

**Securities and Exchange Commission Historical Society**  
**Oral History Project**  
**Interview with Dennis Dirks**  
**Conducted on August 26, 2011 by James Stocker**

**JS:** This is an interview with Dennis Dirks for the SEC Historical Society's virtual museum and archive on the history of financial regulation. Today is August 26, 2011. I'm James Stocker. We're talking at Mr. Dirks' home on Long Island in New York. Welcome, Mr. Dirks.

**DD:** Thank you.

**JS:** We're here on Long Island, but I understand that you were born in Queens.

**DD:** Yes, that's correct.

**JS:** Were either of your parents involved in finance or business?

**DD:** No, my father was a New York City fireman, and my mother was a homemaker.

**JS:** You have worked at the center of the fields of finance and technology. Were you interested in technology at all as a child?

**DD:** Yes, when I was in high school. That's when computers were first becoming fairly prominent. I took some courses in Fortran on my own, because I was always interested

in programming. When I went to college, I was an English major. I was going to write the Great American novel which I never did manage to do. But even in college, because of my interest in computers, I did take some programming courses as electives. I've always been interested in computer technology.

**JS:** You attended Manhattan College, right?

**DD:** That's correct.

**JS:** How did an English major end up working for the New York Stock Exchange?

**DD:** My uncle was a specialist on the floor of the New York Stock Exchange. He was also on the Exchange's Board of Governors. During the summers, when I was in high school and, to some extent, in college, I worked on the floor of the Exchange in a summer intern-type of work. As I got closer to graduation, I realized that although English was a great love of mine, it was very difficult to earn a good living as an English teacher, which is what I intended to become.

My uncle had always reminded me that if I ever changed my mind, and became interested in a career on Wall Street, I should let him know, and I did. Through his contacts with the Exchange, he got me an interview. I was accepted on a management trainee program in the Exchange's Compliance area. I spent my first years working after college in the NYSE's Compliance Department, which was very interesting. It gave me a very good

appreciation of the difficulties that compliance people – such as the Fed or the SEC – have, so it was very good background.

**JS:** Just to go back a little bit, you said you did an internship there in high school. What was that like?

**DD:** I was a pageboy. I don't know if you know what that is, but –

**JS:** Tell me what that was. What did you do?

**DD:** In those days, the New York Stock Exchange was not electronic at all. Orders that came in from customers would be phoned to the floor of the Exchange, and floor clerks, as they were called, would write the orders down on a piece of paper. There was this giant annunciator board on both sides of the Exchange floor, with the numbers of the various brokers on the annunciator board.

If the broker was needed to execute an order, the phone clerk would press a button. That broker's number would show up on this annunciator board. The broker would know that there were orders for him to execute and he would yell, "Page, page!" or "Squad, squad!" Somebody like myself would run over to the broker and he would say, "Pick me up at E F Hutton."

One of the things about being a pageboy is that you took tests to learn where all of the brokerage firms were located on the external walls of the Exchange. The pageboy would go run to that phone clerk, get the order, and then run back and give it to the broker, who would then go to the specialist for that particular security and execute the trade.

**JS:** Would the page just work for one broker, or a couple brokers, or did he work for everyone?

**DD:** The page worked for the New York Stock Exchange, so you actually worked for any broker on the floor. That was basically how they'd signal that they needed you. They'd yell, as I said, "Squad!" or "Page!" Then you'd run over and do whatever that particular broker needed done.

**JS:** Did a lot of former pages end up working either for the New York Stock Exchange or on Wall Street?

**DD:** Honestly, I don't know. I don't know if my experience was typical or atypical. It was very exciting to be there. I happened to be on the floor the day that Abbie Hoffman and his buddies showed up, ripped up dollar bills, and started flinging them onto the floor of the Exchange. What I found the most interesting part of that whole thing was that the people diving for the money with the greatest amount of alacrity were the brokers and the specialists, whereas the pages were looking around at these folks. I guess it was a very good introduction into how Wall Street actually functions. (Laughter.) Since that time,

by the way, the Exchange put up Plexiglas wall-to-ceiling, so that no one could again throw something on the floor of the Exchange.

**JS:** So that was directly because of what Abbie Hoffman did?

**DD:** Because of that incident, yes.

**JS:** You said you started working in the area of compliance. Tell me a little bit about what you did in that area.

**DD:** The Exchange at that time had a division called the Member Firms division. Member Firms was responsible for making certain that the individual brokerage firms were adhering to Exchange rules, particularly Rule 325, which was the net capital rule. The Exchange spent a lot of money and a lot of effort to make certain that its brokerage firms were solvent, and met the minimum requirements that the Exchange stipulated for capital.

In fact, when I was there, the first New York Stock Exchange firm went public – Donaldson Lufkin. That was the beginning of the end of the partnership system, which had been the prevalent mode of operation prior to that. Also, during that period, in the early seventies, I witnessed a lot of very good firms going out of business, Goodbody & Company, W.E. Hutton –

**JS:** This was because of the back office crisis?

**DD:** Yes all of those failures were due to the back office crisis. During that time if you remember, Ross Perot bought DuPont, which at one point was a very significant Exchange member firm. Perot thought because of his computer experience and knowledge, he'd be able to turn DuPont around. That really didn't work. I think he lost a fair amount of money on that particular investment, and DuPont ultimately went out of business.

It was a very trying time, because of the problems that people had with back office processing. Goodbody was a very famous firm that failed because it was unable to keep track of all the trading that was going on internally. Merrill-Lynch rescued Goodbody and took over its accounts.

**JS:** While you were working there, did you have any contact with the Central Certificate Service?

**DD:** Only in the sense that I knew that the Exchange was forming something like that. It wasn't called Central Certificate Service initially. It was called CCAC. Frankly, I don't recall what those initials stood for. It was some kind of central accounting service. That was the forefather of CCS.

**JS:** What about the Bankings and Securities Industry Committee (BASIC) that was also working on some of those issues?

**DD:** Honestly, I had no knowledge of their work, until I became an employee at CCS, which was later on in my career.

**JS:** You stayed at the New York Stock Exchange for about two years and then you went somewhere else. What did you do?

**DD:** Again, with the intervention of my uncle – I'll never forget this conversation. My uncle told me one day, "You shouldn't really stay at the Exchange." I said, "Why?" He said, "Well, you know, even the chairman of the Exchange only makes \$200,000 a year. You really want to limit yourself to that as the ultimate salary?" I thought \$200,000, at that particular time, was quite a princely sum of money.

**JS:** Of course, it's only gone up since then.

**DD:** Yes. My uncle had a friend named Morris Goldstein – Goldie, as he was called. Goldie owned a specialist firm, a very small one called M.E. Goldstein & Company. My uncle felt that I'd be well-suited to go work for Goldie for a number of reasons. First of all, it was a small enough firm that it did its own clearing work, so that if I decided to stay in the operations end of the business, I would get a tremendous education as to how to clear and settle transactions. Secondly, Goldie did have a small arbitrage and trading operation. My uncle thought that if I had a predisposition to do that, and Goldie was

interested in putting me in that area, then I'd have an option of going either direction, working in operations as a career or possibly becoming a trader.

**JS:** You said they did their own clearance and settlement. How did that work?

**DD:** Back in those days, the precursor to NSCC was a stock exchange subsidiary called Stock Clearing Corporation. It was a very straightforward concept. At the end of the day, you sent down to Stock Clearing Corporation all the records of any transactions you completed that day. Similarly, the other firms that you did business with sent their records of those trades to Stock Clearing Corporation, and Stock Clearing Corporation matched them. The next day you'd get what were called contract sheets. Those trades that matched perfectly were basically, at that point, locked in on these contract sheets.

Then they would give you DK, or "don't know" reports, they're called, which would indicate where there might have been a difference. You said the trade was thirty-three and an eighth. Your counterparty said it was thirty-three and a quarter. It would turn out it was a difference that both firms had to work to resolve. Once it was resolved, one party, usually the seller, would put the trade back into Stock Clearing Corporation saying that we have reached agreement with the buyer and now the trade is, in fact good, and here's the price at which the trade, we all agree, was done.

Essentially, back in those days, trades settled T+5, so basically five days after the trade, you would complete the transaction. There was two ways of doing it. CCS had just

started at that point, so you could submit a form which was called an MDO, a miscellaneous deliver order, by which the seller would instruct CCS to deduct shares from its account versus a certain amount of money, and put those shares in the account of the buyer, charging the buyer that amount of money.

Or you could use what was called the Stock Clearing Corporation's envelope system. Basically there, if you had physical stock certificates and you were the seller, you would render the certificates negotiable, so that they could be transferred. You would put them in an envelope, just a regular envelope. You'd put the number of the broker that you had sold that stock to, and deliver it to Stock Clearing Corporation. They would sort the envelopes, put them in the receiving brokers' bins, and runners would come down near the end of the day to collect all of those envelopes with the stock in them. The Stock Clearing Corporation would keep track of the monies involved, and then you'd have a settlement at the end of the day; settlement could go through CCS, but predominantly it went through Stock Clearing Corporation. CCS was just starting, so most of the deliveries were still physical, going through Stock Clearing Corporation.

**JS:** You said that back then the settlement and clearance process took about five days from the trade date. Did that always work out in practice or were there sometimes fails?

**DD:** Oh, no. You would frequently have fails. In fact, there would be a capital charge that the Exchange would levy against each firm, based on how many fails to deliver that firm had, and how many fails to receive the firm had. During the financial crisis back in the early

seventies, the back office crisis, it was pretty horrific in terms of the total number of fails that were outstanding. The process just choked. The volume on the Exchange grew to, by today's standards, laughably small amounts. But back then, because everything was done in a highly manual basis, trades just got choked, and a lot of fails occurred. As we discussed earlier, that was the cause of the failures of many of those firms we were talking about, Goodbody, Dupont, W.E. Hutton, firms like that.

**JS:** Did you expect to stay with the specialist for quite a few years?

**DD:** I always, as I mentioned earlier, had an interest in technology. I was going to Bernard Baruch College, City College, and was getting an MBA in computer technology. Because I had been an English major it took longer than normal. I had to take some basic business courses first before I actually took the computer courses.

**JS:** You were taking classes at night?

**DD:** At night. It became clear to me that Goldie didn't really have an interest, at least in the short-term, for me to join in the trading area. As I said, it was a very small trading department. It only had three traders in it. All three of those fellows were young people who weren't going anywhere. I soon came to the conclusion that what was the point of getting a master's degree in computer science working for a firm that had no computers whatsoever? Everything was done by adding machine tapes and manual ledgers and things of that nature.

So I went in to see Goldie, and I basically explained my situation. He was very gracious, understood completely, and told me, "Don't worry, you've got a job here until you find something that is more appropriate." Then a friend, who I had worked with in my initial job at the New York Stock Exchange in the compliance area, had gotten a job at CCS. I happened to be speaking to him one day, and explaining to him my situation. He said, "Oh, you should come over here. First of all, we've got plenty of computers. Second of all, since it's a brand new organization, just getting off the ground, it would give you a real opportunity to basically get in on the ground floor."

**JS:** At that time, had Bill Dentzer already come in to CCS?

**DD:** No, at the time, CCS was run as a division of Stock Clearing Corporation, and there was a gentleman who headed the Stock Clearing Corporation. His name was Diran Kaloostian.

**JS:** Did you know him personally or was it a very big organization?

**DD:** No, I knew him. Essentially, it was very clear that CCS would never succeed unless the banks fully embraced it. The fear was – and this is part of the BASIC taskforce work – the fear was that if the banks viewed CCS as strictly a broker-dealer-run-and-governed organization, it would be very reluctant, for understandable reasons, to put their assets into such an organization.

**JS:** What were the reasons?

**DD:** They are custodians for all these mutual funds and insurance companies. They had responsibilities to make sure that those shares were safeguarded and no losses occurred. CCS, when it first began, was a rather unproven organization. It did have some embarrassing computer foul-ups initially. BASIC came up with the idea that for this to work it would have to be owned jointly by the broker-dealers and the banks. Bill Dentzer was the former superintendent of banks in New York State. Obviously, I was too junior to know how he was approached and who approached him, but ultimately he agreed to become the chairman of CCS, which very briefly was called CCS, Inc., for about a year. Then it became DTC. I honestly forget the year.

**JS:** It must have been '74.

**DD:** I think it was '74. Over time, as you'd expect, Bill Dentzer started to exert a tremendous amount of influence on how the company was run, what kind of strategies we would pursue, always keeping foremost in his mind, as he should have, that for us to succeed, he had to persuade the banks that this was a safe organization in which they would have a significant voice, as far as its governance and operation were concerned. He did a very good job at that, no question about it.

**JS:** What sort of issues were you working on during these early years?

**DD:** When I got to DTC?

**JS:** Yes.

**DD:** My initial assignments were almost all computer-related, because that's what I was interested in, and I was getting my master's degree in.

**JS:** What kind of computers did you have?

**DD:** We had IBM 360s. Those were the mainframes that we used. But my initial assignments were to work on data entry systems. The company, which is no longer in business, was called Four-Phase. I became a Four-Phase expert, taught myself how to program those machines. We went from key punching on punch cards into data-entering everything on this particular equipment. Then I taught myself COBOL, and I started programming for the mainframes that we operated.

During that time, just stepping back, the Midwest Stock Exchange Clearing Corporation had developed a continuous net settlement system, which was regarded by everyone as being a very superior system compared with the system that Stock Clearing Corporation had.

**JS:** Tell me briefly, what was continuous net settlement?

**DD:** The basic idea is – going back to what I said earlier about trades settling on trade day plus five, you could be in the situation where you owed Merrill Lynch, let’s say, 100 shares of IBM. Because of trading that took place the next day, Merrill Lynch now owed you 100 shares of IBM. Under the old Stock Clearing Corporation system, those two trades were completely independent of each other. So I physically, or through CCS, had to deliver 100 shares of IBM to Merrill Lynch. Then lo and behold, the very next day Merrill Lynch would turn around and deliver 100 shares of IBM to me.

The beauty of the CNS system is that if I fail to deliver that 100 shares to Merrill Lynch on the settlement date, the next day the delivery would be wiped out, because the continuous net settlement system recognized that you had two offsetting transactions. Instead of both organizations having to do a fair amount of work, even though there was a fail for the day in this example, no work was needed. You just recorded on your records that you had bought and sold 100 shares of IBM. Merrill Lynch recorded on its records that it had bought and sold 100 shares of IBM. But no IBM actually had to be delivered to anybody.

**JS:** You basically had a system that tracked all the trades, and then added them all up.

**DD:** And netted them out. One of my first major assignments at DTC – there was a decision made for competitive reasons, since the Midwest Clearing Corporation’s continuous net settlement system was so far superior to what Stock Clearing Corporation had, Stock

Clearing Corporation started rushing into developing a continuous net settlement system of its own. By this time, DTC had become very stable and very accepted. It was clear that these transactions would settle through DTC. So I worked with the clearing corporation people to develop CNS. They did the programming for the actual matching of the trades and the netting of the trades. I did the work with my team of the settlement of the transactions that went through DTC.

**JS:** When you say clearing corporation, you mean NSCC?

**DD:** It became NSCC. As I mentioned to you earlier, precise dates aren't my strong suit at this point. Sometime during the seventies, Stock Clearing Corporation merged with an over-the-counter clearing corporation called National Clearing Corporation, and then was renamed the National Securities Clearing Corporation.

**JS:** There were also regional clearing corporations in different parts of the country, right?

**DD:** There was one on the Pacific Coast. There was one in Chicago. There was one in Philadelphia. There was one in Boston. Each tried to attract clearance and settlement of transactions done on the floors of their respective exchanges to their clearing corporations and depositories. So there was a fairly lengthy period of time when there was a somewhat healthy competition between all of these organizations.

What happened over time is that with the economies of scale that both NSCC and DTC brought to this kind of processing, it became very apparent that DTC and NSCC could process transactions much less expensively than the other regional organizations—through no fault of their own. They were, generally speaking, very well run with very capable management teams. They just simply didn't have the volumes of transactions that NSCC and DTC had. Gradually, over time, all of them basically sold their businesses, in effect, to either NSCC on the clearing side or DTC on the depository side.

**JS:** You mentioned that during the 1970s the name of the clearing corporation was changing and the structure was changing, from Stock Clearing Corporation to to the NSCC, finally. This was a process that was the object of some public attention, and the SEC and the Justice Department got involved. There was a lot of debate about whether a quasi-monopoly should be granted to this corporation. Was DTC involved in that at all or were they just standing back and saying, "We'll work with whoever is there?"

**DD:** There was always some concern that if you put all your eggs in one basket, as Warren Buffett likes to say, you'd better watch the basket. So both organizations did a very good job focusing on that fact. As they became more and more important in the business, and started to process the vast majority of trades in the business, a great deal of attention and care was given to making sure that the systems were well-run, and that they were backed up.

We did very frequent backup tests all through the years that I was there, because of that issue. You had to make sure that if you were banking on these organizations to be there, that they had better well be there, regardless of whether there's a natural disaster or any other kind of disaster that might take place. The regulators, in fairness, were pretty strong-willed about that, particularly the Federal Reserve Bank. In the eighties, when DTC started to process commercial paper and municipal bonds and other securities, the Fed was very vigorous about making certain that we had adequate backup, and that we would have the necessary resources such as duplicate data centers and things of that nature.

**JS:** During this early period, though, in the 1970s, did you on the technical end have to work much with the SEC? Were they interested in the specifics of the systems design or were they more interested in the big picture?

**DD:** I never really had any involvement with the SEC, as far as any systems-related work was concerned.

**JS:** So they were quite content to let DTC handle that and then just look at the bigger picture?

**DD:** Honestly I don't recall, but I don't believe the SEC had a very significant computer expertise at that particular point in time. I'm not even sure they had the wherewithal to even opine on the system that we were putting in place. I don't offer that as a criticism. I just think those are the facts, as I recall them..

**JS:** Did you also have to design technical systems that would enable you to interface with the regional depositories?

**DD:** We spent a great deal of time developing interfaces, as they were called, with each of the regional depositories. The regional depositories such as the Midwest Securities Trust Company (MSTC) made the point – which was valid, I think – that if you had a broker like A.G. Edwards, which was considered to be a "Midwest-type" brokerage firm, since they were based in St. Louis and and if A.G. Edwards wanted to settle its transactions in Chicago with MSTC, there should be an interface between the New York clearance and settlement organizations, and those based in Chicago, so that A.G. Edwards would have that choice.

So they could technically settle their transactions in Chicago, even though they might have done the transaction with a broker based in New York. That was a fairly big bone of contention during those years, because everybody wanted to make sure that they weren't disadvantaged by building an interface that might, even inadvertently, have favored one party over another, as far as this competitive issue of interfaces was concerned. I'd say we spent a tremendous amount of time, effort and money building those interfaces and maintaining them, with a fair amount of political noise in the background, because everyone wanted to be certain that they were not disadvantaged in the process.

**JS:** So, for instance, was Congress talking about the technical details of these interfaces?

**DD:** No, this is one area that the SEC spent a lot of time on. It did, in fact, make a real effort to assure the smaller players, in particular, had an equal share in the game. I think what ultimately hurt those organizations significantly was stock lending. Stock lending was a big business back in the eighties and nineties, as it still is today. Most of the stock lending was being done in New York. Some people might disagree with that, and argue that it's not true, but from my experience it was true.

What happened is that a firm like A.G. Edwards, if they wanted to be very active in the stock lending business, had to have assets at DTC, because the stock lending was taking place in New York. It didn't really help them to have this interface that would enable them to deliver securities from Chicago to New York, because that added an extra layer of complexity and a day's delay to the transaction.

My own opinion is that the stock lending business essentially doomed the smaller clearing corporations and depositories in other cities, because even though the interfaces on paper gave everybody an equal play in the clearance and settlement business, if you had a big stock lending firm in New York and they wanted those securities immediately, they didn't want to hear anything about there will be a one-day delay, because we have to move them through this interface transaction system that we have built. I think gradually, economies of scale started to eat away at the profitability of these various other clearing

corporations and depositories. One by one, they essentially decided that they could no longer compete.

**JS:** How did the interfaces work? Did you have modems at that time?

**DD:** It was initially almost Neanderthal by today's standards – transmissions of tapes. We would transmit tapes to Chicago. Chicago would transmit tapes to us.

**JS:** So you had interface, but you had to actually either use the mail or send a truck or something.

**DD:** Oh, no. It was done over phone lines.

**JS:** Over phone lines.

**DD:** It was automated, but it was, by today's standards, a pretty rudimentary system.

**JS:** So in 1980 you became VP for Operations at DTC. How did your duties there change?

**DD:** We skipped a slight step in my career. When I was finished with the CNS systems work, I wanted to do something different. A gentleman named William Jaenike joined DTC. His initial job was to be in charge of marketing, basically trying to get banks and other

large institutions to use DTC. Obviously, it was a much more effective system if everybody was playing in the same ballpark.

For example, there were plenty of times before the banks became full members of DTC that a broker would receive delivery of securities – let’s say 10,000 shares of IBM – through DTC, pay for them through DTC, and then find, to its dismay, that the customer was being custodied at a bank that didn’t use DTC. The broker would have to come to DTC and physically withdraw the certificates, which we called the CODs – Certificates on Demand – and then physically deliver them to the bank. There was always going to be some delays in that process. The brokers were losing a fair amount of interest float, because they had already paid for these securities, but couldn’t get paid themselves for them until they physically delivered them to the custodian bank, for example, State Street Bank.

Bill Jaenike’s initial job was to market DTC services to not only the New York Clearing House banks, but the large regional banks, because we recognized very quickly that unless we succeeded in getting the banks heavily into DTC, the brokers would always have this tremendous handicap of the added expense of having to deliver securities to the banks.

Frankly, at that point, I had gotten a little worn out doing systems assignments. I wanted a change. Bill came in as a new player in the game with this mandate to try to market DTC to institutions and banks. I joined Bill in a segment of DTC called Participant Services. I was given mutual funds. My assignment, before I went into operations in

1980, was to go around and visit the various mutual funds, not to get them to join DTC directly, because none of them would do that for a variety of reasons, but to encourage them to get their custodian banks to agree to use DTC. That was very successful. It took time and a lot of patience, but it was key to DTC ultimately becoming as successful as it did, getting the banks into the system.

**JS:** Was your focus on the New York banks and mutual funds, or were you looking all over the country? Were you traveling all over the place?

**DD:** Candidly, we felt that there were some New York banks that were somewhat resistant to using DTC because they felt that a good part of their business would go away if DTC was successful, for example, the transfer agent business, to name one. DTC had a strategy of trying to encourage regional banks to join directly to help persuade the New York banks that the world was changing, and that if they didn't change with it, some of these regional banks could take business away from them, because they would be able to do transactions through DTC directly. It was a strategy that wasn't terribly well appreciated by some at the New York banks, but it did, in fact, result in what we hoped that it would.

**JS:** Did it also bother the regional depositories that you were going after banks in their area?

**DD:** It did, but honestly, when you consider the difficulty of persuading a bank that historically has kept its securities in its own vaults to now trust an organization that would be holding all of the securities for them – in my judgment, the regional

depositories had a very difficult sell in that regard. At least in DTC you had an organization that was growing quite rapidly, and had gradually gotten a reputation for probity and for excellent systems and things of that nature.

I think that's one of the advantages that DTC had over the regional players. I think banks that were seriously contemplating joining a depository for the first time were not going to join one that was less than what was considered to be at the time, best of breed. I'm not saying that with any false pride or anything like that. That was a fact.

**JS:** Did you have a standard sales pitch that included talks about your vaults and your security?

**DD:** Oh, yes. I remember so many times questions like, "What if an atom bomb goes off in New York? What will happen to all our securities?"

**JS:** What do you say to that?

**DD:** My usual answer was, "Well, I'd be concerned, depending on where I physically was at the time." How do you answer something like that?

**JS:** It was during the Cold War, though. People were thinking about those things.

**DD:** People definitely were, but we pointed out that we kept backup records of everything that we did at off-site locations. The depository's holdings could be reconstructed if there was such a monumental disaster. I think each of the banks had that concern for themselves. What do they do if an atomic mishap occurred? It was an issue, and it was an issue that people liked to talk about. As a practical matter, I think most people realized that you've got to face day-by-day, real business situations. To start basing your planning on Armageddon is somewhat counterproductive.

**JS:** At this time was there any talk about switching over to book entry-only securities, or getting rid of stock certificates, or anything like that?

**DD:** DTC started down that path with a program they called the FAST program. Under FAST, what we tried to do was persuade cooperating transfer agents that – well, let me step back. When certificates were deposited in DTC, the normal process is that we would render them negotiable, and send them to the transfer agent for those securities. The transfer agent would then re-register the securities out of the name of the party that they were in and put them into Cede & Co., which was DTC's nominee. Then they'd return the certificates to us and we'd put them in the vault.

Gradually, as we grew more successful, we would have very large denominated certificates in the vault – three million shares of IBM on a single certificate, that kind of thing. It became clear to us early on that if we could work with the transfer agents and develop the FAST concept, basically the transfer agent would not return the certificate to

DTC. The transfer agent would keep a record of DTC's holdings in IBM, and then just add to that holding as the deposits came in, or reduce the holding as the certificates were withdrawn from the system.

FAST became quite successful. It stood for Fast Automated Securities Transfer. As more and more transfer agents joined FAST, there were fewer and fewer certificates in DTC's vaults. Gradually over time, they developed the concept of book entry-only securities. It was largely municipal securities that started that process.

Most of the time municipal issues don't trade all that much once they're initially sold. They are sold to investors who want a tax-free income during the life of the security. When Congress outlawed bearer bonds and all municipal securities had to become registered, some very imaginative broker-dealers and municipalities came up with the concept that "Gee, well, let's not even issue certificates."

Let's say that the whole issue is owned by Cede & Company. DTC, in turn, would keep a record on its computer files of the individual brokers or banks which owned that security, and then the banks and brokers keep records of the actual beneficial shareholder, the person who actually owned the municipal bonds.

**JS:** At the beginning of the 1980s, you became VP for Operations. What were the major priorities for the DTC at that point?

**DD:** The major priorities were basically to cut out costs as much as possible. Our biggest cost was clearly processing certificates. Back in the early eighties, we would have anywhere between 20,000 and 30,000 deposits a day, and anywhere between 20,000 and 30,000 withdrawals by transfer.

**JS:** These are the physical certificates?

**DD:** The physical certificates.

**JS:** So you had an armored truck coming in and bringing the certificates?

**DD:** We would take all the deposits and trundle them off to the transfer agents to get them transferred into the Cede & Co. name, and then we would pick them up and bring them back to DTC, now registered in Cede & Co. We'd put them in our vault. In the meantime, you had a lot of individual investors who wanted certificates in their names. The broker-dealers would submit transfer instructions to us and we would basically reach into the vault, take a Cede & Co. registered certificate, send it to the transfer agent with the transfer instruction, let's say into your name, James Stocker. The transfer agent would now take the certificate out of Cede & Co. name, put it in your name, return it to DTC. DTC now would return it to Merrill Lynch, and Merrill Lynch would mail it to you. That was a very expensive and very cumbersome process.

**JS:** That was always through the broker-dealers? You never had some little old lady show up at the door?

**DD:** Oh, no. We strictly dealt strictly with broker-dealers and banks which were known as Participants.

**JS:** At the same time during this period, DTC also began holding new types of instruments. The first one was bearer bonds.

**DD:** To give the proper sequence, we went from New York Stock Exchange-only issues to American Stock Exchange issues to over-the-counter – as they were called in those days – issues, later to be known as NASDAQ issues. Then we made corporate bonds eligible, which was a very challenging process because a lot of the banks did not keep their corporate bonds at DTC. The brokers were up in arms over the fact that we made this new type of security eligible. We went back to the old problem of having to withdraw the security from DTC, and physically deliver it to the banks. Gradually, history repeated itself, and the banks gradually began to keep all of their corporate bonds in DTC. Then we went to municipals.

**JS:** Then you added the municipals. As you expanded the types of instruments that you would hold, who was really pushing for that? Was it DTC looking for new business or was it the participants saying that we need somebody to hold these?

**DD:** It was really a combination of both. The board of DTC was comprised of senior executives from the banks and broker-dealers. The board met monthly. We had various committees that would give us guidance as to what was the next important project that we should work on. I'd have to say it was a combination of our own wanting to do more business where we felt we were capable of doing it, coupled with our participants asking us to make these types of securities eligible.

**JS:** What was the most challenging of these new types of instruments?

**DD:** I'd have to say commercial paper, because it was strictly a book entry-only type of instrument, and for the first time, we were settling those through Fed funds and bearer municipal bonds which required so much physical processing.

**JS:** Was that in 1980's thru the early 90's? That's the dates I have here.

**DD:** It was in the early to mid eighties that we focused on bearer bonds which were a real challenge, because you had massive numbers of bonds deposited into DTC. Each of them had these coupons that had to be clipped or cut twice a year. Those coupons were fully negotiable as were the bonds themselves. If you lost them, you lost the money they were worth. So in addition to safekeeping the bonds, there were millions and millions of coupons that we had to cut each year, make sure we didn't lose them, and make sure we got paid correctly from the trustee for the bond issue. That was an enormous operational challenge.

**JS:** So you had staff members that did nothing but cut coupons?

**DD:** We had a big vault out in Garden City, Long Island, that was built to our specifications, most likely the biggest securities vault in the world. We had armies of people that did part-time work cutting bearer coupons. We all got a chuckle out of the fact that one of our coupon cutters showed up every day in a beautiful new model Cadillac, and went into work cutting coupons. It turned out that she was the wife of a prominent doctor, who just essentially wanted to get out of the house and do something. She got to know the other ladies or gentlemen who were cutting coupons in this particular area. They had a sort of social network while they were busy tearing off these little pieces of paper and preparing them for payment.

**JS:** You mentioned the vault on Long Island. I understand that DTCC later got rid of the vault.

**DD:** What happened is that Congress outlawed bearer certificates. All subsequent municipal issues came out either in registered form or with no certificates at all, book entry-only. Gradually, as bearer issues matured, there was less and less need for the vast amount of physical space we had on Long Island. We actually built a second vault on top of the first one, when the bearer municipal program first grew so dramatically.

Then over time, with the book entry-only system and the diminution of the number of bearer bonds that were in existence, it became clear that we could go back to the original vault in New York that we first started with. It was large enough to hold the assets. Even though the dollar value of the assets we had were thousands of times larger than when we first began, they were now either in the FAST program, book entry-only, or they were at the Fed, in commercial paper.

**JS:** Do you know what happened to the vaults, though? I was just curious where they went.

**DD:** I honestly don't know. I would think the landlord would have had a heck of a time trying to market them for something else. At one point, there was some serious consideration by someone on the Street to take them from us, and make them a depository for people's gold and other valuables, because they were – believe me – quite impregnable, quite impressive. But that never really took hold either, so I really don't know what became of them.

**JS:** One of the things that DTC did was that it helped to handle proxy communications for shareholders. That was done by something called the nominee system. What was the nominee system?

**DD:** It was actually called the omnibus proxy system. The basic concept is that on the record date for an annual meeting, DTC would send to the issuer a list of all of participants and the holdings that our participants (banks and brokers) had in the security on the record

date. Then we gave up our right to vote the shares, even though they were in Cede & Co. name, and gave the right to vote to the individual participants listed on this particular listing that went to the issuer.

The issuer, in turn, would contact the various broker-dealers and banks that were on our listing and basically determine A, that they were voting the shares directly themselves, or if they weren't voting themselves but their customers were going to vote the shares, how many sets of proxy material did they need to send, primarily to the broker-dealers, who in turn would send them to the actual beneficial holder (customer). This was somewhat of a controversial issue for DTC for a number of years, because issuers felt that one of the detriments of a depository system was that they the issuers became more and more distanced from the actual beneficial owner.

There was quite a bit of discussion as to how to remedy that situation. The industry came up with what was called the NOBO-OBO system. NOBOs were non-objecting beneficial owners and OBOs were objecting beneficial owners. If you were a customer of Merrill Lynch, then Merrill Lynch would ask you, "James, do you mind if we identify to the issuer your name and address as a beneficial holder of these securities?" If you said, "No, I don't mind," then you were a NOBO and Merrill would be willing to transmit to the issuer the names of their customers who own IBM, who were NOBOs, those willing to let the issuer know who they were and their identities.

If you said, "No, I don't want IBM to know my name specifically as an owner of IBM," then you were an OBO, and Merrill Lynch would not transmit your information directly to the issuer. Instead, Merrill Lynch would send you proxy material, because they would tell the issuer, "In total, we own two million shares of IBM and we have 1000 customers who are OBO's. Send me 1000 sets of proxy material, and we will mail them out to the customers."

The biggest issue in this whole area was takeover concerns. The issuers felt that if somebody was trying to make a move and acquire their shares for takeover purposes or whatever purpose, the old system, where certificates were registered in the individual owners' names, gave you some kind of an indication as to who owned your securities, although – not to spend a lot of time on this – that was a little bit of a red herring, because banks would traditionally hold all of their securities in bank nominee name.

Goldman Sachs could be accumulating a tremendous amount of a given target's security, but through Bank of New York, let's say. Bank of New York is still showing a large holding in its nominee, whatever it is. Let's say it's Boney & Co. So you, the issuer, still didn't have direct access to the information as to who specifically was trying to accumulate your securities.

**JS:** So the problem would have been whether or not there was a depository?

**DD:** Right. In my judgment, the problem was there regardless of the fact that there was a depository. But it was raised constantly by the issuers that the depository was interfering with its contact with its beneficial shareholders. The omnibus proxy system and this NOBO-OBO system were basically constructed to try to mitigate those concerns.

**JS:** Did you keep records about what percentage of beneficial owners were NOBOs and what percentage were OBOs?

**DD:** No, we didn't know that. That was the broker, who knew that information. Our only customer was Merrill Lynch. We never looked through Merrill Lynch to any customer beyond that. But Merrill Lynch knew which of its customers were NOBOs and OBOs.

**JS:** While they were creating this system of NOBO and OBO, did the DTC participate at all? Did you offer an opinion, or did you just stand back and say, "We'll let you all discuss this and we'll adapt to whatever decision you make?"

**DD:** My recollection is that we encouraged people to come up with a solution, because of the criticism that was being levied at us, in my judgment, unfairly. But my recollection is that we did not spend a tremendous amount of our own effort. We felt this was an industry issue that was best resolved between the issuers and the ultimate owners of the securities, the broker-dealers and the banks.

**JS:** Were you working at DTC during the savings and loan crisis?

**DD:** Yes.

**JS:** How did that affect the operations there?

**DD:** Frankly, minimally. It was largely a crisis of confidence, as these savings and loans went out and bought all sorts of real estate, and failed as the value of those real estate deals went under. But it didn't affect us directly.

**JS:** The stock crash of 1987 did pose a few challenges for DTC, right?

**DD:** Only with volumes. There was an unprecedented surge in trading volumes. Frankly, we were very proud of the fact that our computer systems held up very well. We processed everything perfectly fine, without any kind of interruptions or problems whatsoever.

**JS:** So there were no major problems, but at the same time, some people were a little bit concerned after the stock market crash about the settlement cycle and its length. There was a report put out by the SEC's Division of Market Regulation, soon after the stock market crashed, that said the length of the trade settlement cycle created a major crunch for the securities processing industry.

**DD:** I don't think it was a major problem. I think the problem was risk. The argument was – and I think it's a valid argument – the shorter the period between a trade occurring and its

final settlement, the less risk you have of something going awry. The G-30 was the group that really pushed the argument that we should start to tighten the number of days between settlements. The initial thrust, which is still with us today, was T+3, as opposed to T+5. There were some people who strongly objected to moving to T+3 but generally speaking, the industry would concur that that was very doable. It was an objective that could be met, and it made sense to do it. We spent a great deal of time working to implement the T+3 settlement at DTC.

**JS:** In 1994 you became CIO?

**DD:** Yes.

**JS:** I guess the three day settlement cycle, T+3, must have been the major issue on your plate at that point?

**DD:** Yes.

**JS:** What sort of changes had to be implemented in order to achieve T+3?

**DD:** We basically had to look at all of our systems and confirm – almost like the year 2000 – that you didn't have code that specifically was earmarked to a five day settlement cycle. If you did, make certain that it was modified to switch to a three day settlement cycle.

Because of the way CNS worked, it was relatively straightforward to do. I don't think it was as challenging as the year 2000 work was, because we knew our systems. We went through them carefully. We just simply modified them to work on a tighter timeframe. NSCC, in fairness, had even more work than DTC did, because NSCC was the organization that took in the trade input, compared the compared trade summaries that we discussed much earlier and had the CNS system under its purview. They had to do quite a bit more processing changes, in my judgment, than DTC had to do.

**JS:** Did NSCC and DTC have to work with the participants to try to get them on the same page?

**DD:** Yes. We ran several tests on Saturdays. We mandated that our participants had to come in on Saturday. We created a fictitious trade day, if you will, and we ran simulations of clearing all the transactions. We took a particular day in the past, pretended now that it was a T+3 settlement instead of a T+5, and then everybody ran through this day-long weekend test. We did it at least twice. We might have done it three times before we went live with T+3, which was completely uneventful, by the way – one of the smoothest transitions of major changes in the industry that I've ever been involved in.

**JS:** Immediately after T+3, you began working on same-day fund settlements for equity transactions?

**DD:** Right, because up until this point settlement had been on a clearing house, next-day basis. At the end of the day, we would accept in payment certified checks drawn on New York Clearing House banks. In return, we would credit participants with next-day money in the form of checks drawn against us. As part of the effort to reduce risk, the thinking was that it was foolish to be settling all these transactions in next-day money. Let's go to federal funds, where settlement is irrevocable. Once it occurs, it occurs. Money has changed hands. There's no possibility that if a bank fails overnight, a settlement check will not clear because it is drawn against that particular bank. . The Drexel Burnham situation, I think, when they went out of business illustrated the risks of a next day funds settlement system.

**JS:** Tell me a little bit about that.

**DD:** You had a very confused situation. Drexel had been a powerhouse firm. Milken was their most visible public face. They basically overextended themselves and collapsed. Mortgage-backed securities was one of the areas that they were heavily involved in. The Fed got involved, and they had this big meeting at the Fed, where people were marking fails, and trying to straighten out deliveries of mortgage-backed securities that had involved Drexel Burnham.

That was the crisis that focused people's attention on the fact that irrevocable settlement and same-day funds made a heck of a lot of sense, as opposed to running the risk of

settling in next-day funds, and having something happen overnight that rendered the settlement incomplete.

**JS:** Was that change more or less complicated than T+3?

**DD:** In my judgment, again, because we already did same-day funds with certain types of securities, like commercial paper, we essentially extended the concepts that we had already thought through with commercial paper. But we did make an enormous number of rule changes. We put in enormous numbers of controls to make certain that we were fully protected in the event that a broker-dealer or a bank failed.

Under the same-day funds settlement system, DTC is the owner of all securities that are delivered to the receiver, until the receiver pays for them. We put in very elaborate, very strong controls so that if, for example, a major broker dealer, like Lehman Brothers failed– which didn't happen, of course, until much later. If Lehman Brothers failed and Lehman owed DTC, let's say, \$600 million for deliveries of trades that they received that day, DTCC states that "All of those securities that were delivered to Lehman, DTC owns. DTC now has the right – since Lehman didn't pay for the securities – to go into the market and sell those securities."

But we also have what's called a clearing fund. Every broker and every bank contributed to a fund. It was mostly broker-dealers, I shouldn't say the banks. Basically, Lehman would have contributed to, let's say, \$100 million to this particular clearing fund. Some

of the fund was cash but most of it were US Government securities which we would have been marking to the market every day, so that we would increase or decrease that \$100 million that Lehman had in the clearing fund, depending on which side of the market they were on.

If Lehman failed, as I mentioned earlier we would now sell all of those securities that Lehman had received that day. If we suffered a loss because the market had gone down, and we weren't able to get the full amount that we owed the counterparty, we would take money out of Lehman's clearing fund to make us whole. If Lehman's clearing fund contribution wasn't large enough to cover the loss, we would take a pro rata portion of each other Participant's clearing fund to make DTC whole. It was a very elaborate system, very carefully thought through. Fortunately, it never broke. In fact, when Lehman did fail some years later, it worked perfectly. DTC, as you know, never suffered a dollar's worth of loss because of any of the failures of any of its participants.

**JS:** During the 1990s, there was also the development of what was called the equity repo market and DTC played a role in that.

**DD:** Although equity repo was a factor and was developed, it never, to my recollection, ever became a big business. Most repos, as you know, are done with government securities. Somebody had the idea that if you do them for governments, why can't you do them for equities? But the problem is that governments, at least until recently, had always been

absolute gilt-edged securities that you knew were always going to be there and always going to be valued pretty much close to face.

The problem with equity repos is obviously that in the repo that you did, the equity could have been Enron, and you thought you were fully protected, because you had the collateral. There was a move afoot to do equity repos. From my experience, it never actually really took off. I don't know what you're basing your question on.

**JS:** It becomes a bit like a short, right?

**DD:** The idea is you want to borrow money, and I have a whole bunch of Enron in my possession. I want to keep the Enron, but I need to finance something else. I basically go to you and say, "Lend me \$100 million. I'm going to give you \$150 million-worth of Enron as collateral. Ten days from now, we're going to reverse the transaction. I'll pay you back what you lent me. You return the Enron to me." The risk that you run is that you have already given me the money, and its collateral is something that all of a sudden could turn out to be worth much less than you expected. So for that reason, my recollection is that equity repos never really took off, unless you have information to the contrary.

**JS:** No, it was a phenomenon that a lot of people talked about at the time as a developing market.

**DD:** It definitely was discussed. There was a lot of fanfare. My clear recollection is it never really amounted to much, because of that inherent risk. It's not like exchanging government securities for cash. You are exchanging something that's much more dangerous.

**JS:** Now I'd like to talk with you a little bit about the preparations for the merger with NSCC. When did it become obvious that there was going to be a merger between the two organizations?

**DD:** When Bill Dentzer retired and Bill Jaenike became the chairman of DTC, Dave Kelly was the President of NSCC. The broker-dealers – predominantly the broker-dealers – felt that there could be further economies of scale realized by combining these two organizations, as opposed to the industry financing both of them. In the mid-nineties, that became a big issue. The problem was the personality issue. The industry liked Dave Kelly and the industry liked Bill Jaenike. The feeling was one of those two people would have to be the chief executive, if you will, of the combined company.

There was a lot of discussion as to how that would work. There could be a lot of political clashes, possibly, between the two organizations. But then Bill decided to retire. Jill Considine was chosen by the board to replace Bill. Jill came in with none of that baggage whatsoever, and I think it was very apparent early on to the main broker-dealer executives, who were pushing this concept, that she was a very capable and exceptionally gifted manager.

With Bill Jaenike gone from the scene, and DTC being so much larger than NSCC, it was decided to merge DTC and NSCC. It was done with some grace and some care, particularly given Dave Kelly's personal feelings about the matter. Jill was chosen to be the person that was going to run the merged company which was named DTCC.

**JS:** The two organizations had a lot of redundant functions. That was one of the reasons for merging them in the first place. Did that culture clash at the top replicate itself on down the line?

**DD:** Frankly, no. It was a matter of scale. You had 3,000, whatever the number is, DTC employees, and you had 300 NSCC employees, I don't recall the exact figures. I think the NSCC employees were intelligent enough to realize that this was going to happen. Jill Considine was going to be the person running the combined organization. I think people did what you should do in a situation like that. They realized that it was in their best interest to be cooperative and embrace this change, as opposed to being antagonistic and running the risk they could get tossed out the door because they weren't contributing in a positive way.

The other thing that made a difference, too, is that at the time, there was a computer operation called SIAC – Securities Industry Automation Corporation. SIAC was doing all of the systems work for NSCC at a fairly hefty price tag.

**JS:** Was SIAC a private company?

**DD:** No, SIAC was owned by the American Stock Exchange and the New York Stock Exchange and NASD. The New York Stock Exchange had the biggest ownership. One of the savings that was evident in this combination of NSCC and DTC was that DTC had the computer wherewithal to run the systems that SIAC was running for NSCC. A big part of the savings had to do with just putting all of that computer work on computers that DTC already had. It was a little controversial, because SIAC was a profit-making organization for the New York Stock Exchange and its other owners. There was some discussion there, but ultimately the transition occurred, the savings were realized and it was very successful.

**JS:** You talked about the goal of reducing costs as one motivating factor for the merger. Were there also hopes that a merged organization could implement a faster settlement cycle?

**DD:** No, I think the other leading reason was risk reduction. As good as NSCC was and as good as DTC was, you basically had two different risk systems, in some regards relying on the same securities as the underlying collateral in case there was a problem. In addition to the cost savings, there was an understanding that you'd have some risk reduction if you had a single integrated risk system, as opposed to a risk system run by two separate organizations.

**JS:** No one was hoping to get to T+1 at this time?

**DD:** There was an organization that was an industry-funded organization, called the Global Straight through Processing, GSTPA. They began pushing the concept of going to T+1. It had some momentum for a while, but the individual broker-dealers and the banks were funding this particular organization. My clear recollection is that after a number of years of fairly substantial onvestment, the organization was no closer to actually having a workable T+1 concept than it was when it first started.

There was a dip in the market around this time, and GSTPA needed some additional funding. They went back to the individual banks and broker-dealers that had supported them up to this particular point in time, and they ran into a roadblock. With no actual, concrete system in development to show for all the money that had been spent up to this particular time, and with a dip in the securities markets, which made additional funding unlikely, the organization just fell apart. To the best of my knowledge, and I've been retired now almost nine years, there's never been a significant resurgence in interest in going to T+1.

**JS:** How did people at DTCC feel about this idea of T+1? Was it just kind of a pie in the sky idea, or did they think it was something they should be looking towards?

**DD:** I think the general feeling was that we already successfully went from T+5 to T+3, so the concept of shortening the settlement cycle had been successfully engineered the first time

around. I think, though, at least from my vantage point, there was a great deal of indifference. It was vastly more complicated to shorten the cycle, because you had this tremendous number of trades. You do need some time to straighten out errors or problems where the trades didn't exactly hit completely.

I think DTC, to its credit, had built some terrific risk mitigation systems that were widely recognized as being pretty successful. NSCC, the arm of DTCC, took responsibility for a trade once it was matched. If a trade matched on trade day-plus one, NSCC was on the hook for that trade. How much more were you actually gaining by trying to compress everything into a tighter settlement cycle? I think most people were particularly wearied of the tremendous amount of money that was wasted by the GSTPA organization. I think the whole issue just died and, to the best of my knowledge, has not resurfaced again.

**JS:** After the merger, you became the chief operating officer for DTCC?

**DD:** Right.

**JS:** What was your work primarily concentrated on?

**DD:** There were some other clearing corporations that were out there that everyone felt should be brought into the DTCC umbrella. One of them was the Mortgage-Backed Securities Clearing Corporation, which had originally been developed in Chicago, and a depository called Participants Trust Company, which essentially was a depository for mortgage-

backed securities, Ginnie Maes, et cetera. There was another arm of NSCC called Government Securities Clearing Corporation, which as the name implies, cleared government securities.

Basically Jill Considine, the chairman of DTCC, gave me the assignment of bringing these organizations into the fold. I became the CEO of MBSCC and the CEO of GSCC. Ultimately, they became merged into the Fixed Income Clearing Corporation.

**JS:** The major incentive behind putting all these together was cutting costs?

**DD:** Cutting costs and trying to reduce risk by having everything looked at as one, single entity, as opposed to each of these organizations having their own, individual risk systems.

**JS:** Were the SEC or other regulators interested in that? I mean, were they scrutinizing it or did they have to approve it?

**DD:** Anything that DTCC did basically needed the concurrence of the SEC and the Fed. I don't remember this being a source of controversy at all. I don't recall there being a tremendous amount of scrutiny. I think our track record, up to that point, had been pretty good, in terms of merging other organizations into DTCC. Although they did have to give their approval, my recollection is that it was not a long, drawn out, or controversial process.

**JS:** So after three years at DTCC, in 2003 you decided to retire?

**DD:** I underwent a triple-bypass operation in 2001. Age fifty-five was the earliest age that I could financially afford to retire from DTCC. I went in to see Jill about six months before my retirement, and told her the triple-bypass had been a real wakeup call to me, and that some of the doctors who treated me felt that the stress of working for a large and critically important organization like DTCC, plus the commute, which in my case was a four hour a day commute, which I'd already done for thirty-five years or so, was too much.

I told Jill that my wife and I had talked it over and I felt I had accomplished what I wanted to accomplish in my career, and that I did not want to run the risk of further health issues. She was very gracious about it, and understood that a triple-bypass operation is a wakeup call for anybody.

**JS:** That's understandable.

**DD:** We had a very capable guy named Don Donahue, who was waiting in the wings to take over more responsibility than he already had. It worked out perfectly. I retired in May of 2003 and Don, as you know, became president and ultimately, the chairman and CEO of DTCC, upon Jill's retirement.

**JS:** Before we started this interview, you mentioned a phrase to me, "plumbers of the industry," which had once been applied to DTC. Where did that come from?

**DD:** No, it wasn't applied specifically to DTC. Gerry Corrigan had been invited to speak at an industry meeting hosted by the Securities Industry Association. Gerry was at the New York Fed at the time. To his credit, Gerry was well-aware of the importance that clearance and settlement played in the securities markets.

His talk was to that point, although I have to admit he referred to people that did the kind of work that I did as the "plumbers of the industry," which I'm assuming he meant to be complimentary, but maybe it struck me a little bit odd as being a compliment at the time.

**JS:** Mr. Dirks, looking back over your career, do you have any final thoughts before we wrap up?

**DD:** The only thing I'd say is that I think DTC is the perfect example of not wasting a good crisis. If it weren't for the paperwork crisis or back office crisis of the late sixties, when Wall Street almost came to a halt, I doubt if a very successful organization like DTC would have ever been started. But because everyone realized that something had to be done, and had to be done quickly, I think that it helped modernize the entire United States securities market, even though at the time it was the view that we have to do this, because if we don't, we're going to be out of business.

In this particular case, it was not a wasted crisis, and a very solid, very reputable organization was created, out of necessity. It proved to be, over the years, a real boon for the securities industry. I'm proud to have played a part.

**JS:** It sounds like a good lesson for all of us. Dennis Dirks, thank you very much for talking with me today.

**DD:** You're welcome.

[End of Interview]