ROUTING AND RECORD SHEET

SUBJECT: (Optional)

Phase IV, Long-Range Plan Action Items

STAT

FROM: [redacted]
Plans and Programs Staff, OL

EXTENSION: [redacted]

NO. OL 4090-83

STAT

DATE 26 May 1983

TO: (Officer designation, room number, and building)	DATE RECEIVED	DATE FORWARDED	OFFICER'S INITIALS	COMMENTS (Number each comment to show from whom to whom. Draw a line across column after each comment.)
1. Chief, PMS/OL				Attached is an info copy of OL's response to the DDA's request re Agency Long-Range Planning. Thank you for your support in getting this paper together. [redacted]
2. Chief, LSD/OL				
3. Chief, P&PD/OL				
4. Chief, PD/OL				
5. Chief, RECD/OL				
6. Chief, SD/OL				
7.				
8.				
9.				
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12.				
13.				
14.				
15.				

STAT

FORM 1-79 610 USE PREVIOUS EDITIONS

ROUTING AND RECORD SHEET

SUBJECT: (Optional)

Phase IV, Long-Range Plan Action Items

STAT

FROM: [redacted]
Plans and Programs Staff, OL

EXTENSION: [redacted]

NO. OL 4090-83

STAT

DATE 26 May 1983

TO: (Officer designation, room number, and building)	DATE RECEIVED	DATE FORWARDED	OFFICER'S INITIALS	COMMENTS (Number each comment to show from whom to whom. Draw a line across column after each comment.)
1. Chief, BPS/OL				Attached is an FYI copy of OL's response to the DDA's request re Agency Long-Range Planning.
2. Chief, P&TS/OL				
3. Chief, SS/OL				
4.				
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15.				

FORM 1-79 610 USE PREVIOUS EDITIONS

NOTE FOR: Director of Logistics

STAT

FROM: [redacted]
~~Chief~~, Plans & Programs Staff, OL

SUBJECT: Phase IV Paper - Support Capabilities 1982-1992

We hurriedly reviewed the final draft of the DA Support Capabilities Paper and provided comments to [redacted] DDA/MS. Our comments were mainly limited to structure and clarity except for the following requested addition to Galley 1.12, first paragraph under Logistics:

STAT

> OL strategy is to increase the capacity and efficiency of a centralized support system via automation. Development of the Logistics Integrated Management System (LIMS) is underway to increase the timeliness and responsiveness of the Agency procurement, contracting and supply systems. The capability to meet decentralized requirements is being increased via cross-training for career personnel and through the development of proprietaries to provide a mix of skilled personnel to meet the potential shortfall between requirements and onboard capabilities. OL is taking action to expand capability in the areas of transportation, storage and space acquisition.

We think the major issue of the planning papers that impact OL is the projected growth in Agency personnel and the associated need for space. We have placed paper clips at those pages of the subject paper which address this issue. The numbers which address growth & new building capacity were coordinated with Building Planning Staff. Two OL initiatives for future capabilities are contained in Section VII of the paper, which are also paper-clipped.

[redacted]

STAT

CAPABILITY PAPER - 1D

- Add index
- Typos, misspellings, punctuations
- Galley 1.01, Para 3, last sentence not logical
- " 1.01, Para 5, Second sentence
- " 1.02, Add Resource to Title of Sec III
- " 1.04, Para 2, Line 7
- Renumber Sections, There are two Section 10
- Galley 1.14, OL First Para - Add:

OL strategy is to increase the capacity and efficiency of a centralized support system via automation. Development of LIMS is underway to increase the timeliness and responsiveness of the Agency procurement, contracting and supply systems. The capability to meet decentralized requirements is being increased via cross-training for career personnel and through the development of proprietaries to provide a mix of skilled personnel to meet the potential shortfall between requirements and onboard capabilities. OL is taking action to expand its capability in the areas of transportation, storage and space acquisition.

STAT

Comments to [redacted] 11-22

He Gave another "FINAL DRAFT" which I gave a cursory review.

11-22-82

STAT

Called [redacted] He had spoken [redacted] on personnel #s for bldg

STAT

ROUTING AND TRANSMITTAL SLIP

Date 19 Nov 82

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. Director of Logistics		
2.		
3.		
4.		
5.		

	Action		File		Note and Return
	Approval		For Clearance		Per Conversation
	As Requested		For Correction		Prepare Reply
	Circulate		For Your Information		See Me
	Comment		Investigate		Signature
	Coordination		Justify		

REMARKS

Attached is final draft of the Phase IV paper--Support Capabilities 1982-1992. Please review the paper and telephone any comments you might have to [redacted] prior to COB on Monday. Also please be prepared to discuss at Tuesday morning's staff meeting.

STAT

Thanks.

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
[redacted] DDA/MS	7D18 HQ
	Phone No. 5226

STAT

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I. INTRODUCTION

This paper begins with the DA's resource strategy and the concerns which form the basis for that strategy. There follows a review of the environment we expect to be operating in from a National, Agency, and Directive perspective. We then give an assessment in general terms of the impact of the Phase III capabilities and follow this with an estimate of the manpower and funds this Directorate will need to support an 25X1 Agency [redacted] Then we present themes and directions we expect to pursue regardless of the outcome of the current planning exercise as we feel they have a very high potential for increasing Directorate productivity and improving support to you our customers. And finally, we include as an annex some ten separate aspects of communications which contain too much detail to fit into the body of the paper.

We recognize that we were not to make these capabilities studies resource intense. We have tried not to but the resource problems of the past and the present are beginning to impact on the future. The future themes outlined in all Phase III Planning Papers forecast grave consequences for the DA if the current resource trend does not change. The underlying tone of the five capabilities papers is that support will be required in a more sophisticaated environment than today's and for requirements more complex than today's. The papers imply that support to an expanded, computerized, and highly technical Agency will be required.

With the exception of communications which is currently undergoing a modernization program, the whole Directorate infrastructure of plant and equipment needs a large program of increased capital investment to attain a modest standard quality and availability which would be the normal expectation in any average American working place. Before we begin to add on to or expand our support base, we must be sure that the base is strong enough to support additional tasking.

In reading this paper remember that by definition, support is fixed plant, equipment, and services and this translates to fixed costs. You can usually find a management strategy to defer fixed costs but keep in mind they can only be deferred, not avoided. You can pay now or pay later but you must pay.

II. DA MAJOR RESOURCE CONCERNS

During the period of the sixties and the early seventies, our resource strategy was to do more with more. Demands were met with increased capital and required personnel were on board and available. More recently (early seventies to FY 1982), we have been challenged to do more with less to offset the effects of scarce resources. FY 1983 was the first year in which the Directorate had relief from the downtrend in resources. FY 1984 is the first year in which, if it survives the approval process, the DA will be able to show positive growth. We are now faced with the dilemma to apply these anticipated additional resources against rebuilding the eroded support base to provide adequate and required current levels of support or to apply the additional resources against new and seemingly ever increasing requirements and needs. This dilemma is further compounded by the continuing inability to achieve adequate resource levels to develop, enhance, and maintain our automated systems in a timely fashion. We are in the unenviable position of having to place heavy emphasis on getting sufficient resources to catch up with our basic requirements, initiate new automated systems development, and simultaneously expand this activity to encompass new requirements. All of this adds up to our over using crisis management to solve situations that occur regularly. Resources have been diverted to meet unanticipated requirements in continuity of government and covert action, and in order to meet pressing surge-like requirements, we have overtaxed existing support mechanisms, held much-needed upgradings in abeyance, and reduced routine, but necessary, administrative support for the Agency populance to dangerous and unacceptable levels of service.

One major current concern is the Communications Recapitalization Program which is well underway. Its objective is to bring our communications service to the Agency and the Intelligence Community up to an acceptable level of current performance and to add near-term, modest expansion. We must maintain the impetus of this program and not lose sight of its importance in the outyear funding schemes. Another and very real concern of high interest within the Directorate is that we have adequate security of our personnel and information. Our Computer Security Group is wrestling with convolute and complex problems, some of which are not only pressing the cutting edge of new technological development but surpass it. We must ensure that Security receives adequate resources to cope with the rapid growth in networking, telecommunications, distributed processing, new data bases, and the wide-spread use of mini and microcomputer technology. These changes present a new generation of tremendously complex security concerns and prblems which are already rendering many traditional control and accountability security principles obsolete. Satisfactorily meeting this challenge will be costly in manpower and funds and we must pursue adequate funding for the new systems security systems in addition to and not at the expense of traditional security efforts. We must also establish adequate and responsive near-term centralized processing support in order to meet the long-term goal of providing every professional worker with an electronic work station with supporting communications and computing infrastructure. In conjunction we are addressing acquisition of adequate training resources to prepare our employees to be able to perform well in an automated environment. Additionally, within the Directorate we are placing heavy emphasis on developing and improving our automated systems in order to improve productivity and responsiveness to customer needs. And last but certainly not least is our concern that we acquire adequate space to house the forecast increases in personnel. If the new building is approved and built, we will have space in Headquarters building (new and old) [redacted] 25X1 Allowing for some imprecision in our estimate, we feel that is the total number that we will be required to house in the Headquarters building, up to and including 1988's [redacted] 25X1 The growth between now and 1988 will fit in the new building but the new building will not be ready for occupancy until 1988. This leaves the problem of providing adequate space for growth in positions from 1983–1988. Additionally, we must be sure that this short-term leasing problem does not have a negative impact on the ultimate approval of the funds for the new building.

III. DIRECTORATE STRATEGY

With these concerns in mind, we will pursue the following strategy for the acquisition and management of Directorate resources for the next ten years:

A. Remedy existing shortfalls in support of Agency programs.

B. Recapitalize and modernize equipment and facilities.

C. Gain increases in DA resources prior to Agency growth so that appropriate accommodations and support are existent upon arrival of additional personnel or requirements.

We must first address the shortfall in space for the additional positions called for prior to the occupancy of the new building. Although various potential strategies are explored in Section VI, para B, the current bottom line is that we will continue leasing
25X1 additional space as required [redacted] We recognized the many inconsistencies this builds into our overall strategy but the reality of what we can afford and what is available leaves us no other choice.

In the longer term, we will pursue the new Headquarters annex and begin to rebuild and refurbish the Agency's office space, furnishings, equipment, and utilities. When our fixed plant and equipment provide adequate volume, quality, safety, and operating efficiency, we will expand in direct ratio to the availability of new resources to meet new requirements. The American Automobile Industry is a prime example of the folly of allowing fixed plant and equipment to deteriorate in order to solve short-term funding problems. The Agency can no longer afford to underfund its fixed plant and equipment needs. We must bring our current assets to an acceptable operating capability which is able to fulfill normal growth as well as current requirements before we attempt major expansion.

As a natural consequence of the above strategy, this Directorate suggests that the Agency pursue the pace of growth called for through the 1984 Program and set a
25X1 ceiling target [redacted] We do not feel that growth beyond this is practical. It may in fact be counter productive and put so much strain on our already stressed support base that the increase is self-defeating. It will take extraordinary efforts on the part of Directorate personnel and require the full support and active endorsement of the EXCOM members in order to ensure that the DA is successful in actually achieving adequate resources to support the growth called for in the FY 1984 Program. Generalizations about the shortfalls or divergence in growth are straightforward; as new facilities, equipment, and services are needed by the customer, the DA will need to acquire new facilities, equipment, and people. More workload placed on the support structure after it has been modernized and strengthened with the resources called for in the 1984 Program will cause midcourse redirections, creative new solutions, and perhaps, but not necessarily, added funds and proportionate personnel increases.

IV. ENVIRONMENT 1982–1992

A. Just as previous eras were tagged with such names as the Renaissance and the Industrial Revolution, our current era may be known as the Information Era. We have already seen such terms as information explosion used to describe the huge volume of data that pervades our environment. American society is moving into a ser-

[redacted]

vice-oriented economic structure which has the computer as its major tool. People in our society, especially younger people, are adapting to computers and, more importantly, adapting the computer's ability to solve an impressive list of problems. Society wants the computer to be the tool that removes the drudgery from many of its tasks. It is probable that while this new technology promises much, it will fulfill more than it promises.

The totally paperless office will not come into common use during this period. Although the technology will be available, the ability of industry and government to provide surge funding to replace current systems and equipment, along with their inability to quickly modify current operating procedures and retrain all their current workers will cause a graduated evolution towards a paperless society. What will occur is a constant explosion of technology which the information systems producers will ensure evolve generation by generation so that customers can buy in building blocks. This will ensure that new advances keep pace with the customers' ability to pay. This will allow for a planned and orderly evolution, not only of the information handling equipment but also of the management and organizational structure and the retraining of workers. The main challenge in this environment will be to budget for and execute buys of new technology which can be readily integrated into current systems with a minimum of disruption.

B. From an Agency Perspective

The Agency's main challenge during the next ten years will be to get adequate resources to modernize its current capabilities as well as additional resources for enhanced capabilities to support new tasking and expanded requirements. This will not be easy. The critical need for space to house additional personnel and machine applications will continue. New tasking and expanded requirements will require that enormous resources be spent on information handling systems. Increased personnel levels and new technology will cause an explosion in training needs. All aspects of the attractiveness of overseas assignments will continue to decline. A major factor in this decline will be the ever-increasing security threat to our people and facilities overseas but will also be aggravated by economic factors. To keep pace with state-of-the-art technology will require an escalating share of our resources. The next decade will require the Agency to recruit, train, and keep on board an appropriate mix of high caliber, dedicated personnel and ensure that they have a reasonable amount of automation to do their job.

Although society may only now be moving into the Information Era, the Agency has always been in this business; there is a fundamental need to stay ahead of society in information handling. Our job demands that we collect information well, know how to analyze it, and how to publish our findings. Similarly, the new recruit of tomorrow will be today's computer-literate young person. Both the people and the tasks of the Agency of the future will want the near paperless environment that is currently being forecast.

C. Directorate Perspective

The Directorate must respond with the kinds of support this new customer will need, given that modern attitudes and new technology will influence many aspects of his future endeavors. The DA's work force will also change in the future. Ideally, to be effective in this environment the DA would need to attract a broadly visioned recruit who can respond in several disciplines, but who has sufficient specialized knowledge to be an expert in one. Additionally, the Directorate will experience a constant challenge keeping employees' skills levels current with the rapidly advancing state of technology. The need to assign personnel to support new requirements will be in serious competition with the need to assign personnel to work on improving automated systems and may in fact cause a degradation in support to ongoing requirements. To solve this dilemma, the Directorate will need the continued use of supplemental support factors to match growth in resources to growth in new requirements.

During the decade of the eighties, support functions of the Agency will change in more dramatic fashion than they have in the entire past 35-year history of the Agency. These changes will be the direct result of the development and adoption of data and word processing systems to traditional support systems control and management. The driving force will be the adoption of the new technology within the Agency, by the rest of the Federal government and by private industry in the United States. We foresee that within the decade the laws of the Federal government regarding accounting, procurement, Federal wages and retirement and most other Federal administration will change the definition, organization, and functioning of future support management systems.

The late 1980's will see an Agency analytical environment in which ADP services will be central to all productive activities. Document preparation will be accomplished by using both data and word processing technologies printing and publishing and the coordination of document drafts will be done over networks that interconnect all user terminals with each other and directly to the major printing systems of the Agency. A terminal will sit on the desk or at the work station of virtually every analyst. The integration of word and data processing with networking will make it possible for the analyst to accomplish all major activities associated with the production of intelligence from a single terminal. The entire process will be dependent upon systems that are responsive to the user and absolutely reliable. This presents an extraordinary challenge to ODP in terms of being able to guarantee that major services are never interrupted.

More fundamentally, however, the coalescence of these three technologies (data processing, word processing, and networking) will present the opportunity for dramatically improving the productivity of virtually everyone. Electronic mail systems will move correspondence throughout the Agency in seconds rather than days. The ever-decreasing cost of storing data megnetically will drive us away from paper files and into electronic filing cabinets. This analytical environment then becomes a given into which new computer applications must be delivered. Whether it be SAFE or new information management systems for the Intelligence Community; e.g, CAMS3 for the post-1985 collection systems, the implications for ODP are clear. All ODP endeavors involve the development of systems that must be capable of being used in the office right from the desk of the analyst. In developing this system, ODP

[redacted]

must cope with rapid advancements in new developments in ADP technology. The most significant advances anticipated are increased miniaturization of hardware components, increased central processing unit (CPU) speeds, faster, higher density peripheral devices, improved network architecture, greater reliance on interactive applications, improved graphics capability, high-quality printing, and increased use of personal computers. Use of on-line storage devices such as direct-access storage devices (DASDs) also will expand. Furthermore, improved hardware and software will significantly increase the amount of on-line information directly accessible to users of ODP services. Major technological advances in communications are expected. Use of remote terminals, located at great distances from the computer and eventually supporting users not now being serviced, will substantially increase, as will the use of direct communications among computers.

The most significant aspect of the change in technology is that the user and provider of information will be in direct contact with the communications network. In a very real way, this changes the customer into a participant. A different kind of communicator will support the new participant/customer of the future; no longer will mechanical tasks occupy the communicator's time. Customer relations, maintenance, training and network connectivity duties will increase. It is probable that a non-OC terminal operator will work the field station of the future and the office can at last reach its goal of two-person staffing regardless of size of post. The communicator of the future will thus be required to become more involved with the customers' problems and respond closely with them to reach a solution. Technical support of the future communicator will require many of today's disciplines. Engineers and technicians will, however, need a broader knowledge of related fields and most will need software expertise. COMSEC support will require psychological as well as technical tools. While it is likely that OC employees will never be involved in medical problems, other aspects of DA support may gravitate to the on-site technical experts and their technical support infrastructure. This range of signficant shifts in the nature of the OC work force will cause recruiting and follow-up training/education to dominate the attention of the office management in the coming decade.

The role of change agent for the Agency will be properly assumed by OTE in the next decade as the value of training becomes more important in dealing with the rapid changes we will experience in our workforce and the environment in which we work. A larger diverse workforce in an automated setting will require changes and standardization in the way we communicate and make decisions. Our Agency culture will place more value on collaboration and will have to learn and institutionalize the process. Managaement analysis of jobs and their organizational relationships will become increasingly important along with the process of selection of employees to fill the positions. The role of OTE will include making available process consultants and facilitators to assist Agency line managers in applying concepts such as decision analysis. The profile of OTE's offerings will change considerably with more offerings of specialized and shorter programs available in all areas including language instruction, where the demand for intensive survival programs will increase. Other changes in foreign language instruction will include the adoption of computer assisted instruction (CAI) and the possible development of the capability to train students in an overseas environment on a tutorial basis. We will see an increased need for rotational officers to fill training positions with specific content expertise, and an increased need for MT careerist to seek experiences through rotational assignments throughout the Agency. The use of external experts, consultants and guest speakers will also increase along with the attendance of Agency personnel in external training programs. This area is the area of operational training where the volume of training will increase and some of the tools used by the case officer will change, but the methods of training which have been tested and proven through the Agency's history will not change significantly.

From a Security perspective, the accelerated use of mini, micro and even personal computers and advances in product development in the Agency, the Community and contractor environments including the exploitation of laser, bubble memory, holographic, and fiber optic technologies will challenge our ability to identify and correct vulnerabilities associated with these powerful and ubiquitous information tools. Current distinctions between microcomputers, microprocessors, word processors, office machines, computer terminals, and communication terminals are based more on their specialized uses than on their technological characteristics. During the next decade the already blurred distinctions between these types of devices will virtually disappear. Typical office machines at the end of the next decade will have the capabilities of all of the devices and will have voice, graphic and data integration. Future operational environments will require that access to Agency data bases be extended outward to the end user, overseas as well as domestically, even perhaps to non-Agency entities. Access limitations, compartmentation and ever increasing requirements for accountability and audit trails, however, will severely tax the entire Office of Security's ability to maintain a secure environment. The future will see an increased use of computer networks between computers of difficult security levels or containing subnetworks within communities of interest. Traditional physical security requirements must be judiciously reinforced, therefore, by such new initiatives as the development of data base encryption, by better methods of authenticating users, by more finely tuned auditing, and by other simular new security technologies.

In 1981, OIS began to develop The Records Information System (TRIS) which will be designed as a network of subsystems, some supporting the information needs of a single component and others maintaining central data bases for the use of all participating components. TRIS will integrate all subsystems in a way that facilitates standardized records accounting practices and allows an uninhibited exchange of data within security constraints. Additional capabilities will be required to handle the increased data collected and to operate the electronic mail and automated information handling systems which will be in use by the end of the decade. Registries will be smaller, with fewer mail clerks and couriers, and will function as satellites feeding into and communicating with a centrally administered data base. Records control schedules will be categorized and standardized throughout the Agency for consistent maintenance and disposition. Clerical personnel operating the system will be more highly trained than in the past and the duties performed will be less easily distinguished from those of the professional than in the past. New recruiting guidelines will be required and new training to update current employee skills will be necessary.

[redacted]

IV. SUPPORT TO THE PHASE III CAPABILITIES STUDY

\The requirement to provide a comprehensive analysis of the impact of the capabilities papers on support operations suggests that a detailed, quantitative response is warranted. The information and data in the capabilities papers, although comparatively extensive and probably an Agency first, does not lend itself to detailed, quantitative analysis and was probably not intended as such. We therefore address the papers from a broad long-range perspective, define resources on a scale of general order of magnitude, and at a theoretical/estimative range. Actual implementation cost will need much more detailed study.

It requires a great deal of specific information to prepare good sound support planning estimates and annexes to operational plans. Over time, prices escalate, availability of whatever is required from the commercial market whether it be things or services like transportation also vary. The availability of support resources also vary as different requirements compete for a finite amount of support services. That is why it is so important that all support components be involved in the conceptual as well as the planning stage of new initiatives. Specifically, we would suggest that two [redacted] pared to deal with it when it becomes fact. The FBIS modernization program will affect all aspects of our support structure. The more support personnel are included in the conceptual stage of these projects, the better we will be able to deliver the actual services.

25X1

Office of Data Processing

There are many requirements which will impact the ODP level of effort over the next ten years. For the most part, these are not new requirements. Only the magnitude and urgency will change. Project SAFE is the backbone for ADP support for analysts in the DI. Existing plans call for SAFE to support [redacted] The SAFE design concept has been designed and funded around this figure. The addition of more analysts requested in this plan will cause a significant increase in the SAFE workload and terminal requirements. It would be premature to attempt to discuss additional requirements for SAFE support in the midst of efforts associated with the redirection of the SAFE project. A study will be required to analyze the impact and to determine the feasibility and cost of the needed SAFE system enhancements.

25X1

While SAFE is intended to support DI analysts, the implementation of office automation capability has more general applicability across the Agency. ODP has competitively selected a contractor, Wang Laboratories, for an Agency-wide standard word processor and office automation system. The contract includes Wang support for initial surveys, maintenance, and training. It is anticipated that with sufficient component funds, this effort could be expanded to whatever level is necessary for additional Agency analysts, technicians, and clerical personnel.

During the early 1970's, ODP was overtaken by accelerated user demands for data processing capability. Central processing capacity was woefully inadequate to cope with demands for service. Extraordinary efforts were undertaken in the mid-1970's to acquire new computer hardware to address the mushrooming requirements. The efforts were successful. In addition to solving the immediate problem for additional computing resources, the procurement strategy and defense became the model for subsequent successful acquisitions of computer hardware. Since the mid-1970's, ODP has managed to just keep pace with increased user demand.

However, ODP's capability to support user requirements for new applications software development fell behind demand levels. A seven year period of zero increases in numbers of applications programmers (ignoring a modest complement of four staff positions for the TADS project) ended in FY 82. But an estimated two to three year backlog of requirements for applications development has developed.

ODP is addressing the need for increased applications software development in three ways: obtaining additional personnel slots for applications programmers, increasing the use of contract development, and by helping the users to help themselves when feasible. While ODP has been successful in defending new staff positions for the development of ACIS for example, it is clear that there will never be enough applications programmers to undertake to directly satisfy all the requirements for service levied on ODP. ODP personnel will thus be increasingly engaged in contract monitoring (as we increase the use of contracted development efforts), and in efforts to give users the ability to exploit the potential of data processing on their own. The newly established information center will be the focus of efforts to provide the users with assistance in simple data processing tasks—programming, data base manipulation, simple graphics, etc.—which will help free ODP's professional programmers and allow them to concentrate on complex problems like ACIS development. All of the above strategies—obtain more staff personnel, increased use of development contracts, and increased user involvement in data processing activities—will address the necessity for general programming support for a wide spectrum of data processing requirements. As the Agency population increases, the need for such strategy becomes more apparent.

Two more specific categories of support requirements continue to receive increasing attention—modeling capability and computer graphics. Requirements for increased use of sophisticated mathmatical models may develop such that a new scientific computing capability will be required. Such models are most efficiently run on a computer designed to optimize processing oriented toward scientific and engineering problems rather than the general—purpose computers employed by ODP. A new scientific computing capability could be expected to entail costs of ten to twenty million dollars for hardware alone. And there will be a need for an additional thirty-five new ODP staff positions to support the activity.

The use of computer graphics can provide dividends in the areas of presentation graphics, publication graphics, analytical support, imagery analysis, and computer aided design. While individual components with specific needs such as the cartographers in OCPAS/CDC make very good use of computer graphics capability, we do not offer easy-to-use capability for the general use of the ODP user community. Demand can be expected to grow for such capability, and indeed, the potential and promise of computer graphics capability as demonstrated with such systems as CAMSTACK, foster continuing new interest in exploiting the technology.

Additional requirements include the need for extended automated publication facilities. As more and more of the Agency's information holdings are converted to electronic form, there will be increasing demand to go straight to publication in that form. More electronic paths to more ETECS-like capabilities will be required.

We must also develop means for data archival for storage and backup. A requirement for reliably storing huge volumes of electronic data has existed for sometime. This requirement will take on new importance as disaster plans are more carefully formulated and detailed. But technology has not yet quite evolved to the point to permit serious planning to satisfy that requirement. We will continue to monitor technological developments in this area.

As computer systems proliferate and as electronic data holdings grow, systems security will correspondingly become of greater concern. ODP will continue to work closely with ISSG to identify and resolve security vulnerabilities and improve our security posture. Increased activity in this area will likely generate a need for additional information systems security officers from ISSG.

A growing and increasingly sophisticated customer population which depends more and more on data processing to accomplish the daily workload demands increased availability and reliability. Central service customers would like to have their terminals work just like their telephones do in terms of availability. That is, telephone availability is perceived to be nearly 100 percent. ODP systems availability (which the users see through their terminal) is only 97 percent, so there ia a three percent margin for improvement. But that three percent improvement (nearly three percent—we cannot reach 100 percent) will require improved hardware technology, redundant equipment, improved telecommunications, reduced software errors, and reduced procedural errors. ODP will improve systems availability, but progress will be difficult and slow.

No mention is made of personal computers (PC). ODP is in a position to address the issue of TEMPEST approved PCs networked to the central facility, should the requirement surface, in two ways: use of the Delta Data with a floppy disk, or use of the Wang Alliance system which has the ability to support the CP/M operating system.

Communications

As planned, OC is presently implementing a major replacement program which will result in a more modern network. The thrust of the planning papers is quite clear; they describe an ever-expanding customer work force which must use progressively more modern techniques. Technical tools which multiply the customers' effectiveness will also find wider application. This robust growth shows that the challenge that OC will face in the coming decade will be to maintain its current high-level of service while meeting the changes in customer demands. To do this, OC must continually improve its service profile, modernize its network, and provide the qualified professionals to run that ever-changing network. By 1988, the services available from the 25X1 backbone network will include the potential for narrative traffic, bulk data service, secure voice, teleconferencing and facsimile. Any service will be provided error free with cryptographic protection. Where desired, users (e.g., CRAFT, SAFE, [redacted] 25X1 [redacted] will be able to have a dedicated port on the network which will 25X1 appear to them to be a point-to-point circuit. In fact, literally anything that can be converted to a digital signal can be transported by the future network.

[redacted]

Probably the most significant growth through the period will be in the domestic network. In the metropolitan area complex, the growing demand for the projected ten thousand interactive data terminals prompted a large-scale expansion of the Langley grid. Up to 100 Delta Data terminals per month are currently being installed for interactive operation with ODP. Secure voice expansion began with the activation of 25X1 the DBX-5000 switch in Headquarters [redacted] and DBX-1200 switches at four other sites. OC's present goal is to expand the secure voice system by 100 instruments per month through 1985. The move to new metropolitan locations and major upgrade of existing facilities will (by 1984) see OC install major new com- 25X1 munications support systems [redacted] SAFE and the 4-C program add to this heavy workload. They require major new additions to the grid system and add to the number of data channels passing through the technical control facility. Through this period, OC will be installing, operating, and maintaining more telephones, crypto, statistical multiplexers, secure grid, facsimile and alphanumeric terminal systems. Concurrently, the microwave system will also be expanded to handle more ultrawideba 25X1 [redacted] better error detection will be provided. OC will also be preparing fo Message Handling Facility, and the new Headquarters annex. It is a goal that by the end of the decade most electrical cables coming into the Agency will be disseminated in electronic form rather than paper. In addition, much 25X1 of the operational and administrative information distributed in the Agency will be in electronic form.

[redacted]

[redacted]

duced, at first, to satisfy some of the new locations (field and contractor) that do not have existing communications links. Later, major retrofitting and/or installations will finish the job. All future installations to satisfy the total growth will be made to this standard.

The total global network will thus see a significant growth in both size an capability by the end of the decade. The major gains will be made in the near term through meeting the goals of the Recapitalization Program. Versatility in OC's responses will also allow it to adjust its course to respond to the dynamic flow of the customers' needs. In the outyears of 1989 to 1992, this rapid growth will be sustained by continuing to expand the number of sites that are supported while accelerating the modernization of the equipment.

Office of Training and Education

One of the major impacts of the papers individually and collectively is the major and profound increase in both the nature and the volume of the training requirements. A major need implicit in the Phase III Planning Papers will be to bring employees on board and get them to a productive level as fast as possible. To meet the resulting training requirements, OTE will use inhouse resources for dealing with Agency-specific information while contracting out for short-term requirements that do not need to be Agency-specific. To meet specialized requirements, training programs will be set up as self-study, self-paced programs on interactive video terminals. The concept of a terminal on every desk will be explored in detail to ensure that the full potential of using these terminals for self-study is fully exploited. With the proliferation of terminals throughout the Agency, it is anticipated that a very large part of future training will be self-conducted through the terminal. Whenever possible, we will procure packaged training programs with the new systems. This change will influence the Agency workforce in the next decade. Instructors and employees in general will find that some of their skills are less than adequate if not obsolete. Training will play a role in dealing with this change by retraining employees for new jobs and training managers to deal with employees that feel trapped in the career squeeze. OTE will have to become more involved in the planning stages of all Agency projects which create training requirements.

Office of Security

The DI paper suggests a need for outside expertise which would involve more staff-like clearance actions for individual consultants or contractor employees. Use of ADP equipment in communications and word/data processing which will service every analyst, would have an across-the-board influence on the computer security discipline. Security plans to at least triple the strength of the Information Systems Security Group (ISSG) by 1992. Related to growth is internal and external training, appreciation that computer specialists are difficult to recruit and retain and a general realization that a proliferation of word processing equipment in CONUS and abroad will multiply the functions of ISSG to identify and negate security threats, and to audit and inspect computer operations. Space requirements will require physical and technical security support beyond that planned for the new building. Specifically, significant new requirements in areas such as alarms, vaults, vault-type rooms, safekeeping equipment, and guard personnel will merge.

The DDS&T paper suggests impact associated with the expansion of national programs which equates with increases in the special access investigative/adjudicative/polygraph workload and an increase in the number of security officers assigned to OD&E. It will also cause an increase in collateral (non-SCI) clearance actions to meet DO requirements. The Counterintelligence paper has impact in that all protective security disciplines figure in a balanced countermeasure posture. Given this approach, priority rankings must be approached with a mandate to avoid chronic shortfalls in any single core program. The Office of Security made input to the CI paper and recognized the above point. The office input essentially remains valid in projections of required human resources and funding for the period extending to 1992. Also, there is a projected increased effort in the counterintelligence area with an emphasis on increased penetration and training. Both will require behavioral science techniques in agent recruitment and management.

The HUMINT paper suggests:

- A graduated increase in the number of area security officers assigned to the DO.
- The paper on Covert Action is not specific in the number of human resources required for new initiatives and leaves room for a great deal of speculation as to the nature and extent of the program that will emerge; it could be a modest enhancement of ongoing programs or, on the other end of the scale, approach the capability enjoyed in the 1960s. It is assumed, however, that security support will be required in:

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[redacted]

Office of Finance

The long-range planning papers submitted by the other Directorates each call for increasing activities requiring additional personnel and funds with clear implications for increasing travel, procurement, commercial contracting and bill paying. These papers project a growth of the overseas population and growing covert action capabilities which usually require a high-level of financial support. Most of these plans are not specific enough to permit us to draw clear relationships between the presumed growth in other areas and what the Office of Finance will need to provide financial services to these activities. Nevertheless, we can make certain statements about the impact with reasonable certainty. There is a clear emphasis on additional travel above the current rate, additional personnel overseas, additional contractual requirements for covert action hardware, data processing equipment and software and external analytical research as well as technical R&D. In sum, we can expect every financial system to be hit by increasing workloads ranging from 30 percent for payroll to 50 percent for contract audit and bill paying. Furthermore, the growth of activities across the Agency will require increased decentralized support within the DDS&T, the DDI, and the DDO which does not appear to be included in their projections. Provision of finance careerists to meet these outside needs will require substantial investment by this office, in training programs which do not now exist, if we are to provide personnel who are capable of maintaining the decentralized financial systems on which the Agency relies.

Office of Logistics

Logistics proposes to meet increased requirements by extending automation in the logistics process ~~and~~ through improved productivity. If the projected increases and initiatives are realized, some increases in logistics specialties are inevitable. Logistics generalists, contracting officers, and engineers will be needed to provide support in maintenance, design and construction of facilities, depot and supply operations, property management, material acquisitions, transportation and covert operations. * 25X1

[redacted]

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Office of Medical Services

One of the key elements in each of the five planning papers and the area where OMS has a great potential contribution to make is in the recruitment and selection and retention of personnel of the highest quality and suitability to carry out the Agency mission. All five papers stress the need for an expanded work force, and several of the papers call for the selection of suitable employees with greater talents and capabilities as well.

The following summarizes in general terms the potential impact on PSD by Agency components:

— The Intelligence Directorate reports a major need for analysts with training and background in economics. The PSD Research Branch may be requested

* OL strategy is to increase the capacity and efficiency of a centralized support system via automation. Development of the Logistics Integrated Management System (LIMS) is underway to increase the timeliness and responsiveness of the Agency procurement, contracting and supply systems. The capability to meet decentralized requirements is being increased via cross-training for career personnel and through the development of proprietaries to provide a mix of skilled personnel to meet the potential shortfall between requirements and onboard capabilities. OL is taking action to expand capability in the areas of transportation, storage and space acquisition.

to undertake a study to determine the PAT-B correlates of successful job performance as an Agency economic analyst so that the future selection of economic analysts can be improved.

25X1

[redacted]

— Guaranteed employment opportunities for spouses will be necessary if the Agency is to attract and retain a work force willing to move frequently, especially from one overseas assignment to another. As a result, increased attention will be paid to the psychological make-up of spouses to determine their flexibility and willingness to cope with the conditions found in many overseas assignments. Increased use of the PSD mini-assessment of spouses is a strong possibility in view of the potential impact a spouse can have on an Agency employee's short-term assignability and consequently his or her long-term career.

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[redacted]

25X1 [redacted]

Office of Information Services

The workload and responsibilities of OIS are proportionately dependent on new initiatives undertaken by other Agency Directorates. A substantial increase in resources (funds, personnel, space, and equipment) will be required during the next 10 years in order to keep abreast of increased records management/accounting functions that will be generated by the new endeavors projected by other Agency components. As more information systems are automated and users see the results of this automation, they will demand both higher-quality data and improved systems responsiveness. The change of the old image of a registry is necessary as the age of electronic mail and other automated office systems insert themselves into the routine way of doing business. The registry of today must change in response to customer desires and to the trends in information handling systems. The change will occur as registries become highly automated, as the clerical personnel operating them become more highly trained, and as there occurs a greater blurring of skills between clerical and managerial functions. The goal for 1992 would be an integrated automated information system which would utilize artificial intelligence for making routine decisions and routing traffic. It would work under a central management control using data base administrators and systems analysts/troubleshooters, and would replace mail clerks and couriers in decentralized component locations by using terminals operated by information analysts. These decentralized terminals would have a built-in, but limited, processing capability and the necessary hardware redundancy to provide the needed reliability. Encryption would also be provided before the data is transmitted to the data base thus providing added security to the stored file.

APPLICANT PROCESSING

Another obvious impact of the papers taken as a composite is represented by the increases in selection and processing of personnel which will be required. The Office of Medical Services will be required to handle more psychological applicant testing and medical screening. The simple fact of increased numbers of applicants demands that OMS not only review their applicant screening procedures with an eye toward expanding manpower and space resources, but also use automation and technology in those aspects of processing which allow substitution for the human; e.g., (1) adaptation of psychiatric and clinical screening devices for rapid administration through a computer terminal and immediate review/profiling (by means of computer software) for evaluation and (2) substitution of technology for the human element in tasks which are largely clerical/routine in nature.

Since these requirements cannot be met solely through refined psychiatric evaluation techniques, it is necessary that we review methodologies for achieving rapid and valid integration of all-source data on applicants; viz., data integrated from personnel (OP), psychology (PSD), and security (OS) sources. The Office of Security
25X1 would, on an average, add approximately [redacted] new hires per annum, which
25X1 translate to [redacted] cases based on the fact that 2.5 individuals must be security processed to bring one new hire on board. These figures apply to professional applicants and would be less if a substantial number of clericals were recruited and more if there is a drastic increase in the Career Trainee program (the respective ratios are 2 to 1 and 4 to 1).

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VI. RESOURCE REQUIREMENTS

[redacted]

At this level, the DA can sustain current levels of support and begin the recapitalization of our worldwide communications network. Similar required modernization programs in other areas such as logistics, security, personnel, and training will receive resources to maintain their current place of development, but will not be adequate to keep up with the demand created by an expanded Agency. Also at this level, elements responsible for centralized support services receive modest increases in
25X1 resources—both positions and funds—in the form of Supplemental Support Initiatives to provide support to increases in total Agency personnel and new activities. We feel we have austere but adequate support resources programmed to support growth [redacted] Austere because for years we have been robbing Peter to pay Paul and will not have enough resources at this level to rectify this situation. Adequate because we will be able to maintain our baseline program and accommodate the increases in the Agency level but not with the enhanced level of support we would like to provide.

For instance, in order to continue expediting security and medical processing of applicants at this level, we would have to continue with only sporadic and fluctuating relief to the chronic shortfalls we have experienced in the availability of polygraph support to operations and the reinvestigation program and also in the industrial clearance program. We will also continue to carry a large backlog in servicing requests for applications programming support and in the installation of terminals and word processors. The current shortage in computer operators will also continue. The impact on the Communications Recapitalization Program is a function of funding, not a growth in positions. If the funding is cut back, costs escalate due to slips in time sequenced procurements and the engineer cost and manpower escalate due to the need for ad hoc work-arounds created by changed schedules.

In order to evaluate the long-term need for space at a level [redacted] 25X1

[redacted]

25X1

[redacted] will be assigned to the Headquarters area. Upon completion of the new Headquarters building in FY 1988, there will exist a maximum capacity [redacted] on the Headquarters compound. The growth forecast through the 1984 Budget can be accommodated in the new building but will have to be quartered in additional leased space until the building is ready for occupancy. As this paper is being written, requests are being processed for 150,000 sq. ft. of additional space. If this is approved and funded, the additional space should adequately house all of the FY 1983 increase. For the FY 1984 space requirements we will need to lease additional space for whatever number of positions is finally approved. This means that relief from our current problems of lack of programmed funds for additional leasing, competition for space in the Headquarters building and in the inefficiency of having offices dispersed throughout the area will not come prior to 1988. It should also be noted that program growth through 1988 is currently projected to rise [redacted] of which approximately [redacted] will be assigned to the Headquarters area creating a shortfall of space for about [redacted] positions or 115,000 sq. ft. of space. 25X1 25X1 25X1 25X1 25X1

[redacted]

There are no current programs or funds to acquire adequate space to accommodate this large personnel increase and its attendant increase in the need for additional machine space. If this projected increase were to become fact then current planning for new Headquarters construction is significantly short of requirements. As planned, the new Headquarters compound will provide 200,000 sq.ft. of prepared machine space and will accommodate a maximum [redacted] If all the planned initiatives come to fruition, it appears that 300,000 square feet of prepared machine space and accommodations for an estimated [redacted] would be more appropriate. The new building will reach the natural limits of expansion on the Headquarters compound given the physical surroundings, the transportation system, and the National Capital Planning Commission. Hence, the alternative for additional space must be decentralization in and around the Washington metropolitan area. The following concepts are alternatives to meeting Agency space needs: 25X1 25X1

A. Headquarters Compound Concept

Build the new addition on the Headquarters compound as planned and accommodate new growth by one or more of the following:

- Continue to lease selected external buildings.
- Build, buy, or lease in the Washington metropolitan area a building large enough to house the remaining external elements plus all new growth, gradually phasing in existing components with new growth.

25X1 [redacted]

- Relocate the Federal Highway Research Station to a new location and adapt their facilities for Agency use.
- Place temporary structures (inflatable buildings or modulars) on the Head-

quarters compound and use them until one or more of the above can be accomplished.

— Build a new facility within 50 (plus/minus) miles of Headquarters which can accommodate all elements in the Washington metropolitan area not slated to move into the new additions. This would also include all depot operations.

B. Two Compound Concept

Do not build a new addition on the Headquarters compound. Instead, build temporary structures to house new growth only and develop a new compound on a large tract of land within 100 miles of Headquarters. Most DS&T and DA components would be housed in this facility and Headquarters would be retained for DCI, DDI, and DO functions.

C. Satellite Concept

1. Relocate selected offices to other areas within the region. For example:

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[redacted]

2. Relocate directorates throughout the region and keep DCI and support elements on Headquarters compound. Also could set up geographically by regional organizations; e.g., all EUR co-located.

3. Explore work-at-home concept via terminals for selected occupations.

In addition to the concepts stated above, the following should be considered:

— Explore the excavation of the basement in the P&PD building for offices or storage.

— The P&PD building was originally constructed with the capability to expand via two additional floors. The two floors could best be used by editors, cartographers, publishers, or for housing computers and peripheral equipment.

— The proximity of Headquarters to the Potomac River should be weighed for future relocations and possibilities of water transportation if moves were made to Rosslyn, Crystal City, Georgetown, and MacArthur Boulevard areas.

— Explore reconfiguration of parking areas in the Headquarters compound area to align with the trend toward smaller automobiles.

— Application of new GSA guidelines on reduced square footage for work

25X1 stations.

In addition to acquiring adequate space to house this increased population, the DA would need the following positions and funds:

[redacted]

The above positions and funds will provide for additional capacity for training both operational and organizational; additional terminals and word processors as well as expansion of central ADP support such as processing and storage; telephone and communications; the establishment of additional [redacted] the establishment of new overseas stations; and [redacted] costs for additional communicators; and finally, furniture and space.

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VII. FUTURE DIRECTIONS—THEMES

This section presents a series of themes and special topics which are presented without consideration of resource or organizational constraints. Our intention is to develop, through appropriate research and staff work, the practicality of the following concepts and we will lend our efforts to exploiting whatever aspects appear feasible to enhance support to our customers. The themes are presented in the approximate time frames in which we will complete the study, i.e., short-term=one year, mid-term=2–3 years, and long-term=3 to 10 years.

IMPROVING SUPPORT TO OVERSEAS PERSONNEL AND LOCATIONS (SHORT TERM)

1. Future emphasis must continue in increasing the physical security of our installations and residences; of maintaining an attractive benefits program; of improving training (especially language) for all persons going abroad; and providing the structure to ensure timely support both in the field and at Headquarters. All DA discipline should review the response times to requests from Headquarters components in an attempt to reduce lead times and, in general, improve the quality of support from the parent office. Wherever possible, contract processing, procurement

[redacted]

response, credit union responses, insurance claims, PCS processing, language testing, etc., must all be examined from a systems approach to reduce time and unnecessary paper work. The DA must review all current field reporting requirements to revalidate the need for such reports by the central DA. While all agree that continued discipline at the station relative to paper retention is a must, it is incumbent upon Headquarters to restrict paper flow to the field whenever and wherever possible. We still place demands on stations for recurring reports reflecting information which is generally available or should be at Headquarters. A centralized DA-wide data base for support to overseas stations should be explored.

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[redacted]

Additional Recommendations

1. Establish a DA liaison office to monitor all non-intelligence relationships with U.S. Government Foreign Service agencies. In addition, there would be a legislative branch to monitor all non-intelligence related employee legislation; i.e., pay legislation, retirement legislation, health and insurance legislation, EEO legislation, etc. This approach for the future will place us in an anticipatory posture rather than a reactive posture relative to employee benefits.

2. To assist in retaining a prospective employee during the lengthy clearance processing, we should restructure certain primarily unclassified elements of the Agency to allow us to place new recruits in productive work almost immediately. For example, within FBIS the Daily Report is currently typed by contract non-cleared typists. JPRS also has unclassified typing. Programs for analysts could be established as well as some specialized language refresher training. These are merely some ways we could improve retention once an individual has expressed interest in working for the Agency.

3. Internally we may consider combining Central Processing, Central Travel, and the Allowances Staff into one unit within the DA to improve efficiency, response time, and central support to all Agency components relative to overseas travel and service. It would also eliminate a lot of existing confusion.

[redacted]

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[redacted]

5. Guaranteed employment opportunities for spouses will be necessary if the Agency is to attract and retain a work force willing to move frequently, especially from one overseas assignment to another. As a result, increased attention will be paid to the psychological makeup of spouses to determine their flexibility and willingness to cope with the conditions found in many overseas assignments. Increased use of the PSD mini-assessment of spouses is a strong possibility in view of the potential impact a spouse can have on an Agency employee's short-term assignability and consequently his or her long-term career.

25X1 6. [redacted] and leave support elements in the Agency less vulnerable to the traumatic cuts inevitably waiting at the end of the budget cycle. Although we are aware of customer
25X1 dissatisfaction [redacted] it is not out of the question to suggest that a small increase in Agency staff at Headquarters, for the
25X1 purposes of oversight and coordination, could have great leveraging effect on the quality of support in the field.

[redacted]

8. If Wang is to be the standard field machine, explore the feasibility of establishing a Wang Service Center in each major geographical area. An agreement could be worked out with State to fund and Agency-clear one or two Wang customer service engineers to be assigned to these regional centers on a technical representative contract to service our systems.

9. We should explore the feasibility of assigning a language instructor at several of the larger overseas stations. Several of the top CTs from each class should be assigned to these stations on 3 to 6 months TDY as an adjunct to the CI interim assignment. It gives the CT class additional motivation to excel and could add a very large amount of realism to training, serve the interest of overseas stations in providing
25X1 a strong back (implies inexperience rather than a weak mind) type of operational support help and should greatly expedite the absorption of language.

[redacted]

prietary. This would significantly reduce overseas positions, TDY lag time, pouch time, procurement time, etc. We will also explore the feasibility of expanding the Communications Regional Centers to include: Wang technical representatives as well as stocks of spare parts and equipment; security specialists so we have regional security representation; OTE instructors; and ODP specialists. In other words, expand an already existing communications support infrastructure to include all the support needs of automated information processing and an appropriate level of security regional support to counteract the increasing CI and terrorist threat and provide upgraded operational polygraph support. If the area is not covered adequately

25X1 [redacted]

SURGE RESPONSE (SHORT TERM)

1. Once again, this is an area where we have both past and present experience to draw upon. In dealing with surge, a fundamental question must be resolved: can we continue to utilize the practice of drawing upon existing resources (otherwise employed) when a crisis arises or must we select a pre-identified surge cadre and make them immediately available for crisis duty? In addition, are we capable to respond to multiple simultaneous crises?

2. It is recommended that DA consider providing a fixed or mobile crisis center to be made available upon request. This facility should accommodate up to 100 people and be equipped with the latest communications equipment. A pre-identified cadre list should be utilized by the DA to release people in all disciplines to join the crisis team. The center could serve two or more crises at one time.

3. The following represents additional steps the DA can take to counter the effect of a surge upon the DA:

a. Pre-identify crisis managers in each office who have decision-making authority for that particular office.

b. Maintain a DA annuitant skills bank for immediate use as rehired annuitant contractors. Such a skill bank could be expanded to include all annuitants possessing peculiar skills; i.e., language, trainers, paramilitary, etc.

c. Establish a reserve pool of part-time cleared clerical personnel available for WAE contract. Primary source would be Headquarters staff dependents who could work intermittently, around-the-clock if necessary, to handle the significant paper requirements that accompany any surge effort.

d. Eliminate the need for complex travel accountings for long-term surge TDYers. Adopt a system, for example, that would grant an additional one-third of the existing daily per diem rate to cover all miscellaneous travel expenses and computate per diem in whole days only. This would mean a person would account for TDY with a proof of departure and return dates only. The total could be days TDY, times the special rate, and no receipts required.

e. Obtain special authority for the Director to exceed Agency ceiling for crisis actions related to Presidential findings. We should establish a positions reserve pool similar to the funds reserve pool and administer it in the same fashion.

f. In conjunction with the other Directorates, prepare a manual based on past actual experiences of how to and how not to support a crisis situation.

4. The aforementioned identifies several areas where the DA could improve surge response and capability. Other areas were not addressed such a Rewards and Incentives for long-term crisis work and an excessive time currently required to identify, clear, and process people for crisis-related tasks. These issues have been addressed in the past by the DA components concerned.

OVERSEAS EXPERIENCE FOR DA OFFICERS (MID TERM)

1. Any broad experience gained from field service will be invaluable to the young DA careerist throughout a career in the DA. The Directorate should identify and encourage overseas service for its younger officers and, therefore, we must discover the means to achieve this goal in light of the prospect that future field service opportunities may be diminished.

2. There are several viable ways to approach this problem now and into the future. These options are presented without the pros and cons, but merely as different ways to attack the problem.

a. A DA TDY standby complement could be established to respond to DO surge requirements and to be available to cover all DA field underlaps as well as routine headset and audit type trips.

25X1 [redacted]

approach would ensure a high degree of competent DA officers in the field, while also ensuring that in Headquarters there will be a constant flow of DA officers who have field experience. Establishment of a formal program such as this would preclude any movement on the part of the DO to establish a separate internal support structure to offset the current trend which indicates less and less non-MG DA (read also Office of Personnel) careerists are receiving field experience. To augment this program and make it more palatable to the DO, a review should be conducted to

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[redacted]

25X1

COVER (LONG TERM)

[redacted]

PROPRIETARY SUPPORT (SHORT TERM)

25X1

25X1 [redacted]

4. The foregoing is a brief overview of current planning. Obviously, much more detailed investigation and analysis is necessary before we will be in a position to support an initiative of this scope. We are exploring the above options in detail and if found to be viable, we plan to develop it in conjunction with the cognizant Agency components, a specific proposal and plan of action.

BACK-UP INFORMATION/COMMUNICATIONS PROCESSING CENTER (LONG TERM)

1. As the Agency becomes more and more dependent upon the capabilities of data processing to accomplish its mission, the need for a backup computer center to preserve a minimal processing capability in an emergency situation assumes a correspondingly greater importance. Past efforts to defend requirements for such a backup center in annual budget exercises have been unsuccessful. Efforts to reserve space in new buildings [redacted] have been similarly unrewarding. 25X1 Lacking a backup computer center, ODP's emergency backup procedures are based on the assumption that the Ruffing Computer Center and the Special Computer Center will not be simultaneously disabled. One center could therefore be used to process the critical workload from the other center until the crippled center could be returned to service.

2. Opportunities to extend these backup procedures are on the horizon. For example, one result of the redirection of the SAFE Project was a shift to the use of IBM compatible architecture, which will make the SAFE computer center compatible with the existing centers and thus add another dimension of flexibility to backup procedures.

3. The construction of the new building in the Headquarters compound will likewise provide additional opportunity to extend flexibility. As central computing capabilities are moved from existing computer centers to the new building, some existing computer center space will be retained, refurbished, and used to accommodate some production processing requirements. The systems which will be configured to provide this support will also be included in emergency backup procedures. A request for two staff personnel to manage the move, determine levels of capability to be retained in existing centers, and determine critical backup needs and thus backup system configurations was included in the FY 84 budget submission for the new building.

4. While the increase in numbers of different computer centers offers additional flexibility in shuttling production workload from one center to another in the event of crippling disaster to a center, more centers mean more work and are indicative of greater dependence on data processing in the Agency. Such dependence begs for more than minimal capability to support critical requirements. Plans should be adopted to establish a backup computer center located away from the Headquarters compound.

[redacted]

This implies that a telecommunication capability must be installed such that existing terminals and remote input/output equipment can be switched to the backup center 25X1 as needed during an emergency. The center must be configured with enough flexibility to accommodate any of the major services supported by ODP. These

[redacted]

STRATEGY TO BECOME INDEPENDENT FROM GSA AND TO IMPROVE LOGISTICS SERVICES SUPPORT (LONG TERM)

1. In the metropolitan Washington area, the Agency resides in government-owned or leased buildings which have historically been maintained, operated, and/or leased by the General Services Administration (GSA).* Routine services as required during the normal 40-hour work week (such as lights, air conditioning, maintenance, custodial, guard services, etc.) have been funded by an established Standard Level Users Charge (SLUC) which currently costs the Agency $28,000,000 per year. Services outside normal hours or those of higher quality than considered standard, are available only if agreed to and funded on a reimbursable basis. The activities which are necessary for the Agency to stay open 24 hours per day, 365 days per year and to maintain the high level of security required, cost several more million dollars per year. New construction or major alterations are designed and constructed through additional reimbursable efforts. The same constraints exist to various degrees in Agency buildings throughout CONUS where GSA is the agent and the Agency is the client.

2. Over the years, GSA has shown either a lack of interest or a lack of ability to provide the level of service or to meet the required time of delivery of the service. Even when the Agency has been driven by events to provide extra monetary resources to GSA to improve matters, the result has been a period of short-lived interest in improving performance. Inevitably, service continues to be inadequate and unsatisfactory.

3. Our efforts to gain independence from GSA are restricted by that law which

designates GSA as the executive agent in Federal requirements for space, renovation, construction, and for maintenance and operation of Federally-owned and leased property. Hence, the only feasible alternative for independence is delegations of authority from GSA. We have aggressively pursued this avenue and recently (9 August 1982) assumed responsibility for maintenance and operation [redacted] 25X1 We are continually negotiating with GSA for additional delegations of authority. The current issues being negotiated are:

a. Maintenance and operation of the OTS complex at 2430 E St. The complex has deteriorated to such a degree that the Agency has, in effect, asked GSA to show cause why the Agency should not take over that facility. GSA has indicated its determination to do better and is in the process of accomplishing many minor repairs and formulating a schedule of capital improvements such as major roof repairs or utility systems upgrade for Agency consideration.

b. Maintenance and operation of the Headquarters Power Plant. In response to repeated concern by the Agency relative to the degree of reliability available from GSA, negotiations are now in progress to determine the true cost of adequate maintenance, operation, and those capital improvements necessary to recover from a plant facility nearing the end of its useful life expectancy.

c. Leasing and alteration to suit Agency space requirements in non-government buildings. Negotiations have been conducted to obtain unlimited authority from GSA for the Agency to directly lease space. GSA has refused to delegate authority above the existing 5,000 sq.ft. limit and has promised to expedite requests to the extent possible. The Agency has placed GSA on notice that it will, when necessary to meet operational requirements, proceed with GSA if possible or without GSA if it cannot meet operational deadlines. Independence from GSA will result in improved service through the:

- Control of the custodial, maintenance, and operations work force.
- Identification and clearance of contractors with the professional skills required; i.e., architects and engineers.

4. Services can also be improved through the automation of those labor-intensive activities; i.e., architectural design and layout functions, receiving and resupply, and mail sorting and distribution activities.

√ STRATEGY TO IMPROVE TRANSPORTATION AND STORAGE CAPABILITY (LONG TERM)

1. Transportation facilities necessary to adequately support expanded Agency activities are currently lacking. It is essential that OL's capabilities to move cargo efficiently, securely, and on a timely basis be thoroughly explored. OL needs to 25X1 establish [redacted] channels. A limited effort is already underway to bolster our capabilities in this area.

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[redacted]

25X1

2. The increase in people, the Communications Recapitalization Program, the implementation of the CRAFT Program, and planned initiatives will all have a considerable impact on OL's storage capability. During the forthcoming decade, OL [redacted] therefore providing a much needed improvement in customer responsiveness. Our new automated system will assist us in tracking requirements to the extent that OL will be capable of more accurately forecasting Agency materiel support requirements.

ALTERNATE METHODS TO ACCELERATE THE NUMBER OF LANGUAGE-QUALIFIED EMPLOYEES (MID TO LONG TERM)

1. Over the coming decade, the Language School will become highly automated as we move into word processing and computer assisted instruction (CAI). Expanded application of CAI techniques will enable instructors to focus their attention on the more creative aspects of teaching and program development, and drills and reinforcement exercises will be studied using CAI programs. This will enhance the efficiency of instructors and enable the school to train increasing numbers of students without a concommitant increase in staff. The Language School is already working with the Information Science Center to expand an in-house CAI system, and in cooperation with ORD, is exploring the possibility of assistance from the commercial and academic world. Those efforts will continue through the 1980s.

2. The planned adoption of computer techniques to test scoring using optical character readers and mark sense readers will increase the speed and accuracy of our testing procedures and allow us to more easily determine both the effectiveness of our training and the quality of the Agency's foreign language inventory at any given time.

3. Throughout the next decade the Language School will continue to experiment with types and lengths of language programs, offering increased numbers of both short minimal survival courses and total immersion programs of several weeks' duration. New instructional techniques will be tried and the use of audio and visual aids to supplement classroom instruction will be expanded.

4. Efforts to direct course curriculum to the specific needs of Agency students

will continue through familiarization of instructors with the tasks required of operations officers and analysis of the Language Use Questionnaire which gathers information about language use overseas.

5. The results of research into the relationship of language aptitude to learning success and optimal course length to attain professional proficiency will become available during the next several years, and we may see selectivity in accepting students and some changes in the design of language programs.

6. The Language School's role in the development of a standardized method for oral proficiency testing will indirectly contribute to an increase in language qualified employees in the Agency. The adoption of these standards nationally will regularize and improve language teaching in high schools and colleges and provide a better trained pool of individuals with language skills from which to recruit new employees for the Agency.

7. The Language Incentive Program which provides monetary reward for language use, achievement, and maintenance will be continued since all evidence indicates that it is having a positive impact on the Agency's language skills inventory. The program will be reviewed and adjusted during the coming years to assure that the intent of the program is being realized.

8. Finally, the professional qualifications of the Language School staff will be autmented by continued participation in the activities of professional associations and through expanded in-house programs.

TRAINING FOR INFORMATION HANDLING (LONG TERM)

1. Today the VM user population is approximately 25 percent of the Washington, D.C. Agency employees. Over the next ten years this is forecast to grow to approximately 90 percent to 95 percent of the Headquarters employees. During this decade almost all Agency employees will have to become familiar with information systems. In a very few years, the emphasis on electronic mail, file handling, electronic printing, etc., will cause the secretary to need a variety of information handling skills. By this time many of the word processors will be connected to mainframe computers. It is likely that in the future the secretary will spend proportionately less time than now typing and more time managing office resources. The analyst and desk officer will also, in many cases, receive their introduction to information handling in the area of word processing. This will be even more true as voice input word processors become widely available by the end of this period. Over the next five years there are plans to bring electronic cable dissemination to the desks of most DDI analysts and DDO desk officers. Large data base retrieval will also become more popular. For some analysts, statistical analysis, modeling, and graphic presentation will become more important than it has been in the past. With the advent of CRAFT, operational personnel will almost universally have to learn how to use this office automation tool. There are not now, nor will there ever be, a sufficient number of programmers to write programs for all requirements. As current low-level systems are fairly easy to use, we are addressing the problem by teaching the users how to program. In the future higher-level, nonprocedural language systems will be purchased and developed so that the

[redacted]

user will be able to specify what they want but not have to specify how to achieve it.

2. Currently there are very few graphic terminals in the Agency. This will change over the next decade. In many instances, one picture is worth more than a thousand words. Statistical analysis, information or material goods flow diagrams, organization charts, and briefing material all benefit from graphic representations.

3. Over the next ten years, a number of new nonprocedural, visually oriented systems will be developed. Two existing precursors of these system,s are the Wang word processors and some relational data base management systems. These systems can be characterized as having the user tell the system what to do, but not how to do it. In many instances the user specifies what the results should look like. These systems will be natural to use. A user will be able to guess how to use the system. When the user makes an error, the system will provide immediate, relevant feedback about how the system should be used.

4. Information handling training will increase at least fourfold over the next decade. As the CIA is asked to do more, it is necessary to use computer-based information systems to multiply intellectual power. More information handling training should occur in the vendor's facilities than has been true in the past. In the future, a number of information handling tools will be off-the-shelf items from a vendor. Other government and commercial organizations have need of information handling tools similar to our own. Over the next ten years, a far larger percentage of the software used in the CIA will be standard (or almost standard), commercially available packages. In many instances, the training for this type of package can be better provided by the vendor. Other types of general training, such as a computer language or information handling concepts, can be effectively and efficiently provided by general providers of education such as the Office of Personnel Management and universities.

5. In the next several years, training will more often occur in the office. Some of the training will be OJT after a formal course. In the case the training may be conducted by the component officer and may emphasize the particular way a system or package is used by the office. As more terminals become available in various offices, it may be more cost effective to bring the formal training to the student. Courses could be held for three hours a day in an office. An alternate would be the development of packaged training courses the student can use for self-study. This would permit the student to conveniently accomplish a half day of work. It would reduce the demand for classroom space. In many instances, the employee will use self-study material to master this material. In some cases, the self-study material will be computer-assisted instruction (CAI). Since almost every employee will have convenient access to a terminal, it will be easier than it is now to present information in this fashion.

6. In the coming years, training will be more of an on-going activity. It may be necessary to provide a sizable amount of information handling training as part of EOD training. If an analyst, secretary, or manager must be able to use one or several systems in order to perform a job, it will be necessary to provide training as soon as an employee joins the Agency. One thing constant about information handling is change.

New and better systems will continue to be developed. The CIA employee will have to expect the necessity for periodic retraining in these procedures throughout his career. Self-study will be a vital part of information handling training in the future. It permits the student to learn at his own pace. In many instances, it permits the student to learn at a location of his own choosing. This location may be the employee's office; it may also be the employee's home. A large part of information handling training is unclassified. Therefore, employees might study career enhancing material at home on their own time. CAI is very powerful, albeit expensive tool.

minor increase in staffing will also be required to maintain network information, perform "service desk" functions and accumulate project and management information for a large and complex technical network.

b. Funds—The budget will remain at the Recapitalization rate for the foreseeable future, plus another add-on of approximately 10 percent for contractor assistance with an additional 10 percent for new initiatives.

c. Systems—The heart of the Domestic Network must be upgraded to meet new
25X1 requirements and support [redacted]he Technical Control Facility will not meet future needs, therefore it must be upgraded, and perhaps automated. A bus concept will be used for local area networks. Finally, a plan to provide electronic conference centers must be developed and implemented.

d. Organization—The Domestic Network division will be modified to conform to the new network.

Attachment 6

TECHNOLOGY

DISCUSSION:

The current state of our technology represents the logical evolution of discrete components which yielded to integrated circuit devices. Coupled with dramatic cost and size reductions in hardware, significant advances were realized in software development and digital processing. The product of this 1960s and 1970s technology included the advent of systems methodology and the beginning of distributed processing. In the OC world we witnessed the implementation of message systems, voice systems, data systems, facsimile (fax) systems and satellite systems. Although each system was somewhat distributed in nature, and to some degree interconnected, the systems emerged and remained as essentially discrete capabilities. Similarly, the basic data rates involved were dramatically enhanced from the days of hand-keys and off-line crypto, but for a long time 75 baud remained the predominant channel rate. Even today our basic channel data rates rarely exceed 2.4 Kbps and still basically serve the discrete services of voice, data, fax and message handling systems. By the end of the Recap era, OC will have implemented a [redacted] switched network 25X1
and as many as 120 second-generation satellite terminals (SC-3). In addition, the use
25X1 of Time Division Multiple Access (TDMA) to improve channel utilization will have
25X1 been integrated into t[redacted]etwork as a partial or complete replacement for

[redacted]

A review of the requirements as expressed in the long-range planning papers confirms the presence of several trends in communications. Some of these trends are "new", whereas others are simply logical extensions of current developments. To be sure, advances in electronic circuitry, particularly Very Large Scale Integration (VLSI), will continue to reduce the cost and size of "hardware" while allowing greater amounts of data to be processed in the local elements of a distributed system. The functional distinction between "hardware", firmware, and software will become increasingly faint, as will the blurry line that separates telecommunications from data processing. System development will be driven to provide each worker with intelligent terminals that have significant processing and storage capabilities. In an uneven tug of war between burgeoning requirements and under-staffed components, technology will be the rope that stretches to increase the productivity of each worker.

In order to accommodate the systems of the Post Recap Era, the network will have to accommodate much higher data rates than currently provided. Building upon the fundamental rate of 64 Kbps which will be possible by 1988, the network will have to rapidly accommodate megabit channel rates. This quantum increase will be driven by the need for bulk data transfers, including softcopy images, and the basic necessity of providing an integrated network which can bind the various systems of the 1970s and 1980s into an effective information handling process of the 1990s. This process will require extensive interconnectivity throughout the Intelligence Community (IC) which both meets the users' real-time needs and also provides appropriate security for the process. As surely as discrete components yielded to integrated circuits, discrete systems for voice, fax, data, imagery and messages will evolve into an integrated, distributed, fully-connected and survivable information handling process.

NEW INITIATIVES:

1. Integrated Work Station (IWS)—The future work force will require a work station that can accommodate voice, data and graphics for both classified and unclassified applications. The IWS will have to be modular and flexible in order to accommodate different levels of application, data rate and processing. The IWS will require extensive connectivity within the information handling process.

2. Local Area Network (LAN)—Within any particular facility, such as the new Headquarters Building, LAN technology must be implemented to provide the connectivity, data rates and integrated services to the IWS of the future. As a starting point, the current NPIC Development Program efforts should be closely monitored for applications in other facilities.

3. Networking—The design philosophy of our network should include the objective to accommodate the same quality and quantity of services wherever and whenever they are needed by our customers. In order to accomplish this objective, some significant changes will be required that partially or significantly exceed current plans and programs. As mentioned earlier, the future network will have to provide effectively higher channel data rates, perhaps an order of magnitude or more above the 64 Kbps of 1988. In fact, there is nothing magical about the 64 Kbps rate except that it represents the upper limit of the KG-84 cryptographic equipment which is being acquired under the Recap Program. Perhaps more important than the actual data rate is the need for the Domestic and Foreign Networks (DN and FN, respectively) to uniformly progress in capability. In today's environment, the DN

generally enjoys higher data rates via leased circuits, while the FN has a growing 25X1 number of satellite terminals which provide potentially greater capacity and government control. There are several factors, including the future impact of the AT&T divestiture on domestic leased line operation and the current power limitations in the [redacted] satellites, which suggest that a feasibility study should be performed to consider the use of domestic satellite terminals and/or [redacted] 25X1 leased/owned satellites. Additionaly, in order to meet the inter-network connectivity required within the IC, the protocol and security issues must receive continued close attention both within the Agency and in the community forums. A major program must be undertaken to ensure that both primary and emergency power systems are survivable in times of stress. This concern may not be practical in terms of the primary power systems worldwide, but emergency power systems are within the purview of OC and can be improved. Finally, the future network must adequately address 25X1 the total survivability issue including [redacted] This latter area strongly suggests that we pursue alternate facilities for our CONUS base, for example.

4. Service Profile—The Recap Program includes several programs, such as facsimile, which will begin to close the gap on existing services that OC's network should provide or accommodate. Still, several service areas are not adequately covered or even on the horizon. In particular, the use of Secure Voice overseas is certain to grow in importance. [redacted] 25X1 cellent example. Although Department of State will provide a secure voice terminal (KY-71) for the Ambassador, the Agency will not have an appropriately scaled capability unless a new initiative is undertaken. This initiative should be studied. A second area of concern is the ability to provide high-quality graphics, imagery or even video to our customers. This capability will require much higher data rates (as previously discussed) and may warrant the development/acquisition of terminal equipment.

Attachment 7

FIELD STATION AUTOMATION

DISCUSSION:

There is an increased emphasis being placed on the "paperless" station of the future. It is envisioned that by the end of the decade, a merger of the office system and the staff communications network will occur. The office system will reach full 25X1 operating capability at all overseas [redacted] facilities. At approximately 25X1 the same time, the [redacted] switched network will be fully installed. The office system of the 1980's will expand into more of a data processing and interactive terminal from the simple word processing systems of today's program. The field customer will demand automation that can handle both limited direct access to certain Headquarters data bases, as well as direct transmission and reception of narrative command message traffic. The customer will also desire his own on-site data base manipulation and word processing capabilities.

These requirements will drive the office information system and the communications terminal (message processing system) from earlier efforts at interface between the two into one common system from the standpoints of cost effectiveness, efficiency, security, and standardization. This system will be directly connected to the communications network. Paper as a transfer medium between systems will be a thing of the past, as the DO officers will compose, edit, release, transmit, receive, file, and retrieve from their installed workstations. Security, compartmentation, and message processing/preparation will be built into the system.

The initial program to achieve these broad objectives is the DDO-IMS's CRAFT program which will bring word processing and limited data processing capabilities to field facilities. The goals are to make office routine more efficient and reduce classified destruction time. OC currently has support responsibilities for: (a) installation of systems, (b) limited onsite maintenance, (c) repair & return via the OC TECHREQ system, (d) emanations security, and (e) systems integration (interface) of CRAFT and [redacted]

25X1

EVOLUTION:

[redacted]

MAINTENANCE—Since reliability statistics are not yet available for the Wang systems, it is difficult to judge the amount of time and effort that OC personnel will have to expend in troubleshooting, repairing, returning, etc. Eventually this could prove to be a considerable workload on a global basis.

25X1 TRAINING—Similar to the [redacted] program, installations are going to take place at times when PCS rotations are such that classroom maintenance training will be impossible. This will result in the requirement for on-site training at the time of installation and will impact both on instructor resources and TDY operational support during training.

TEMPEST—All installations are to be TEMPEST tested prior to classified use. Additionally, each installation not in a shielded enclosure will have to be retested annually. The resultant TEMPEST effort, therefore, is cumulative and could reach as many as [redacted] on-site tests by 1989-1990. This will have a large impact on resources. 25X1

INTEGRATION—In the 1987-1989 time frame, the office system will have a requirement to be "interactive" from the field to certain restricted data bases at Headquarters. This requirement is tied to the implementation of th[redacted] program. From the user standpoint, CRAFT will be seen as an office information system; it is possible that by 1990, CRAFT may be viewed from a communications standpoint simply as an extension of [redacted] Coupled with th[redacted] packet switched network, CRAFT may be the DO multi-purpose terminal equipment for narrative messages, as well as some data exchange. 25X1 25X1 25X1

Attachment 8

PERSONNEL

DISCUSSION:

OC organization developed along discrete, hierarchical lines. With some minor exceptions, the Office was organized with a structured, separated T/O with personnel developed according to Panels, or areas of expertise. The anticipated changes in the technical network configuration in the next decade will require the Office to reassess its present recruitment and assignment procedures. After a detailed task analysis, the optimum size of the work force will be determined and specific programs will be started to improve the qualities, skills, and productivity of our personnel.

Human resource requirements are going to change significantly in the work equation. The productivity and nature of the work force has to change dramatically, since it is not feasible to increase staffing levels *ad infinitum*. Technology will have provided the potential for increased productivity through the development of powerful, intelligent systems for collection, distribution, analysis and production of intelligence. To be effective, this technology, such as Office Automation Systems, will have to be implemented and operated by personnel who are equally skilled in basic computer as well as telecommunications disciplines. The work force will have to be acquired and managed in a way that permits development of indepth competence to meet the needs of worldwide service. More than ever, the training and assignment process has to provide an integrated career progression that maintains the growth and currency of a basically technical work force. It would appear that specific programs are needed to realize significant gains in this area.

Given that personnel should be assigned and developed in an optimal fashion, it will be necessary to constantly examine our organizational structure in order to best manage our work force. It is likely that the hierarchical structure of the 1980s will give way to a hybrid program/functional/matrix alignment that will allow development of in-depth competence and still be reasonably flexible. As in technology applications, systematic personnel management must be aggressively pursued in order to stay abreast of the many advances that are occurring in the work environment. The basic goal must be to have the right person, with the right skills, in the right job. Done effectively, we can bring the programs to the people, rather than being driven to assigning people to "a slot." The end result can be a work force that has careers more effectively integrated and interconnected to the development, operation and maintenance of a network which shares similar characteristics.

NEW INITIATIVES:

1. Organization—Specific planning must be devoted to systematic changes which will allow broader development of competence, as well as more flexible application of that competence.

2. Study of Personnel Needed—As times change, so do requirements. Monitoring these requirements and tracking the current work force would provide a more effective target for our recruitment efforts.

3. Recruiting—Finding and attracting highly qualified personnel continues to be a critical issue. There is a need for making our organization more competitive with private industry in terms of salaries, advancement, benefits, etc.

4. Skills Training—In order to maintain the pace of the computer age, we need to direct our efforts to training our personnel in varied skills, utilizing their knowledge, and thereby expanding on their potential for growth and mobility within the organization.

5. Education—As the requirements continue to outpace the acquisition of additional staff, it will be necessary to dedicate specific formal time in each career plan to provide additional education. Without specific planned education as an integral part of each career, the work force will become obsolete, burned-out, and will further exacerbate the staffing shortage.

Attachment 9

COVER

DISCUSSION:

25X1 [redacted]

25X1

25X1

[redacted]

Attachment 10

COMMUNICATIONS SECURITY

TECHNOLOGY:

The Office of Communications has undertaken the design and implementation of a secure, worldwide, packet switched network [redacted] meet user needs for increased services. This system will depend on high speed, wide-band communications trunks, sophisticated ADP based switching nodes, and more and newer cryptographic techniques and hardware. For [redacted] and another major program, CRAFT, the Communications Security Division will need to address problems such as: 1) developing a new secure gateway-to-network concept, 2) a viable method for user file encryption, 3) routine and emergency destruction techniques and devices for electronic data storage media, 4) with the advent of new cryptographic equipment, new forms of keying material which will impact the key distribution, accounting and control functions of the Division, 5) new communications equipment installation standards and guidelines and 6) the need to protect high speed non-encrypted data links (the Division has embarked on the adaptation of the Intrusion Resistant Optical Communications [IROC] medium to respond to this need). 25X1 25X1

In the TEMPEST arena, OC has several long-term programs, among which are 1) to develop a TEMPEST profile monitor for specific equipments having known TEMPEST profiles, and 2) to develop special shielding materials, and shielding techniques ranging from the total shielding of entire buildings to unique enclosures for specific equipment. Through the next decade there will continue to be a need to identify new TEMPEST vulnerabilities, low-cost TEMPEST-free technologies and design approaches, and cost effective shielding.

In the field of Covert Communications (COVCOM), OC will be required to evaluate applications of existing and planned encryption devices and methods. Some of these applications will consist of new appliques to existing systems; others will involve advanced micro-technologies. The demand for high speed real-time covert communications (e.g., voice) has impacted the COMSEC resources of OC. Many of these new systems will require development of key material specifications, key production and unique key distribution, and new accounting techniques. The growing availability of commercial cryptographic systems has resulted in an increasing demand to employ these systems, since in many cases they represent a cost effective solution to requirements. Another COMSEC support requirement, which is closely allied to COVCOM, will be the increasing demand for communications systems to

25X1

[redacted]

RESOURCES:

The Communications Security Division's personnel resources and capital expen-
25X1 diture requirements are approximately [redacted]

THREAT:

1. Based on information collected to date, the KGB has been persistent and aggressive in targeting US Government communications. In the coming decade, it is anticipated that the KGB will expand its effort to read our communications through various avenues used in the past, as well as newly developed techniques. Our concern is heightened because of a combination of factors which range from strategic US vulnerabilities to improved Soviet operating capabilities. For example, the number of countries which offer favorable operating conditions for the KGB has expanded significantly in the last decade. In addition to the 18 Criteria Countries designated by the US Attorney General in 1981, there are now 18 additional countries which have a security service liaison with a Communist country. This list will probably expand further in the next decade. (In a comment made to the press in September 1982, the DCI cited 50 countries in the world under Communist influence.) Moreover, in the absence of Western political countermeasures in developing areas, the Soviets are expected to continue their efforts in turning Third World countries against the US.

2. More resources are needed to collect, collate, and analyze information pertaining to hostile technical operations against our communications. COMSEC has identified the need for two additional persons to support this effort. Hand in hand with the TEMPEST program to identify communications vulnerabilities, more effort will be needed to eliminate those vulnerabilities. Advances in technology will undoubtedly result in the KGB initiating more technical operations abroad to supplement the less costly HUMINT, OPEN SOURCE and SIGINT sources. The anticipated hostile increase in technical operations is based on factors such as:

25X1 [redacted]

25X1 [redacted]

3. Past performance of the Communist adversaries indicates that the US Government can expect a relentless effort to acquire US secrets through the penetration of its communications. This makes it all the more imperative to correct deficiencies which have been overlooked or ignored in the past; the ever changing international environment can no longer be considered benign.

ANNEX

COMMUNICATIONS—1982-1992

EXECUTIVE SUMMARY:

While modernizing the network and enhancing the abilities of the work force will allow the Office of Communications to stay ahead of customers' demands, there are several other innovative things that can be done to significantly improve the level of service. Some are subtle, have high impact, and are relatively inexpensive, such as a change in the recruiting strategy. Others, while capital intensive, can result in long-range cost savings; e.g., replacing the unclassified telephone equipment. Still others are costly, but could significantly enhance such traits as network survivability.

25X1

[redacted]

INTRODUCTION:

Communications support in the coming decade is the subject of "Administrative Support Capabilities by the Office of Communications," which responds to the Agency's Long-range Planning Papers. It describes an equivalent growth in the customers' need for service and OC's capability to provide service. It does not, however, answer some of the more fundamental questions regarding the quality of communications support. This paper will deal with these more subjective areas and is augmented by 10 detailed attachments.

Previous discussions dealt with the "size of the pipe" that interconnects the Agency sites. This discussion is intended to investigate what can be put into the pipe and how versatility can improve customer service. In reading this paper remember that changes to the capacity of the network are costly, while adding an optional feature within established capacity usually costs less and adds more to the quality of customer service.

INTRODUCTION:

The modernization efforts covered elsewhere and the challenge to provide a responsive work force remain dominant in OC's strategy for dealing with the future. Against the uncertainty of predicting the future, however, there are some available alternatives that would position OC well ahead of the customer's perceived need.

The global network is large and complex. While there are many constants, the network is best dealt with in smaller groupings. This approach allows similarities in service needs to dominate the discussion without constantly degenerating into exceptions to some generalization. Detailed discussions of the foreign and domestic networks are contained in Attachments 1 and 5, respectively.

25X1

[redacted]

growth, then alternate solutions must be sought. One aspect of this question is the Agency's capability to support crisis reporting which may result in a need to acquire new equipments and lease commercial satellite channels. This is discussed in further detail in Attachment 2. There is also a requirement to increase the OC support to non-Staff duties which is explored in Attachment 3. This paper recommends a closer consolidation with Staff communications, an improved management structure, and rebuilding the strategic reserve of equipment. Finally, survivability of the Agency's communications capability is a complex subject, greatly contributing to the concerns 25X1 regarding the mid-decade vulnerabilities. While several issues are currently under review, the most significant of them is the need to build a redundant capability to [redacted] This subject is covered in further detail in Attachment 4.

The domestic network can be further broken down into a discussion of issues 25X1 [redacted] In the metropolitan area there are capacity, capability, scheduling and space issues explored in great detail in the Attachment. Significant suggestions concerning outstations detail the heavy dependence upon commercial service and suggest the employment of satellites to resolve these problems. In any case, there is unprecedented domestic growth 25X1 projected which will cause [redacted] communications support. Purchase of long-lead items will become a problem and OC will need to build a reserve of equipment to respond in a reasonable time.

There has been much emphasis placed on the impact technological innovations 25X1 will have on society and the nature of the Agency's business. How this will influence OC's way of doing its job is further explored in Attachment 6. A companion discussion covering the future automation of the field station [redacted] 25X1 is contained in Attachment 7. This activity is currently supported by a joint effort in the CRAFT program. It could raise some questions regarding the capacity of the total OC network.

The future OC work force will need to be made up of some communications generalists and some specialists. They will need to have specific knowledge of a wide variety of technical systems ranging from computers to diesel-powered generators. They will need a breadth of knowledge to enable them to visualize a global network, and they will still need the dedication and motivation that characterize today's OC employee. A more detailed discussion of this subject is also covered in Attachment 5. Providing cover for OC's work force remains a continuing problem and this subject is discussed in Attachment 9.

Finally, there are new aspects to the traditional technical field of Communications Security (COMSEC). The growing threat of hostile attacks against our people will add to our concerns regarding attacks against our equipment. Both of these subjects are explored in Attachment 10.

STRATEGY:

The broad range of issues discussed above provides alternatives which challenge the Office. Many of the proposals would be dealt with in time; all would require a lot of study and work to reduce them to the project level. However, this long list must be consolidated and priorities must be assigned in order to ensure that OC is responsive to future requirements.

The Agency has had as one of its major goals the *improvement* of its communications capability. This priority treatment is reflected in the Phase IV guidance. The Recapitalization Program is a good start at achieving this objective—but it is only a start. Moreover, the Recapitalization Program is only really intended to *maintain* the Agency's communications capability through modernization. Ultimate success depends on a willingness to continue replacement indefinitely. We also need to stop eroding the benefits of modernization by reducing funds or spreading/delaying implementation. Indeed, capital replacement and modernization are never-ending parts of maintaining capability. By the same token, growth demands added resources. For OC this means adding both capacity in the network and new equipments at new locations, or adapting to a customer demand for different technology. Finally, only after these other needs are attended to, can we turn our attention to improving capability. This, too, requires still more resources. Therefore, obtaining sufficient resources for these three separate aspects of its endeavors will be OC's principal priority for the coming decade.

In retrospect, the lessons we learned from some past mistakes in resource acquisition can now guide our strategy. For instance, we learned that one cannot divert funds from maintaining capability to growth areas without threatening the infrastructure that the growth areas depend upon. Similarly, we know that improvement must be subordinated to both maintenance and growth or you have nothing to improve. The strategy then is to aggressively pursue the acquisition of funds and to apply them to all three areas in the balanced (but prioritized) areas of maintaining capability, responding to growth in requirements and improving the service profile.

Obtaining personnel resources is critical. Here the Office not only needs the proper numbers of people, it needs the proper mix of individuals with the needed talents and motivation. The task is, therefore, to build the kind of work force that can respond to future requirements. As previously stated, this involves recruiting, retaining, skills training/education, and deploying qualified personnel.

The Agency needs communications in both normal and stressed conditions; survivability of the communications capability is OC's second pressing issue. Improving the prospects for a continuance of service will occupy considerable effort during the coming decade. This need presumes that the network is being modernized and that it will contain sufficient capacity for both conditions. In spite of this, the separate issues of satellite utilization, redundant base stations and primary power vulnerabilities at field stations share in importance in dealing with this vexing question.

Responding to the unprecedented growth in the domestic network will demand a dynamic program supported by new resources. OC must also respond to the customer's plans to automate their offices. This has broad implications to network capacity and personnel skills. Finally, an intelligence organization's communications capability is only useful if it is secure; thus, COMSEC's concerns round out this prioritized list.

The conclusions suggest a strategy for dynamic improvement of OC's capability. In the coming decade the Office must:

1. Acquire sufficient resources to maintain, grow and improve its capability.
2. Improve prospects for survivability.
3. Deal with domestic network growth.
4. Respond to customer's office automation.
5. Improve/maintain communications security.

25X1

Attachment 1

[redacted]

25X1

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c. The Mini-relay Program will have to be expanded and integrated into an updated network architecture designed to survive in a stressed environment with the capability of gradual degradation, but with alternate capabilities that will compensate for a multitude of failures allowing for an acceptable throughput to sustain operations.

d. Operational procedures and handbooks must be developed promulgating methodologies to be used in emergencies. Additionally, these efforts must be refined through a series of exercises in which OC will be obligated to participate.

e. Training will have to be expanded to integrate these efforts into the WCS curriculum.

f. R&R facilities and additional technical/logistical support will be required to deploy and maintain the above mentioned system enhancements.

g. Selected staffs must be enhanced to manage this effort. An impact has already been realized on the Operational Support Staff.

This initial effort may be termed "stop-gap" because of our requirement to support existing network requirements. As future study reports and new systems are developed, a second stage of network improvement will be forthcoming which will enhance system survivability not attainable with today's technology.

RESOURCE IMPLICATIONS:

25X1

CIA/OC has mutually agreed to budget only for the [redacted] aspects of the program. Another government staff [redacted] The program will begin to have a significant impact this year and throughout this decade. Intensive program integration into our facilities will require more management and training participation. Dollar figure estimates for the funding and implementation of the deployments within the Recapitalization years for equipment protection are 7.5 million. That figure could rise to about 20 million in future years as planned new techniques and [redacted] protection systems become a reality. R&R, training, and deployable reaction equipment costs are estimated to be another 7.2 million. 25X1 25X1

The personnel projections for the 1982-92 time frame are:

25X1 [redacted]

The initial deployment of the "hardening" effort should be realized within the five-year period of the Recapitalization Program, which should be sufficient time to allow the "window of vulnerability" to be diminished to the point where new "state-of-the-art" advanced communications systems presently being developed can be realized. A second deployment series of network enhancements in the late 1980's and early 1990's will be required to fulfill the mission.

Attachment 5

DOMESTIC NETWORK

BACKGROUND:

The Domestic Network's evolving role will by necessity reflect the changes occuring both in the Agency and in society as a whole. ADP technology will be a driving factor, as will increasing customer sophistication. With a large segment of the population acquiring cable TV and personal computer systems for their homes over the next decade, the substantive officers of this Agency will want no less in their work environment. In the coming decade, service emphasis in the Domestic Network will focus on interactive manipulation of data bases, more secure voice and facsimile, paper reduction, efficient use of available bandwidth, and improved communications security.

25X1 The personnel growth described in the Agency Long-range Plan will require more Headquarters office space at the same time that OC's new systems, [redacted] [redacted] will need space. Space for secure grid systems is already limited and costly. 25X1

Teleprocessing, secure voice, metropolitan outbuilding, field and contractor communications requirements, and special programs such as SAFE, 4-C, and NDP are growing and converging into overlapping time frames. The mid-1980's will see a rapid expansion of basic services, and a changeover to a new generation of terminal and cryptographic equipment.

DISCUSSION:

The following is a list of planning topics or problem areas, with a proposed approach (or several approaches) for confronting the problems over the next decade:

a. Space—We never seem to have enough, and a [redacted] increase in the Agency's population, coupled with the growth of ADP equipment, won't make our space problem any easier. Prior to completion of the new Headquarters annex, OC needs to advocate near term elimination of old or unnecessary systems. The old "gray" XY and 758C portions of CISVN need to be removed, as well as the red button system. HSTS instrument activation needs to reflect this need. The current C&P black switch and old manual switchboard should be replaced, with all space vacated by C&P to be turned over to OC. We should also advocate movement of the Credit Union Headquarters space in order to acquire this additional area. Some portions of ACT-O may have to be functionally replaced, and this may gain space for other purposes. The KG-84 may help us stay even regarding facilities control (FACON) space, and the X.25 concentrator will help by eliminating one layer of FACON multiplexers. 25X1

b. Circuitry—Channel and link rates of 9600 bps and 1.544 Mbps will quickly become standard in the metropolitan area, with 2400 and 4800 bps to field sites. Requirements will obviously dictate changes to our network topology, but bureaucracy may impede efficient use of bandwidth in some instances. Economies of scale can be achieved in the 1980's if the bureaucratic constraints that impede integration of BYEMAN and non-BYEMAN links can be overcome. These impediments could be minimized with no loss of security or compartmentation. Likewise, the cover/security problems that currently preclude use of non-Bell companies for WATS service will again be reviewed; significant savings may be realized if we can force more competition into the black telephone service arena, particularly if the AT&T divestiture increases rates as expected. OC will also take a hard look at 25X1 [redacted] systems as a means of augmenting or replacing 25X1 [redacted] network may be more reliable and cost-efficient.

c. People—Integration of Cable Secretariat Branch and Telecommunications Operations Branch functionality will see opportunities open up for career broadening and growth for some personnel. Beyond this, TOB/FACON and Voice Communications Branch operations may show enough circuit control and circuit switching commonality for further integration between circuit operators and telephone operators. Increasingly, OC will be supporting systems and customers different from those found in the foreign network, and continuity (i.e., long assignments) will be required.

d. Service—OC will use less paper and more electrical interfaces to our Headquarters customers. The policy and procedural aspects of accepting outgoing messages from other systems need to be addressed and resolved within the next year. By the mid-1980's, electrical origination will be commonplace; the OCR/paper system will be less dominant. A "service desk" system will be developed that is more customer oriented than the decentralized mechanisms we use today. Conversely, the Domestic Network will, by 1990, have sufficient field activity clustered around certain large cities that a decentralized area support concept may be justified. We've started on this 25X1 path, [redacted] forming the nucleus of what may be a different organizational structure.

e. Systems—We know facsimile (FAX) and secure voice systems will grow and integrated voice/data switching is anticipated. Beyond this we can expect voice store and forward, video conferencing, and voice recognition systems. This latter concept, translation of voice into alphanumeric characters suitable for editing and transmission, is the next quantum step beyond today's OCR's, teletypewriters and word processors. Cellular radio systems will be maturing soon, and we may see increased demand for secure mobile systems for senior officials based on this new service. OC can also expect to support new energy management and security sensors over its channels. The technology exists, and must be exploited, to enable unattended delivery and receipt of messages 25X1 [redacted] over dial-up telephones, during non-peak hours. The systems acquired during the 1980's should be micro-processor based, with sufficient flexibility that software or EPROM changes can modify the functionality of a given box to handle such attributes as new protocols, channelization, and speeds, etc.

f. Organization—OC will require improved organizational linkages with the other Agency groups involved in domestic communications, in order to properly do its job. Our ties to ODP, already strong, will get stronger and more intertwined. OD&E, OSO, NPIC, and [redacted] are customers or providers of service, depending upon the issue at hand. The internal organization itself may grow so large that it would call for a higher organizational level. Direct message addressing, like directing data to a particular file resident in a data base, may obviate the need for the dissemination function as we know it today. 25X1

g. Flexibility—With the organizational mobility we're now encountering, OC needs to address the "cost of connection" into the network, and develop a Local Area Network concept based on wire pair, coax, or optical cable that can handle all normal services from a single "plug". Telephone (black and secure), data, and FAX service is at the point where the present separate approaches may not be viable for much longer. An integrated approach is called for especially in the new Headquarters annex. Personnel flexibility may likewise require some analysis of the amount of "vertical integration" in OC's structure. If we are to continue our traditional roles (plan, install, operate, maintain, upgrade) over a broader spectrum of services, we need to develop better civil engineering, power, and systems analysis capabilities in-house. Despite our increased use of contractors for certain brute force tasks, our internal expertise needs to be expanded in order to properly direct contractors, train a growing cadre of non-professional communicators, and analyze the growing complexity of the Domestic Network. There is taxpayer money to be saved in lease circuit analysis alone, if we but had the time to do the analysis.

25X1 25X1 h. New Building and [redacted]—Schedule problems abound regarding the delivery dates for [redacted] and the completion of the new Headquarters annex. If schedules hold, Headquarters may have to accept 25X1 [redacted] in the present building, request [redacted] be installed in the new annex in 1987, and after cutover, remove and deliver 25X1 **25X1** [redacted] [redacted]

RESOURCE IMPLICATIONS:

a. Personnel—There is a foreseen need for more technical personnel to maintain an increasingly complex network. This will be achieved by addin[redacted]ngineers to the 25X1 25X1 Domestic Network staff and [redacted] lectronic technicians. The Domestic Network will 25X1 also require [redacted] additional [redacted]unicators (hard requirements fo[redacted] additional 25X1 communicat[redacted]ve already been identified). In addition, an industrial type contract will be required to provide assistance with renovations, telephone service, grid and/or bus maintenance, equipment maintenance and, perhaps, field station maintenance. A