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ANALYSIS OF ADEA's

AUTOMATED DATA PROCESSING (ADP)

SURVEY

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US ARMY DEVELOPMENT
AND
EMPLOYMENT AGENCY

FORT LEWIS, WASHINGTON
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19. ABSTRACT (Continue on reverse if necessary and identify by block number) This report presents the results of a broad survey of users and potential users of Automated Data Processing (ADP) and Automated Data Processing Equipment (ADPE) at the Army Development and Employment Agency (ADEA) conducted during the period June - July 1987. The ADEA Automated Support System (A2S2) was designed in 1983 to support a user-base of 125 nodes concurrently on a centralized computer network, but by the time of the survey, the user-base had grown to over 300 people. A2S2 performance decreased as the user-base increased causing numerous ADP problems for its users. This survey was designed to identify these problems and to determine ADEA's future ADP/ADPE needs. This report examines data collected from 278 respondents to the survey and presents it through descriptive statistical means. The data one objective, presented in summary form and not interpreted to any great degree. Topic of greater interest are presented in graphic form. No follow-up interviews were conducted to help qualify the results of these data.					
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Analysis of ADEA's
Automated Data Processing (ADP) Survey

September 1987

Operations Research Office

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The Operations Research Office (ORO), Army Development and Employment Agency (ADEA), conducted a survey of Automated Data Processing (ADP) and Automated Data Processing Equipment (ADPE) at ADEA by request from the Technical Support and Automation Management (TSAM) Branch. The results of that survey are presented in this report. The author is Mr Robert Grundborg. Technical guidance was provided by Mr Agustin Fabian. CPT Tom Herbert created the statistical data sets and procedures using the SAS software applications programs. Ms Debbie Kohner provided data transcription and data entry support.

Data entry support was also provided by Mrs Mary Gregory, Ms Denise Van Housen, and Mr Randy Cox, all of TSAM. Mr Douglas Burke, the Digital Equipment Corporation (DEC) representative at TSAM, provided system technical support and created the database structures for the entry of all survey data.

Special thanks are extended to those 278 people who were so responsive in contributing information and comments about the ADP/ADPE at ADEA. Those ideas expressed in the survey are collectively presented in this report.

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I. INTRODUCTION

A. Purpose. This report presents the results of a broad survey of the users and potential users of the Automated Data Processing (ADP) and Automated Data Processing Equipment (ADPE) at the Army Development and Employment Agency (ADEA) conducted during the period June-July 1987.

B. Background. The current ADPE user-base at ADEA was recently determined to be over 300 people. The current ADEA Automated Support System (A2S2) architecture was designed in 1983 to support a user-base of only 125 nodes concurrently on a centralized computer network. The original user-base represented the projected number of potential users of ADPE at ADEA based on an interview process conducted at ADEA in 1983 by Dr Gerald McDonald, the BDM Corporation. Since then, as the user-base has steadily increased, the apparent A2S2 performance rate has steadily decreased, presenting numerous ADP problems to its users. To better solve these problems, the Technical Support and Automation Management (TSAM) Branch recognized the need for a survey of its ADPE users to identify the problems and determine ADEA's future ADP/ADPE needs. In June, 1987, TSAM requested the Operations Research Office (ORO) to assist in the conduct of a user-needs survey to aid TSAM in modifying the A2S2 architecture. The survey was to also provide information to assist TSAM in developing an ADP plan and ADPE acquisition strategy to ensure the availability of a more responsive suite of ADPE resources, the melding of which can be flexible enough to meet most of the users' changing needs.

C. Scope. This report examines the data collected from 278 respondents to the ADP survey. These data are presented largely through descriptive statistical means. Because of time constraints, the data are objective and presented in summary form and for the most part are not interpreted to any great degree. Topics of greater interest are presented in graphic form. SAS applications software was utilized for most of the statistical analyses including the graphic presentations of data. Again, because of time constraints, no follow-up interviews were conducted to help qualify the results of these data.

II. SURVEY PROCESS

A. In order to supplement the initial A2S2 electronic survey conducted in May 1987 and expand its scope to include ADPE users not utilizing the A2S2, a second survey addressed in this report was developed by a committee consisting of both ORO and TSAM personnel. The questions on the latest survey questionnaire collectively addressed all areas of interest held by the committee. ORO developed, staffed and conducted a limited test run on a small sample of the total population before final distribution.

B. The committee agreed that the survey should go out to everyone working at ADEA. TSAM provided ORO with 583 mailing labels. ORO published 600 copies of the questionnaire and made the final distribution to everyone on TSAM's mailing list. A copy of the final questionnaire with the Staff Director's cover letter is found at Annex A.

C. By 30 June 1987, ORO received over 180 completed surveys. ORO began coding and entering these data with the help of TSAM personnel. By 6 July 1987, a total of 278 surveys were received. The data were coded and entered into primary data sets utilizing a dbase program on the VAX 11-785. Over 72,000 data points were entered and subsequently analyzed using the SAS (statistical analysis) software programs.

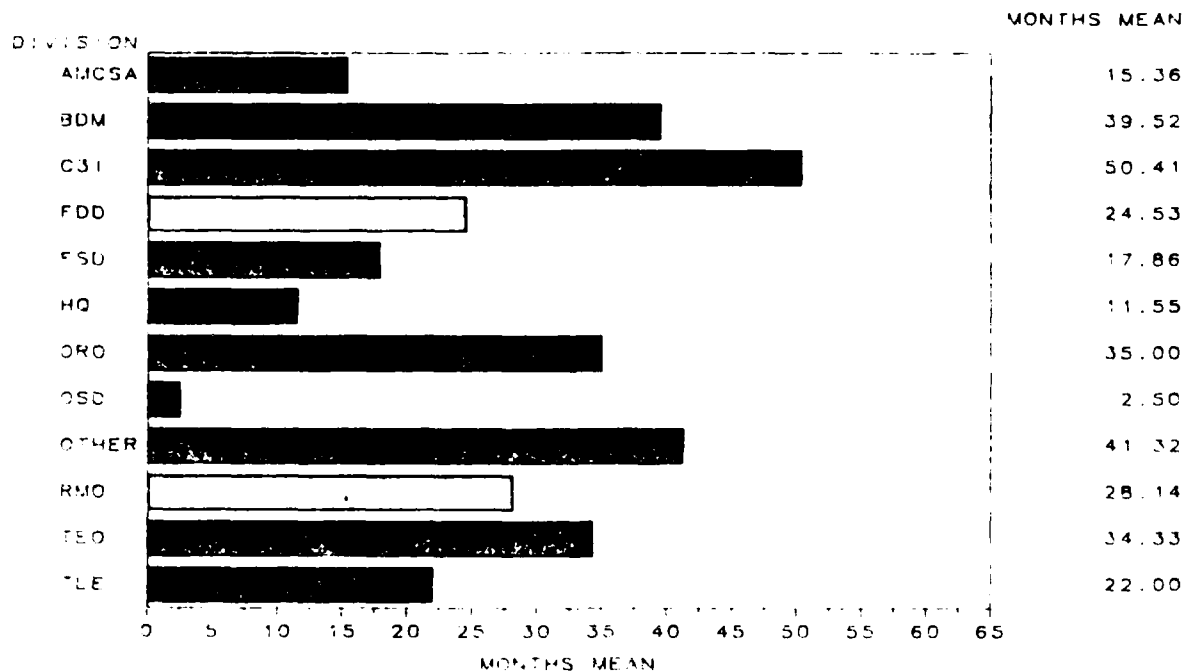
III. SURVEY RESULTS

A. General. This section describes in general terms the results of the survey analysis found at Annex B and selectively expands on questions of interest and issues to provide greater insight, focusing on the respondents' assigned divisions and job functions.

B. Respondents' Background and ADPE Experience. The ADP backgrounds of the respondents are extremely diverse. The average number of months experience with mini-computer systems for all of ADEA is 34 months. There was a wide range of responses to this question, from "no experience" on one hand to over 20 years of experience on the other. Military officers at ADEA, for example, have an average of 17 months experience on mini-computers, while contractors as a whole have an average of 45 months experience. Figure 1 shows the average number of months of experience with mini-computer systems for each major division at ADEA.

MINICOMPUTER EXPERIENCE

Comparison By Division



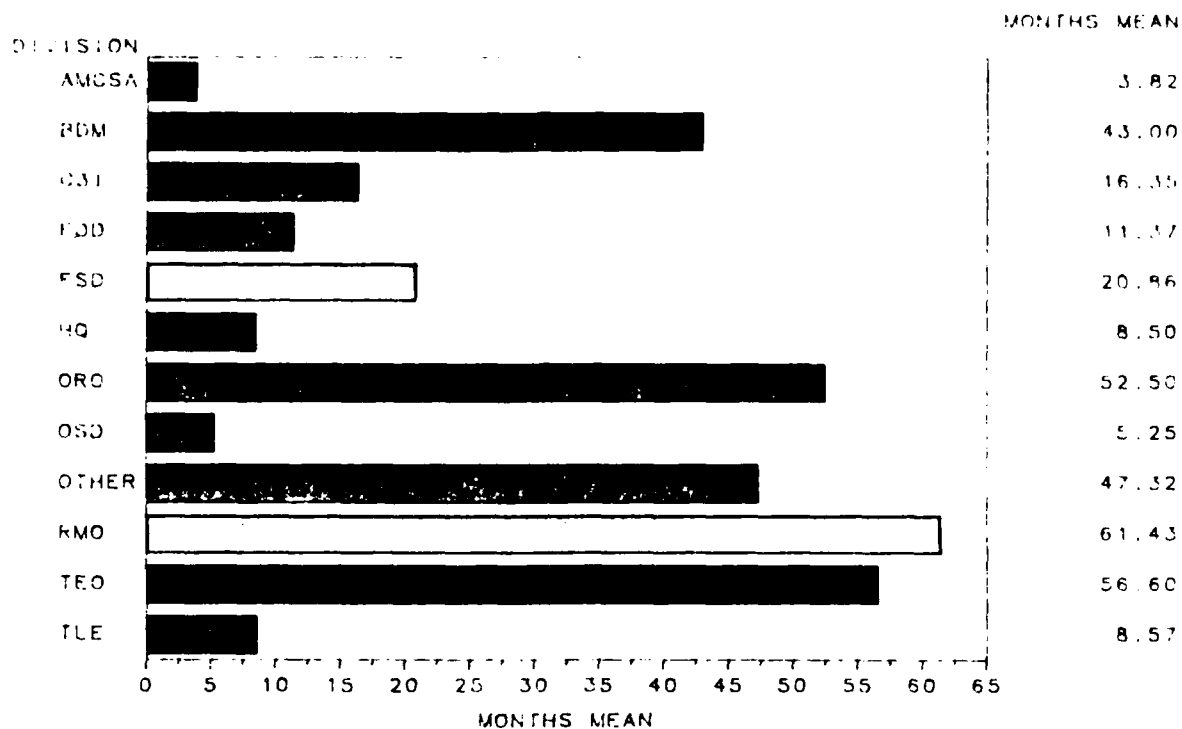
All values are expressed in MONTHS

Figure 1

A similar comparison for micro-computer systems is shown in Figure 2.

MICROCOMPUTER EXPERIENCE

Comparison by Division



All values are expressed in MONTHS

Figure 2

The average number of months of experience on micro-computer systems for all respondents is 32 months. Here, the military officers at ADEA indicated that they had an average of 38 months experience on micro-computers. Generally, those who indicated that they had experience on one type of computer system also said that they had experience on the other. The number of months of experience on mini-computers versus micro-computers does not, however, follow the overall 1:1 (32:34) ratio of ADEA respondents as a whole. In comparing experience levels within divisions (Figures 1 and 2) for C3I, RMO, AMCSA, and others, we find as much as a 3:1 ratio for number of months of experience on one computer system over another. By and large, ADEA does have many people with a great deal of computer experience equally divided between mini- and micro-computers and utilizing a wide range of very diverse software programs.

C. Current ADPE Usage.

Most of the respondents (85%) utilize ADPE in their jobs at ADEA. Figure 3 shows the frequency of ADPE use by these respondents for each of the eleven most common computer systems at ADEA.

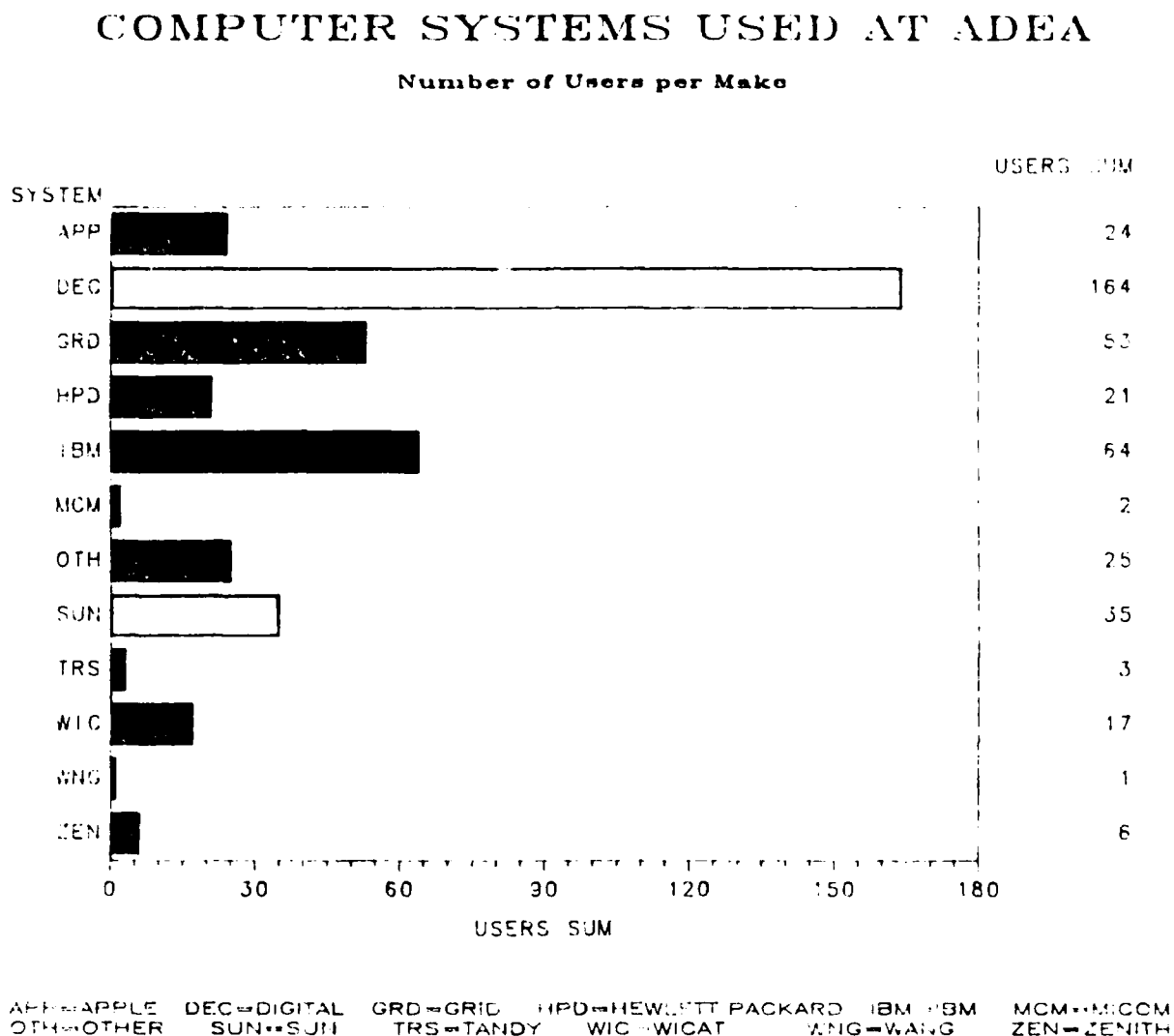


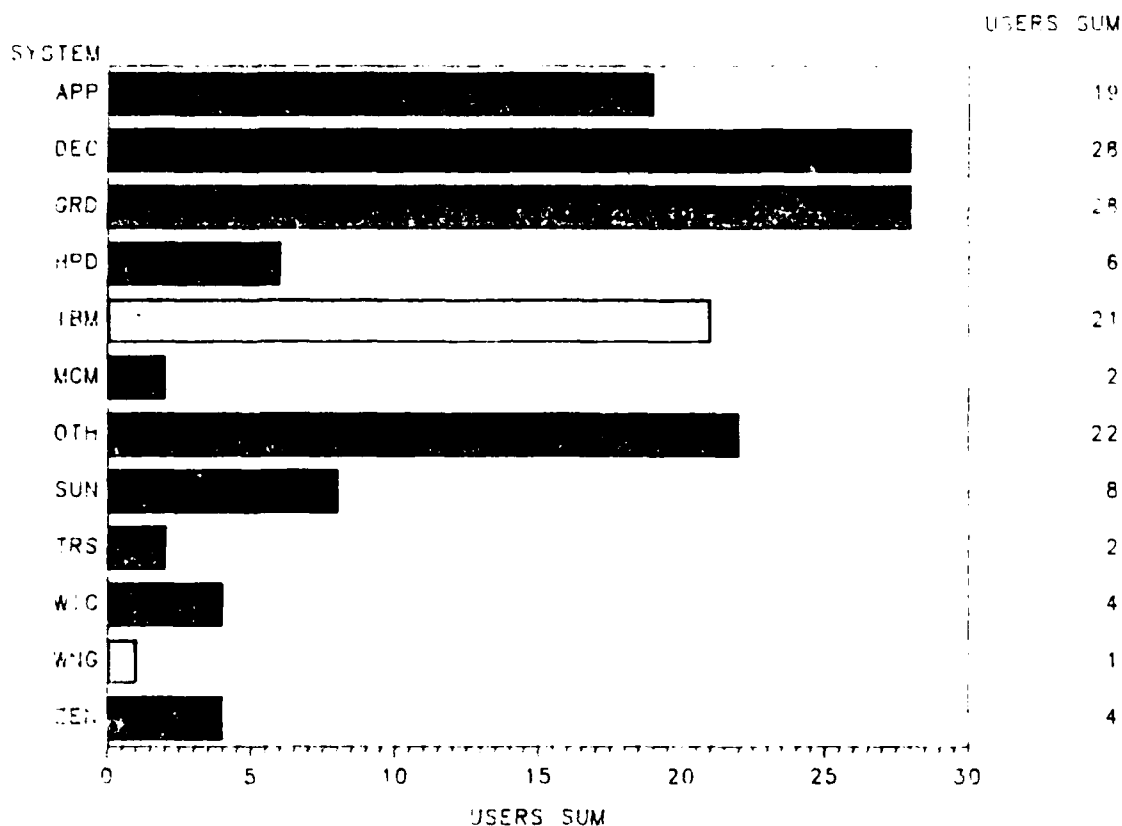
Figure 3

It is important to note that frequency includes all systems used by the respondents, including mini- and micro-computers which are stand-alone or networked systems. The singularly most utilized "system" is the DEC (including Professional and VAX systems).

Figure 4 shows the frequency of use for stand-alone systems not networked or linked to other systems.

STAND ALONE COMPUTERS USED AT ADEA

Number of Users per Make



APP--APPLE DEC--DIGITAL GRD--GRID HPD--HEWLETT PACKARD IBM--IBM MCM--MCOM
OTH--OTHER SUN--SUN TRS--TANDY WIC--WICAT WNG--WANG ZEN--ZENITH

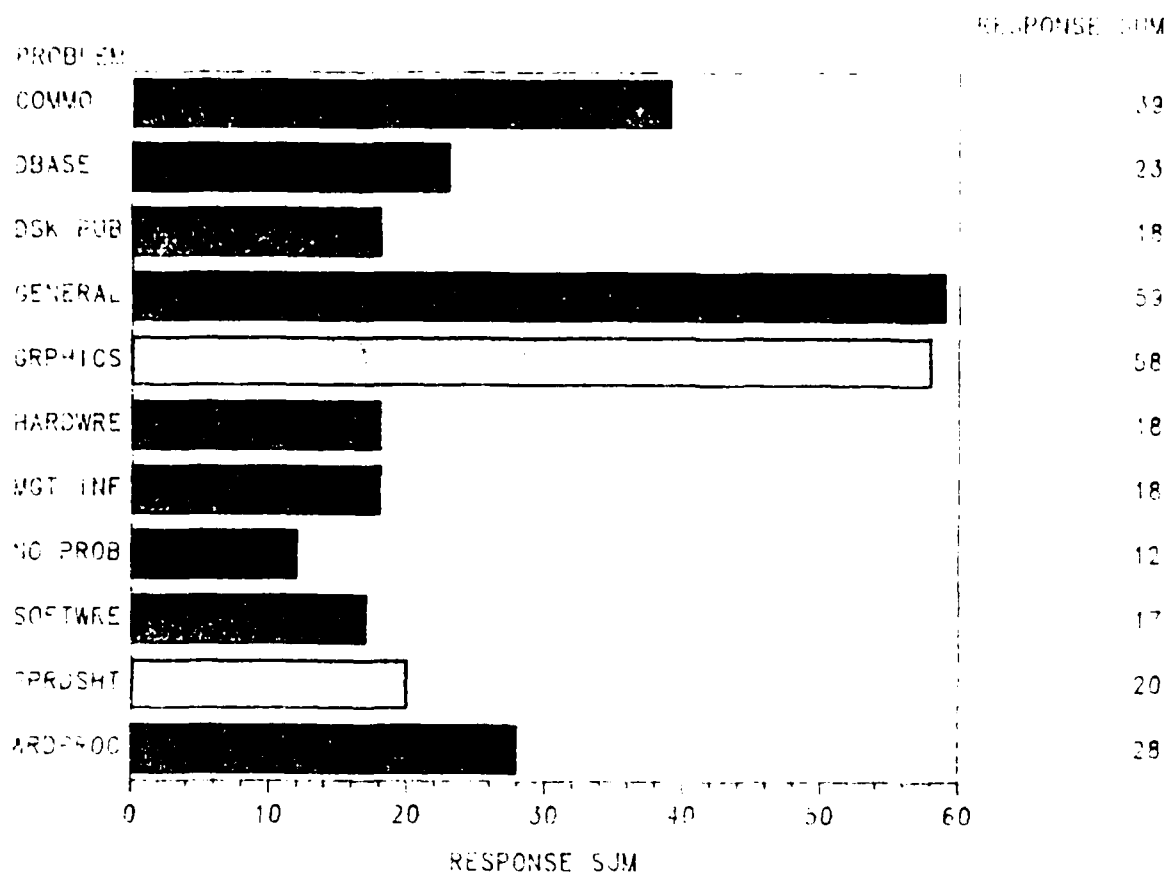
Figure 4

The difference between the frequencies in Figure 3 and Figure 4 is equal to the frequency of use by the respondents on networked or centralized systems. DEC (or the entire A2S2 network) is clearly the most frequently used "shared" system. (Table B-2, page B-6, shows the frequency distribution by division.)

Most of the respondents' singularly most negative comments or complaints about the ADPE at ADEA were directed at the lack of responsiveness and graphics capability. Figure 5 shows the ten categories into which negative comments were placed. The "general" category contains comments about ADPE responsiveness. (Table B-3, pages B-9 through B-11, provides a listing of the respondents' complaints about the ADPE at ADEA.)

COMMENTS ON ADP/ADPE DEFICIENCIES AT ADEA

10 Categories of Users' Major Complaints



Poor system responsiveness is major part of "General" category
(See Table B-3 for complete listings of other complaints.)

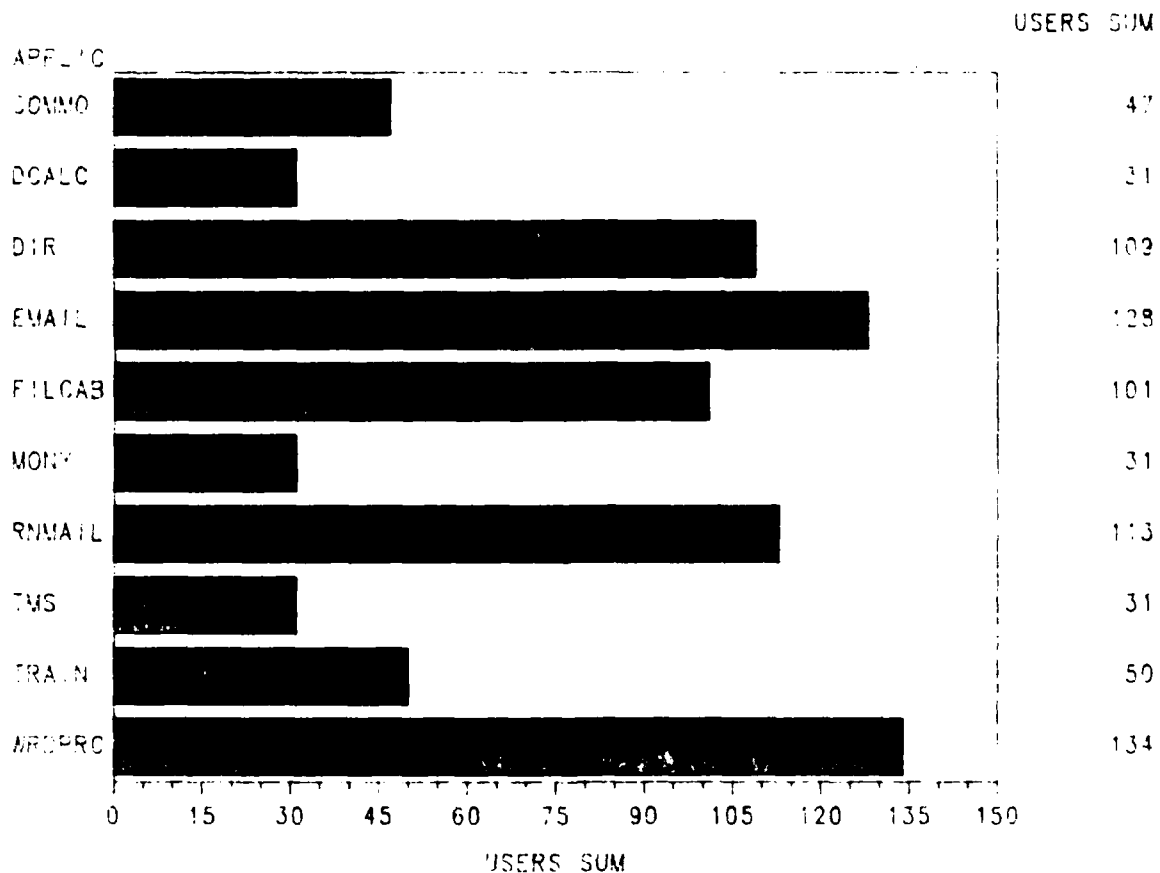
COMM = Communications DBASE = DataBase DSK PUB = Desktop Publishing
GRAPHICS = Graphics MGT INF = Management Information SPRDSHT = Spreadsheet
NO PROB = No Problems WRDPROC = Word Processing

Figure 5

Nearly half of the respondents indicated that they use the word processing (WP) software application on the A2S2 and consider it very useful in their jobs. Over 45% said that they use the electronic mail (EM) utility and consider it very useful in their jobs. Thirty-one respondents said that they use the task management system (TMS) and consider it useful. Figure 6 shows the frequency of use of the ten most used A2S2 applications by survey respondents.

TEN MOST USED A2S2 APPLICATIONS

Based on User Response



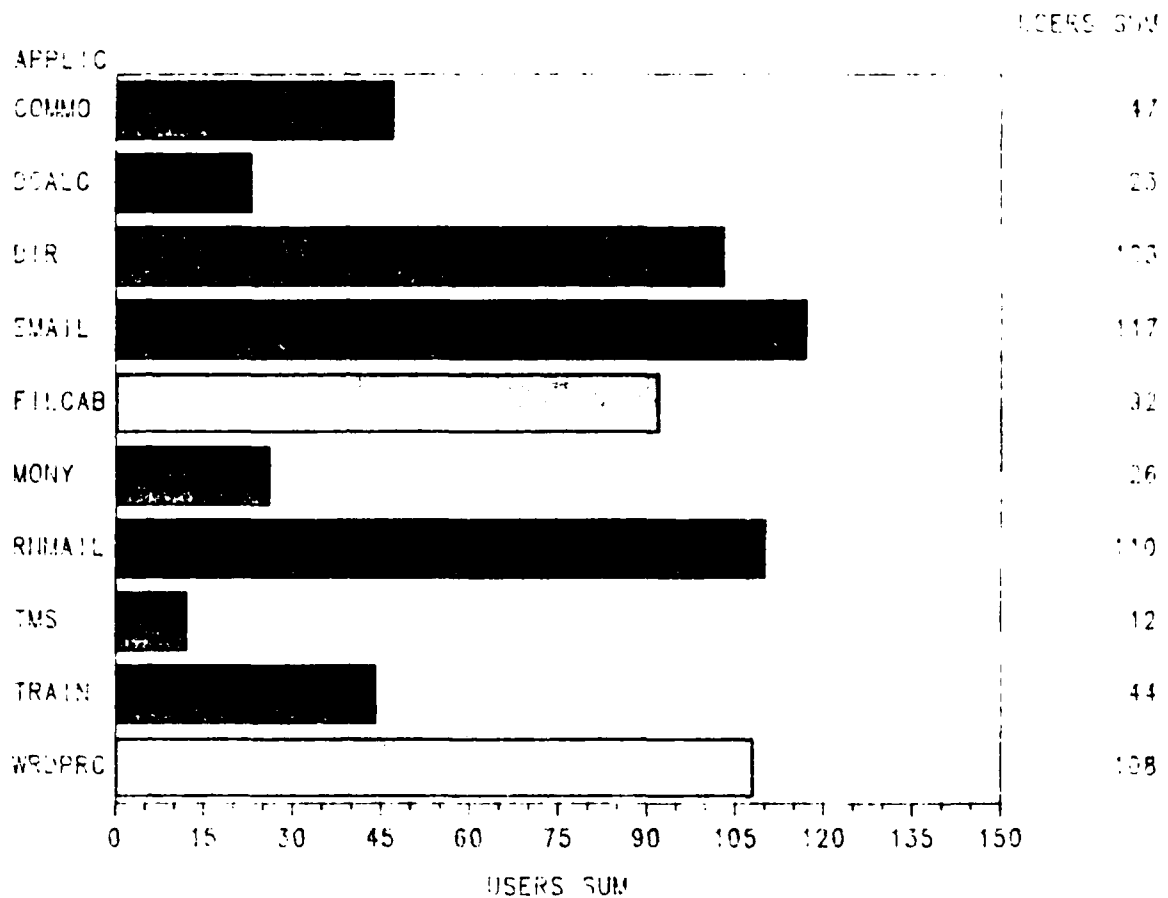
Graph represents number of users of selected A2S2 applications
Percentages are of total A2S2 users

Figure 6

Figure 7 shows the frequency rating of responsiveness of the ten most used software applications on A2S2.

RESPONSIVENESS OF A2S2 APPLICATIONS

Comparison by Users of 10 Most Used Applications



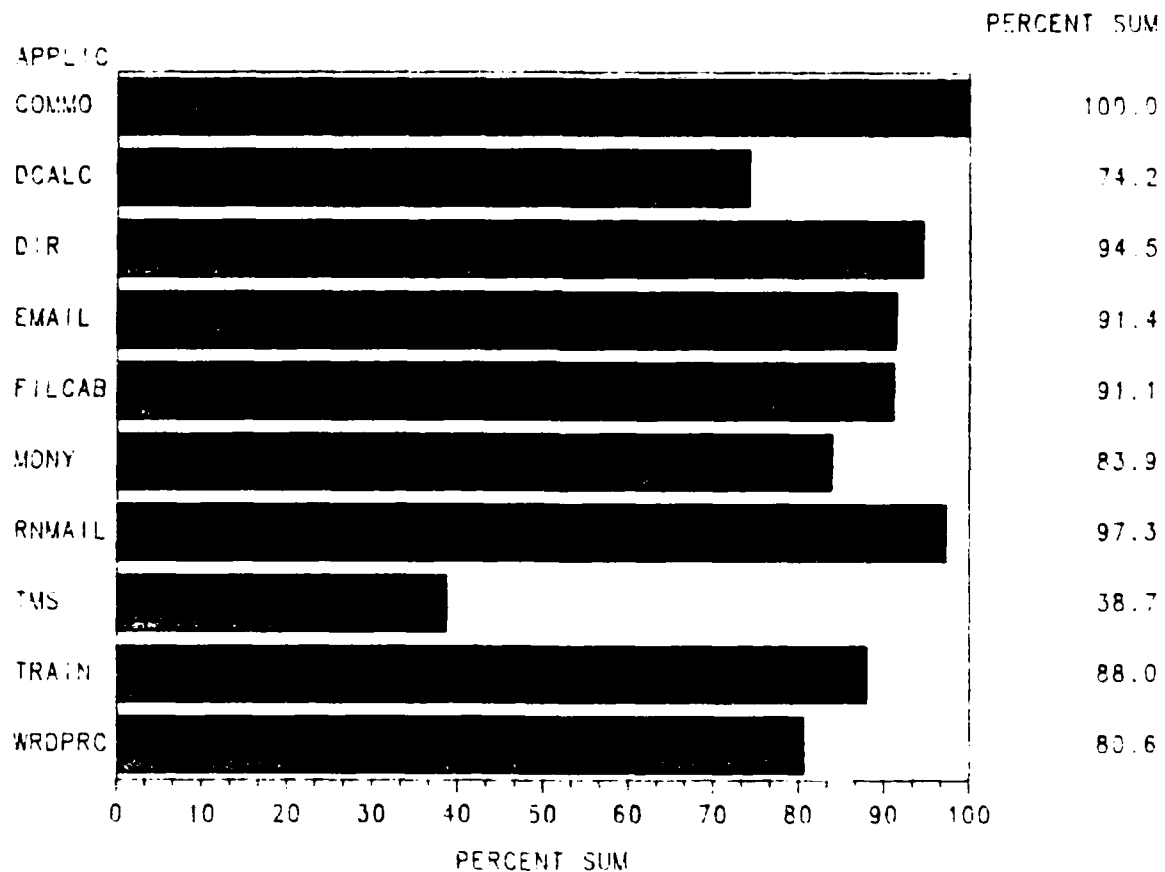
Numbers represent users who think subject application is responsive

Figure 7

Figure 8 presents a rating of the ten most used A2S2 applications based on the percentage of respondents who think that the application is responsive. Note that TMS is rated least responsive. A major factor in that rating may be that the new version of the TMS software was not installed until after the survey questionnaires were completed. Exactly 50% of the A2S2 applications were rated as less than useful to the respondents (see scale on Table B-4, page B-12).

PERCENT RESPONSIVENESS OF A2S2 APPLICATIONS

Percentage of Users Who Say Application Is Responsive



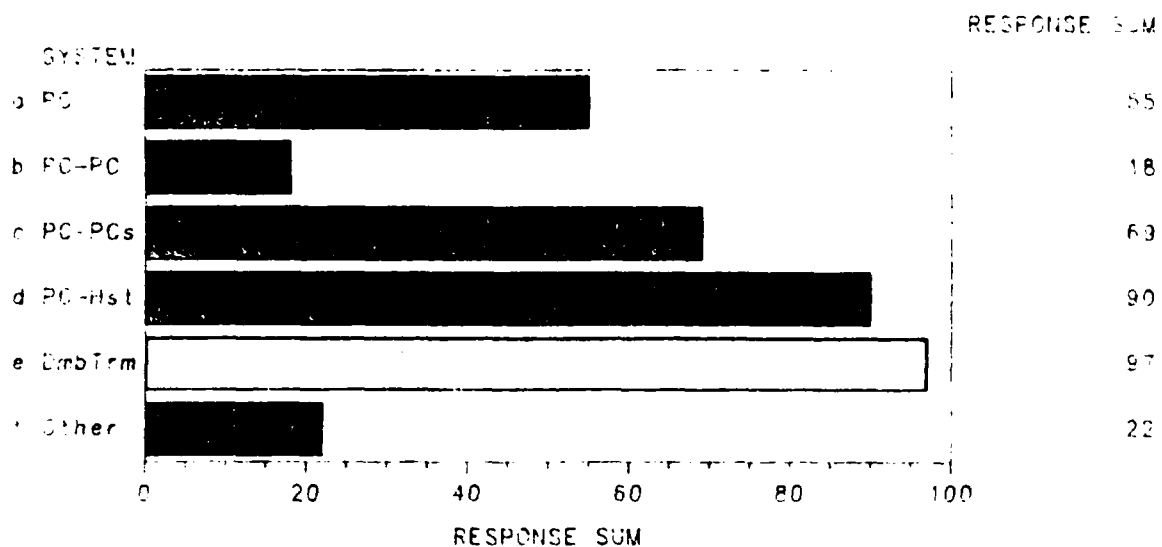
Percentages are based only on respondents who use these applications

Figure 8

D. Projected ADP/ADPE Needs. Respondents were asked to indicate which system(s) they need for their job at ADEA. They could choose a stand-alone PC, a PC linked to another PC, a PC linked to several PCs, a PC linked to a host computer, a dumb terminal linked to a host computer, and/or a write-in choice. Table B-7 (page B-17) shows the 38 combinations selected by the survey respondents. Figure 9 shows the frequency of selection for each system for all respondents. Note that the respondents could select as many systems or combinations of systems as they thought they needed for their job.

COMPUTER SYSTEMS DESIRED BY RESPONDENTS

Based on Response of 233 Potential Users



EXPLANATION OF SYSTEM TYPES
a = STAND-ALONE, UNLINKED MICRO/PC b = MICRO LINKED TO ANOTHER MICRO
c = MICRO LINKED TO MICROs d = MICRO LINKED TO HOST MINI
e = TERMINAL LINKED TO MINI f = OTHER

Figure 9

Figures 10 through 14 present the frequency of the respondents' selection distributed by division for each of their choices of computer systems described in the preceding paragraph.

USERS NEEDING STAND ALONE PCs

Number of Users by Division

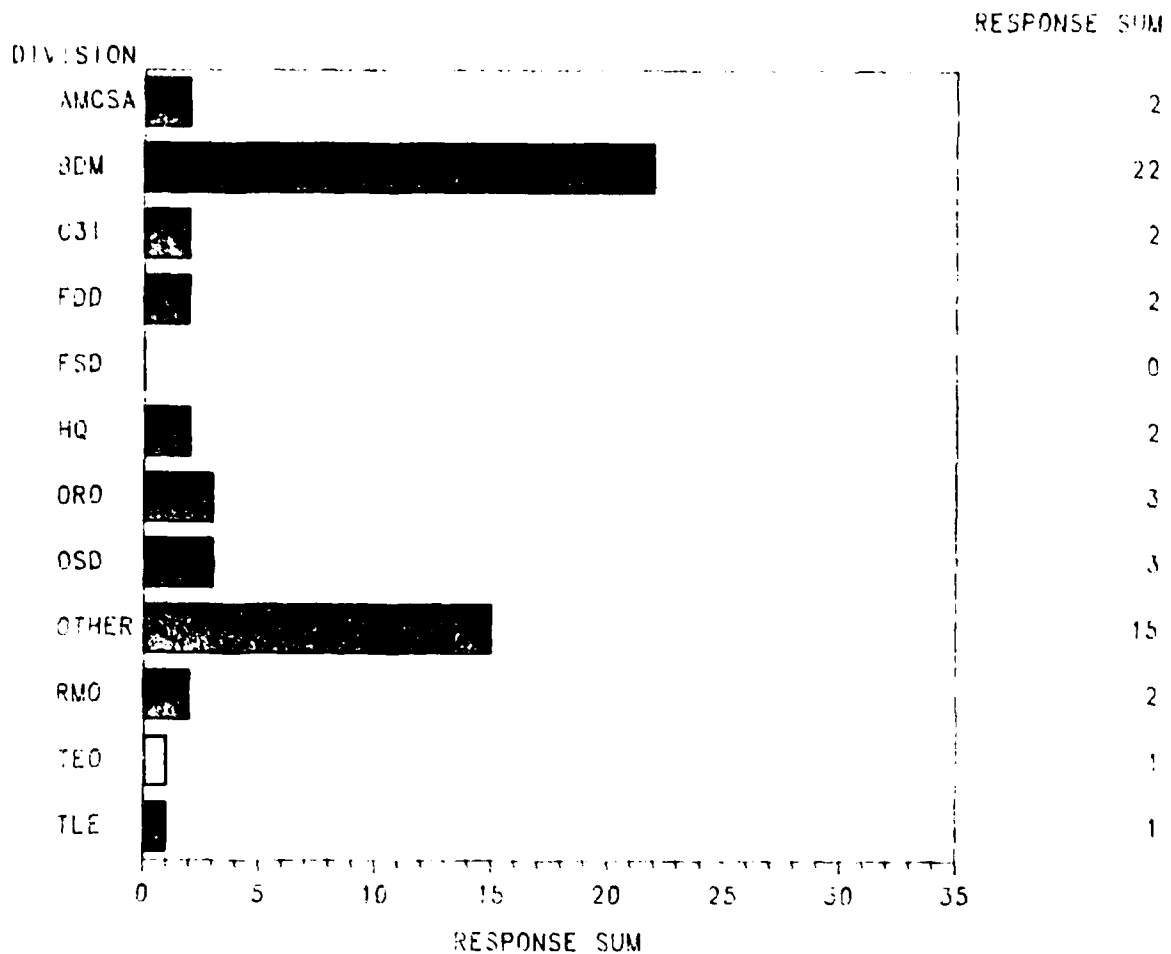


Figure shows respondents who need computer type by division (55 total)
(Reference Figure 9: System type "a")

Figure 10

USERS NEEDING PC LINKED TO PC

Number of Users by Division

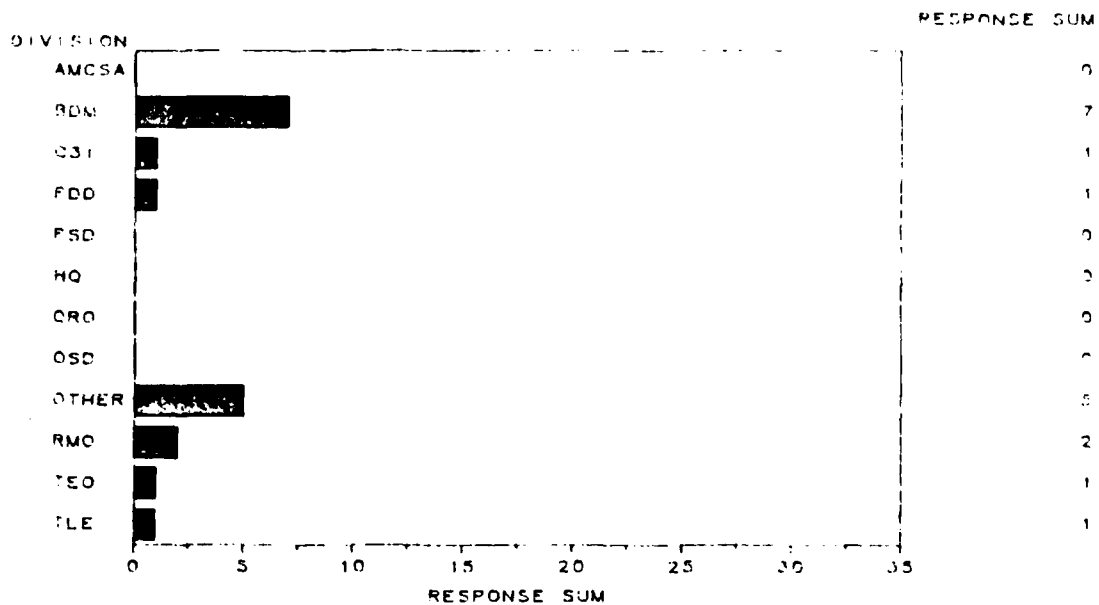


Figure shows respondents who need computer type by division (18 total)
(Reference Figure 9: System type "b")

Figure 11

USERS NEEDING PC LINKED TO PCs

Number of Users by Division

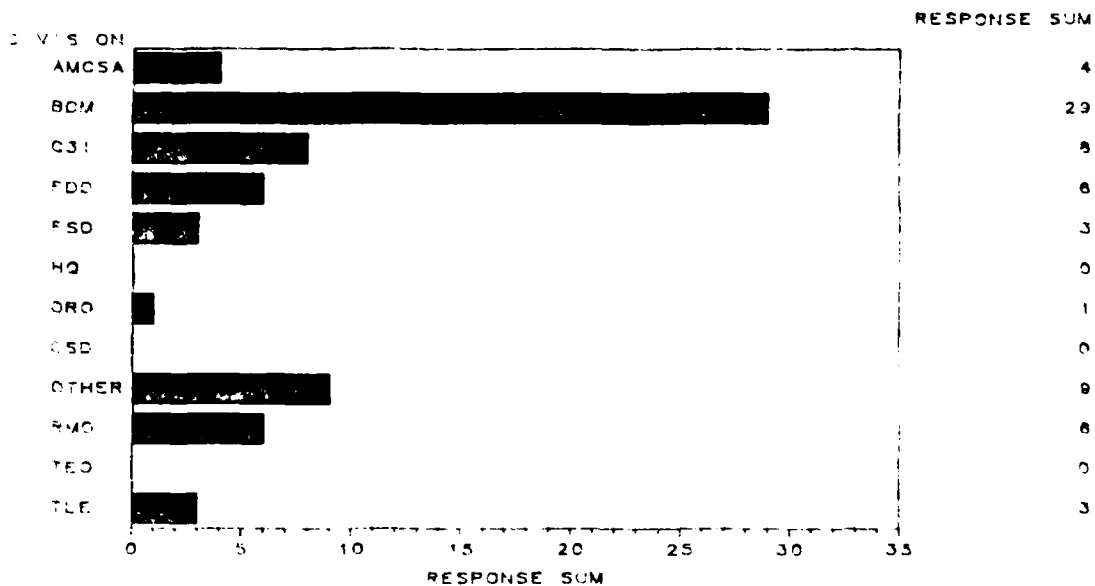


Figure shows respondents who need computer type by division (69 total)
(Reference Figure 9: System type "c")

Figure 12

USERS NEEDING PC LINKED TO HOST SYSTEM

Number of Users by Division

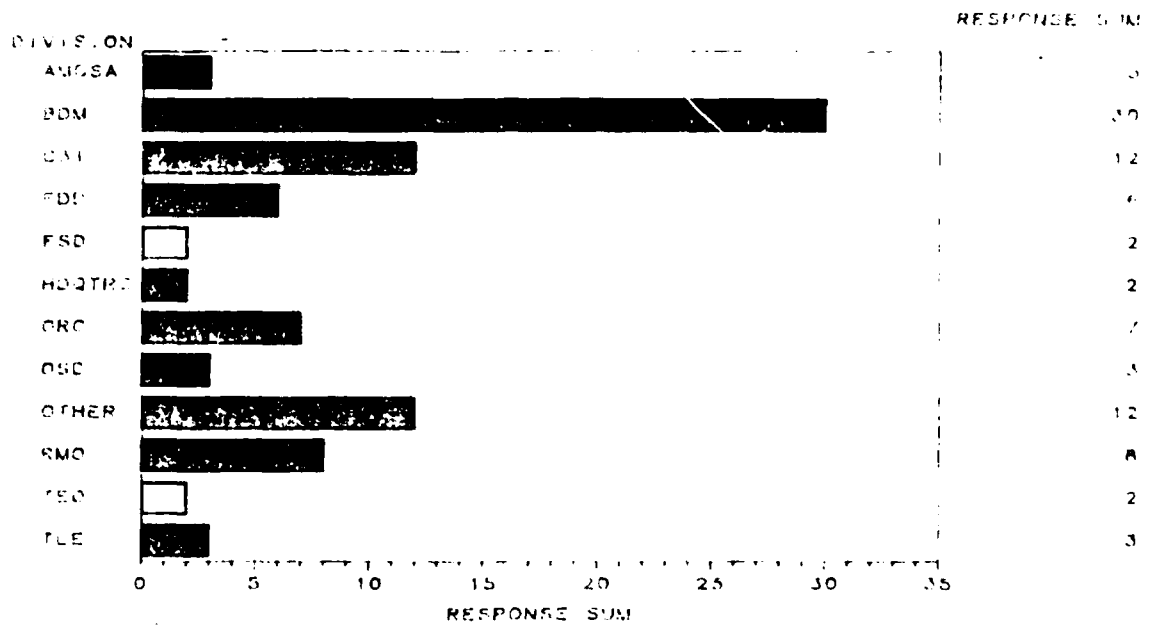


Figure shows respondents who need computer type by division (90 total)
(Reference Figure D: System type "d")

Figure 13

USERS NEEDING "DUMB" TERMINAL TO HOST LINK

Number of Users by Division

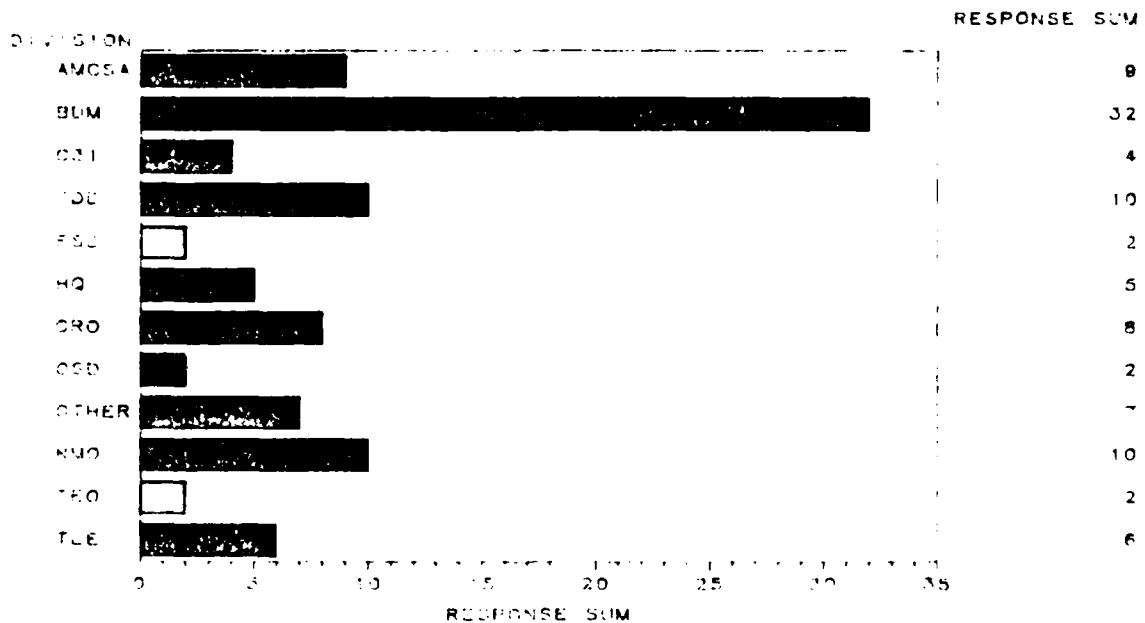


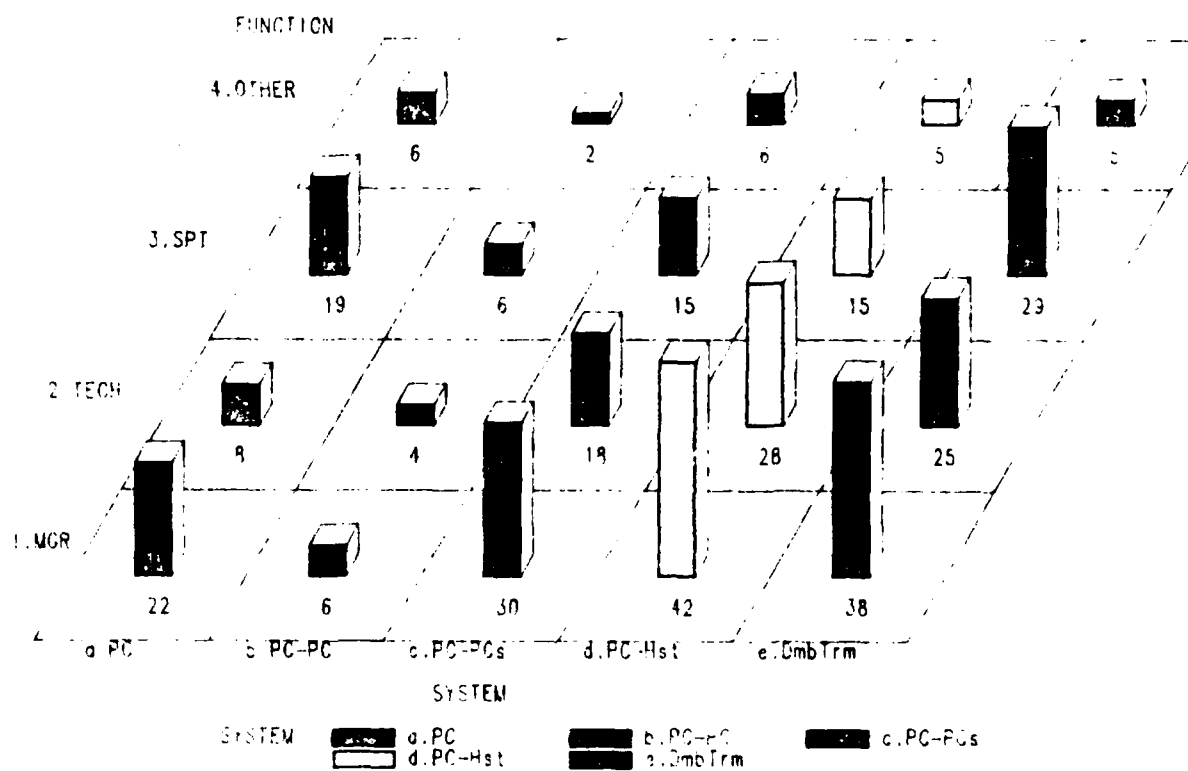
Figure shows respondents who need computer type by division (97 total)
(Reference Figure D: System type "d")

Figure 14

Figure 15 divides the respondents into managers, specialists, and analysts and compares the frequency with which they selected various computer system types. These computer systems chosen by the respondents represent their perceived ADPE needs. These data show that ADEA has a definite interest in the use of micro-computers or smart terminals as part of their ADPE suite.

COMPUTER SYSTEMS NEEDED BY RESPONDENTS

Number of Computer Systems by Type
And by Job Function



SYSTEMS.

- a = Stand-alone microcomputer
- b = PC linked to one PC
- c = PC linked to several PCs
- d = PC linked to host system
- e = Terminal linked to host system

FUNCTION

- MGR = ADMIN, TECHNICAL MANAGERS
- TECH = ANALYSTS, TECHNICAL ADVISORS
- SPT = ADMIN, TECHNICIANS, SPECIALISTS

Figure 15

IV. ADEA's PROFILE

A. General. This section describes generally the profile of ADEA based on the response to the survey as outlined in Appendix B. The profile is separated into three categories: one describing the average response at ADEA, another describing the average response for each division, and the last describing the average response based on his/her job function at ADEA.

B. Profile of ADEA. 278 people at ADEA responded to the survey. Of those, well over half (69.4%) had ADP/ADPE experience. These respondents have had an average of 33.9 months experience on minicomputer systems and 32.3 months experience on microcomputer systems. Many (64.7%) of ADEA's experienced ADPE users own or have owned a personal computer system. Of that same number, 29.5% have a degree in computer science or related field. Of the 278 respondents, a large percentage (86.3%) use ADPE in their current job. About half of these people (54.6%) have taken ADP/ADPE courses at ADEA. Only 61.3% indicated that the current systems offers all the capabilities they need in their job at ADEA. Well over half (64.0%) of the respondents said that they are proficient typists. Many (60.4%) also said that word processing is important in their jobs. The average respondent in ADEA who needs word processing capabilities (total = 168 people) handles 12 documents per week on a computer system. Each document is an average of 7.8 pages long. That equals a daily average of 3,145.0 pages! Fewer respondents (83.8%) said that ADPE is necessary in their jobs than those (86.3%) currently using ADPE at ADEA. Well over half (63.0%) of the choices made were in favour of smart systems, while only 28.4% were in favour of "dumb" terminals as a viable option for ADPE at ADEA. Most respondents (86.4%) need some sort of ADPE communications capability within ADEA; less than half (44.9%) need this capability with major military organizations outside ADEA; and 34.3% need to communicate electronically with major non-military organizations, laboratories, institutions, etc.

D. User profile by division. Table 1 presents a user profile by division based on the survey response.

E. User profile by job function. Table 2 presents a user profile by job function based on the survey response.

USER PROFILE BY DIVISION

Response by Division: (Number (Percentage))

	<u>AMC:</u>	<u>C3I:</u>	<u>FDD:</u>	<u>FSD:</u>	<u>HQ:</u>	<u>ORO:</u>	<u>OSD:</u>	<u>RMO:</u>	<u>TEO:</u>	<u>TLE:</u>	<u>BDH:</u>
1. Number of Respondents (N)	20(74)	18(90)	26(92)	7(66)	6(66)	11(100)	12(60)	20(80)	7(88)	12(63)	97(33)
2. Number w/ ADP Experience (N)	8(40)	10(56)	19(73)	3(43)	6(100)	9(82)	5(42)	13(65)	7(100)	5(42)	79(81)
3. Avg No. Months Exp-Mini's ($\bar{M}$)	3.8	16.4	13.0	24.2	8.5	52.5	5.3	61.4	56.6	8.6	43.0
4. Avg No. Months Exp-Micro's ($\bar{M}$)	15.4	50.4	24.2	20.0	11.5	35.0	2.5	28.1	34.3	22.0	39.5
5. Number Who Own a PC (N)	5(25)	7(39)	13(50)	2(29)	2(33)	7(64)	1(08)	8(40)	4(57)	3(25)	52(54)
6. Number w/ Computer Degree (N)	2(10)	3(17)	2(08)	1(4)	1(17)	2(18)	0	2(10)	1(14)	0	36(37)
7. Number Who Use ADPE on Job(N)	15(75)	15(83)	23(88)	7(100)	6(100)	11(100)	7(08)	18(90)	5(71)	12(100)	87(89)
8. No. Who Took ADPE Courses (N)	15(75)	6(33)	18(69)	5(71)	6(100)	7(64)	7(08)	13(65)	4(57)	10(83)	34(35)
9. No. Who Say ADEA ADPE Is OK(N)	9(45)	8(44)	12(46)	4(57)	6(100)	7(64)	5(42)	11(55)	1(14)	11(92)	52(54)
10. Number Who Are Typists (N)	12(60)	9(50)	19(73)	5(71)	6(100)	6(55)	8(67)	17(85)	6(86)	5(42)	59(61)
11. Avg No. Documents/Week ($\bar{N}$)	8.9	15.4	16.8	12.6	9.7	7.5	20.1	20.2	13.3	13.9	7.8
12. Avg Length of Each Document($\bar{N}$)	11.3	2.2	3.3	2.1	1.2	1.2	1.3	2.2	1.3	1.9	13.9
13. Avg No. Pages Processed/Day($\bar{N}$)	38.2	25.6	37.3	52.0	55.0	12.5	10.6	33.3	18.8	12.4	49.5
14. No. Who Need Communications(N)	10(50)	13(72)	23(88)	5(71)	6(100)	7(64)	5(42)	15(75)	4(57)	11(92)	53(55)

Table 1

USER PROFILE BY JOB FUNCTION

Response by Job Function: (Number (Percentage))

	ADMIN:	ANYLST:	CHPTPOM:	CNTRSPC:	LIAISON:	MNGRS:	FINMGR:	PGHMGR:	TECHMGR:	TECH:
1. Number of Respondents (N)	48	24	39	2	15	40	9	13	51	24
2. Number w/ ADP Experience (N)	28(58)	21(88)	36(75)	1(50)	9(60)	19(48)	7(78)	5(38)	41(80)	15(63)
3. Avg No. Months Exp-Mini's (M)	10.9	39.1	17.1	18.0	22.5	31.45	11.6	13.1	22.2	16.7
4. Avg No. Months Exp-Micro's (M)	16.9	40.8	65.2	18.0	35.5	27.0	15.2	64.9	40.7	27.7
5. Number Who Own a PC (N)	8(17)	15(63)	25(64)	1(50)	7(47)	15(38)	0	3(23)	33(65)	12(50)
6. Number w/ Computer Degree (N)	0	4(17)	23(59)	0	0	6(15)	0	1(08)	19(37)	1(13)
7. Number Who Use ADPE on Job (N)	42(88)	21(88)	38(97)	2(100)	14(93)	34(85)	8(89)	7(54)	43(84)	21(88)
8. No. Who Took ADPE Courses (N)	39(81)	9(38)	16(41)	2(100)	9(60)	21(53)	6(67)	6(46)	16(31)	8(33)
9. No. Who Say ADEA ADPE Is OK (N)	30(63)	10(42)	23(59)	1(50)	10(67)	24(60)	2(22)	4(31)	20(39)	15(63)
10. Number Who Are Typists (N)	46(96)	14(58)	23(59)	1(50)	9(60)	21(53)	6(67)	10(77)	28(55)	11(46)
11. Avg No. Documents/Week (N)	25.2	5.0	4.2	10.0	12.5	9.4	1.0	7.3	10.0	11.8
12. Avg Length of Each Document (N)	57.1	27.7	28.4	12.0	21.3	7.9	1.8	10.8	59.4	37.0
13. Avg No. Pages Processed/Day (N)	6.8	2.4	7.0	2.0	2.6	1.1	0.5	1.5	20.6	2.9
14. No. Who Need Communications (N)	27(56)	16(67)	20(51)	1(50)	11(73)	23(58)	8(89)	9(69)	36(71)	12(50)

Table 2

ANNEX A

SAMPLE ADP SURVEY

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DISPOSITION FORM

S: 30 Jun 87

For use of this form, see AR 340-15. The proponent agency is TAGO.

REFERENCE OR OFFICE SYMBOL

SUBJECT

MODE-ORO (340)

Automated Data Processing (ADP) Survey

TO

SEE DISTRIBUTION

FROM

S/D

DATE

CMT 1

23 JUN 1987
Mr. Grundborg/dm/8503

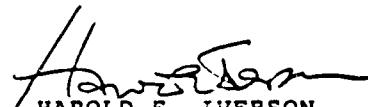
1. Since its inception, ADEA's mission and role as a small and responsive agency that capitalizes on technological innovation, necessitated the heavy reliance and use of ADP. As the agency's mission, organization and scope changed, so did its ADP requirements. With this evolution, we presently have at least eight different brands of computers and at least three separate internal networks.

2. We are now at a crossroads where we must identify our requirements so that reasonable and cost effective alternative solutions can be developed. To do that effectively, facts must be gathered from you, the present and potential users.

3. The attached ADP survey is the instrument we are using to elicit that basic information. It will provide facts on your use, needs, satisfaction and dissatisfaction with the applications and equipment available. Your inputs will provide us with the basic facts and direction to start work on ADP solutions.

4. Please complete the survey and return it NLT COB 30 Jun 87 to Mr Bob Grundborg, ORO, 8503/8443.

Atch


HAROLD E. IVERSON
Staff Director

DISTRIBUTION:

A

SURVEY OF ADEA'S AUTOMATION SUPPORT

1. REQUIREMENT. ADEA is reviewing the use of the Automated Data Processing (ADP) systems to identify trends and patterns of present system(s) utilization and requirements, and to identify potential users and their requirements.
2. PURPOSE OF THIS QUESTIONNAIRE. The purpose of this questionnaire is to elicit information from the ADEA and Support and Liaison Activities personnel to determine user characteristics and needs. Follow-up interviews to this questionnaire may be conducted where required.
3. QUESTIONNAIRE DESIGN. Since ADEA and the Support and Liaison activities have such a wide scope of subject areas and simultaneously operate within narrow functional areas, this questionnaire has been designed to gather information from a broad spectrum of expertise. This spectrum of users has demonstrated in the past vast differences in needs and expectations.
4. EQUIPMENT USED AND NETWORKS. ADEA and the Support and Liaison activities have available a variety of equipment to perform decision support tasks. The major brands of equipment in use include: Apple, DEC (VAX and PRO-350/380), IBM (8100 and PCs), GRiD, MICOM, SUN, TRS, Wang, WICAT, and Zenith. Serial networks are also used and these include: ADEA's A2S2, C3I's GRiD system, the T&E Network, the ARPA Network, TELENET, and others.
5. INSTRUCTIONS.
 - a. The questions in this survey are divided into seven parts and numerically sequenced. The survey will guide you through the questions, based on your responses to previous questions.
 - b. The survey, after eliciting basic information, becomes dichotomous, dividing the respondents into two or more groups. It is designed so that each respondent will definitely fall into one of the groups and will be answering questions relevant to his or her experience and needs.
6. QUESTIONNAIRE CONTENTS.
 - Part I.....User Data
 - Part II.....ADP Experience
 - Part III.....Current ADEA ADP Use
 - Part IV.....A2S2 Software Applications
w/ Table 1
 - Part V.....Word Processing (WP)
 - Part VI.....Projected ADP/ADPE Use
w/ Table 2
 - Part VII.....Communications and Ease of Use

Part I: User Data

Date: _____ 1987.

1. Name (Last, First, MI): _____ 2. ADEA Security Badge No.: _____
3. Division (circle one): HQ C3I FDD FSD OSD RMO TEO ORO CDEC TLE AMC LNO Other _____
4. Branch/Team: _____
5. Position Title: _____ (eg: Secretary, TM, Team Ch, Analyst, etc)
6. Status: (fill in grade/rank) Military Grade: O- _____ E- _____
Civil Service Grade: GS- _____ GM- _____
Contractor (name of company): _____
7. How long have you been at ADEA? _____ months.

Part II: ADP Experience

8. Have you worked with computers or Automated Data Processing Equipment (ADPE) before your current assignment to ADEA? (check appropriate answer)
- YES _____ Continue with Question #9.
- NO _____ Go to Part III -- continue with Question #13 (Skip Questions #9 - #12).
9. Have you ever owned (or do you now own) a micro-computer (PC) of any kind? (check appropriate answer)
- YES _____ NO _____
10. How many months of total experience have you had with each category of ADPE shown below?
- a. Mainframe/mini-computer systems: _____ month(s).
(eg: HP-3000, PRIME 750, VAX 11-785, IBM-360, etc.)
- b. Micro-computers (PCs): _____ month(s).
(eg: IBM-PC/XT/AT, 2-248, GRID, Apple IIe, Commodore, Atari, Kaypro, Tandy, etc.)
11. What software/applications have you used in each category of systems? (ie: Lotus, WordPerfect, ALLIN1, SPSS, SAS, NPM, DECalc, dBase, or other word processing, data-base, spreadsheet, analytical programs):
- a. Mainframe/mini-computers: _____

- b. Micro-computers (PCs): _____

12. Do you have a college degree in computer science (or related field)? (check appropriate answer)
- YES _____ NO _____

PLEASE CONTINUE...

13. Are you currently using any ADPE in your job at ADEA? (check answer)

YES _____ Continue with Question #14

NO _____ Go to Part V, Question #22
(Skip Questions #14 thru #21).

14. a. What ADPE or system(s) do you currently use at ADEA and for what purpose? (list all that apply)
(ADPE brand names at ADEA: Zenith, WICAT, TRS, Sun, Apple, DEC, GRID, HP, IBM, Micom, Wang, etc)

<u>BRAND NAME:</u>	<u>MODEL:</u>	<u>STAND- ALONE?:</u>	<u>PERCENT of USE:</u>	<u>USE:</u>
<u>EXAMPLES:</u>				
Zenith	Z-248	Y	60	WP, data base, graphics, spreadsheet,
IBM	8100	N	40	WP
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

15. Have you attended any ADEA (in-house) ADP/ADPE training courses? (check answer) YES _____ NO _____

16. Did the course(s) (Question #15) make you proficient in the subject and/or software application so that you could use it productively? (check answer)

YES _____ NO _____ Not Applicable _____

17. Does (Do) the system(s) you use offer all the capability(ies) you need to do your job efficiently? (check appropriate answer)

YES _____ NO _____

NOTE: Use the following scale as a guide for completing your response to questions #18 and #19 only:

0 = be significantly degraded (by 25% - 100%)	3 = be slightly improved (by 1% - 25%)
1 = be degraded slightly (by 1% - 25%)	4 = be moderately improved (by 25% - 100%)
2 = remain the same	5 = be significantly improved (by more than 100%)

18. If you did not use the system(s) available to you at ADEA in your current job, your productivity would _____ . (select a number from the above scale.)

19. If the system(s) that you are currently using in your job were able to do everything you needed that (those) system(s) to do, your productivity would _____ . (select number from above scale)

20. What are the most important things that the ADPE you presently use must do for you that it does not do now? (limit your response to three (3) items)

a. _____
b. _____
c. _____

PLEASE CONTINUE...

21. Table 1 on the next page has a listing of the A2S2 (VAX) software applications and six columns for your response on each application. Complete the table by answering the questions at the top of each column according to the following explanation:

Column #1: "Do you use it?" If yes, enter Y in that block and fill in the remaining blocks.
If no, enter N in that block and go on to the next application.
(If no, do not fill in the remaining blocks for that application.)

Column #2: "Is it responsive to your needs?" Does it do what you need it to do for you? Enter Y for yes and N for no in that block.

Column #3: "Is it essential to your work?" Use the following scale as a guide for your response.

- 1 = It is not important to my work and/or I do not use it.
- 2 = It is somewhat useful to my work and/or I use it 1-2 times per month.
- 3 = It is useful to my work and/or I use it 1-2 times per week.
- 4 = It is very useful to my work and/or I use it 3-4 times per week.
- 5 = It is essential to my work and/or I use it daily.

Column #4: "How often do you use it per week?" Self-explanatory.

Column #5: "Average time per use." The number of hours you use the application in any one session.
Enter your estimated hours and/or fractions of hours.

Column #6: "What time(s) of day do you usually use it?" Base your response on your usual work habits and enter the time of day that you normally use the application. If your use is situationally dependent or somewhat random, then write "X" in the block(s).

PLEASE COMPLETE THE TABLE ON THE NEXT PAGE...

TABLE 1

Application:	Is it respon-		Is it		Average time per use: (hrs)	What time(s) of day do you usually use it? (clock hrs of day)
	Do you use it? (Y/N)	sive to your needs? (Y/N)	essential to your work? (1 - 5)	How often do you use it? (#times/wk)		
S A M P L E "A"	Y	N	1	1	.25	X
S A M P L E "B"	Y	Y	5	3	1.5	0800, 1100, 1500
S A M P L E "C"	N					
ALL IN 1:						
Communications						
Current Time						
Desk Management						
Directory						
Electronic Mail						
File Cabinet						
Info Management						
Profession Spec.						
Program Develop.						
Time Management						
Training						
Word Processing						
DECalc						
DECgraph						
Phone Utilities						
SAS Applications						
Set Host Computer						
Set User Account						
Directory						
Applications Program						
Read New Mail						
MONEY						
PARR/COB System						
Logit System						
Task Mgt System						
Test Equip Tracking						
CPM Proj Mgt System						
JANUS						
Software Development						
Material Initiative						

PLEASE CONTINUE...

Part V: Word Processing (WPI)

22. Do you consider yourself a proficient typist? (check appropriate answer) YES _____ NO _____

23. How many words per minute (wpm) do you type? 0-20: _____ 21-35: _____ 36-50: _____ 51-65: _____ 66+: _____

24. Is word processing an important function in your job? (check appropriate answer)

YES _____ Continue with Question #25.

NO _____ Go to Part VI, Question #29
(Skip Questions #25 - #28).

25. ADEA has a variety of word processing systems. Complete the following table with the percentage of your total combined system(s) time which you devote to word processing. List all systems on which you perform word processing.

<u>System:</u>	<u>Percentage Use:</u>	<u>EXAMPLE:</u>
VAX (A2S2)	_____	50
Professional 350/380	_____	15
IBM 8100	_____	25
GRID	_____	0
IBM-AT	_____	5
Memory Typewriter	_____	5
_____	_____	0
_____	_____	0
_____	_____	0
TOTAL USE:	100%	100%

26. How many documents do you work on (word process) per week? _____

27. What is the average length of each document (in number of pages)? _____

28. What is the estimated length (in pages) of the longest document you have (will have) typed? _____

PLEASE CONTINUE...

29. Do you feel that you need to use a computer system (ADPE) for your job at ADEA?
(check appropriate answer)

YES _____ Continue with Question #30

NO _____ STOP HERE. You have completed the questionnaire. Thanks
for your participation! (Skip Questions #30 - #35)

30. To do your job at ADEA, which of the following do you feel that you need? (Check all that apply):

- _____ a. stand-alone micro-computer (PC) not linked in a network to other system(s).
- _____ b. micro-computer which is linked to one other micro-computer system.
- _____ c. micro-computer which is linked in a network to several other systems.
- _____ d. micro-computer which is linked to a host system and allows for the down-loading of software applications and data files for micro-computer processing and restoration of completed data files to host system for storage and/or sharing of data.
- _____ e. terminal (which is not a stand-alone computer) which is linked in a network to a central mini-computer with several other users.
- _____ f. other: _____
- _____ g. other: _____

31. The table on the next page has a list of generic software applications with four (4) columns for your responses as explained here:

Column #1: "Will you use it?" If your response is yes, enter Y in the block and answer the remaining questions above each succeeding block. If no, enter N and go on to the next application.
(If no, do not complete the remaining blocks for that application)

Column #2: "Will it be essential to your work?" Use the following scale as a guide for your response.

- 1 = It is not important to my work and/or I would not use it.
- 2 = It is somewhat useful to my work and/or I would use it 1-2 times per month.
- 3 = It is useful to my work and/or I would use it 1-2 times per week.
- 4 = It is very useful to my work and/or I would use it 3-4 times per week.
- 5 = It is essential to my work and/or I would use it daily.

Column #3: "How often will you use it?" Self-explanatory. Enter number of times per week.

Column #4: "Average time per use." Self-explanatory. Enter time in hours and/or fractions of an hour for your use during each session.

PLEASE COMPLETE THE TABLE ON THE NEXT PAGE...

TABLE 2.

Generic Application:	Will it be		How often		Average time per use: (hrs)
	Will you use it? (Y/N)	essential to your work? (1 - 5)	will you use it? (#times/wk)		
S A M P L E "A"	Y	2	1		.5
S A M P L E "B"	Y	5	8		2.0
S A M P L E "C"	N				
Electronic Mail					
Word Processing					
Spreadsheet					
Data Base Management					
Desktop Utilities					
Graphics					
Statistical Analyses					
Simulations/Modeling					
Proj Mgt (PERT/CPM)					
Logistics/Supply					
Financial/Budget					
Calendar					
Time Management					
Software Development					

PLEASE CONTINUE...

32. Do you have a need to electronically communicate with others via an ADPE system?
(check appropriate response)

YES _____ Continue with Question #33

NO _____ Go to Question #35 (Skip Questions #33 & #34)

33. Do you need to electronically communicate via ADPE with the following? (check all that apply):

a. _____ Divisions, Branches, Teams, etc., within ADEA

b. _____ Major military organizations outside ADEA (eg: DCSOPS, USAICS, etc)

c. _____ Major non-military organizations, institutions, laboratories, etc.

d. _____ Other: _____

34. To which specific organization(s) and/or net(s) do you need ADPE access?

(list all that apply; eg: ORSA-Net, ARPA-Net, T&E Net, JPL, DDN, etc)

a. _____

d. _____

g. _____

b. _____

e. _____

h. _____

c. _____

f. _____

i. _____

35. In order to make an ADP system easier to use, a variety of options are available to the user, such as icons (or symbols representing specific functions) and menus (listings of several functions) which are often linked to the use of a "mouse", keypad, light pen, track-ball, or other device. These are designed to simplify the interaction process with the computer by reducing the number of keystrokes needed and the variety of commands needed to use a particular software application. These aids, however, do not allow for the full power and flexibility available to an advanced user of the program. Once a user becomes proficient with a particular software application, the menus, "mice", track-balls, etc, tend to slow down his(/her) efficiency.

When using specific applications, which environment(s) would you prefer at your current level of expertise? Check the appropriate response:

_____ I have no preference. STOP...You have completed the questionnaire. Thank you for your participation!

_____ I have experience with some/all of these ADP tools, and/or I have a preference on which to use...
(Continue with the remainder of this question...use the key below to fill in the table with the appropriate letter)

I = Icon (using a mouse, trackball, light-pen, etc)

M = Menus (using keyboard to make selection from a menu of options)

C = Direct commands from the keyboard (with no menu or icon system)

a. Word processing _____

e. Electronic Mail _____

i. _____

b. Graphics _____

f. Statistical Prgms _____

j. _____

c. Spreadsheet _____

g. Project Mgt _____

k. _____

d. Data Base Mgt _____

h. _____

m. _____

STOP. You have completed the questionnaire. Thank you for your participation!

ANNEX B

SURVEY ANALYSIS

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SURVEY ANALYSIS

This Annex provides a collective statistical summary of data provided by survey respondents. Survey response data provided after 10 July 1987 (11 days after the initial suspense date) are not included in the primary data sets but are available for analysis at a later time as needed. This Annex is organized in a way similar to the original survey questionnaire located at Annex A. The 35 questions are divided topically into seven parts. However, several of the original questions have been paraphrased in the interest of brevity. Further, because of insufficient time and the often very large data sets, presentation of some data has been omitted from this annex. These data are currently available in the primary data sources only. They are not, however, compiled and analyzed. Questions referring to these data are so annotated in this annex. Over 95% of the data collected have been analyzed and the results presented here.

PART I: User Data

Questions 1 - 7 ask for demographic information which is used to key each data set and provide specific statistical output based on several variables such as division, position title, whether military, government civilian, or contractor, etc. This reference data set can also be used in tracking certain individuals whose responses may indicate the need for follow-up interviews on specific issues. The responses to questions 1 - 7 are not data which are analyzed in the same sense as the remainder of the data in questions 8 - 35 and, therefore, are not included in this report.

583 questionnaires were initially distributed to potential ADPE users. A total of 72 (including all of CO9RO and the 109th MI Bn) indicated that they are not users of ADEA ADPE resources and would like to be exempted from participating in the survey. Table B-1, therefore, uses a base number of 511 for the total number of surveys distributed. This table shows the number of respondents and the percentages of participation by each division and for the entire survey population.

SUMMARY STATISTICS OF OVERALL RESPONSE TO SURVEY

	Number of Surveys	Number of Respondents:	Percent of Organization Respondents:	Percent of Total Distributed:	Percent of Total Respondents:
Organization:	Distributed:	Respondents:	Respondents:	Distributed:	Respondents:
AMCS	27	20	74	5	4
C3I	20	18	90	4	4
FDD	29	26	92	6	5
FSD	12	7	66	2	1
HQ	8	6	75	2	1
ORO	11	11	100	2	2
OSD	20	12	60	4	2
RMO	25	20	80	5	4
TEO	8	7	88	2	1
TLE	19	12	63	4	2
BDM	219	97	44	43	19
Other	113	37	33	22	7
TOTAL	511	278	54		

Table B-1

PART II: ADF Experience

- Q-8. Have you worked with computers or Automated Data Processing Equipment (ADPE) before your current assignment to ADEA?

193 (69.4%) of the 278 total respondents indicated that they have had prior ADPE experience.

- Q-9. Have you ever owned (or do you now own) a micro-computer (PC) of any kind?

125 (64.7%) of the 193 experienced users (Q-8) (or 44.9% of the total respondents) indicated that they now own or did own a micro-computer.

- Q-10. How many months of total experience have you had with each category of ADPE shown below?

Mainframe/mini-computer systems: the average value is 33.9 months per experienced user (Q-8).

Micro-computers: the average value is 32.3 months per experienced user (Q-8).

- Q-11. What software applications have you used in each category of systems?

This question precipitated a wide range of responses, too numerous and varied to list in detail here. Generally, however, if the respondent has had any computer experience at all, he/she listed a wide range of software applications. The most frequently listed programs included: Wordstar, WordPerfect, Lotus 1-2-3, dBase II and III, DecCalc, Allin1 programs, SAS, Multimate, Sidekick, Framework, and GRiD programs. Specific information can be found in the primary data sources.

- Q-12. Do you have a college degree in computer science (or related field)?

57 (29.5%) of the 193 experienced users (Q-8) or 20.5% of the total 278 respondents indicated that they hold such a degree.

PART III: Current ADEA ADP Use

Q-13. Are you currently using any ADPE in your job at ADEA?

240 (86.3%) of the 278 total respondents indicated that they are using some sort of ADPE in their current job at ADEA.

Q-14. What ADPE or system(s) do you currently use at ADEA?

Table B-2 shows a listing of the most popular systems used at ADEA by individual users in each division. The users could select as many systems as they actually used and were not restricted to only that (those) system(s) at their workstation.

NUMBER OF USERS OF VARIOUS ADPE SYSTEMS AT ADEA

DIV:	DEC:	IBM:	GRD:	WIC:	APP:	ZEN:	WNG:	HPD:	SUN:	TRS:	MCM:	OTH:	TOTAL:
AMCSA	15	4	0	0	0	0	0	0	0	0	2	1	22
BDM	40	25	24	0	20	1	0	1	29	3	0	12	155
C3I	8	1	17	2	0	0	0	3	4	0	0	0	35
FDD	18	6	0	0	1	0	0	0	1	0	0	0	25
FSD	4	3	0	0	1	0	0	0	1	0	0	0	9
HQ	8	3	1	0	0	0	0	0	0	0	0	0	12
ORO	19	4	0	0	0	0	0	0	0	0	0	0	23
OSD	10	0	0	0	0	0	0	0	0	0	0	2	12
Other	4	7	8	15	2	0	0	17	1	0	0	8	62
RMO	19	9	0	0	0	5	1	0	0	0	0	2	36
TEO	8	2	0	0	0	0	0	0	0	0	0	0	10
TLE	11	0	3	0	0	0	0	0	0	0	0	0	14
TOTAL	164	64	53	17	24	6	1	21	35	3	2	25	415

DEC = Digital Equipment Corporation
 IBM = International Business Machine
 GRD = GRiD
 WIC = WICAT
 APP = Apple

ZEN = Zenith
 WNG = Wang
 HPD = Hewlett-Packard
 TRS = Tandy
 MCM = Micom

Table B-2

Q-15. Have you attended any ADEA (in-house) ADP/ADPE training courses?

131 (54.6%) of the 240 current ADP users indicated that they have taken such courses.

Q-16. Did the course(s) (Q-15) make you proficient in the subject and/or software application so that you could use it productively?

103 (78.6%) of those 131 who attended training courses indicated that it did make them proficient;

28 (21.4%) indicated that it did not make them proficient.

Q-17. Does (Do) the system(s) you use offer all the capability(ies) you need to do your job efficiently?

147 (61.3%) of the current 240 users indicated that it does (they do).

Those respondents who indicated that their system(s) does (do) not offer all the capabilities needed are included in the following table by division and function:

By Division:

AMCSA	7	(6.9%)
BDM	37	(36.3%)
C3I	9	(8.8%)
FDD	12	(11.8%)
FSD	3	(2.9%)
HQ	2	(2.0%)
ORO	4	(3.9%)
OSD	6	(5.9%)
Other	11	(10.8%)
RMO	6	(5.9%)
TEO	4	(3.9%)
TLE	1	(0.9%)
Total	102	

By Function:

Administrative	15	(14.7%)
Analysts	13	(12.7%)
Computer Pgmrs	12	(11.8%)
Liaison	3	(2.9%)
Managers	12	(11.8%)
Money Managers	7	(6.9%)
Others	4	(3.9%)
Program Managers	5	(4.9%)
Technical Managers	26	(25.5%)
Technicians	5	(4.9%)

Total 102

Q-18. If you did not use the system(s) available to you at ADEA in your current job, your productivity would...

Of 236 respondents,

166 (70.4%) said "be significantly degraded";

51 (21.6%) said, "be degraded slightly";

14 (5.9%) said, "remain the same";

5 (2.1%) said, "be slightly improved".

Q-19. If the systems that you are currently using in your job were able to do everything you needed them to do, your productivity would...

Of 258 respondents,

21 (8.1%) said, "be significantly degraded";

3 (1.2%) said, "be slightly degraded";

58 (22.5%) said, "remain the same";

83 (2.2%) said, "be slightly improved";

71 (27.5%) said, "be moderately improved";

22 (8.5%) said, "be significantly improved".

176 (68.2%) indicated that their productivity will be improved.

Those 24 respondents who indicated that such a system would degrade their productivity are included in the following table by division and by function:

<u>By Division:</u>		<u>By Function:</u>	
AMCSA	4 (16.7%)	Administrative	6 (25.0%)
BDM	5 (20.8%)	Analysts	2 (8.3%)
C3I	3 (12.5%)	Managers	3 (12.5%)
FDD	1 (4.2%)	Money Managers	1 (4.2%)
FSD	1 (4.2%)	Others	3 (12.5%)
OSD	5 (20.8%)	Program Managers	3 (12.5%)
Other	4 (16.6%)	Technical Managers	4 (16.7%)
TEO	1 (4.2%)	Technicians	2 (8.3%)
Total	24	Total	24

Q-20. What are the most important things that the ADPE you presently use must do that it does not do now?

Table B-3 shows a list of the major complaints in 10 major categories.

RESPONDENTS' MAJOR ADP/ADPE COMPLAINTS

Complaint:	Frequency:
I. GENERAL:	59 (100%)
ADPE is not responsive -- too slow, not always accessible,...	36 (61%)
A2S2 is not user friendly	3 (5%)
System is not always available, especially with "watchdog"	7 (11%)
Needs better file protection, DB backup,	3 (5%)
System has too many "gateways" from one application to another	5 (8%)
System does not have military time/date availability	1 (2%)
Must have more efficient method of data input	1 (2%)
Need ADP circulation system & serial control	1 (2%)
Does not have SAS available to contractors	1 (2%)
Need ATIC on-line catalog	1 (2%)
II. SOFTWARE:	18 (100%)
No popular universal software applications available for PCs	6 (33%)
No multitasking of standard programs	2 (11%)
No Artificial Intelligence (AI) capability	1 (6%)
No provision for efficient software to support mission	1 (6%)
No system self-diagnosis software	1 (6%)
Need better documentation, source codes,...	2 (11%)
Need for background functions: compiling, linking, printing,...	4 (22%)
Need developers' utilities	1 (5%)
III. MANAGEMENT INFORMATION SYSTEMS:	18 (100%)
Need usable and universal MISs	3 (17%)
TMS must be more TM-friendly	7 (38%)
MONEY is not acceptable	1 (6%)
TMS is excessively menu driven	1 (6%)
TMS needs ability to pull-up master documents, not just narratives	1 (6%)
Financial tracking of projects needs work	1 (6%)
Need a better DBMS/MIS	2 (11%)
Need active property book application for TDA	1 (5%)
Need time management by objective, task, plan and schedule	1 (5%)
IV. HARDWARE:	19 (100%)
Need a portable PC system	1 (5%)
Need a portable printer system	1 (5%)
Need more storage capacity	7 (37%)
Need peripheral access after duty hours	1 (6%)
Need stand-alone capability	2 (11%)
Need removable data-storage media	1 (5%)
Need my own workstation	4 (21%)
Need hand-held PC	1 (5%)
Need larger screen area	1 (5%)

Table B-3 (continued on next page)

RESPONDENTS' MAJOR ADP/ADPE COMPLAINTS (Continued)

Complaint:	Frequency:
V. DESKTOP PUBLISHING:	18 (100%)
Need desktop publishing capability	13 (73%)
Need more and beter variety of fonts, symbols,...	3 (17%)
Need capability for printing variety of multi-size forms, documents,...	1 (5%)
Need better printing capability	1 (5%)
VI. WORD PROCESSING:	28 (100%)
Need powerful EDITOR	2 (7%)
Need better spell-checker and Thesaurus	5 (18%)
Need standard formats for trip reports and other ADEA requirements	3 (11%)
A2S2 is too cumbersome in moving data (pages, lines,...)	2 (7%)
Need automatic document formatting	2 (7%)
Need central files for standard letters, contracts, appraisals,...	1 (3%)
WP program needs more utilities & enhancements	4 (14%)
WP need sort and find capability (to put in alphanumeric orders,...)	7 (25%)
Need system to do my typing	1 (4%)
Need capability to review reposts, letters, etc, before printing	1 (4%)
VII. COMMUNICATIONS:	39 (100%)
Need better transferability of data	1 (3%)
Need better connectivity between PC software and DEC software	4 (10%)
Need better EM between PCs and VAX	2 (5%)
PCs need connection to laser printer	2 (5%)
Must handle TWX messages in and out of the system(s)	1 (3%)
Need terminal that CAC was promised!	1 (2%)
Need common communication link with ADPE in rest of world, so EM can be extended beyond ADEA	16 (41%)
Need better EM within ADEA	2 (5%)
Need capability to delete EM without having to read it	1 (3%)
Need better capability to support networking	2 (5%)
Need better emulation for smart terminal (not just VT100, but VT220)	1 (3%)
Need capability for networking with other PCs	6 (15%)
VIII. GRAPHICS:	58 (100%)
Need better graphics: analysis, presentation, data from DB, SS,...	44 (76%)
Need utility of "mouse" system for graphics	4 (7%)
Need provision for CAE, CAD, CAM,...	6 (10%)
Need integration of GR files with WP files	1 (2%)
Need rapid hardcopy color graphics capability	3 (5%)

Table B-3 (Continued on next page)

RESPONDENTS' MAJOR ADP/ADPE COMPLAINTS (Continued)

Complaint:	Frequency:
IX. DATABASE:	23 (100%)
Need capability for integration of DB into WP documents	3 (13%)
Need access to other DBs outside ADEA	2 (9%)
Need better DBs -- more user-friendly, more functions, more flexible,	14 (61%)
Need access to relational DB	4 (17%)
X. SPREADSHEET:	20 (100%)
Need better spreadsheet programs	6 (30%)
Need better sorting functions for spreadsheet	7 (35%)
Need merging capability with other spreadsheets	2 (10%)
Need integration of SS and DB, WP, EM, and other software applications	5 (25%)
XI. SYSTEM IS CURRENTLY NOT A PROBLEM:	12
TOTAL Complaints:	316

Table B-3

PART IV: A2S2 Software Applications

Q-21. Table B-4 summarizes the response received from A2S2 users regarding the software applications available on the VAX systems.

UTILITY OF A2S2 SOFTWARE APPLICATIONS

Application:	Do you use it? (number who said, "YES")	Is it responsive to your needs? (number who said, "YES")	How essential is it? (average) (see scale*)	How often do you use it? (average number of times/week)
ALL IN 1:				
Communications	47	47 (100%)	2.81	5.98
Current Time	26	24	1.86	4.04
Desk Management	26	21	2.36	6.40
Directory	64	58	2.67	5.33
Electronic Mail	128	117	3.42	8.96
File Cabinet	101	92	3.33	6.95
Info Management	23	22	2.42	2.26
Professional Spec.	4	4 (100%)	1.80	<0.01
Program Development	12	10	2.81	5.50
Time Management	23	17	2.39	4.68
Training	50	44	2.07	1.52
Word Processing	134	108	3.79	11.52
DECalc	31	23	2.74	3.08
DECgraph	12	5	1.75	1.56
Phone Utilities	28	26	1.88	1.42
SAS Applications	10	10 (100%)	2.71	2.93
Set Host Computer	17	15	1.95	8.53
Set User Account	26	25	2.71	5.68
Directory	45	45 (100%)	2.89	14.37
Applications Program	14	11	2.81	7.71
Read New Mail	113	110	3.58	8.98
MONEY	31	26	2.91	3.81
PARR/COB System	18	11	2.27	2.09
Logit System	5	4	2.33	2.33
Task Mgt System	31	12	2.53	2.97
Test Equip Tracking	6	5	2.38	2.09
CPM Proj Mgt System	4	1	1.92	1.33
JANUS	10	9	2.31	14.00
Software Development	23	20	3.66	9.33
Materiel Initiative	3	2	1.70	1.71
TOTAL	1065	924		

*Scale: (for response to column 3 above)

- 1 = it is not important to my work and/or I do not use it
- 2 = it is somewhat useful to my work and/or I use it 1-2 times per month
- 3 = it is useful to my work and/or I use it 1-2 times per week
- 4 = it is very useful to my work and/or I use it 3-4 times per week
- 5 = it is essential to my work and/or I use it daily

Table B-4

Q-21 (Continued) Tables B-5 and B-6 continue to summarize the responses from users and present statistics concerning the software applications on the A2S2.

DAILY USE OF A2S2 SOFTWARE APPLICATIONS				RELATIVE DEGREE OF SATISFACTION	
Name:	ALLIN1?	Daily Use:	Percent Use:	Name:	Percent Satisfaction:
WP	Y	308	20.7	Commo	115.2
E-mail	Y	229	15.4	Prof Sp	115.2
Read NwMl	Y	202	13.4	SAS	115.2
File Cab	Y	140	9.4	Dir	115.2
Dir	N	129	8.7	Read NwMl	112.1
Dir	Y	68	4.6	Set User	110.8
Commo	Y	56	3.8	Info Mgt	110.2
Soft Dev	N	42	2.9	Phone Util	107.0
Desk Mgt	Y	33	2.2	Time	106.3
Set User	N	29	2.0	E-Mail	105.3
Set Host	N	29	2.0	File Cab	104.9
JANUS	N	28	1.9	Dir ALLIN1	104.4
MONY	N	23	1.6	JANUS	103.7
Appl Pgms	N	21	1.4	Set Host	101.6
Time Mgt	Y	21	1.4	Training	101.4
Time	Y	21	1.4	Soft Dev	100.2
DECalc	N	19	1.3	MONY	96.7
TMS	N	18	1.2	Pgm Dev	96.0
Training	Y	15	1.0	Test Equip	96.0
Pgm Dev	Y	13	.9	Desk Mgt	93.0
Info Mgt	Y	10	.7	WP	92.9
Phone Util	N	7	.5	LOGIT	92.2
PARR/COB	N	7	.5	Appl Pgms	90.6
SAS	N	5	.4	DECalc	85.5
DECGraph	N	3	.3	Time Mgt	85.2
Test Equip	N	2	.2	Mat Init	76.8
LOGIT	N	2	.2	PARR/COB	70.4
CPM PM	N	1	.1	DECGraph	48.0
Mat Init	N	1	.1	TMS	44.6
Prof Sp	Y	0	0	CPM PM	28.8

Table B-5

Table B-6

PART V: Word Processing (WP)

Q-22. Do you consider yourself a proficient typist?

178 (64.0%) of the 278 total respondents indicated they are proficient typists.

Q-23. How many words per minute do you type?

Of the 263 people who responded to this question,

53 (20.2%) type at 0 - 20 wpm;

70 (26.6%) type at 21 - 35 wpm;

71 (27.0%) type at 36 - 50 wpm;

31 (11.8%) type at 51 - 65 wpm; and

38 (14.4%) type at 66+ wpm!

Q-24. Is WP an important function in your job?

168 (60.4%) of the 278 total respondents indicated that WP is important in their jobs.

Q-25. This question asks for the breakdown of WP time spent on various ADPE as a percentage of use on each system. These data were too varied and not consistent with what the question intended to elicit and are, therefore, not included.

Q-26. How many documents do you work (WP) per week? Of 168 respondents,

The average number per respondent is 12.0 documents per week.

Q-27. What is the average length of each document (Q-26)? Of 168 respondents,

The average document length per respondent is 7.8 pages per document.

Q-28. What is the estimated length of the longest document you have types?

Of 168 respondents, the average longest document per respondent is 37.0 pages per document.

The average values from 168 responses to Q-26 through Q-28 by division and by function are shown below:

	Average Number of Documents per Week	Average Length of each Document	Length of Longest Document
<u>By Division:</u>			
AMCSA	8.9	11.3	38.2
BDM	7.8	13.9	49.5
C3I	15.4	2.2	25.6
FDD	16.8	3.3	37.3
FSD	12.6	2.1	52.0
HQ	9.7	1.2	55.0
ORO	7.5	1.2	12.5
OSD	20.1	1.3	10.6
Other	12.9	6.7	33.3
RMO	20.2	2.2	20.8
TEO	13.3	1.3	18.8
TLE	13.9	1.9	12.4
<u>By Function:</u>			
Administrative	25.2	6.8	57.1
Analysts	5.0	2.4	27.7
Computer Programmers	4.2	7.0	28.4
Contract Specialists	10.0	2.0	12.0
Liaison	12.5	2.6	21.3
Managers	9.4	1.1	7.9
Money Managers	1.0	0.5	1.8
Others	15.4	5.7	66.9
Program Managers	7.3	1.5	10.8
Technical Managers	10.0	20.6	59.4
Technicians	11.8	2.9	37.0

The overall daily average number of pages processed at ADEA is 3,145.0!
 (168 people x [12 documents/week/5 days/week] x 7.8 pages/document)

PART VI: Projected ADP/ADPE Use

Q-29. Do you feel that you need a computer system for your job at ADEA?

233 (83.8%) of the 278 total respondents indicated that a computer is necessary for their job at ADEA.

Q-30. To do your job at ADEA, which system(s) do you feel that you need?

There are a multitude of responses to this question. The respondents could select any combination of systems available to them. Table B-5 shows the combinations selected and the frequency of each selection.

The following is a summary of the 233 respondents' choices placed into three main categories: decentralized, distributed, and centralized systems.

Decentralized System:

47 (20.2%) of those needing ADPE indicated that only a micro-computer (PC) is needed...and NOT a PC to host computer link nor terminal to host computer link, based on the following combinations...

stand-alone PC not linked to other systems, and/or
PC to one other PC link, and/or
PC to several other PC systems, ONLY.

Distributed System:

33 (14.2%) of those needing ADPE indicated that the ONLY system needed is a PC linked to a host computer system for down-loading of software and up-loading of data.

Centralized System:

55 (23.6%) of those needing ADPE indicated that the ONLY system needed is a dumb terminal linked to a host computer system.

Q-31. This question address the projected users' needs for various types of generic software applications. Table B-6 shows the responses to 14 of these different applications.

RESPONDENTS' CHOICES OF ADPE SYSTEMS

Type of System(s):	Frequency of Response:	(a) PC:	(b) PC-PC:	(c) PC-PCs:	(d) PC-Host:	(e) Term-Host:	(f/g) Other:
a	21	21	0	0	0	0	0
abc	1	1	1	1	0	0	0
abcd	2	2	2	2	2	0	0
abcde	1	1	1	1	1	1	0
abde	1	1	1	0	1	1	0
abe	3	1	1	0	0	1	0
ac	1	1	0	1	0	0	0
acd	4	1	0	1	1	0	0
acde	2	1	0	1	1	1	0
acdef	1	1	0	1	1	1	1
ace	1	1	0	1	0	1	0
acef	1	1	0	1	0	1	1
ad	6	6	0	0	6	0	0
ade	2	2	0	0	2	2	0
adef	1	1	0	0	1	1	1
ae	6	6	0	0	0	6	0
aef	3	3	0	0	0	3	3
b	2	0	2	0	0	0	0
bc	1	0	1	1	0	0	0
bcd	1	0	1	1	1	0	0
bcde	2	0	2	2	2	2	0
bce	1	0	1	1	0	1	0
bd	1	0	1	0	1	0	0
bde	1	0	1	0	1	1	0
be	1	0	1	0	0	1	0
c	21	0	0	21	0	0	0
cd	18	0	0	18	18	0	0
cde	5	0	0	5	5	5	0
cdf	1	0	0	1	1	0	1
cdfg	1	0	0	1	1	0	2
ce	4	0	0	4	0	4	0
d	33	0	0	0	33	0	0
de	9	0	0	0	9	9	0
dfg	1	0	0	0	1	0	2
e	55	0	0	0	0	55	0
ef	1	0	0	0	0	1	1
f	10	0	0	0	0	0	10
fg	2	0	0	0	0	0	4
TOTAL	228	51	16	65	89	98	26

a = stand-alone micro-computer (PC) system
 b = PC linked to one other PC
 c = PC linked to several other PC systems
 d = PC linked to a host computer system
 e = Dumb terminal linked to host computer system
 f,g = other systems

Table B-7

RESPONSES TO UTILITY OF GENERIC SOFTWARE APPLICATIONS

Generic Application:	Will you use it? (number who said, "YES")	Will it be essential to your job? (average) (see scale)	How often will you use it? (number of times per week)
Electronic Mail	192	3.72	9.97
Word Processing	200	4.08	10.91
Spreadsheet	127	3.03	3.56
DataBase Management	111	3.41	5.85
Desktop Utilities	88	3.05	7.68
Graphics	151	2.92	3.83
Statistical Analyses	56	2.58	2.74
Simulations/Modeling	34	2.47	2.13
Proj Mgt (PERT/CPM)	68	2.76	2.27
Logistics/Supply	31	2.64	3.42
Financial/Budget	74	2.81	4.90
Calendar	74	2.95	6.20
Time Management	66	2.99	5.40
Software Development	52	3.52	7.07

Note: 243 people responded to this question.

Scale: (for response in second column)

- 1 = it is not important to my work and/or I would not use it
 - 2 = it is somewhat useful to my work and/or I would use it 1-2 times per mo
 - 3 = it is useful to my work and/or I would use it 1-2 times per week
 - 4 = it is very useful to my work and/or I would use it 3-4 times per week
 - 5 = it is essential to my work and/or I would use it daily
-

Table B-8

PART VII: Communications and Ease of Use

Q-32. Do you have a need to electronically communicate with others via ADPE?

169 (72.3%) of the 233 respondents needing ADPE indicated they need to communicate with others via ADPE systems.

Q-33. With what agencies or organizations do you need to communicate?

146 (86.4%) of the 169 respondents needing communications capability via ADPE (Q-32) indicated they need to communicate with Divisions, Branches, Teams, etc., within ADEA.

76 (44.9%) of the 169 needing communications capability indicated they need to communicate with major military organizations outside ADEA.

58 (34.3%) of the 169 needing communications capability indicated they need to communicate with major non-military organizations, institutions, laboratories, etc.

Q-34. This question elicits specific information about the organizations with which the respondents need to communicate. The list of organizations is lengthy and very diverse. These data are, therefore, not presented in this report.

Q-35. When using specific applications, which environment(s) (ie: Icon, Menu, Command) would you prefer at your current level of expertise/experience?

114 (48.3%) of the 236 respondents needing ADPE have a preference in what type(s) of environment they operate. These respondents could select as many types of input systems as they would like use for the various applications. Table B-7 shows how they made their selections.

RESPONDENTS' PREFERENCE FOR ADPE INPUT ENVIRONMENT

Software Application:	Icon:	Menu:	Command:	Preferred:
Word Processing	30	<u>48</u>	<u>51</u>	Menu &/or Cmd
Graphics	74	<u>24</u>	<u>21</u>	Icon
Spreadsheet	<u>23</u>	44	43	Menu &/or Cmd
DataBase Management	16	<u>42</u>	<u>40</u>	Menu &/or Cmd
Electronic Mail	22	<u>52</u>	<u>32</u>	Menu
Statistical Programs	11	<u>26</u>	29	Menu &/or Cmd
Project Management	16	<u>33</u>	<u>20</u>	Menu

Note: The underlined numbers indicate the primary choices for a software application. If the two top choices are significantly close (within |5|), both numbers are underlined to show a choice for a combined system. Example: Respondents selected both Menu and Command as top choices for manipulation of data under Word Processing applications. Since these choices are not mutually exclusive, both methods can be incorporated into the system symbiotically for Word Processing.

Table B-9

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