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DD/A Registry

88-2610X

16 December 1988

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Memorandum For:

From   :

Subject   : OTE's Five-Year ADP and Communication Plan

        Attached is a copy of our latest OTE ADP Plan for your information.
Hope this will be of interest to you.

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Chief, Information Center
OTE

DD/A REGISTRY
FILE:

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9 November 1988

FIVE-YEAR OTE ADP AND COMMUNICATION PLAN

This paper describes the current state of information handling and secure communication in the Office of Training and Education (OTE) as of 1 October 1988, identifies near-term OTE goals and requirements, and presents a strategy for achieving those goals. It is intended as a general discussion of where OTE should be heading in information handling and secure communication. Detailed requirements relating to specific systems and programs are developed within the context of this overall plan and are consistent with Agency policies regarding information handling and secure communication. This plan will be reviewed and updated annually.

Four central issues play a major part in the OTE ADP plan. First, there is a significant shortfall of ADP equipment available for OTE use. (This will change in FY89.) Second, with the exception of those in Information Systems Training Division (ISTD), OTE personnel have lacked the opportunity to work with ADP technology. Third, OTE currently resides in an outbuilding and will do so for the foreseeable future. In the past, these three issues have lessened OTE's opportunities to take advantage of ADP technology. Fourth, secure ADP and voice communication are becoming more closely related.

Background

OTE uses ADP for both administrative and classroom purposes. However, with the exception of information systems training, we have not made significant use of data processing technology to accomplish our work. Five years ago, there were scarcely 20 VM terminals for administrative use in all of OTE. Currently, there are [   ] Delta Data terminals, outside of classrooms, for OTE in CofC. OTE lags significantly behind the rest of the Agency in its use of ADP equipment and technology. In most of the Agency, the ratio of people to terminals (Delta Data, Wang, or PC) is approximately 1 to 1. If we exclude classroom terminals, the ratio in OTE is approximately [   ] to 1. Appendix A lists all current ADP equipment.

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The shortage of ADP equipment, especially devices connected to VM, means that OTE cannot make full use of the software available in the Agency. Very few employees have a terminal on their desk. This means, for example, that they make much less use of AIM to send messages than they otherwise would. Various administrative support personnel such as Security, Personnel, Logistics, and Finance—have to go to another room in order to access Agency database systems. Instructors and training assistants must leave their own work area in order to access the mainframe system to create class rosters, training materials, and other documents. Finally, OTE management finds it awkward at best to gain physical access to equipment.

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To accomplish this goal, OTE must significantly increase the amount of time its personnel spend on thinking versus time spent performing mechanical tasks. This change will enhance both the productivity of OTE and the quality of our product. Specifically, OTE needs to provide the following for its employees:

(1) universal access to distributed and mainframe computer services from a single workstation.

Today in OTE, there is significant interest in optimizing the use of computer and word processing technology, both for administrative purposes and for classroom training. Technological advances in ADP--including optical storage, enhanced graphics devices, and commercial software--considerably increase the potential for use of ADP by OTE. OTE employees would like to look to automation to aid them in conducting training of many different types. During the five-year timeframe addressed by this report, data processing support used by this office will at least triple. Tools to plan, schedule, develop training materials, and present training to students will be made available to all OTE instructors.

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Secure voice communication is less of a problem at CofC. Most OTE staff employees have a green line phone on their desk. Currently, ____ is having secure voice communications upgraded to a level equivalent to HQs. In the future, however, we anticipate increasing use of secure communications for facsimile and video transmission.

The growing disparity between what ADP resources OTE has access to and how much of the Agency works with has a direct impact on the relevance and applicability of our courses. We cannot continue to expect intelligence officers to perform effectively back in their offices or in the field where they must work on state-of-the-art equipment when they have been trained on yesterday's tools.

What Are Our Goals?

OTE's information handling goal is to provide state-of-the-art tools for our staff and students that show that we are leading the way in training that counts.

(2) Twenty-four-hour availability of word processing and computer systems and 99% reliability for computer-based training systems.

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(3) Commercial-grade word processing capability.

(4) Fast, reliable electronic mail.

(5) Automated support for administrative tasks.

(6) Management information and decision support systems for OTE managers.

(7) Improved storage, distribution, and retrieval of hardcopy materials.

(8) Convenient integration of graphic and textual materials into a single training product.

(9) Access to a local area network (LAN) from individual workstations within the primary OTE building, including a gateway into VM.

(10) Access to a high-resolution computer graphics system.

(11) A system to deliver computer-based training on both mainframe terminals and personal computers.

(12) Ability to transmit secure facsimile and video to any OTE training facility. (This includes video conferencing, using microwave to connect the HQs grid system to OTE facilities, and up and down linking video programs.)

We will have three new classrooms in the new Headquarters building in FY89 and will install 12 non-tempest IBM PC AT 3270s in two of them and tempest Wang PCs in the third. Two of the classrooms are scheduled for use by ISTD; the third is to be used for SACTD's Secretarial Simulated Office Environment class. Additional tempest and non-tempest Agency-approved terminals have been 25X1 purchased for administrative use by personnel at CofC, HQs, In FY89, we also plan to install a third and fourth Wang Alliance system in the South and East buildings to support WOTD's and SACTD's administrative functions. We will also install nine non-tempest PCs and eight tempest Delta 25X1 Data terminals in a classroom

For FY90 through FY93, we plan to upgrade at least one classroom per year with the Agency standard terminal. In addition to the classroom upgrades, we plan to add at least two new PC classrooms using the Agency standard workstations when we move to Reston. These classrooms will be used for secretarial, intelligence, and management training. By FY92, or the move to Reston, all Delta Data terminals now used by OTE administrative personnel will be upgraded to the Agency standard workstation. Since the majority of OTE workstations will be located in remote buildings, we will need IBM 3174 series controllers to link to the mainframe computer. These devices may need to meet tempest standards. See Appendix B for a summary and costs.

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By 1991, each person in the Office of Training who needs a workstation should have one. Nearly all administrative and training material development tasks should be accomplished on individual workstations. A single workstation should support desktop publishing, delivery of training materials, scheduling of training and travel, access to all internal and external databases, and ordering of supplies.

Where Do We Stand

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More than [   ] OTE personnel still do not have convenient access to a workstation. Only two types of workstations--Delta Data and Wang Alliance terminals--are generally available in the office. A very limited number of PC and graphics terminals are available. The Agency's workstations are mutually incompatible. It is not uncommon for a user to access two different workstations to enter data and run needed software. In many OTE divisions, training materials and administrative papers are still typed and retyped during the production process either because of lack of access to an automated system or because of incompatibility between systems.

Today, OTE users depend upon the central VM systems and local Wang Alliance systems for most of their automated information handling. OTE production is adversely affected when any component of the central or office system is down or response is slow.

Many of the automated systems used by OTE contain redundant information and few have the same organizational structure or capabilities. Maintaining two separate methods of information handling--paper and electronic--is costly and cumbersome. Many of the automated databases are not currently available at the user's workstation. For example, a commercial database containing external training resources can be accessed only by personnel in Central Registration. Some important documents that need to be searched are available only in hardcopy, making it difficult to retrieve information.

OTE has now developed an automated registration processing system (TEAMS). This system permits users to view a description of any regularly scheduled OTE course, view the schedule for that course, and complete a form 73 on AIM, sending it through their supervisor and training officer to OTE Central Registration. The system then automatically constructs class lists and transfers data about students completing courses to a permanent training database. This system is still undergoing change.

Few administrative tasks are automated today. Individuals can notify the Office of Security of future visitors, order publications from the Technical Library, and procure books, maps, or journals electronically. Still they are a long way from having completely automated administrative procedures available to them. OTE personnel still spend time in paperwork, telephone calls, and coordination to accomplish such simple tasks as purchasing supplies and creating logistics requests. Scheduling classrooms for ad hoc classes can be time consuming.

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An OTE-wide Management Information System (MIS) should be developed within the next five years to provide rapid response to requests for information on OTE courses and resources. Such information should include but not be limited to classroom scheduling and utilization, student registration, instructor utilization and capabilities, enrollment projections, and test scores. The system should interface with TEAMS.

The MIS will provide timely information upon which OTE management can base decisions as well as improve the query response capability for Agency Training Officers. Parts of the OTE MIS system already are being undertaken: an automated Form 136 and an automated Flight Schedule are being developed, as are other programs to schedule conference rooms, aircraft, operations instructors, etc. OTE also needs an administrative system to maintain personnel data, including PAR ratings, travel and training data, and a limited access subset for Career Board use--for ranking, categorizing, identifying those eligible for promotion or other actions.

We expect computer systems to play an increasing role in non-ADP training as well. Use of computers in Intelligence training will certainly increase. ADP can enhance secretarial and management training by simulating the actual work environment. Computer-Based Training (CBT) will be used to deliver many types of courses. Computerized testing of students in foreign languages and in other areas will increase.

In FY88, OTE ordered and received seven facsimile devices. OTE ordered but has not yet received 50 tempest Wang PCs and 20 IBM 3174 controllers.

Each Wang PC is able to act as a stand-alone Wang PC, a stand-alone IBM PC, a Wang Alliance workstation, and a VM workstation. This gives OTE staff access to a single device that serves a multitude of purposes. These 50 devices have been equitably distributed among all of the OTE components.

Each 3174 controller can support from one to eight 3270-type PCs. We have purchased more controllers than we actually need at this point in order to guarantee port access on the VM system. Initially, we will place only two or three PCs on each controller. In FY89 and out years, we plan to place additional PCs on every controller until each is maximally loaded.

We have placed two facsimile devices in the OTE Crypto Equipment Room (CER) and one in the DAC. Each facsimile is connected to a matching

25X1   device--one at Headquarters, one [ ] and one at another remote training facility. All of this equipment will considerably enhance OTE's data processing and communication capabilities.

25X1   By January 1989, OTE will move out of [ ] This will free up 28 classroom terminals. These devices will be equitably distributed to the various OTE divisions. This will provide several additional VM connections to each division.

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Where Do We Want To Be By The Early 1990s?

The top priority for OTE must be universal access to automated tools that provide users with more efficient means to do their jobs. Access to machines--mainframes, Wangs, and PCs--and to software systems--VM, AIM, Wang, and so forth--must be provided to all who require it. The primary problem is an insufficient number of VM ports in OTE for administrative purposes.

The central systems upon which users depend--VM, AIM, and Wang--must be available and responsive at all times. Each OTE workstation must be capable of connecting to a prescribed set of basic services.

OTE contractors should have access to an unclassified Agency VM system. This would enable them to more rapidly provide the costly training products for which they are contracted. Currently, VMU is restricted to contractors working on SAFE.

The trend toward distributed processing and storage (departmental and desktop as well as mainframe) permits users to exercise greater control over the use of their data and to benefit from local applications and system capabilities. By putting a workstation on everyone's desk, OTE is embracing that trend. This computer architecture offers a potential for integrating a trainer's entire working environment.

When improving user access to systems, we must consider the man/machine interface. Already we must learn too many systems. Adding a workstation with all its intended applications and a departmental system will only increase training frustration unless OTE adopts a common man machine interface for all OTE systems. It must be easy to learn, easy to use, flexible, and robust.

Office of Information Technology (OIT) standards should be applied to all software, hardware, and computer architecture. Development guidelines for software applications must be established and followed. All databases, and where possible all software programs, should use the same interface. The OTE Information Center (IC) provides the software coordinating group to assist users in finding software tools that fill their requirements and exercises some control over the new applications that users develop. Also, increased emphasis must be placed on publicizing information tools and systems that already exist.

Integrated tools for creating training documents--forms, text, and graphics--should be available at the workstation and must look and behave the same to all users. Today, we use a plethora of word processing systems (Wang, Script, Microsoft Word, and HBWP). There is little standardization, nor is there a way to easily transfer text between this multiplicity of systems.

By the early 1990s, the distinction between paper and electronically available information will begin to blur. Although paper files will never entirely disappear, most files will be automated. Standardization and rationalization of all OTE files, whether paper or digital, and a comprehensive records management program will optimize information retrieval.

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Local communications traffic within OTE is dependent on central system availability. We need a local area network/decentralized electronic mail system that is integrated with the central system. This is very important as we consider requirements for a new OTE building. We need telephone system support at least as comprehensive as that provided by the PBX system at headquarters.

With the increased reliance on ADP systems, we must emphasize the need to train our own people to use these systems. Further, OTE management must work with OTE personnel to help them to see how this new hardware and software can be used to produce better quality training more efficiently.

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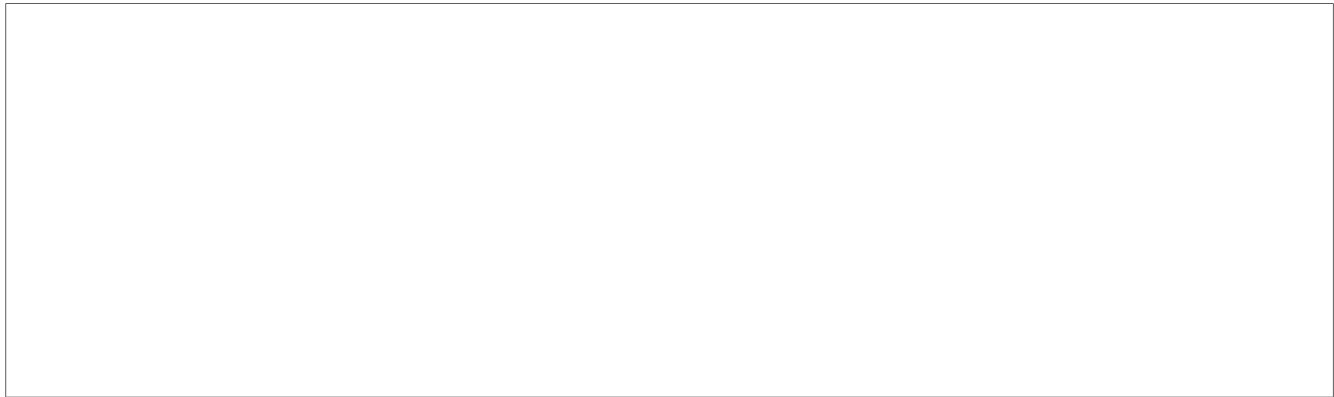
OTE will also want to significantly increase our capability for secure video transmission. We want to be able to transmit videotape, satellite downlink material, and video teleconference material from the primary OTE

25X1 building to Headquarters, [   ] at a minimum. Initially, this will be one-way transmission. By the mid-1990s, we would like to have two-way video transmission between these sites. We need to replace current crypto equipment with high-band width equipment in order to transmit secure video and voice.

As we make greater use of secure transmission facilities and they become more important in our everyday work, we will have increasing concern about backup capability in the event of a primary system failure. On the other hand, cost will provide a significant limitation on what we are able to do. Video transmission is likely to be a lower priority than data or voice transmission. Therefore, in cases where we have two parallel high-capacity

25X1 lines, for example, [   ] one carrying voice and data and the other carrying video, we may have the video line act as backup to the voice and data line and have no backup for the video transmission capability.

How Do We Get There?

Over the next few years, the primary role of the OTE IC will be to provide OTE end users with the appropriate software and hardware tools to develop their applications and to provide the support that end users need to use these tools. The IC assists users in selecting the correct hardware and software

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products for their application and provides support or direct assistance in designing and maintaining the application. The IC is responsible for arranging hardware maintenance of PCs, Wangs, and Delta Data terminals.

The IC is responsible for providing the tools and techniques for more effective data analysis and retrieval by OTE management. The IC orders and tests new products on the market and then provides end users with instructions on the products' use.

Currently, the IC is staffed with eight people. We foresee the need for additional personnel in FY90. OTE management must commit itself to three additional slots--GS 14, GS 13, and GS 11--to develop systems, purchase and install equipment, and generally manage the implementation of this plan. The people we add should have good analytical abilities and good communication skills. They should also possess some data processing knowledge along with certain product knowledge such as PC software or database design. These individuals will act as facilitators for OTE end users by guiding them in the use of various interactive tools and techniques to design and maintain the users' applications. Additionally, contractors may be needed to work on specialized projects. Two rotationals from OIT will be available as a Dispersed Operating Support (DOS) element. New personnel can be expected to come from within the Agency structure via vacancy notices. One of the slots would be good for developing OTE personnel.

Most of the immediate needs of OTE computer users can be provided within the existing data processing framework provided by OIT. Programs should concentrate on improving the man/machine interface and performance. Increased functionality should play a secondary role until availability, interface, and performance issues are resolved. OTE will continue to work with the OIT Customer Standards Group to make OTE access and availability requirements known and to work out solutions. OTE needs to work directly with OIT to develop a plan for improving central computer reliability, availability, and performance.

OTE needs a well-coordinated communications systems plan. We need high-speed wideband communication capabilities to transmit text, graphics, voice, and video, both internally and from the training building to
25X1   Headquarters,   and other locations.

OTE will work with OIT to identify a range of workstations for OTE personnel that will be compatible with the applications and interface chosen and will adhere to all of the Agency's technical standards. OTE has determined which users need which new workstations first and has prepared a budget plan that will upgrade workstations. OTE needs to identify those divisions and branches that would benefit most from a departmental distributed
25X1   system and local communications network. For example,   is a prime candidate for departmental computing. OTE will work with OIT's Customers

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Standards Group to develop local and departmental computing standards
compatible with OTE workstations and systems. We will follow with interest
the testbeds developed in other Agency components to determine which approach
would be most beneficial in our environment.

Working with other offices, OTE will use ADP tools to perform routine
administrative tasks. Electronic menus that simulate existing paper forms
should be built and their data routed electronically. Signature verification
systems need to be developed so that electronically produced forms can be
electronically validated. In these areas, OTE will follow the lead of other
DA components.

OTE must begin now to plan and budget for advanced information handling
tools. Implementation of this ADP plan will require considerable financial
resources and a strong commitment by OTE management. It will also require
technical support and increased access to VM provided by OIT.We need to work
with OIT to develop integrated and seamless applications on both the central
and desktop systems. It will also require technical support and increased
access to VM provided by OIT.

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COMPUTER BASED ACTIVITIES

TRAINING
- Information Systems Training
  - CIA Unique Software
  - General Mainframe Computer Skills
  - Word Processing
  - Personal Computers
- Computer Based Training
  - Present New Material
  - Drill and Practice
  - Measuring Performance
- Computer Support of Training
  - Intelligence
  - Secretarial
  - Operational
  - Foreign Language Reading

ADMINISTRATIVE
- OTE Management Information System
- Personnel
  - Applicant Processing
  - PARs
  - Panel Ranking
- Security
  - Clearances
  - Applicant Processing
  - Security Records
- Logistics
  - Equipment Accountability, Costs, Ordering
  - Flight Scheduling
  - Contracts
  - Inventory Control
- Budget and Finance
  - ELECTAS
  - Component Budget
  - Contracts
- Internal Training
  - Room Scheduling
  - Course Queues
- External Training
  - Course Dates
  - Course Costs
- Word Processing
- Electronic Mail

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Mission/Functions	Processor	Peripherals	Mission Software	General Software	Additional Support
Administration	VM	Tektronix	TRAIN ELECTAS		VM Ports & $
	MVS IBM PC Wang Alliance				
Training	VM	Tektronix	CAMS SAFE DESIST BARS CLAS ELECTAS TRAIN	GIMS 204 IDMS IDMS IDMS	VM Ports & $
	IBM PC Apple PC Wang Alliance Wang VS		CBT		

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