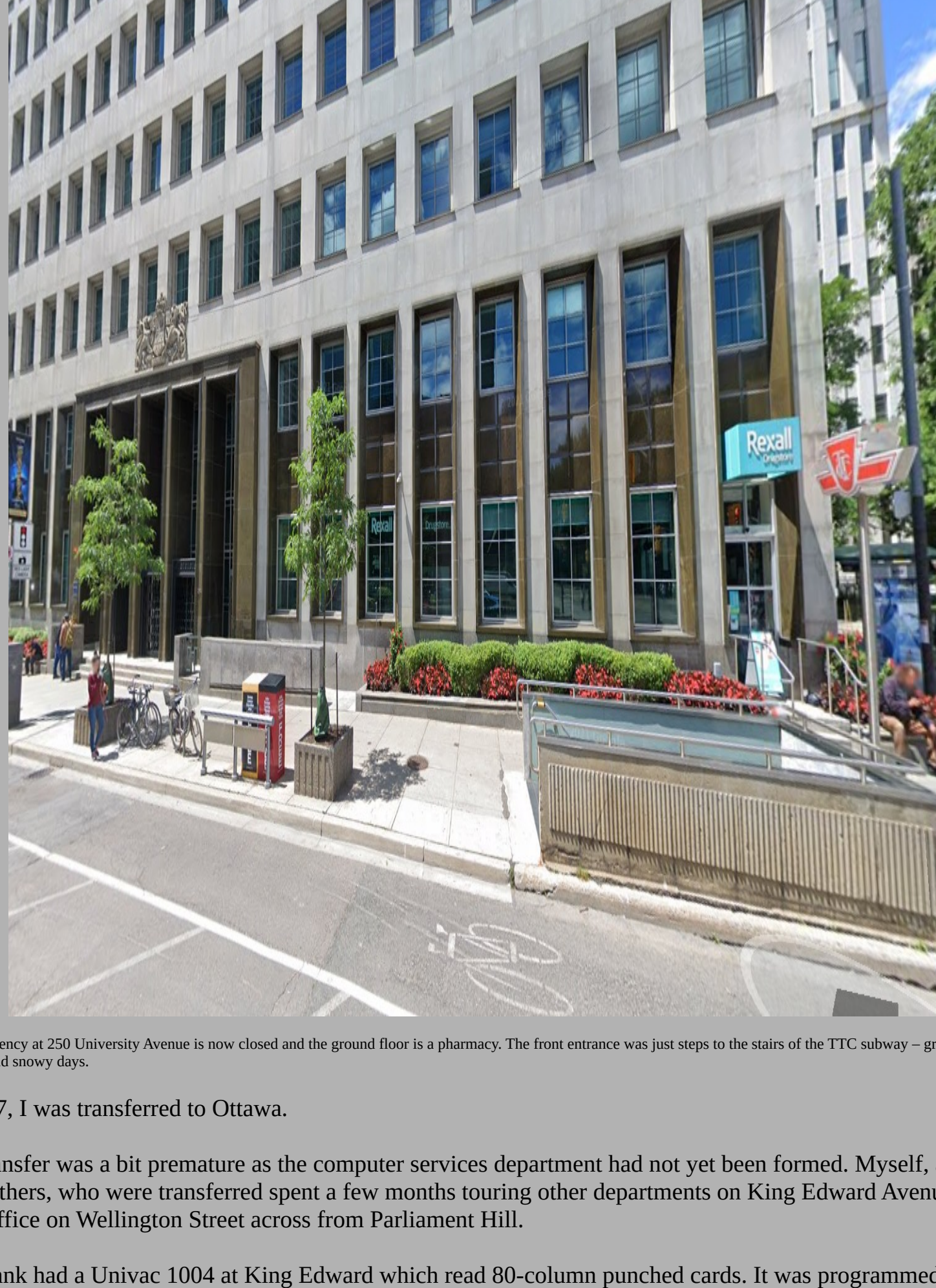


I started in the Toronto Agency of the Bank Of Canada in September 1964. Basically, it was office work: accounts payable, vault custodian for both new and unissuable banknotes and bond work including estate papers.

During this time, I took accounting and commercial law at Queen's University.



Toronto agency at 250 University Avenue is now closed and the ground floor is a pharmacy. The front entrance was just steps to the stairs of the TTC subway – great on rainy days or cold snowy days.

In 1967, I was transferred to Ottawa.

The transfer was a bit premature as the computer services department had not yet been formed. Myself, and three others, who were transferred spent a few months touring other departments on King Edward Avenue and head office on Wellington Street across from Parliament Hill.

The Bank had a Univac 1004 at King Edward which read 80-column punched cards. It was programmed with wired panels rather than a computer language. I took the course but never actually programmed the Bank's Univac 1004.

Then the Bank sent us on numerous computer courses both in Ottawa and Montreal. There were no university courses in the 1960's so most training was done with various computer companies of that era: Univac and IBM were the main ones. I took COBOL (**Common Business Oriented Language**) on a Univac 1108.

Note: *US Navy Admiral Grace Hopper was the “mother” of COBOL. She pioneered the universal business programming language that was written in English-like statements. She developed a program, called a “compiler”, that would translate the COBOL English statements into “machine code”. Various “compilers” were written on different computers so that COBOL could be run on different computers such as UNIVAC or IBM. Without getting too technical, compilers were developed to run on computer architecture with 6-bit or 8-bit characters and different “word lengths” such as 16, 32 36, 48 or 64 bit words. This meant that the original COBOL programs could remain unchanged if a company switched mainframe computer companies from one manufacturer to another. The original COBOL program just had to be re-compiled to run on the new machine code. I attended a seminar by Grace Hopper at a computer convention in Montreal in the late 1060's. Truly an amazing lady!*

The Bank eventually got a Honeywell mainframe computer and I took assembler machine code language (Easycode). I wrote some machine code programs and also “patches” to the COBOL compiler.

I also took FORTRAN (**Formula Translation**) which could be “compiled” to run on any computer. I never used it although the Bank did run it mainly in financial research but not on the Honeywell computer system.

For me, once I used computer languages, I found it was easy to learn other languages (self-taught). That also allowed me to learn and write “macros” in spreadsheets to automate some functions.

Without getting into “hot water” and “Bank Secrecy oath”, I learned the computer language BASIC. Sparing the details, there was an issue with the Bank's pension fund in the early 1980's that was rather urgent. However, the computer department told the Governor that they had no resources available unless one wished to cancel certain projects and re-assign programmers to the pension problem. I was in Comptroller's Department and senior management wanted to know if I could write a program to solve the pension issue if they gave me access to a desktop computer (new in the 1980's). I already had a home computer and used BASIC for some programs. This caused a bit of a ruckus as the computer department figured they had a monopoly on “programming” and other departments were not allowed. However I was given the “green light” to proceed and wrote the program for the pension problem.

A bit of history here: *The Industrial Development Bank (IDB) was basically part of the Bank of Canada in the 1960's. All its programs were done on the Bank's computer system and their pensioners were a subset of the Bank's pension fund. It was decided that IDB should standalone and it was renamed the Federal Business Development Bank (FBDB) (affectionally called FubDub). I participated in moving their computer system from the Bank's to a service bureau in Montreal (actually near Dorval airport, so I would sometimes fly down in morning and back later same day during the conversion). The service bureau used a Honeywell computer so the conversion was relatively easy. So it was no surprise that their pension fund contained the same pension issue. When they were told that “Wagner” had written a program (“invented the wheel”), they got permission to contact me. They gave me all their pensioners' data and I processed it with my program in Ottawa. Just to round this off, FBDB has been re-named again and today is the Business Development Bank (BDC). For the minutiae, see <https://www.bdc.ca/en/about/who-we-are/history>*

Forgive the digression above – it fit the topic but not the timeline.

I moved away from the computer side (long story) in 1970's and did a short stint with personnel department - guess modern name is human resources. Some of that involved pay equity and potentially computerizing the Bank's occupational health services. This involved flying to Chicago with the Bank's occupational physician and a computer department analyst. There was a large oil company that had developed an excellent computer system was willing to market it to recoup some of their investment (their internal doctor thought it should be free). Everyone was impressed, including me, but the Bank did not like the price tag (*understandable as the large oil company had thousands, if not tens of thousands employees while Bank had just over one thousand*). I was asked by the Bank's physician to try to “negotiate” a lower price but the best was that the oil company would sell the program at about the same original price but give the Bank exclusive rights to market it in Canada to mitigate the cost. Unfortunately that was a non-starter as Bank did not want to be a software vendor. There was some thought to develop a program in the Bank but I opposed using the Social Insurance Number (SIN) or Employee Identification Number (EIN) as an identification key for privacy reasons of health records. Also cost/benefit for relatively small number of employees was a problem. Needless to say, the project died. From my perspective, it gave me insight into legislative issues of pay, human rights, medical systems and privacy.

Around 1977, one gentleman from personnel was seconded to the Debt Management Task Force (DMTF) to assist with the conversion of the traditional Canada Savings Bonds of fully registered and coupon registered to the new format of “R” bonds for fully registered bond and “C” bonds for the coupon bond. The “R” bond was to have the option of Electronic Funds Transfer (EFT) (a.k.a “direct deposit”) to save producing thousands of cheques annually. The “C” was designed for compound interest to eliminate the thousands of coupons presented for payment every November 1st.

His workload was heavy and the DMTF was facing some critical deadlines for implementation. He sought to have additional help but training someone to help would be too time consuming. Someone with knowledge of bonds, legal issues and computer systems was a bit of a rarity. He then remembered my background when working with me in personnel and asked that I be seconded to help him. I am tempted to name him as I owe him a huge debt of gratitude but I have made the decision not to name names.

The head honcho of the DMTF (and perhaps others) questioned whether I would be the right “fit” but he insisted and I became his assistant.

I should mention here that there was some “old school” thinking of public perception of not having those “endearing” little coupons to clip each year and run to your favourite banker teller to redeem. Therefore there was a proposal to have a hybrid coupon feature between the “R” and “C” bonds. I wrote a short “paper” on the cons of having a hybrid coupon bond with the complicated “closed” period for transfers. It hit the right note with the head honcho who then saw my background was beneficial. He used my write-up with senior management to squelch any hybrid between the “R” and “C” bond. That opened the door to more aspects; he then included me in meetings with government lawyers (presumably from Department of Finance as Bank was acted only as fiscal agent for bonds).

Many publications had to be produced and this was before any computer word processors. It was a manual job in conjunction with printers and “cut & paste” with hot wax on light tables. Working with one fellow on contract from typesetting printing company exposed me to publication techniques.

As deadlines were tight, it involved overtime on weekends.

When the DMTF was finally wrapped up, the implementation of the new system was with the Bank's Public Debt Department (PDD). The head honcho then asked if the gentleman from personnel and myself would join him in PDD rather than returning to personnel. That was great for me as personnel was not “my bag” and the other gentleman was fighting an uphill battle about equal work for male/female issues with the mindset of the Bank in that era – best not to mention specifics here.

Direct deposit issues needed to be addressed both internally and with banks. I sat in with meetings with banks and was a contact for the Canadian Bankers' Association. I had contacts at head offices of all banks when glitches with payments occurred. In those days, basically there were only the Big Five banks and when all were meeting with Bank of Canada, there had to be a representative from the Department of Finance to sit in (sometimes called the “bump on the log”) so as to not give appearance of collusion behind closed doors or violation of the antitrust Combines Act.

Note: Canada was at forefront with Combines Act in 1889 – leader in the industrialized world and one year before the equivalent antitrust 1890 Sherman Act of the United States.

In the next few years, I was then in charge of all the publications related to Canada Savings bonds and direct deposit. With the “R” and “C” bonds it was possible to change the interest rate (up only) when the bank rate changed. This was not possible with the previous bonds and the public would cash in bonds before maturity to buy new bonds at higher rates. Thus the new system saved the Bank and financial institutions needless turnover of redemptions and new bonds.

In that era, bank rate changes were not anticipated. I was on call anytime the bank rate was being changed – many times on a Sunday. If I was not at home when the Bank called, they would only tell my wife that I was needed in the office and **he will know why**.

A little digression here to show that absolute secrecy is not absolute.

My wife won a 1972 American Motors Gremlin automobile on a CFRA radio station contest. It was well publicized and the car stood as it was bright red with a gold strip on each side. When I was called in one Sunday, I parked the car on Kent Street near Wellington across from Bank of Canada. After I made all the changes in the publications, I was going to phone some of the Ottawa printing companies – we had their home phone numbers for urgent cases. However a very very senior Bank officer overheard me and said that I could not go external to Bank until after Governor's news release in the morning. I said we had sworn in all contacts with a commissioner for taking oaths for such cases and they were bound by secrecy. I dealt with many printing companies and drove to their offices many times. I was still overruled so I said nothing more that I can do so I'm going home. Next morning after the press release, I phoned one of the contacts at work. He said that he knew the bank rate was changing Sunday afternoon. I just about fell out of my chair! How? He said my wife and I were out for a drive on Sunday and I saw your car parked on Kent Street. He told his wife that he knew the guy who owned that car and the only reason Fred would be parked by Bank on Sunday would be that the bank rate will be changing.

Eventually I got a fulltime position as Comptroller's Department as a financial analyst and GL administrator. I perhaps had some “behind-the-scenes” help from an individual who had worked with the aforementioned IDB but was now with the Bank. I found a security breach at the computer service bureau during the Bank/IDB split. I reported it to him as it affected IDB data, not the Bank. He was grateful and remembered that years later. *Funny how things come full circle.*

Some, including management, questioned why I would move into an accounting area with my computer background. I would say, rather flippantly, that computers just deal with “1's” and “0's” and accounting just deals with “debits” and “credits” – any idiot can do that. And I took accounting courses way back in the 60's.

Comptroller's then was considering writing their own financial reports without relying on the computer department using a new computer language of FOCUS. I took a look at it and had no trouble learning it myself. I wrote many reports and some for another department for budget purposes.

I then managed to move from Comptroller's to Department of Banking Operations (DBO). My expertise using the FOCUS language was invaluable but initially caused a bit of ruffled feathers. There was one individual who had a terrific mind and for whom I grew to have great respect. I was nearing retirement age and he had years to go. I only desired to learn from him and share my experience – no competition for any positions. He was acknowledged as being the DBO expert on FOCUS and I thought this was a great to work with someone with common interests.

I must point out that FOCUS was broken into two separate language components. One was like COBOL English statements while the other was called Financial Reporting Language (FRL). The former was like the high level COBOL language and FRL was more like a spreadsheet environment. BOTH WOULD DO THE SAME JOB.

However when I looked at some of the FOCUS routines that he had written, there were hundreds of lines of code. I have written some pretty complicated routines but anything more than 25 or 30 lines of code was exceptional. It took me a while to wrap my mind around what he was programming. When I grasped what the routine was doing, I could see that I could write a routine getting the same results with a dozen or so lines of code. I bench marked my method and the FRL method and found that the higher level would execute faster on the computer. The FRL version was more difficult to document and maintenance was more difficult for someone to take over.

At first, there was a bit of negative reaction but the advantages of using my method gained traction. There is no right or wrong and FRL did allow those with no previous programming experience to write routines more complicated than using a spreadsheet. For those familiar using spreadsheets, the progression to FRL was easier but the learning curve to using the high level language interface is not too steep. Comparing code side by side, it was easy to get some converts.

Other DBO work consisted of stats on counterfeit banknotes and liaison with the Royal Canadian Mounted police (RCMP). Very often I would go to RCMP headquarters to get the latest. I did some forecasting as to how many banknotes of each denomination was required to print each year. In those years, the automated teller machines would only spit out \$20 denominations so that weighted the forecasts. Today machines can give any denominations so I am sure forecasting is a bit more difficult – glad to be retired. Canada had already had the \$1 coin when I moved to DBO and the project to then do a cost/benefit of the \$2 banknote versus a \$2 coin fell on my desk. I did not like the \$1 coin so I guess management thought if there was any justification to keep the \$2 banknote, I would find it. The numbers crunched out that the coin was more cost effective so I had to recommend the demise of the \$2 banknote. But it shows that despite one's bias, it is possible to analyze facts objectively.

I retired in 1996.

I still do not like the Loonie or Toonie. South of the border, the \$1 banknote still prevails because of the adverse public reaction to the \$1 Susan B Anthony coin. Although rarely used, the \$2 banknote is still available: a bookstore in Lake Placid, NY keeps a supply as a tourist gimmick and hands them out as change. That is also rare as most use credit card these days.

Note: Looking back, I am quite honoured that I was in four articles in the Bank's internal publication. I may be wrong but I don't think any other employee had that many articles; perhaps not even senior management. See main menu links of “Tribute”, “October 1984”, “January 1985” and “September 1994”.

Work in progress.....

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