we set up the accounting system for the city ... I got a call one day from Hillsdale, Michigan. Their payroll operator had been out on account of an automobile accident and couldn't run the payroll. They wanted me to go down there and help them get the payroll out. You see, for every machine that we sold, every accounting machine, we had a form about this big - blue prints - you probably have seen it. There was an actual picture of the paycheck, the ledger card, the journal sheet, all the different things that were done on that machine, and sample figures. Then there were operating instructions for each of these units, whatever the jobs were. You could take an amateur, sit them down before a

machine, and in ten minutes you could teach him to run that machine. Now, it would be a long time before he was proficient or fast on it, but he could operate the machine because ... the instructions were very detailed. So I could go into any customer'd office, look at the blue prints, and go to work. Even if I had never seen it before, it was very simple to do."

MC: "Do you recall when Burroughs made the jump into electronics in the late 40s under John Coleman, when they set up their Paoli operations - first in Philadelphia, later in Paoli?"

OS: "I wouldn't attempt to say within two or three years when it was. I had training twice but I never got in to that part of the business. I retired when this began to take off."

MC: "You retired when?"

OS: "1965."

MC: "Burroughs had by that time, of course, bought Electrodata and they had introduced the B 5000."

OS: "They had this data processing center over at the McCord Building. I was in the McCord Building about six months before I retired. They had it all set up and they were going strong then. But as so far as to say what year they really got it rolling, I wouldn't be able to tell you."

MC: "So you had very little to do with the computer end of Burroughs?"

OS: "Practically nothing."

MC: "Did you work at all with the sensitronic machines that came out in the late 50s?"

OS: "Yes, in lay outs."

MC: "What was the basic difference between a sensimatic and a sensitronic?"

OS: "Well, the sensitronic was electrically controlled, whereas the sensimatic was mechanically controlled. Instead of the old cam action, it had pins that felt to see what it was supposed to do. In other words, if there was nothing there, the pin went up and nothing happened. If the pin was stopped, it indexed the parts and caused the rest of the operation to do what was required."

MC: "But the sensitronic was electronic. It looks a lot like the sensimatic."

OS: "Yes, the machines basically looked the same, but they had different operating units inside."

AF: "What were customers' reactions to the sensitronic? Did it take a while for them to get used to it or did they take to it immediately?"

OS: "I think the customers took to it. I will tell you this: the customers had faith in Burroughs. Burroughs told them this is what they had, and the customers were impressed and took to it. As I say, people trust Burroughs. Just to show you the type of thing they did, they started rebuilding trade-in machines back in the early 30s. They set up a department that actually rebuilt the machines, not like an automobile that is taken in for a tire change and a body shine. They rebuilt the machines. Some of them came out with improved sections that were not in the original machine. They could do that easier than repair the one that was in there. They advertised in Popular Mechanics. There was a lady appointed to a post office down in Kentucky who happened to see one of these ads: no price, just a picture of a machine. She sent a blank check to the Home Office and wanted a machine suitable for her business. Mr. Britt took a machine in his own car and delivered it to the lady."

MC: "At the time he must have been the sales manager for the country."

OS: "He was Chairman of the Board."

MC: "Impressive."

OS: "There is a story about a little broom factory over on the east side that happened when I was here. Our prices on service went up in 1921. The price went up again in 1941. I don't know how much you know about the service contract."

MC: "We don't know much."

OS: "That carried the Company, you know what I mean. It was a tremendous thing. 50% of the customers were paying us annually to maintain their machines, and the 50% were the big people, not the little five dollar man on the corner. We had contracts with banks, General Motors, and others that stated that all machines would be taken care of by us for a set price. All new machines expired from guarantee would automatically be included in that contract. That

was a fixed income, you see. This fellow over on the east side had a little broom factory. I was in there once. His office looked more like a living room than an office. He had a couple of desks, an adding machine, a typewriter, the man, and one girl. He had a seven column high keyboard, which was very old. He was paying annually for service. When the contract price went up in 1941, the service man went in with the new contract that had to be signed - we couldn't raise the price without his approval - and he discovered that this man had been paying for many years for a five column machine for his old seven. There was two dollars a year difference. For twenty years, he had paid the two dollars difference. The Company refunded his money, even though he had signed the contract, which was legal. They did many things like that. I know of another time in Toledo. We had two special savings bank machines which carried an interest balance on the left side of the keyboard and an account balance on the right side. Every chance they would transfer the interest totalled. If you took your money out before that, you didn't get your interest in those days. We had two machines in this one bank. On one of them, a section broke in two, right in the middle of the bottom of the machine. I was taking care of the customer. I called my boss right away and he called Detroit. We couldn't fix it; it was impossible. Detroit called us back in a little bit and told us that there was a machine in Texas just like it that we could loan the customer. The machine came in in a few days and we shipped the broken one to the factory. It was returned within a short time with a \$285 repair bill. \$285 in that time - and I am not kidding - was the salary for three or four employees. The boss and I sat down and I said, 'Now look, Walt. We have been taking care of this machine. They don't abuse it. I don't think that they ought to pay for it.' We wrote a letter to the Home Office explaining our position. Now, they had rebuilt the machine, put in things that were originally not a part of it: new stuff, redesigned sections. They shipped it back to the customer without cost. So that is why people have confidence in Burroughs."

MC: "What about the employees? How did they view the Company?"

OS: "I will say this. In every group of people, you have a certain number that should not be there. They are just there because of the paycheck ... I don't deserve credit for the things that I got from Burroughs. The income I got and the jobs I got - I don't deserve credit for that. But the fellow who didn't get that is to be criticized. The fellow who did the same job at the end of 35 or 40 years that he did the first day he worked - there is something wrong with him. The longer you stand in the rain, the wetter you are going to get. If you stay around this business and haven't learned anything, there is something wrong. Actually, we

had those kinds of fellows, who didn't go anywhere in the organization. During World War I, as I say, that had difficulty in getting help. There were fellows out in the factory that thought a service job was a job were you sat at the bench like a fireman and when a call came in you went out and fixed a machine, went back, and sat at the bench. That was not true. Each man had a territory, and that territory consisted of customers who payed annually twice what his salary was. The second part of that was to pay overhead, parts, travel expense, education, all those things. Well, these fellows in the factory thought that this was a cinch, if they could get into the field service. They came into field service jobs. Most of them had specialized in one type of machine. They never learned the other types too well. We had one fellow who should never have been in the deaprtment, but they had to take him because they needed help. A customer bought a big new bookkeeping machine. I knew them quite well. I got a call from them after the machine had been over there a week or so. The customer said to me, 'Mr. Smith, I hate to do this, but we have an adding machine that we have had in our office for years. Mr. Snyder has been coming in to service it three or four times a year, cleaning and oiling it, and taking care of it. We like Mr. Snyder, but please don't send him to work on this new machine.' We had those kind of people. I would say that one third of the employees in the field were truly loyal. As I told the general manager, when I was still in service, 'About a third of the men you have to watch all of the time, another third you can help a little, the other third can take care of themselves. You don't have to worry.' And I think this is true most anywhere you go ... We worked by telephone and the Company was good. It generally tried to give a man a territory close to where he lived. He would call in about 4:45 and the girl would tell him what calls he had. From his experience, he would know which ones were most important. The girls at the desk didn't know. He would tell her where he would go in the morning. Fine, I had thirteen fellows out here. I got a call at 8:30 and the customer says, 'Where's that man who was supposed to be here at 8 o'clock this morning?' 'Well, he signed out a 8 o'clock.' We had just talked this company into trading in their IBM system for one of ours and we had sold them company three big machines. They wanted to know where our man was ... I went over to the place. There was one little spring that had come unhooked from the carriage. I hooked it up and it started to work. I went down and sat in the lobby. At 9 o'clock the fellow walked in. 'Ha, ha, ha, I overslept this morning.' I asked him if he had called the girl to tell her he would be late. 'No.' I got him outside and said, 'I don't know how often this happens but I think it happens more often than I know. We can't operate this way. In the morning there are thirteen men and I expect every one of those men to be on the job or let me know. If you're not on the job, I have to come

over. If I have to take another man off his job, then I have got to watch his territory, and I don't know when you are coming in.' He said, 'Well, I work overtime a lot of times and don't report it.' I said, 'Have you ever been asked to work overtime and not report it?' He didn't have an excuse. You have those types of fellows. I had one in Indianapolis who was that way and I laid him off for three days without pay. He didn't speak to me for six weeks. He was never later again. Now, I couldn't do that in Detroit. I would have a strike on my hands the next morning. The labor situation as it was."

AF: "How was the labor situation when you were in Detroit?"

OS: "There were a lot of agitators. To show you how ridiculous they were, the electrical union didn't want us to put electric cords on the machines. If an electric cord burned out or if something else went wrong, they wanted us to call an electrician."

MC: "In the field, you mean."

OS: "Yes, in the field. I had a call one day. There had been a storm the night before and I got a call from the customer's office. Our electrician had been over. The machine wouldn't run. He had taken the motor apart and looked at it and said, 'There is a reverse lining in the armature.' I said, 'Now, that's funny that there would be a reverse lining in the armature, which has been running for six or seven years without any trouble.' This fellow, it turns out, had taken all the wiring off and when he put it back, he had put it back in incorrectly. So I just changed it back and it was all right. Sometimes after a storm we would have motors burned out. If the motor was burned out in different place there, we would charge them for replacement. But if only our motor was burned out, we would give them a new one free. We figured it was our fault. If it was general, if the motors were burned by electrical outside interference, then it was not our responsibility."

MC: "What were some of the unions that were active in the plant or at Burroughs?"

OS: "The only one, when I was still here, was the tool maker's union. Say, now I have got some stuff at home that I don't know whether you would like to use. They came out here with all kinds of literature about 1953. They bombarded the place with literature: 'Time for Burroughs to get a union.' Had a dozen letters, complaints of people inside, and 'It is time for Burroughs to have a union. We know before it was all right. But now we need it.' So finally the Labor Relations Board called an election. A

few days later, the news came out - and I have got this clipping - which was that 83% voted for no union. Just a few percent voted for the electrical union. The rest voted for the UAW. There was no union actually active here when I worked for the Company apart from the tool and die makers. But you never knew it was here. They had caused a little trouble several years before, but it never amounted to anything. They never closed the plant."

AF: "Why do you think the unions weren't very successful? Do you think that people were generally satisfied working for Burroughs? What do you think the reason was?"

OS: "When I started, long before Walter Reuther or any of these people, I had two weeks vacation. I had, starting out, a \$1,000 free insurance policy and \$1000, that was nice in those days. Each year that increased \$100 until it got up to \$2,000. I had six days sick leave and additional benefits as well. So I think that employees were pretty well set. And to bear that out, there was never a close down in the plant. I would say that, from my experience of people, that there is a third of them that, if they don't get a paycheck today, they don't eat tomorrow. The fact that they never went out on a strike is very telling."

MC: "Were there any layoffs during the Depression?"

OS: "There were in the factory. In the field organization we were not laid off. We were paid, everyone of us. But the factory had a lot of layoffs. In Toledo, they called the salesmen and offered them a flat rate of pay per week, if they wanted to stay. If they found a better job, they wouldn't hold them to their contract. Do you understand? A salesman usually had a contract for say, three years, covering several counties. Two years or three years. They would not hold him to his contract if he wanted to leave, but if he wanted to stay, they could pay him so much per week. A lot of salesmen left. In our department, we had twelve men. We all worked four days. One third of the crew worked the last two days. The other two-thirds, eight men, didn't work. Every third week, we got a full week, which probably amounted to a 22% reduction in salary. But there were people weren't getting anything, there was no unemployment compensation, nothing of that kind to help people, so we were very lucky in the field. Of course, I can understand that if you have spent a lot of money training a man, you would like to have him on the job. Here's an interesting thing. During the Depression, we only lost 5% of our contracts in Toledo ... The people thought that this would be over and I want to keep the machine in shape. It will be over so I want to pay for this. They paid in advance."

MC: "Actually, the Company did make money, we understand. As a matter of fact, they opened the Plymouth Plant in '37."

OS: "The service department, as I can see it, served as kind of a balast, because we were getting a certain amount of money (for our maintenance contracts). We sold some supplies. There were times we didn't sell much in Toledo, I will say that, but we sold some supplies. Burroughs commanded a lot of respect because of our pricing. I had a bank in Toledo that wanted 50,000 15 x 24 sheets of paper. 50,000. We were selling plain paper in 12, 20, and 15. They wanted 50,000 shipped in one pine box, which the Company did, directly to them. We had a price list. 500 sheets were \$5.50, 1000 sheets were \$10, and so on. I wrote the Company and I said, 'I have got a customer that wants 50,000 sheets, shipped to one point in a wooden box.' I got a letter back that said, 'Your price is on page so and so.' In other words, if I had gotten a 50,000 break, then the next week someone would have gotten a 20,000 break and somebody a 30,000, and it goes on and on and on. 'This is the price. If you can't sell it at that price, don't sell it.' This fellow at the bank told me, 'Now, we own an office supply company. I am advised to buy as much as I can from them. If you can give me a penny a break, I will buy it from you.' Well, I couldn't give him a break."

MC: "Do you remember any of the social activities that were available to the employees at the Company?"

OS: "In 1926, we went and bought the Farms."

MC: "I think it was in '27."

OS: "I don't know for sure ... This was a great thing, a great thing. I know all of my friends thought it was wonderful, that the Company thinks that much of their employees. In fact, I preach Burroughs any place I go. They thought it was great. I had, I suspect, a hundred of my friends up here at different times at the Farms ... When I was here during the war, you could go up here and see people of all stages of the business--electricians, machine operators, salesmen, office managers, the president of the Company--having coffee together. There was no feeling that anyone was any better than anybody else ... and that was true of everyone in the place."

MC: "Was there a swimming pool here?"

OS: "On the north side, maybe north of the present building, there was a swimming pool. When the boom came and when they needed the space, they floored it over and put machinery in there. When they

started demolition, they found the swimming pool. At one time, there was a house across from ... the east main entrance ... that was a club house. There were tennis courts over there. Later on, that became a parking lot."

MC: "It is still a parking lot owned by the Company. Do you recall the years when there was a ball diamond on the site of what is now these buildings?"

OS: "No, I do not remember that."

MC: "Were there any league sports that were engaged in by the employees? We do have a lot of old photographs taken ..."

OS: "Of course, I have a bunch of photographs of the girls' basketball team, the baseball team ... Now, that was before I came to Detroit. I was still in Toledo. Bowling used to be a big sport."

MC: "Do you remember the Peanut League?"

OS: "I do remember it by name. I didn't know any of those fellows. One fellow that worked in the high keyboard department and later came in to our department to work on orders, told me that for three years he never cashed a Burroughs check to put in the bank. He made his money to live on from bowling. He was single ..."

MC: "What about Burroughs Family Nights? Do you remember those from the late '40s and early '50s?"

OS: "No, I don't remember them."

MC: "Do you recall any dances here?"

OS: "No. Most of the activity was in the branches--branch parties."

MC: "Did they have anything as organized as annual Christmas parties in the branches?"

OS: "No."

MC: "You talked about things that happened at the Company. What did you not like about Burroughs?"

OS: "This could have happened to anybody. I got double crossed twice. I moved up here from Indianapolis. They were supposed to have moved the furniture from my house on Saturday morning. On

Friday morning I was at the office and my wife called me to say that the movers had arrived. I got on the phone and the fellow said to me, 'We were over in Illinois and we were ordered to pick up your furniture. We were supposed to pick it up tomorrow but thought maybe we could pick it up today.' I got the wife on the phone and said, 'Get the kids ready and we will leave.' So, they loaded my furniture on Friday. I came to Toledo on Friday and stopped over night in Toledo with friends. That's about a 200 mile drive--and you didn't drive in those days as you do now. That was in 1938. I stopped at Toledo overnight; left the kids there Friday night. Saturday morning, we came up here and found a house in one day. We went back to Toledo Saturday night and on Monday they moved my furniture. About the middle of the week, I went down to the personnel office and said to a fellow, 'I've got an odd situation here. Because ... I left my children in Toledo, I have hotel bills. My meals are taken care of, but I would like (the Company to pick up my) hotel bills. He said, 'You don't get any money.' Now, I don't think that was Company policy at all. I think that was his idea of keeping his expenses down. I was working in a branch in Indianapolis. In 1923 they had a shakedown and fired almost everybody. Everybody was doing business on the side. Some were padding the books. Five fellows were being treated for venereal disease and all that sort of stuff ... I went there in '37 ... to straighten things out. I got to looking around and I sorted out a few problems in the service department. I was going through the files and the biggest bank in Indiana--by the way, I meant to tell you that two of the men that were fired set up a service business and took a tremendous amount of business away from Burroughs. That was in '23. The service manager there had been there from the time the Company had established the office about 1904. He knew everybody, so he took the business away. In 1937, I looked through the file and noticed that the biggest bank in Indiana did not have Burroughs service. They must have had twenty five bookkeeping machines. I went to the stock room and got new parts that had been ... (end of side two, tape number one)"

MC: "You were saying."

OS: "I had a nice new tool roll and I had at least twenty parts that had been reengineered, the old part and the new part. Anybody could see an improvement in them ... I got to inquiring around and I found out that the purchasing agent for the bank was the son of the president. I called him and talked to him, told him I was from Burroughs. I went over and I told him ... 'I was really surprised to see that you people were not using Burroughs service. I know these men that are taking care of you. They are good men, but the minute they left Burroughs, they lost contact with all the improvements.' And I showed him all these new parts. He was just

flabbergasted. I said, 'Now, a man cannot buy these parts. He doesn't even know they exist. Even if he did, there would be a chance that he would avoid putting in new parts if he could. A Burroughs service man would have no reluctance in doing this at all. If you need the part, he puts that part in. The office doesn't question it. If he says he needs it, he gets the part.' I said, 'If this man is taking care of your machines and if any of the parts fail, his only recourse is to use second hand parts from used machines that he can buy or to weld the parts.' The fellow said, 'This is almost impossible to believe.' I said, 'We are always being given updates on adjustments and the structure of the machines and on all the parts. Whereas this man cannot get at those parts, no matter how hard he tries.' This fellow said, 'Now, we are re-organizing. I would like you to come back in two weeks.' I waited for two weeks, then I went back over to the bank. He said, 'We are still in a little turmoil. Call me next week.' I had been reporting to my boss, who had been there 13 years. He called me in and said, 'I have talked to some of the fellows over there. You know, they are not interested in your services. Don't go back.' Now, if there is anything unethical in this world, it is for one man to go in on another man's deal when he is with a customer. He was the boss. What could I do? He was afraid that I was going to get that contract, the biggest in the state of Indiana, and his name wasn't going to be on it. He wouldn't let that happen. But outside of that, I have always been very tolerant of the men I worked for. One man called me one day. He was manager of the branch here. He had a bill that a customer had protested, it being too high. He gave it to me and said, 'Will you O.K. this?' I said, 'No, Mr. McCarthy, I will not O.K. it.' He said, 'Why?' I said, 'This man bought a machine from us. He logically expects service from us. The fact that we laid out a territory and put a man fifty miles away (on his contract) ... doesn't justify us charging him travel expenses (for service rendered). We charge him for fifty miles costs, when he is ten miles from us. I will not O.K. it.' And I didn't. I don't know what he ever did with the bill. Now, to me, that was very unethical."

MC: "We would like to know something of your chronology with the Company. Can you be very fairly precise and go through, as much as you can remember, the various jobs you held with Burroughs?"

OS: "I started in September, '18. I was there through my training, the first two months, which was supposed to be three months. In May of the next year I was transferred to Richmond, Indiana, which we called a resident point. We had a telephone in the Company name --I lived with my aunt and uncle--and I service five counties out of Richmond. I was there for about six months and went back to Indianapolis. Then, about four months later, I was transferred to

Lima, Ohio. I was in Lima four years. In the meantime, I was sent to Detroit for a month's training on special machines. Then in '24 I was transferred to Toledo, into the home office of that district. I was there until until 1937. Due to the death of the manager in '35, I was appointed service manager there, which I held until '37 when I was transferred to Indianapolis. In Indianapolis, I was assigned a trouble shooting job. It wasn't any particular job. I was supposed to do anything to help out the branch. I was there just a year, before I was transferred to Detroit in 1938. I spent the first three months at the Packard Motor Car Company, while they were readjusting the personnel in the office here. Then I was appointed to a specialized group: six of us, who only followed the most difficult problems of the customers, real trouble problems. After a year of that, I was appointed supervisor of a group of thireteen men during the war. We covered the industrial area outside of the Boulevard. A great deal of that was 24 hour service. Calls would come in at night. The customers would be working all night and they wanted service. I was on that job until 1943. The M.A.E. department asked that I come into their division, which I did. I was in that division from 1943 to 1953. In 1953 I went to the Detroit branch on Woodward Avenue and I operated as a one man M.A.E. department for the next twelve years, until the time I retired."

MC: "M.A.E. again stands for what?"

OS: "Mechanical Accounting Engineering. We were between the salesmen and the manufacturer. In other words, the salesman came in with a problem and we helped him decide which machine to sell; what features were required; and designed the stationery, the layout, the operations and that sort of thing, in the most efficient way we knew how."

MC: "How about your personal life? When did you get married?"

OS: "I was married first in 1924 in Lima, Ohio. The next year I was transferred to Toledo."

MC: "What was your wife's name?"

OS: "Her name was Consuella. At the time she was born, Consuella Vanderbilt was first in society pages. That is where they got the name. Our little girl was born in May of 1924."

MC: "What was her name?"

OS: "Margery. She is now living in Fort Myers, Florida. She and her husband."

MC: "What's her name now, her last name?"

OS: "Her name is Bebe now. Her husband was a Detroit boy. They have been in Florida, in Fort Myers for four years. My son was born in Toledo in January 1935. Both the children went to school in Detroit."

MC: "His name is Jerry?"

OS: "Jerry. Jerry joined the Fire Department when he was 21 years old and is still in the Fire Department, recently appointed to captain. He has two children. The boy is married and he is with the gas company in Grand Rapids. The girl is married and lives in Brighton. Her husband is with Chrysler Corporation. My daughter has two children. Her boy is living in Ann Arbor and is married. Her girl is single and is living with my son in Detroit. She is employed with an advertising agency."

MC: "Did your first wife die?"

OS: "I lost my first wife in '64 from cancer."

MC: "And you have remarried since?"

OS: "The next year, the next February on my birthday, the month I retired, I remarried. Our families had grown up together. Our children grew up together. They are still good friends. My present wife's son was the minister for our wedding."

MC: "No kidding? Well, that is interesting. And what is your present wife's name?"

OS: "Thelma. Our families were close friends, all through the years, from the time the girls started kindergarten. That's when we first met."

MC: "I guess at this juncture we would like to know more about the nature of some of the prominent men in the Company. We will begin chronologically. Do you know any stories concerning William Burroughs?"

OS: "No, only one thing that was rather interesting. In the early 20s, we sold a small accounting machine to a candy firm in Toledo. I was calling on this company at the time and the young lady who operated the machine, her name was Burroughs and she was a descendant of William Seward Burroughs."

MC: "Really? We don't know much about the family, you know. His grandson is an author named William Seward Burroughs as well."

OS: "There was never much said about William Seward Burroughs. There has been more in the magazines the last couple of years than I have ever seen before."

MC: "What about Joe Boyer--Joseph Boyer?"

OS: "Very much in the background. Never heard much about him."

MC: "Did you ever meet him?"

OS: "No."

MC: "Did you see him?"

OS: "No, I never saw him. I saw the successor to Mr. Boyer."

MC: "Backus--Standish Backus?"

OS: "No."

AF: "Mr. Doughty?"

OS: "Yes, I saw Mr. Doughty a number of times. I saw Mr. Backus, but only from a distance. Coleman was very much around with the people. I spoke to Mr. Coleman, that is just about all. Macdonald, I knew Macdonald very well, personally. Mr. Eppert was a quiet sort of a man. He didn't say much to anybody. I never had any real contact with Mr. Eppert."

MC: "You mentioned at lunch that oftentimes you and other men would be congregating in the hallways here and someone would say, 'Here comes the boss.' Then you would all put out your cigarets and straighten yourselves up. Who were you referring to?"

OS: "In the front of the building, along Second Avenue, the service department was in the far corner on the second floor. The sales department had the space from about halfway up to the main entrance, where the big columns were. Just about every so often, Mr. Doughty would make a visit through the whole building. He would go through the factory, through the office and all. The man who was our service manager at the time--a nice guy and all that, unfortunately he died of cancer from excessive drinking--he used to walk back through the service department and warn the fellows when Mr. Doughty was coming through. Everybody would douse their cigarets. Of course, those things were banned anyway, you know."

MC: "Were they?"

OS: "They tolerated it. But he would warn the men and they would immediately get down to business and douse their cigarets."

MC: "But you never actually had an opportunity to talk to Mr. Doughty?"

OS: "No, I never did. In fact, he had someone with him usually, perhaps one or two people. They would walk down the hall and walk back to the end of the room, turn around, and walk back again. That's about all there was to it ... he was a very reserved sort of a man."

MC: "You did know, however, Mr. L. V. Britt?"

OS: "Yes."

MC: "What was he like?"

OS: "Quiet. Very fixed. He knew what he was going to say and he said it properly. As I say, he was a reserved type of man. He was not a man to make a lot of fuss over anybody or make a big showing of himself either. He was very quiet."

MC: "He doesn't sound like a Watson, like IBM's Watson, who would pump up the sales staff."

OS: "No. He didn't get out of the office very much either. He was mostly in his office. Mr. Coleman was around everywhere. You would see him anywhere, at anytime. I don't know how Ray Macdonald was when he was here, but Macdonald knew everybody and had time for everybody. I don't know how much time he spent doing that when he became president because that was after I left. Mr. Eppert was friendly but quiet. He didn't have too much to say and did not appear too often on the scene. He was out of the picture."

MC: "And you did say you saw Mr. Backus on occasion around here."

OS: "Yes, just occasionally. Very rarely. He was the only man I know of who inherited the job, you may say, in that he came in through his connections. I don't think he knew much about the business. He didn't need to as far as that goes. He was a sort of a lost figure as far as I can tell. He was there, in title, and that's about all there was to it. Now, Coleman was a very active man, as I say. He was around looking after things and doing things all the time. Very active."

MC: "Of course, it was under his leadership that the Company began to shift gears, so to speak."

OS: "Yes, he ditched the old high keyboard. You know, this was typical of every manufacturer. Just like I say, Ford held the Model T car too long. And Burroughs held the old high keyboard

machine too long. National Cash Register held on to some of their old ideas too long. Strictly speaking, IBM punch cards were as obsolete as Noah's ark."

MC: "We haven't discussed yet the influence of the International Business Machine Company on the industry. Do you recall the first time you heard the name IBM mentioned?"

OS: "Yes. From the very beginning I heard of IBM but I never saw much of it until I got into Toledo about five years after I started working for the Company. Then I began to see their machines. Mr. Lamont Hoffman, who was later branch manager of Chicago--he is now retired and I believe living in Waukegon--left the Toledo branch with five less IBM installations than when he took over the branch. They had gotten rid of that many. Five less than they had originally. As I mentioned, I got into peoples' offices and liked to learn what they were doing and why they were doing it the way they were. I remember being in a Sears Roebuck office one time and they were putting their delivery system on an IBM machine. In other words, if you went in on a Friday night and bought a thirty foot ladder, they wouldn't have it in stock, they would have to deliver it from the warehouse. In your area, it would be next Thursday. They would write up a sales ticket and it goes to the delivery department. You get your ladder next Thursday. Well ... with the IBM machine ... you would get your ladder two weeks later. They did that just for a few months then they went back to their old system ... as far as I understand, IBM was a statistical machine. It wasn't a current work machine. Originally that's how they started out. If you know the history of it, they started out figuring the U. S. census."

MC: "Yes, the Hollerith machine."

OS: "Anyway, there was a company in Toledo that made small automobile parts. They had this IBM system. They also had a Burroughs billing machine, the multiplier that I spoke of, that could do anything a pencil could do. IBM convinced them they ought to put their billing on the IBM machine. I don't know about the different models that IBM offered, but whatever it was, they ordered several thousand forms and started the next week billing on the IBM. They billed one week on it and found out they couldn't figure discounts, freight allowances, anything apart from straight multiplication. So they took it off and put it back on the billing machine. And that's been the history of a lot of those installations using the older IBM machines. They attempted to do things that were really not in their field. They did a good job for what they were designed to do, but they went into fields they shouldn't have gone into."

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MC: "Did you know of any men who came over to Burroughs from IBM or vice versa?"

OS: "No, I never knew anyone who had."

MC: "You see that often now in the industry. You see people cross over from one firm to the next. For instance, its not unusual around Burroughs to meet people who worked at Control Data or Honeywell or IBM. And vice versa, people leave to go elsewhere. Did that happen in your day?"

OS: "I will tell you about one, this Mr. Hoffman whom I have mentioned. When I went to Lima in 1920, shortly after that I found out that Mr. Hoffman was selling Dalton adding machines. Dalton was based in Cincinnati. I wouldn't say he much more than twenty years old. He had a Ford roadster and you would see him going down the road with the back curtain flapping in the air. He really covered his territory. If you went out at 7:30 to go someplace, he was already there. It appeared to me that Burroughs finally hired him because they were scared of him. He was the smartest salesman in Lima. He was running them to pieces. They couldn't make any headway. If there was a prospect, he was there ahead of them. At one time, they thought the girl in the office was giving him a little tip off. It wasn't the case, but they thought so. Anyway, Hoffman was a go-getter, so the Company hired him and set up a branch for him. They got rid of competition that way. Of course, Dalton faded out later on. Have you ever seen a Dalton machine? They had ten keys in two rows across. The other ten key machines were three and three and three and one. It was a vertical machine and it added, but that's about all you can say for it. They tried to sell a bookkeeping machine ... that some people bought. To show you the tactics that were used, we had an oil company that used our duplex ... Mr. Hoffman tried to sell them Dalton machines. Well, Dalton didn't have a duplex machine. Nobody else had a duplex. He suggested that they buy two machines and place them side by side--put one figure in this one and another in that one. (Laughter). Now those were the kind of tactics he used ... But this Hoffman peddled a lot of Dalton adding machines. He was a salesman. And Burroughs hired him. He went to Toledo as a branch manager, went to Chicago as branch manager, and retired from there ... "

MC: "Did you ever go to one of Burroughs foreign operations?"

OS: "No."

MC: "Was International more or less a separate entity?"

OS: "Really not until they built this building. I would say the

first twenty five or thirty years it was all just one set up here at the Home Office. I remember the year the English people changed their money. Burroughs sent over a carload of parts to convert the machines not over a certain age to decimal ... I think they converted machines under five or ten years of age."

MC: "Let's talk about the publications the Company had. We have copies of a lot the early things that came out of this building, like The Burroughs, the Sales Bulletin, Burroughs Overseas ..."

OS: "I wish I had brought some of them. I had them just before I left."

MC: "Were any of these official organs. Were people expected to read them."

OS: "Oh, yes. They published the Clearinghouse, which was strictly for bankers. It had bank advertising and articles on banking. Then, there was The Burroughs magazine, which was general business."

AF: "Wasn't that meant for employees?"

OS: "No, The Burroughs magazine was for all types of commercial business. It had pictures and general advertising--Pitney-Bowes and duplicating machines, office filing equipment, and all that. Then there were different companies that made stationery. Baker-Vohner(?) was a big company in the ledger card business. They were the Tiffany of the forms business ... Good stationery would speed up an operator's work ... Form handling was a very important factor in accounting."

MC: "Would Burroughs send people out, such as yourself, who knew something about these systems and help customers by instructing them in their use?"

OS: "Yes, I spent three months or so at the Bell Telephone Company doing that ..."

MC: "We were talking about some of the publications that Burroughs printed."

OS: "The Burroughs Bulletin was published for employees. There was a Bulletin that went to sales people. Another went to the people in manufacturing and service. I worked with the sales organization the last ten years I worked for the Company, so I got the sales Bulletin. Sometimes they were different than the ones received by the service employees. Different subjects. The Bulletin was a newspaper that kept everyone advised of what was going on--promo-

tions, transfers, new developments, important sales, and that sort of stuff. They used to have an All Star Convention. All salesmen who made quota went to the All Star Convention, with all expenses paid. Once they held the convention in, I believe, Atlantic City. Somebody got an idea to publish a newspaper every day. The first day it came out, there was a big line. Somebody had gotten a copyright on the figure 9. Everybody who used the figure 9 had to pay this fellow a copyright fee. Well, they built that story all week long and it made quite an interesting hit at the convention. That was way, way back. But Burroughs Bulletin was for the employees. Now there was an early Burroughs Bulletin that came out in 1910 or 1912, maybe. In 1918 the Bulletin was about 8½ x 11 and had two, four, or six pages. It had maybe ten or twelve items pertinent to sales. Then it would have items about mechanical changes to the machines, ways to do certain adjustments, things that pertained to the mechanical department. Each branch would hold a meeting whenever a Bulletin came out. They would hold a meeting of the sales department (to discuss the issue) and ... the service department would go through their end of the Bulletin. It was an informational magazine then. But the later issues were more like newspapers. It was used to boost the morale of everybody."

MC: "And then there was the B-Line."

OS: "The B-Line was pretty much the same sort of thing. There was also In Focus."

MC: "Also The Keyboard and several others."

OS: "The Keyboard, I believe, appealed basically to the Detroit manufacturing organization, more than it would to the field organization. It had a lot of pictures in it and dealt with things that were happening in the factory ... but the Clearinghouse and The Burroughs magazine were strictly for customers."

MC: "We have complete runs of the Clearinghouse, which was a very fine magazine."

OS: "The banks prized it very highly."

MC: "Somebody told me that here, at the old Home Office on the upper floors, was a hallway in which the original art work done for the Clearinghouse covers were framed and displayed."

OS: "I remember that."

MC: "Do you know what happened to any of those covers? We don't have a one."

OS: "No. The covers for these magazines were printed in Toledo for years and years at what was called the Medbury Ward Company. They were in colors. I don't know what happened to Medbury Ward, but the building stood vacant for a while and ... Burroughs leased it and remodeled it for offices ... There was a big print shop here at one time."

MC: "We have seen photographs of it."

OS: "I think Coleman was the man who did away with it ..."

MC: "You talked about several occasions when you went out to work in companies--such as the time you spent at Packard, Michigan Bell, and so forth. Was it standard business practice for Burroughs to have people assigned to these major accounts?"

OS: "No. We did have, in Detroit, one man stationed at the National Bank and I was at Packard for three months ... the last two weeks I didn't have, an average of an hour a day, anything to do ... "

MC: "We have come across Company policy statements dating from the 1920s that stipulate that only salesmen with college training would be hired. Was that a policy that was in effect and practiced for years?"

OS: "I don't know when that came into effect, but I know that in 1953 Mr. Shaver came to me and said, 'All the new men coming in will be men with degrees in business or accounting.' The first three men they gave me were football players from Ann Arbor. (Laughter)"

MC: "Did they do well?"

OS: "They got desk jobs in the Home Office. They didn't get sales jobs. You know, there is a lot of difference between the football field, where everybody cheers for you and they pat you on the back, and a customer's little office, where all he is interested in is how much money he is going to make. He doesn't care whether you have a top grade in football. He is not concerned about that. These were nice fellows but they ... didn't anticipate all the detail involved in selling machines. It's not like selling automobiles ... You worked on a layout and system for months before you got something that satisfied a customer and permitted you to make a sale. They didn't anticipate that at all."

MC: "So then all machines were custom ordered."

OS: "Oh yes, that was the big difference. There were not too many stock or standard machines. In about 1960, there was a young fellow here named by Bill Kelly who came in to me and said, 'If we can work out a system for the City of Detroit for water billing, I can get an order for the machines.' I got all the information from the people in the water billing office and I sat down and redesigned the bill on a postal card. They had been passing these door to door. I worked the whole program out and the machine to use to do it. Bill went down and brought back an order for \$90,000. We didn't have a machine that was exactly right for that operation. We had to do a little inventing after we got the order ... I wrote the engineering for it ... They released it in about two weeks ... A lot of salesmen didn't figure that all this comes ahead of an order."

MC: "There were several steps involved in making a sale, then. The salesmen got wind of prospective buyers, would visit with them, and would go back on a number of occasions until the specifications were worked out."

OS: "You worked on orders for a long, long time. The type of fellow who can do this, then lose the order to a competitor and bounce back the next day--he is a salesman. Otherwise, he should not be in sales. You don't know how many times that does happen ... A lot of fellows couldn't take it ..."

MC: "Once the sale was completed--the buyer knew what he was buying and the sales order sent to the factory--how long would the turnaround time be before a machine was installed in the buyer's office?"

OS: "If you got any special kind of accounting machine in ninety days, that was good. We would sometimes ... take a stock machine ... make minor changes ... and that would satisfy the customer. That way we wouldn't have a long delay, perhaps only two weeks. Anything special at all, you would figure three months."

MC: "If a machine was broken or needed repair work, would the Company loan machines to customers?"

OS: "Yes, their contract read that ... (Burroughs) would send a service man or ship a machine (to the customer) ... The option was either a service man or a loaner machine. And Burroughs didn't charge for that loaner, either."

MC: "We often have questions about the old style numbers. Can you explain the system to us?"

OS: "We had 1, 2, 3, 4, 5, 6 classes. Then we had the number of columns. The 0 was 5 columns, 1 was 7, 2 was 9, 3 was 10, 4 was 11, 5 was 13, 6 was 15, and 7 was 17. So a 600 would be a bookkeeping machine. 67 would be a 600 with 17 columns of keys. And then the last number would indicate the style of carriage. Now, for standard machines, a bank machine was an 02, which was a carriage that returned under motor power. An 01 was a carriage that moved back by hand. If the machine was very special, the last two numbers were 00--it could be anything. The class 301 was the 5 column. Later on, they changed this. They called it a 30501--they actually told you how many columns it had. They changed the 310, which was the 7 column to 30701--that was the little narrow carriage, an 02 was a wide one. (End of tape #2, side #1.) ... The 6714 was a machine designed for all kinds of wholesale-retail business. You put the balance in the machine and the charge in the machine. It had a divided keyboard, the left had was numbers, the right hand was amounts. The left hand side had no adding wheels on that particular machine ... This machine would prove that you posted the correct amount to the ledger statement. It would prove that you had the same balance on the total. It would prove that the machine was clear at the start ... That was one of the biggest sellers ... It started out as a 61714. When they made the new style of the machine, it became a 20, and afterwards features of the machine were incorporated on all models of the big bookkeeping machines: duplicate printing--the ledger statement was printed at the same time without carbon paper; automatic balances on both; and automatic proofing. (The early) bank machines ... printed across the ledger card and extended the balance ... When you were all through, you had nothing proved. You had to go back and add up all the items that had been posted to see if they had been posted. Then you had to add your new balances and subtract your old balances to see that you picked up the right balance ... They (eventually) added more registers to accumulate the balances ... When the new machine was designed, they fed the ledger cards in from the front. That was the 20313."

MC: "When would that have been? Do you remember?"

OS: "That was about 1926."

MC: "When you joined the Company in 1918, did Burroughs have a machine that did actual subtraction?"

OS: "Yes, and I suspect from what I read that it had sold for about four or five years. That was a class 6, a subtractor with no accumulating registers. When you put an amount in, you got over at the edge of the ledger card a printed total. The machine would clear every time, you see. There were no accumulation of totals for proof ... On the class 6, there was a key up in the corner,

like that on the class 2, that alternated (and allowed the machine to either add or subtract)... When they got through, the difference between the old and new balance should be the difference between the amounts, of course. That was the system used for years and years, from the time they began selling bank bookkeeping machines up until the 1920s when accumulating registers appeared."

AF: "There was a time in the 50s when Burroughs acquired many other companies, such as Control Instrument and Mittag and Volger. I wonder whether that impacted on the work you did?"

OS: "No, we didn't see any change, not even when computers started coming in. We still had a tremendous business in Cincinnati, even up until the very last when I retired in 1965."

AF: "Is that pretty much what you worked with, the more mechanical machines?"

OS: "Strictly. We had a machine that came out, a multiplier, a sensimatic. I am not kidding you, if this thing was sitting here, you would think that it was a nut crusher. When you put amounts in, there was a section in there that would grind and grind and grind. I will grant you, it did the work, but they didn't make that one. I worked on them, I did the programming for them. They never sold because they were very expensive and there wasn't enough demand for them."

MC: "Are you referring to the E101? It looked like a sensimatic sitting on a desk. It was actually a small computer."

OS: "It looked like a sensimatic. It was a sensimatic. I don't remember the style number of that. Of course, there was such a few of them around. We were getting the bank machine, the one with electronic control, when I left. I worked on some of the layouts, but I never got into the mechanics of that machine at all. The others I got into much more."

MC: "Do you recall the feelings that were prevalent in the Company when Burroughs built the Strathleven plant over in Scotland in the early 50s?"

OS: "I never heard anything about it."

MC: "That was one of the first times the Company, using today's vernacular, began to outsource work abroad."

OS: "When they built that, the union hadn't gotten enough people in here to create any activity against outside work, like they do now. You see, the union never got really any kind of a hold until after

World War II. When the war ended, we had \$93M worth of orders in the files that we had to process. That's when they hired in a bunch of outside people and that's when they began to get in these organizers. That's when they started. But there was never any comment about outside manufacture. Like over in Windsor, that was normal for a company to have a plant somewhere else. We made most of the stuff that went to Windsor, you know."

MC: "I didn't know that. Do you mean that the assembly was done here?"

OS: "They built the printing section. They built the accumulating section. They built a lot of stuff and shipped it over there, where they assembled it. They would assemble it and make the final adjustments. A lot of the sections were made right here, because they didn't have the facilities over there to make all that stuff like we had here--the different machining departments, the type department, and all that. There was an awful lot of assembled stuff that went over there ... I believe somebody said that 40% of the labor was put in over there ..."

MC: "I think the only thing we haven't covered yet, at least from my notes, are the names of the people who influenced you in your career."

OS: "Henry Loomis."

MC: "Who was that person?"

OS: "Henry Loomis is down in Lexington, Kentucky now, if he is still living. We was a field representative for the sales department. When I came here, I was very unhappy about transferring to Detroit. You know, when you work at a branch like Toledo or even in Indianapolis you think that you don't want to work in a wicked city like Detroit. I was very unhappy. I told you about the circumstances that occurred when I moved here, when they refused to take my expenses. I was just pretty sour on everything. I didn't make any fuss about it, but I was just unhappy. I was coming down the hall one day, and Henry happened to be in, making the rounds. I had met him in Toledo when he used to make visits there. In fact, I knew a lot of these Home Office people, you know. I was walking down the hall and Henry came up and put an arm around my shoulder. He said, 'How are you doing?' I said, 'I don't know. Not too happy.' He said, 'Hang in there. Your time's coming.' The fact that he showed some interest and remembered me put me back on my feet again. I worked for a fellow in Toledo, Walter Lergan, who was the service manager. To his own harm, he did a lot of favors for me. I was having a little trouble

the rules and regulations. He called me in one day --he was part of the old clique from Detroit--and said, 'Remember, whatever the Company says to do, that is right, until they find out it is wrong and then they will correct it. We don't correct it. They correct it. If they tell us to do this, we do this.' I never forgot that. He used to talk to the fellows. One time he said, 'You go out and shovel up a bunch of dirt. What happens? All the big things go to the bottom. The fine stuff stays on top.' He always had sayings like that. Walt was a very uncouth sort of a fellow--uneducated, what I mean to say is that he lacked formal education--but he had a lot of experience and he knew what he was talking about ... A letter came from Detroit once asking him to instruct someone in the use of a machine, a class 600. He was the manager of a branch, you know. I came in on a Monday morning and he handed me the letter and said, 'Go on. Get your stuff and go to Detroit. I don't want to go.' So he sent me. I took the training in his place. Now, he had influence enough here that he could talk them out of it, if he didn't want to go. Later on, he got so that any customer who called in to make a complaint in Toledo about anything, he would call me in and tell me to straighten it out. He put it all on me, which was good experience. Early in the 30s, they decided to initiate a rebuilding program. At the time, new machines were coming out and I had instructional responsibilities. And there he was, sitting at his desk. He would raise the window and talk to the girl in the office once in a while. That is about all the effort he would put out. They were going to set up a department in Detroit with about twenty men and rebuild the machines that were being traded in. They wrote Walter and asked him to run the department. He accepted the job, but they had given him all the dogs in the world--the fellows who couldn't make it in the field, who couldn't get along with customers, who couldn't fix machines--and they put them in his department. Well, he failed completely. Two years later, he was back on the bench himself. If he had kept up his knowledge and his knack at fixing machines, he would have gotten along a lot better. But he turned everything over to me, which was to my good and his loss. Walt did have a lot of influence on my learning. 'The only way you are going to do it is to go out there and hit the ball.' There were so many fellows willing to sluff off on the job. He really impressed me getting me out there and doing the job.

MC: "So, all in all, you are glad you worked for Burroughs?"

OS: "Yes. As I said, I started out with a mechanical ability ... It was easy for me ..."

MC: "Thank you very much for coming by and talking with us today. We really appreciate it."

OS: "I have really enjoyed this. We have a nice day, too."