

# CANDOER News



A quarterly Newsletter dedicated to Communicators AND Others Enjoying Retirement

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Welcome to the latest issue of a Newsletter dedicated to the **CANDOERS** (Communicators **AND** Others Enjoying Retirement). This newsletter will be distributed quarterly. New issues will be posted on the Web for viewing on or about, January 15, April 15, July 15, and October 15.

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**Did you ever notice: When you put the two words "The" and "IRS" together it spells "Theirs?"**

### Cat's Corner

This issue's one-liners were received from Joe O'Brien and are titled, "Gentle Thoughts."

**First you forget names, and then you forget faces. Then you forget to pull up your zipper. It's worse when you forget to pull it down.**

### The ATS Story

By Ray Wolf, Bernie Weinstein, and Denis Combs

#### Part II of II

*Mr. Raymond L. Wolf was the Supervisory Programmer, Department of State. Born on February 25, 1929 at St. Mary's, PA. Mr. Wolf received a Bachelors of Science Degree in Business Administration from Penn State in 1957. He started employment at the Department of State in 1963. (Ray died on April 1, 1999 of a heart attack.)*

*Bernard Weinstein was a consultant systems analyst who has been involved in data processing activities since 1954. Mr. Weinstein has been associated with the State Department ATS from its inception. He holds a Bachelors Degree in Business Administration from the College of the City of New York. (Bernie is now retired and lives in Las Vegas.)*

*Denis F. Combs was the Manager-Field Operations, Logistics, for ITT Defense Communications Division, Nutley, NJ. He has been involved with real time data processing systems since 1956. Mr. Combs has been involved in project management and field operations for ten ITT message/data switching systems and also has been associated with the State Department's ATS system from its inception. He attended the University of Michigan, Flint*

*Campus, from 1955 to 1957, and GM Technical Institute, Flint, Michigan from 1951 to 1952. (Denis is now retired and lives in La Plata in Charles County, Maryland.)*

### Storage Devices

The duplex storage devices perform another important function by doubling as overflow storage devices whenever the number of drum cells in use by the system approaches a critical point. To determine which message cells are transferred from the drum to the storage devices, various scan programs search through certain queues and select which traffic will not be required for long periods of time. After the cells are transferred to the storage devices, their area on the drums is released, freeing the drums for future message storage. However, the queue itself is not disturbed and the traffic retains its first-in, first-out nature. Other programs scan the queues to determine which messages will be required for processing within a short time and recall these messages from the storage devices.

### Modifications

During the six years following the cutover of the ATS, a great number of changes were made to the programs and to the hardware. During the initial debugging of the programs, a number of State Department programmers were trained through formal ITT classes and later received additional on-the-job training imparted through working with ITT programmers. Shortly after cutover, the Department of State programmers were able to make all table modifications as required and have since been making major changes to all areas of the system. All of the off-line Journal program changes have been performed by Department of State programmers since cutover. It is estimated that State Department programmers have modified at least 20 per cent of the programs in

the past six years. In general, they have been making changes which can be incorporated without additional hardware.

To insure that the system is kept up-to-date, the State Department has continuously investigated many applicable "state of the art" devices as they were introduced into the computer field. Where new equipment has a potential use in the ATS system, it is thoroughly studied as to cost, ease of application, tradeoff benefits and reliability.

When changes have been made, a minimum of disruption to the system has resulted. The benefits have been such that the system performs better today than it did six years ago. This is significant in view of the fact that traffic has increased fourfold and the numbers of functions performed by the program have doubled since 1967.

When an improved version was introduced, the original mass storage devices were replaced with the more advanced magnetic card units, resulting in corresponding improvements. Simultaneously, the Department of State contracted for a study by an independent source to estimate effects of increased message throughput on the system, and to recommend means by which access to the storage devices could be reduced through more optimum processing. As a result of the units being replaced, excellent maintenance, and the reduction of access as proposed in the study, the storage devices continued to operate for over five years. In addition, the amount of core in each ITT 7300 ADX was increased by 12K, bringing the total to 64K, or the maximum available to the then-configured ITT ADX 7300.

The following year (1969), a high-speed full-duplex line was incorporated

as part of the system. The high-speed circuit was required to help handle the heavy volumes to one customer.

The Initial ATS was, configured to operate using three drums on-line, with a fourth as a spare. One drum contained all the homogeneous message cells; while one-half of the second drum contains message and table information. Since all items are duplexed on the drums, three drums, are required. The fourth drum is necessary for a drum copy whenever any of the three must be removed for maintenance or because of drum failure. In mid-1970, a fifth drum was incorporated into the system. This drum is called the DROVE (drum overflow), and is used to store messages that are formatted in a version for local subscribers as built in the subscriber routine. Its function is to reduce the number of homogeneous drum cells on the duplex drums. Since the cells on this drum are a version which can be rebuilt by the system, a duplex of the DROVE was not provided. The DROVE drum can be instituted or eliminated by operator command based upon the system load at the time and provides a fast and reliable means of adding storage in a vital area of the system.

In late 1970, two additional displays, manufactured by Hendrix Incorporated, were incorporated into the ATS. These displays were programmed to perform all of the functions inherent in the other ten units. Through supervisory requests any two displays can be selected to become VISCA (Video System Control Activity) screens, and as such perform various traffic control functions. When an error is detected in a message, the message is queued to a VISCA screen and ultimately displayed along with the notification of which error was detected. The operator at the screen can

correct the portion of the message through the display keyboard and by depressing certain function-buttons can cause the message to be reentered into the system. Upon re-entry into the system, the message is again scanned by the validation programs to insure that it has been corrected. If another error is detected, the message is again queued to the VISCA screen for additional correction. When the operator at the VISCA feels they cannot process the message, they can direct it to a spill out punch/print position. At present only about 2 per cent of all traffic found to be in error is processed by means of paper tape punching. To provide further flexibility as a traffic tool, the VISCA screens can be used to initiate supervisory action entries with the response to the request presented at the screen. A printed copy of these requests is also prepared as a hard copy record. Additionally, the VISCA operator can originate a message at his position and enter it into the system as a response to an outstation.

During 1971, additional high-speed lines were incorporated into the system. These were 2400 baud synchronous lines and a detailed study had to be performed to determine what effect high-speed line implementation would have on overall system performance. It was determined that approximately 50 per cent of the processing of the message is performed at the time the characters are received and subsequently transmitted over traffic lines. Therefore, if these functions could be performed on a supplementary processor, a great deal less processing would be required in the ITT 7300 ADX.

#### **PDP-15**

The machine selected as the concentrator was the Digital Equipment Corporation PDP-15 and was chosen due

to its similarity to the ITT 7300 ADX in word size and instruction makeup. Coding the PDP-15 was possible after little training for anyone who had ever coded the 7300 ADX, and a similar assembly routine to that of the 7300 ADX was produced for the PDP-15 by ITT/DCD. The PDP-15 is a less expensive and more powerful machine than the earlier ITT 7300 ADX and it is at least seven times as fast in instruction processing time. Also, its peripherals such as fixed head disks are four times as fast in transferring data as are the 7300 ADX drums. Therefore, the PDP-15's could be counted upon to perform the concentrator function easily, and could be used to relieve the 7300 ADX of other functions at future times as the requirements arise.

The PDP-15 was interfaced with the ITT 7300 ADX through an AC/IO channel which operates on a word basis. The PDP-15 concentrator was programmed to perform all of the time-consuming operations associated with the receipt and transmission of characters in ASCII code over the 2400 baud synchronous lines. Upon receiving characters on the high-speed lines, the concentrator combines and stores them into block areas in accordance with ITT 7300 ADX requirements. The formatted cell is also set up with the incoming line identifier, the appropriate internal message number, error condition bits, and codes which indicate the prosigns detected by the concentrator. The concentrator additionally controls receipt of start and end of messages.

The concentrator also performs the individual transmission of characters to the high-speed circuits. Characters are received in blocks from the ITT 7300 ADX, converted to ASCII and transmitted to the proper lines. The concentrator



detects all error conditions on the lines and prepares notifications when these occur. A further PDP15 function is to control the synchronization of the lines and to set up character patterns which will restore the lines whenever an "out-of-synch" condition is detected.

The concentrator system was cut over in December 1971 and is presently in use. A further high-speed output line was added to the concentrator within a year and it is anticipated that many more lines will be added in the near future. The concentrator device was permitted significant line additions without causing major processing impact on the ATS.

### **ATS Upgrade**

The most recent and most difficult change to the ATS was to replace the magnetic card storage devices with Century Data System disk packs. The ATS Upgrade (ATSUP), was completed in December 1973, and has been in operation since that time.

The ATSUP modifications were extremely complex because the disk packs were interfaced with the PDP-15, whereas the magnetic card devices had been part of the ITT 7300 ADX. In addition to the new disk pack routines that were developed, a set of high-speed channel transfer programs had to be implemented. Fixed-head disks which provide an intermediate type storage device within the PDP-15 were fully duplexed and write operations to the fixed head disks and the disk packs performed in duplicate.

The ATSUP modification has provided many immediate benefits to the ATS in the form of faster logging and retrieval with at least twice as much available storage area for long-term message storage. Presently the operators can retrieve any message up to sixty days old based upon the amount

of traffic at the time of the ATSUP cutover. The number of disk packs interfaced with the PDP15 can be increased up to 100 percent with a minimum of change to the programs or hardware. Furthermore, the disk packs have proven more reliable than the magnetic card devices in relation to data storage and require far less maintenance in their daily operation.

The ATS will continue to be expanded through the use of additional hardware with the appropriate software changes as required. Recently new requirements have been identified whereby the number of low-speed lines which interface with the ITT 7300 ADX may have to be greatly increased.

Other requirements in the form of increased traffic, more processing and additional subscriber services must also be addressed. Therefore, the ATS must constantly be studied, new products investigated and programming techniques updated so that the ATS story can go on.

In looking back at the growth of the ATS, it becomes obvious that no single equipment manufacturer has provided all of the devices used in the operation. In fact, when a piece of equipment, whether computer or peripheral, was considered best for performing the function required, that piece of equipment was purchased and installed.

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**The real art of conversation is not only to say the right thing at the right time, but also to leave unsaid the wrong thing at the tempting moment.**

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**A pretty good tour**

By John Kennedy

Now referred to as Mugabistan in some circles, Zimbabwe has changed

considerably since the American Embassy in Salisbury, Rhodesia, opened in the spring of 1980. The country was renamed Zimbabwe on April 18. It was several months before Salisbury became Harare because of disagreements on spelling its name in honor of Shona chief, Neharawe.

Our temporary embassy was a residential house about five miles from downtown. It was chosen because the owner was a gun dealer and the house had a 12' X 20' vault. Guess where the CPU was located. But it was big enough for a KW rack, two ASR's, four HW-28's and four file safes. The intent was to be there less than two years before moving into something more suitable. But FBO got into the act and ordered more studies and work on a two-story building that 3-4 years later became the embassy. We were stuck in that house for so long we received an AFRECON installation as backup to our sole leased line. It was used, but as a relay for Lilongwe during my tour.

Colonial remnants were still the norm. One opened accounts with a butcher, dairy, and other stores. Bottled milk with cream on top, prime fillets (less than \$1 a pound), and other goods were delivered to one's home and accounts were payable monthly.

Some of the FSN's had previously worked for our consulate before it closed. They had many stories of the good old days when staff had only short drives to shoot their own meat.

Thanks to my Air Force time at RAF Chicksands (60-62) I knew the game of darts and the lingo such as "torch", "wireless", "boot", "fanny", "two and six pence"; etc., etc. It helped me with the local blokes who almost always owned Rhodesian ridgeback dogs. The very well trained dogs would be left outside shops

where they sat awaiting the owner to return. Our mixed black lab was somewhat trained and I also made her sit while I shopped. Folks would ask what kind of dog I had. With a straight face I said "Quebec Labrador". Sure enough, I was asked how could one obtain this unique breed and I had to come clean.

Our first July 4<sup>th</sup> picnic celebration was held on the residence grounds. All Americans in the country were invited via a newspaper ad and large quantities of soft drinks and beer were laid on. It was unknown how many would attend because there was no official count of who was in country during and after the civil war. Approximately 400 showed up-half missionaries and half mercenaries. Free beer was a big mistake because the mercenaries wouldn't leave until the beer ran out.

We got to know our next door neighbors as our daughters went to school together and visited through a fence opening. Man talk was fishing and shooting and I was invited to a shooting range sometime in the future.

We were invited over for a Sunday brunch and met a lively group. I was introduced as the newest CIA arrival at the American Embassy. Laughter followed. I could only pull out my pen, shake it, and ask the man to speak louder as my microphone was acting up. More laughter!

I learned this gathering was a send off to the Moscow Olympics for the Rhodesian pistol shooting team. They had won gold in the past but said they wouldn't score well because of the civil war and lack of practice. I also learned that my neighbor was an individual world champion in 1968. And I had accepted his invitation to a shooting range! Later, we did go shooting. I noticed he took me an hour before the range opened when

no one else was around. I guessed he didn't want me to embarrass him in front of others. I didn't. And I learned a lot.

Later, a small embassy group went shooting with a policeman (ex Canadian) who was giving lessons to our ladies. One in our group, an ex Marine Security Guard, who didn't know about my lessons, challenged me to a match with dinner on the line. Targets were held in place with large paper clips. I scored well, but the ex MSG hit two paper clips and his target fell down. He quickly agreed to two out of three for the match and went first. He again hit a paper clip and the target--now held by one clip--swung back and forth. Everyone was laughing so hard and kidding him so much I had to compose myself before winning the steak dinner.

In the early days we had a small staff and TDY personnel (ADMIN, GSO, B&F). USAID had no permanent staff but there were usually 24 or more on temporary duty working to disburse the first AID tranche of \$55 million. They received all the multi section immediate telegrams from Washington putting an unbearable strain on our limited communications (100 wpm). Other customers became irritated that their priorities and routines were always late. We then started using a B U S T service message tape (made of Mylar) which we would send to cancel USAID messages as soon as we saw the circular heading. Most everyone was happy again.

Rumor had it that USAID personnel were all TDY because suitable housing could not be found. Most houses had swimming pools and USAID folks were not allowed to have swimming pools at that time. Once a few found housing, support requirements increased. The USAID Director asked us to install a shipment of GE radios in their homes and

cars. We responded that we were not allowed to because USAID had not reached a shared support agreement in D.C. for such services. He didn't believe me but a RCPO visitor explained it to him. Later, we offered to do installations on our weekend time for \$150 each. He refused until he found out how much a local company would charge. When he returned we said no because we'd decided we needed our weekends off (and to be a little mean).

The USAID Director was basically an OK guy. His little dog was with him most every day. That is, until the dog became too friendly with the Ambassador's leg during a staff meeting!

One day the receptionist had a call for me from the Foreign Office. A polite lady informed me that she was preparing the diplomatic list and wanted to be certain she spelled my name correctly and that she published my proper title. I agreed with her spelling and the Attache title. I then asked her about my three colleagues, letting her know they should be Assistant Attaches and spelled their names for her. This was the first time in my career I was able to escape the caste system of diplomatic list discrimination. My colleagues were pleased as well.

It was common practice to share information about our new posting at Monday staff meetings. News of good restaurants, movies, game parks and grocery stores was welcomed. I remember reporting that good steaks at the Acropolis restaurant were so large that big Tom couldn't finish one. I saw it with my own eyes!

I also reported the Royal Salisbury Golf Club was giving two memberships to each diplomatic mission. I was the only embassy golfer and said we had one membership left. The club was very British with a second story bar for men

only that overlooked the 18th green. At the time I could envision my taking a visiting congressman or VIP out for a round. But alas, they all had heavily booked schedules and barely enough time for overnights in a game park and Victoria Falls.

After independence many farmers "gapped it". That means they would load up trailers with valuables and at night drive their tractors with trailers across dry riverbeds into South Africa. Auctions were held often and I recall letting my boss outbid me for a pristine double-barreled .410 shotgun (for \$100). But I did OK, too.

During the civil war, Barclays Bank serviced farmers via vans with two guards. When I learned they were asking only \$125 for Browning 9mm's with holsters and ammo, I couldn't resist. Farmers and members of shooting clubs could legally register guns. My wife didn't know it but she also became a shooting club member so I could buy and register more guns. Most were U.S. made or commonly known and all U.S. customs import forms were returned with approval.

We were fortunate in that there were several good doctors in town. Our Regional Medical Officer visited them and gave the embassy a list of specialists he recommended. One couple decided to have their medicals completed at post prior to home leave. Imagine their surprise when the doctor performed their physicals at the same time in the same room—and without any blinds or curtains whatsoever! Never mind that it was in his home and the windows had no shades.

In those early days we had a staff that jelled and most had a good sense of humor. There is always one, however, who seems to have a knack for

unwanted attention. For example, the Ambassador's secretary baked a chocolate cake for his birthday. We all gathered for a small celebration. That's when the Ambassador's wife said, "Don't you know he's allergic to chocolate!" That secretary didn't finish her tour and I believe she wound up as GSO Algeria or some such.

Housing (with pool) was by far the best I had in my career. And all the Drexel furniture was right out of the crates. When people would ask me about the housing I would say, "It was so good my wife never complained". How many can say that?

This was my third and final African tour. Little things reminded me it was time to move on. For example, at a traditional Thanksgiving dinner, the DCM had managed to obtain cranberry sauce. It was passed around and our daughter said, "No thank you--I don't care for beetroot".

When it came time to transfer, I sold my Caprice to the Portuguese Ambassador who had a big boat to pull. And my (yellow) Citron went to the Zimbabwean government pool. In sum, a nice ending to--all things considered--a pretty good tour.

There are other stories about that tour. Several are downright comical but cannot be repeated here because of sensitivities.

Lastly, it is sad, sad, sad to think about what's happened to that country. I recently heard a rumor that should Mugabe be forced into exile (doubtful), he has a \$5 million house in Malaysia where he would be welcomed. Strange bedfellows indeed....

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Enjoy and be safe!