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IMPLEMENTATION OF MICROPUBLISHING, ARMY CONCEPT AND TECHNOLOGY --ETC(U)
FEB 77 R T ALLSOP, M A CARPENTIER, A N CARRAS

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PROJECT IMPACT FINAL REPORT

APPENDICES

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Feb 75 - Feb 77

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report addresses the development of a micropublishing system which reduces publications costs and increases user acceptability. Current and proposed publications systems are described. Extensive attitude surveys and user field tests document the desirability of providing DA publications in the microfiche medium as a supplement to and/or replacement of hard copy publications. An actual operational prototype micropublishing system is described in detail and various alternative subsystems are presented. A micropublishing system is recommended for implementation.

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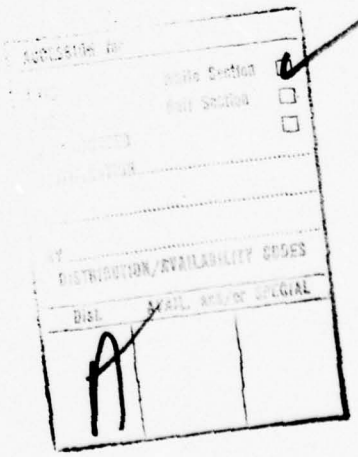


APPENDIX A

DEPARTMENT OF THE ARMY
THE ADJUTANT GENERAL CENTER
WASHINGTON, D.C. 20314

DAAG-SD

6 FEB 1975

MEMORANDUM FOR: THE PROJECT DIRECTOR, PROJECT IMPACT
SYSTEMS DEVELOPMENT DIRECTORATE, TAGCEN

SUBJECT: Project: Implementation of MicroPublishing, Army Concept and Technology (IMPACT)

1. References:

a. AR 5-5, The Army Study System, 26 June 1974

b. AR 340-22, The Army Microforms Program, 12 Nov 1973.

c. TAGO Reg No. 1-53, Project Planning Control and Procedures, 1 Nov 1973.

d. AR 340-8, Army Word Processing Program, 1 March 1974.

2. Purpose. This memorandum provides for the establishment and development of a micropublishing implementation plan and prototype which will permit the use of microform techniques in the formatting, printing, and distribution of HQDA publications. TASS Category VI applies.

3. Terms of Reference.

a. Problem. Current shortages of paper resources in conjunction with rising costs of paper products and printing operations emphasize the need for the Department of the Army to explore technologies which have inherent cost reductions in these areas. Microform techniques have shown significant savings in on-going Army applications. In addition to reductions in paper and printing costs, the use of microfilmed, multicopy publications can achieve significant dollar savings in storage, transportation and mail. Also, there are intangible gains in data integrity, accessibility, and change-entry over the present hardcopy system.

b. Glossary of Micropublishing/Microform Terminology: (See Inclosure #1).

c. Objectives.

(1) Develop a micropublishing system proposal for the Department of the Army to include implementation plans for conversion to micropublishing where applicable.

SUBJECT: Project: Implementation of MicroPublishing, Army Concept and Technology (IMPACT)

(2) Analyze current Department of the Army publishing system utilizing data gathered by the STARPUBS Project to establish the scope of micropublishing application.

(3) Formulate alternatives of representative micropublishing systems for a Department of the Army prototype publishing operation.

(4) Investigate and document current problems in DA micropublishing and the impact they will have on DA implementation.

(5) Determine user requirements and proponent constraints for selection of an optimal system design.

(6) Design and evaluate a prototype that will incorporate those aspects of a micropublication system as might be deemed reasonable to exist on a large scale basis in a real life environment.

(7) Draft recommendations for subsequent inclusion in AR 340-22 and AR 340-8 which will provide additional controls for micropublishing and text processing activities applicable to HQDA/DA publication operations.

d. Limits.

(1) The project will comply with micropublishing regulations as covered in GPO/JCP standards in the "Government Printing & Binding Regulation #23, dated October 1974 and AR 340-22, dated 12 Nov 73.

(2) No attempt will be made to limit, expand or modify those MICRODIS on-going operations.

(3) No attempt will be made to change current laws and regulations on printing except within DA micropublishing purview.

(4) Project prototype micropublishing will be confined to representative HQDA publications candidates (e.g., AR's, TM's, FM's).

(5) No attempt will be made to compare or evaluate various vendor equipment.

(6) Microform systems will be acquired in accordance with AR 340-22 and word/text processing systems will be acquired in accordance with AR 340-8 except that compliance with Appendix A of 340-8 is not required for equipment to be used in support of the project.

e. Scope. The project will address micropublishing from the time the document is received through distribution to the user. The primary emphasis will be on efficient utilization of the micropublishing technology for

production. Microform output from final hard copy manuscript to the related areas of manuscript preparation and microform usage will be addressed as they may impact on the total system. It will utilize:

(1) Micropublishing state-of-the-art.

(2) Micropublishing in federal, state and private sectors.

(3) User requirements and proponent constraints.

(4) A prototype for evaluation of a micropublishing system for Department of the Army.

(5) Economic analysis.

f. Time Frame. 12 months - contingent upon approval of total project proposal.

g. Assumptions.

(1) A functioning and efficient publications system will continue to be required to provide an effective communications system between publications proponents and users throughout the entire Army.

(2) TAG will continue to be responsible for operation of the Army publications system.

(3) Funding for Army publications will continue at the current level.

(4) Cost of publications will continue to increase with rising labor, transportation and paper costs.

(5) Micropublishing will continue to increase in use as a part of the publishing industry.

h. Essential Elements of Analysis (EEA).

(1) How have outputs from STARPUBS been received and analyzed for micropublishing system design?

(2) What are the considerations for micropublication in the current publishing system as documented by STARPUBS?

(3) What is the present work-mix and work-load of HQDA publication system?

SUBJECT: Project: Implementation of MicroPublishing, Army Concept and Technology (IMPACT)

(4) What is the present HQDA user requirement in micropublications?

(5) What are user attitudes toward use of micropublications?

(6) What are the specific problems associated with the use of micropublishing/micropublications?

(7) What is the present microform equipment inventory in DA and is it compatible with micropublishing (readers, cameras, etc.)?

(8) What available COM systems are suitable for micropublishing?

(9) What are the characteristics of various alternative micro-publishing systems as to; equipment costs, personnel requirements, capacity and compatibility levels with on-going microform operations?

(10) What is the current requirement to handle charts, photographs and color as a part of a total system?

(11) In what areas will the proposed micropublishing system be compatible with the current publications system?

(12) In what areas can the current distribution system be adapted to the effective use of micro-forms?

(13) What is the extent to which the current policies and procedures used in publications system contracting and printing interface with the micropublishing field?

(14) Would current/present decision criteria and cost factors involved in initial printing, reprinting and premium printing interface with micropublishing?

(15) To what extent would present quality standards and controls need to be revised to encompass micropublishing?

(16) Would the present equipment acquisition policies and procedures need to be revised to incorporate micropublishing?

i. Environment. The micropublishing system must be able to operate in both peacetime and wartime environments Army-wide, supporting the full spectrum of users.

4. Support and Resource Requirements.

a. DAAG-SD will provide:

SUBJECT: Project: Implementation of MicroPublishing, Army Concept and Technology (IMPACT)

(1) A management analysis team of 7 personnel to conduct all phases of this project.

(2) Advance Research Office assistance as required.

(3) Evaluation Branch as staff input as required.

b. DAAG-AMD will provide:

(1) Management Analyst with microform equipment/system expertise.

(2) Management Analyst with Text Processing background, as needed.

c. Publications Directorate (DAAG-PA) will provide:

(1) Management Analyst with publications operations expertise, as appropriate.

d. CG, TAGCEN will:

(1) Provide office space, personnel and equipment for implementation of a total test center for micropublishing system prototype.

(2) Instruct TAGCEN Directors to provide information and assistance as required by the project team.

(3) Provide funds for travel expenses of the project team and for costs associated with equipment procurement (prototype).

(a) $25,000 - TDY in FY 76 if funds are available.

(b) $177,192 Text Processing/COM/MICROFORMS equipment to support a 6 month prototype micropublishing system; the decision to lease equipment in lieu of contracting for services to be made on the basis of cost-benefits.

1. Text Processing	$50,970
2. COM System	$83,722
3. Production	$42,500

(4) With the assistance of DAAG-AMD and DAAG-PA, insure compatibility between proposed and on-going concepts in the areas of WP (AR 340-8), MICRODIS (AR 340-22) and Project COMPACS (under DAAG-AMD control).

e. Full control of any micropublishing prototype operation will be through the DAAG-SD-D assigned team. The project team will introduce test variables with the concurrence of DAAG-AMD and DAAG-PA Director.

5. Administration.

a. Project Title: Implementation of MicroPublishing, Army Concept and Technology (IMPACT).

b. Project Schedule: See attached detailed schedule at Inclosure #3.

c. Control Procedures:

(1) Project Director - Mr. R.T. Allsop (DAAG-SD), Ext. 31927.

(2) Project Control Officer - Dr. E.B. Cobb (DAAG-SD), Ext. 35625.

(3) Project Sponsor - COL A.R. Pede (DAAG-SD), Ext. 35623.

(4) Project will proceed in 2 phases with in process reviews scheduled at the ends of Phase I and Phase II.

d. Project Format. To be determined by the Project Manager in coordination with the Project Sponsor.

e. Concept of Project Execution. See Inclosure #2.

f. Action Documents.

(1) A proposed implementation plan in accordance with AR 340-22 for a Department of the Army micropublishing system capable of immediate production of selected functional documents, e.g., AR's and designed for continual expansion into other applicable publications.

(2) Recommendations for micropublishing additions to AR 340-22 and AR 340-8 covering:

(a) Composition Systems.

(b) COM.

(c) Microform production.

(d) Micropublishing system configurations.

(e) Economic Analysis procedures.

SUBJECT: Project: Implementation of MicroPublishing, Army Concept and Technology (IMPACT)

(3) Economic Analysis.

(4) Final Reports to TAG, DAAG-AMD, and DA.

VERNE L. BOWERS
Major General, USA
Commanding

7 Inclosures

1. Glossary of Micropublishing/ Microform Terminology
2. Concept of Project Execution
3. Event Network Diagram
4. List of Project Events, by Phase
5. List of Project Outputs, by Phase
6. Output Evaluation Criteria
7. Data Collection and Analysis Plan

APPENDIX B

GLOSSARY

(Terms defined herein, in most cases, have been abridged for use in this report)

Anhydrous Ammonia - A chemical compound used in developing diazo film.

Archival Standards - Standards of permanence for photographic films established by the National Archives Records Service. There are separate standards for raw and for processed film.

Blowback - (1) To enlarge or make an enlargement of a microfilm image on a reader-printer. (2) An enlargement itself.

CAD (Computer Aided Design) - A design process in which computer produced drawings are displayed on a CRT for examination and/or modification by a designer.

Change-Page-Posting - The process of updating a publication by removing old pages and replacing them with new, updated pages.

Character-Stroke-Generator - A COM method of generating characters using short strokes of light to draw the alphanumeric characters in a similar manner to that used in ordinary handwriting.

CIM (Computer Input Microfilm) - (1) Microfilm containing data to be read into a computer. (2) A computer input device which reads data recorded on microfilm.

Column - A vertical series of images on a microfiche.

COM (Computer Output Microfilm) - (1) Microfilm containing data produced by a recorder from computer generated electrical signals. (2) Computer Output Microfilmer - a recorder which converts data from a computer into human intelligible form and records it on microfilm. (3) Computer Output Microfilming - a method of converting data from a computer into human intelligible form onto microfilm.

Console Operators - Persons who operate CRT type computer I/O devices.

CPU (Central Processing Unit) - The main working component of a computer.

Debugging - The process of correcting errors in computer software.

Diazo - (1) An organic, light-sensitive dye, coated on a material, exposed by strong blue or ultraviolet light, and processed by ammonia fumes or an alkaline solution. Diazo materials generally produce non-reversible images; a positive image will produce a positive image, and a negative image will produce a negative image. (2) A duplicate made from diazo material.

Disk File - The electronic representation of a unit of information stored on a magnetic disk storage device (see mag-media).

Edit/Print Formatting Station - A CRT type computer terminal.

Error Diagnostic - A computer output statement displayed on an output device which indicates an error condition in a computer program, usually the erroneous part of the program is displayed as well.

Expansions - Entries in an internal translation table of a text processor which will convert a data stream from one format to another.

Film Recorder - See microfilm recorder.

Front-End System - See text processor.

Fiche - Interchangeable with microfiche.

Format - Makeup or arrangement of data on a page or fiche.

Full Reversal Processing - The developing of exposed microfilm to produce negative appearing images suitable for archival keeping.

GRAFIX I - A powerful automated data entry system utilizing CIM and data management systems to prepare technical manuals for republication on microforms.

Halftone - The reproduction of a photograph in which the gradation of tone is reproduced by various size dots and intermittent white spaces.

Hardcopy - A document or reproduction normally printed on paper which can be read without optical aids.

HQDA Publications - Any publication processed or controlled by the Publications Directorate of The Adjutant General Center.

Illustration Merge Slide - A transparent plate or film bearing a picture or image. The image is flashed (exposed) onto microfilm simultaneously with a computer controlled display of any associated textual material. This process is carried-out in a special graphics-type COM.

Input Station - See terminal.

I/O - A computer input/output device (see terminal).

Linotron - A large scale photocomposer which produces camera ready copy.

Mag-Media - (1) A generic term for any tape, ribbon, disc, or card impregnated with magnetic material on which information may be stored in the Form of magnetically ploarized areas. (2) A computer data storage device.

Master Film - Any film, normally the original resulting from copying the paper document, which is carefully inspected and then used as such or for producing further reproductions.

Merge Slide - See illustration merge slide.

Microfiche - A sheet of film containing multiple microimages in a grid pattern. It usually contains a heading or title which can be read without magnification.

Microfilm - (1) The recording of microphotographs on film. (2) A processed photographic film containing microphotographs.

Microfilm Cartridge - A housing for roll microfilm.

Microform - A generic term for any form containing images which cannot be read without special display devices. Examples are: Microfiche, aperture cards, roll film, etc.

Micrographics - The industry which reduces any form of information to a microform media.

Micropublishing - To issue new (not previously published) or reformatted information in multiple copy microform.

Micropublishing System - A three module (text processor, microfilmer, development-duplication) system for micropublishing.

Micro-republishing - To re-issue material previously or simultaneously published in hardcopy form in multiple copy microform.

MINI-CAT - Commonly used name for the Federal Catalog System Publications Program.

Minicomputer - As used in this report, a digital computer dedicated to a particular portion of the publishing cycle. The computer uses vendor provided software and is not reprogrammed.

OCR (Optical Character Reader) - A device which senses and identifies by means of photoelectric devices the special shape of each character printed on the input media and translates the data into electrical impulses.

OJT - On the job training.

PDP-11 - A series of digital computers manufactured by Digital Equipment Corporation.

Photocomposition - The process of generating the character shapes and sizes required to present a given amount of information for photoreproduction.

Print Format - To insert a predefined string of phototypesetting control codes into the electronic image of a text.

Prototype - As used in this report, a system of hardware and software which models an automated micropublishing system. Its purpose is to generate empirical data on which to base estimates of production costs and throughput speeds.

Reader - Optical device whereby images may be viewed on a screen either locally or distantly remote from a miniaturized document collection.

Reduction Ratio, Diameters Reduction - A measure of the number of times a linear dimension of a document is reduced when photographed into microfilm, expressed as 16:1, 24:1, etc.

Scanner - A device used to convert artwork, drawings, illustrations to an electronic image for computer processing and/or storage.

Stand-alone COM - A computer output microfilmer which is not directly connected to a computer system. It usually has a built-in minicomputer which controls the COM operation.

Strip-up - The process of preparing microfiche by putting together the appropriate length strips of processed 16mm microfilm.

Terminal - A dual purpose computer peripheral device which can perform both input and output functions. It is usually a typewriter-like device but may also contain a CRT.

Text-Editing - The process by which written or recorded words are transformed to a form which can be published.

Text-Processor - A device which transforms written or recorded words to a form which can be published.

TRUMP (Technical Review and Update of Manuals and Publications) - A Naval Air Systems Command program to convert technical manuals for out-of-production aircraft to microfilm.

Ultrafiche - Microfiche with images reduced more than 90X.

Vesicular Film - Film which has the light sensitive element suspended in a plastic layer and which upon exposure creates strains within the layer in the form of a latent image. The strains are released and the latent image made visual by heating the plastic layer resulting in the formation of minute bubbles or vesicles. The image becomes "permanent" when the layer cools.

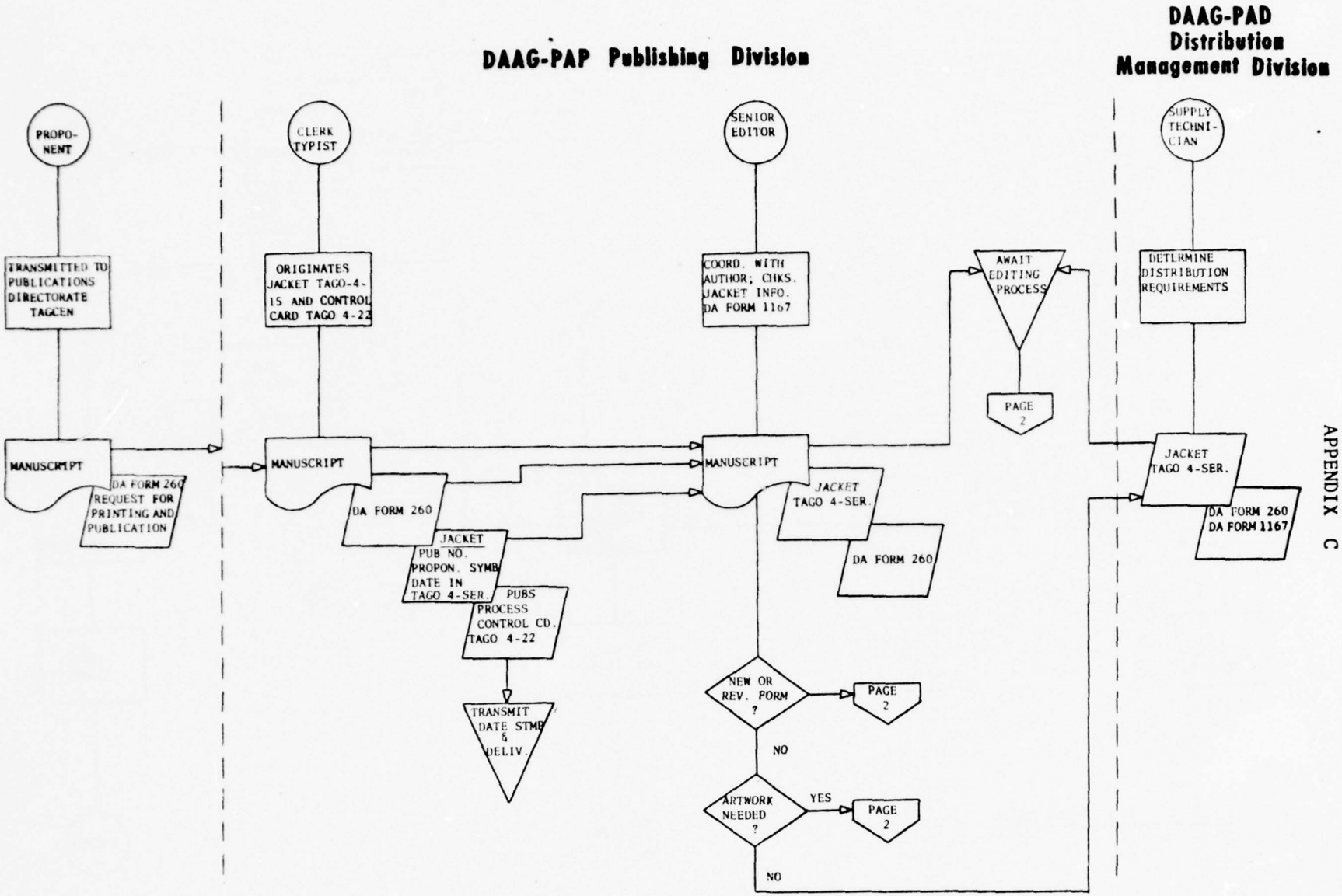
Video Disk Storage Device - A computer storage device whose operating principle resembles that of a phonograph but involves video information rather than audio.

Word Processing - (1) The process of transforming a written, verbal, or recorded communication to typewritten or printed form and its distribution for its ultimate use. (2) The equipment and operators which do word processing.

9 Track Tape - (1) See mag-media. (2) A magnetic tape having nine information recording tracks, commonly used with a computer storage device.

24X - See reduction ratio.

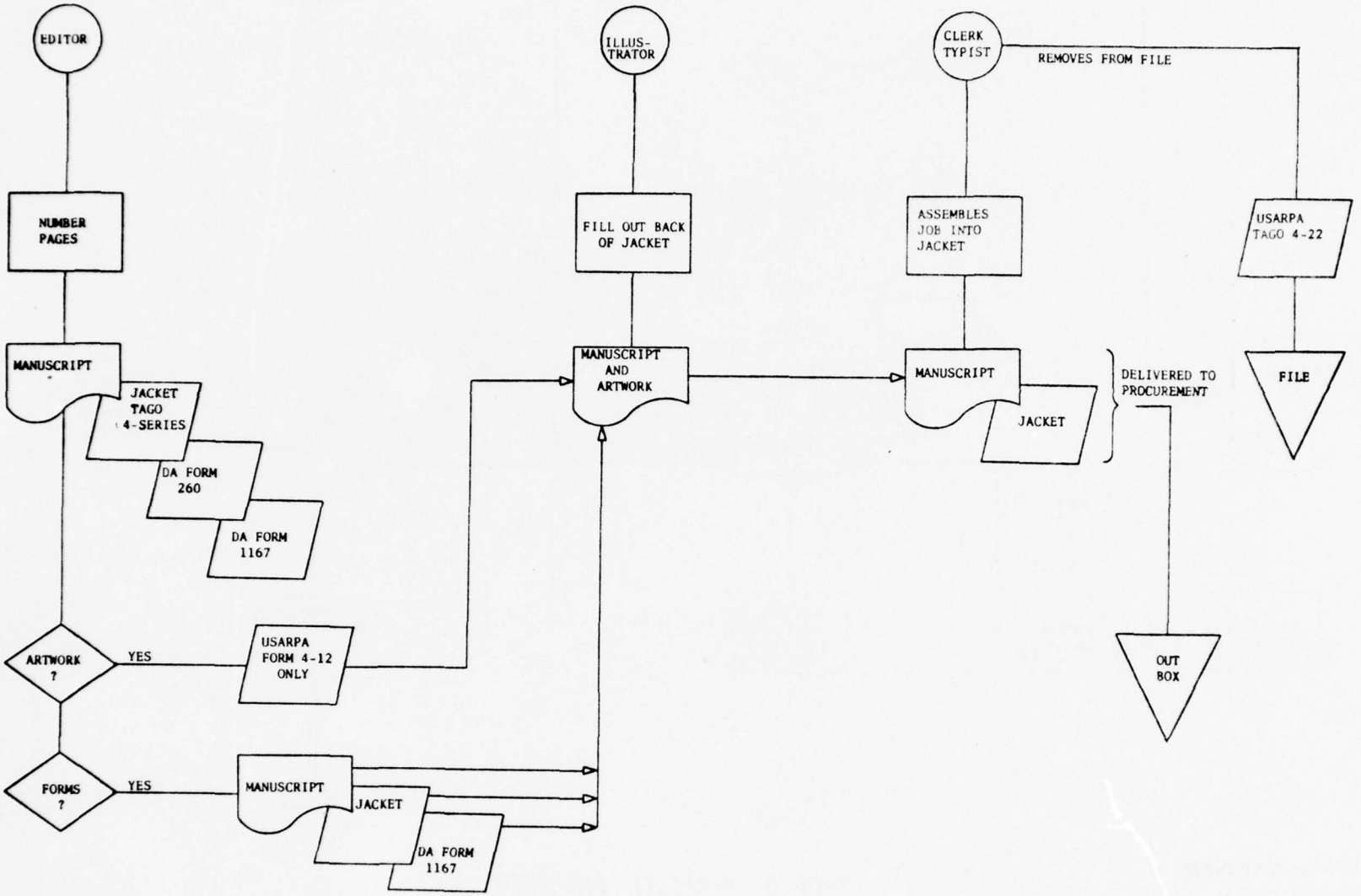
105mm Camera - A microfilm camera, usually step-and-repeat for microfiche.



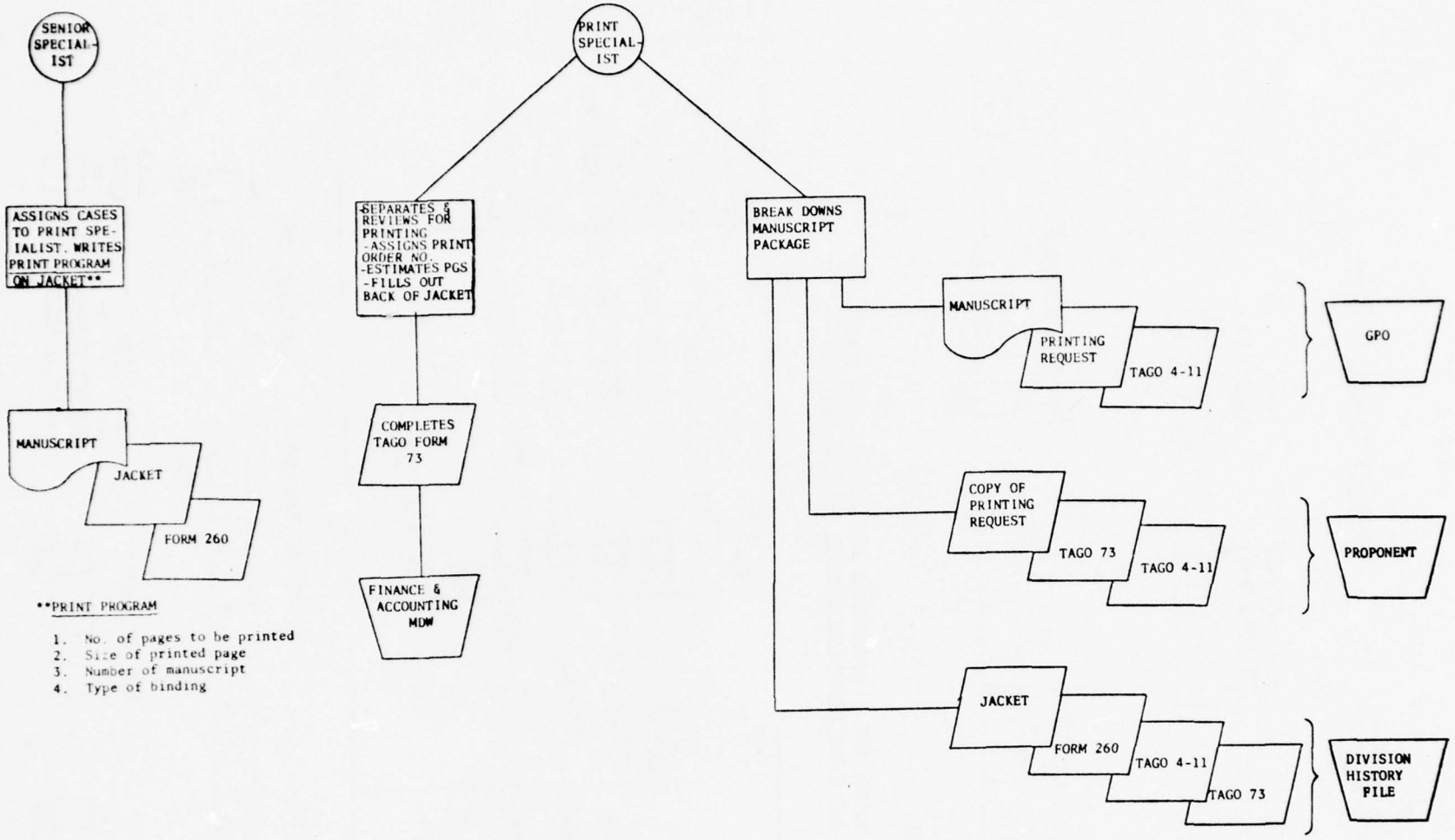
HQDA PUBLICATIONS SYSTEM WORKFLOW

APPENDIX C

DAAG-PAP Publishing Division



DAAG-PAR Procurement Division (Departmental Branch)



IMPACT

PROJECT CONTROL FORM

SDD PROCESS CONTROL NO. (1–5)

DATE RECEIVED (YR, MO, DAY) (6–11) 7 5

TIME RECEIVED (12–15)

PRIORITY (16)
0 - routine
1 - expedite

ACTION (17)
1 - initiate
2 - change
3 - reprint
4 - rescind

PUB NO. (NOMENCLATURE) (18–32)

PROPONENT SYMBOL (33–38)

OEA NO. (39–40)

TYPE OF PUB (41–43)

(CHECK THE APPROPRIATE BOX BELOW, AND ENTER THE CORRESPONDING NUMBER IN COL. 41-43)

DA ADMIN (310-1)	FORMS (310-2)	DOCTRINAL (310-3)		EQUIPMENT (310-4)	SUPPLY (310-6)	
101 AR	201 DA	301 FM	308 TOE	401 TM	601 SUPPLY CATALOG	
102 DOD REG	202 DD	302 ROTCM	309 TDA	402 TB	602 SUPPLY MANUAL	
103 DA CIR	203 SF	303 TC	310 CTA	403 SM	MGM (310-7)	
104 DA PAM	204 MISC	304 ATP	311 JTA	404 SB	701	
105 DA POSTER	205 DA LABELS	305 A SUBJ SCD	312 GTA	405 LO	OTHER	
106 JCS PUB		306 ATT			901	
107 MISC PUB		307 FT & TJC				

REQUISITION NO. (44–52)

NO. OF COPIES (53–57)

INVOICE NO. (58–63)

INVOICE COST (64–69)

NO. OF PAGES (70–74)

(NOT USED) (75–79)

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APPENDIX E

COST BENEFIT ANALYSIS

1. Introduction. A publishing system may be divided into three main subsystems. The first of these would be the conversion of author input into edited or camera ready copy, the second the production of hardcopy either in the form of printed documents or film and the third being handling, storage and distribution of the end products. The study that follows is devoted primarily to the second stage. Costing information of the hardcopy printing system is based on printing contractors invoices, and for the micropublishing system on data collected during a six month prototype project extrapolated to fit a set of mathematical models representing realistic micropublishing systems of different throughputs. The micropublishing system because of its automated data handling capability would allow savings in the first stage mentioned above and would show to greatest advantage in the storage, handling and distribution of the final outputs. A mathematical model is defined that can provide costing data for a varied number of systems depending on the hardware configuration chosen. Systems changes are handled by varying the coefficients of the equations in the model. A cost analysis is made of two possible systems representing an optimized and lower limit of operational efficiency and the results are used in a comparison to present publishing costs. The cost analysis is then repeated for a more efficient surveyed system.

2. Data Base (Sampling).

a. Present Publishing System. A survey of 4,716 publication requisition orders for the months of January thru April 1975 provided descriptive data quantifying and qualifying DA publication processing. Of the master 4,716 sample 2,387 were finalized with the necessary costing information applicable to economic analysis. Investigation has shown that there exists a high variability in cost for fixed levels of various quantitative and qualitative factors surveyed. Qualitative factors assessed include job priority, job action, nomenclature, proponent, OEA account number, publication classification, requisition number, and reprint status. Quantitative factors assessed included number of copies, number of changes, GPO invoice job cost, number of pages, document master composition (six categorical breakdowns) and estimated job cost. Data was documented for each requisition on the IMPACT Project Control Form by Publications Directorate, TAGCEN.

b. Prototype Micropublishing System. The prototype micropublishing system became operational in May 76. All job processing was documented on a daily basis by each system operator onto Project IMPACT's Daily Production Account Form. Operational elements were separated into key-

stroking, editing, formatting, reading of alphanumeric text from tapes, microfilming, and merging of graphics. Work quantity and work measurement data was compiled for each subsystem peripheral.

c. Sample data collection forms are found in Inclosure 1.

3. Data Summary. Present Publishing.

a. Various SPSS subprograms massaged the data-base on the present publishing system and provided necessary statistics for the creation of a summary profile on the present publishing system. The system output is given as Inclosure 2.

b. Collected data was recorded on five levels of job actions and thirty-three levels of publication categories. This created a profile of the types and volume of publications processed through the present system as indicated in Figure 3-1, and Table 3-1.

c. Results of Analysis. The SPSS program yielded the following statistics.

(1) Original Document Production.

STATISTIC	OUTPUT VALUE
Mean Pages	75.2
Sample Size	256
Mean Copies	5,237
Mean Invoice Cost	$1,338.46

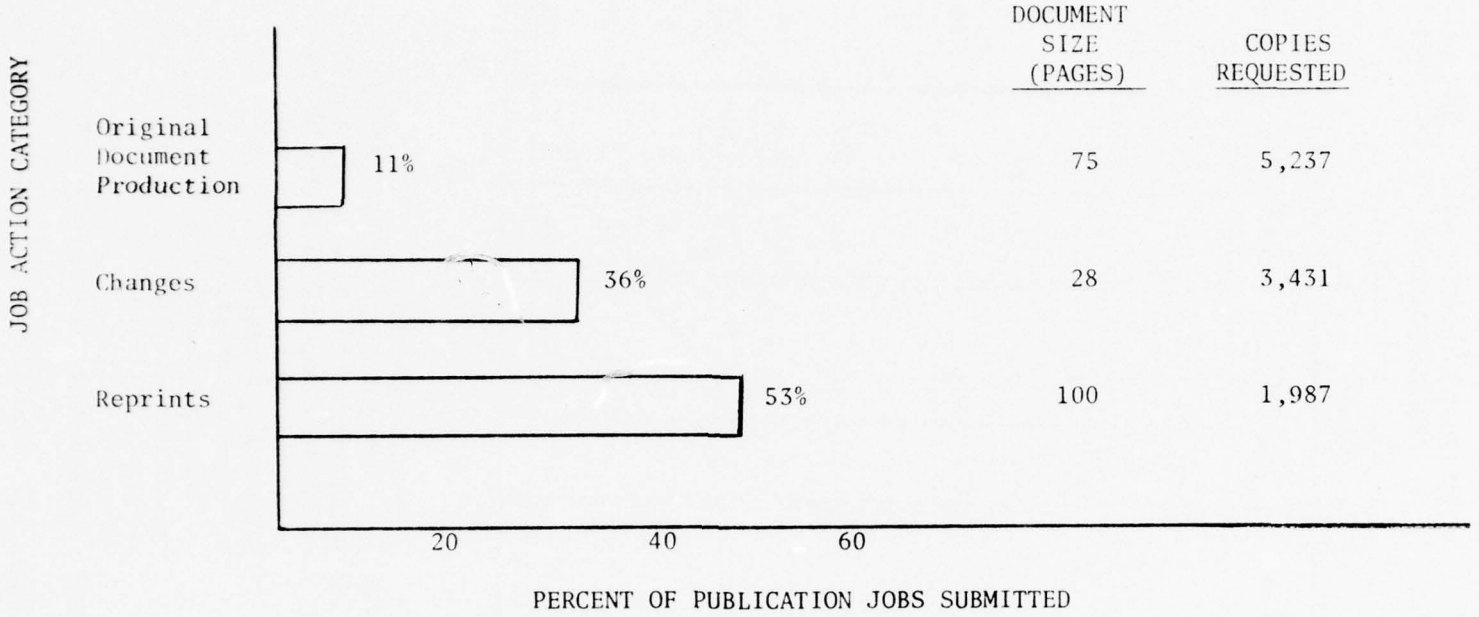
(2) Changes Production.

STATISTIC	OUTPUT VALUE
Mean Pages	28.5
Sample Size	882
Mean Copies	3,431
Mean Invoice Cost	$542.07

(3) Reprints.

STATISTIC	OUTPUT VALUE
Mean Pages	100.5
Sample Size	1,249
Mean Copies	1,987
Mean Invoice Cost	$1,061.10

HISTOGRAM OF PUBLICATION JOB ACTIONS



	DOCUMENT SIZE (PAGES)	COPIES REQUESTED
Original Document Production	75	5,237
Changes	28	3,431
Reprints	100	1,987

Figure 3-1

TABLE 3-1

DISTRIBUTION OF MOST ACTIVE PUBLICATION TYPES
PROCESSED DURING THE TEST PERIOD

PUBLICATION TYPE	INITIATES		CHANGES		REPRINTS		COMBINED	
	#	%*	#	%	#	%	#	%
AR	7	3	34	4	104	8	145	6
DA PAM	9	4	2	.2	31	4	42	2
DA CIR	10	4	12	1	2	.2	24	1
TO&E	18	7	392	44	75	6	485	20
FM	5	2	6	1	56	4	67	3
TC	5	2	0	0	18	1	23	1
TB	31	12	78	9	32	2	141	6
TM	72	28	300	34	783	63	1,155	48
LO	2	1	3	.3	21	2	26	1
SB	7	3	8	1	11	1	26	1
SC	6	2	18	2	20	2	44	2
OTHERS	84	33	29	3	96	7	209	9
TOTALS	256		882		1,249		2,387	

KEY:

AR = Army Regulation
DA PAM = Department of the Army Pamphlet
DA CIR = Department of the Army Circular
TO&E = Table of Organization and Equipment
FM = Field Manual
TC = Training Circular
TB = Technical Bulletin
TM = Technical Manual
LO = Lubrication Orders
SB = Supply Bulletin
SC = Supply Catalog
OTHERS = Other Miscellaneous Publications

*Percentages are rounded and will not add up to 100%.

4. Prototype Micropublishing System.

a. Print Preparation Processing. There are three avenues for the processing of alphanumeric text on the print preparation subsystem. These avenues are determined at the first phase of conversion, the input of text into the system. The three methods of input are: (1) keystroking of text from proponent master directly into disk storage, (2) the input of OCR formatted masters into disk storage through the OCR, and (3) the input of clean alphanumeric text on magtape into disk storage through various magtape readers. The remaining processing on the print preparation subsystem includes editing of text material, formatting the text for print composition, and the creation of the text composition for the package. Data and related analysis show that the print preparation subsystem contains the more critical factors influencing throughput times for the processing of documentation and that the output capability (capacity) determines the effective utilization of the COM micropublishing system.

b. Microfilming. The text composition package (on 9-track magtape) is loaded into the COM unit and processed directly into microframes onto microfilm with little operator coordination required. Graphics material is indicated by a program interrupt and a merge slide request via TTY display automatically to the operator at its appropriate location on the microfilm. The operator in turn manually inserts the graphics merge slide and initiates a strobe flash that optically transfers the image through a pellicle beam converter onto the microfilm. Headers may, as an option, be programmed directly into the data tape. Composition of forms representing table borders, graphs and simple line drawings may be programmed, stored on disk and called into a filming sequence, without a program interrupt, whenever feasibly advantageous.

c. System Throughput Standards. Table 4-1 summaries the production standards for each operational breakdown. The standard values on system throughput were developed from the summarizing of the Daily Production Accounts. "System text line" is the constant method of evaluation for alphanumeric text input on the shared logic print preparation subsystem. This standard unit of work quantity measurement is defined as 96 alphanumeric character blocks to a system text line. Survey of text output shows a correlation of 62.40 system text lines to a standard, dual-columned, alphanumeric-texted, printed hardcopy page. Figure 4-1 illustrates the manhours required for print preparation of varying throughput operations.

5. Systems Throughput Time Model for Alphanumeric (A/N) Text.

a. Variables definition.

TABLE 4-1

SYSTEM THROUGHPUT STANDARDS

OPERATION	SUBSYSTEM (UNIT)	WORK QUANTITY	TIME MEASURE	THROGHPUT VALUE
Keystroking	Print Preparation (Selectric I/O, CRT)	System Text Lines	Manminutes	2.69 Syslines Per manmin
Editing	Print Preparation (Selectric I/O, CRT)	System Text Lines	Manminutes	4.72 Syslines Per manmin
Formatting	Print Preparation (Selectric I/O, CRT)	System Text Lines	Manminutes	5.30 Syslines Per manmin
OCR A/N Text Manuscript	Print Preparation (OCR)	System Text Lines	Manminutes	73.03 Syslines Per manmin
A/N Text Input via Magtape	Print Preparation (DEC, PERTEC)	System Text Lines	Machine Minutes	152.07 Syslines Per macmin
COM Text Input Packing	Print Preparation (PERTEC)	System Text Lines	Machine Minutes	25.95 Syslines Per macmin
105mm Fiche Composition	COMp 80	Fiche (24X R)	Machine Minutes	12.40 Macmins Per fiche (98 frames)

THROUGHPUT TIME STANDARDS ON VARYING DOCUMENTATION

MICROPUBLISHING PRINT-PREPARATION SUBSYSTEMS

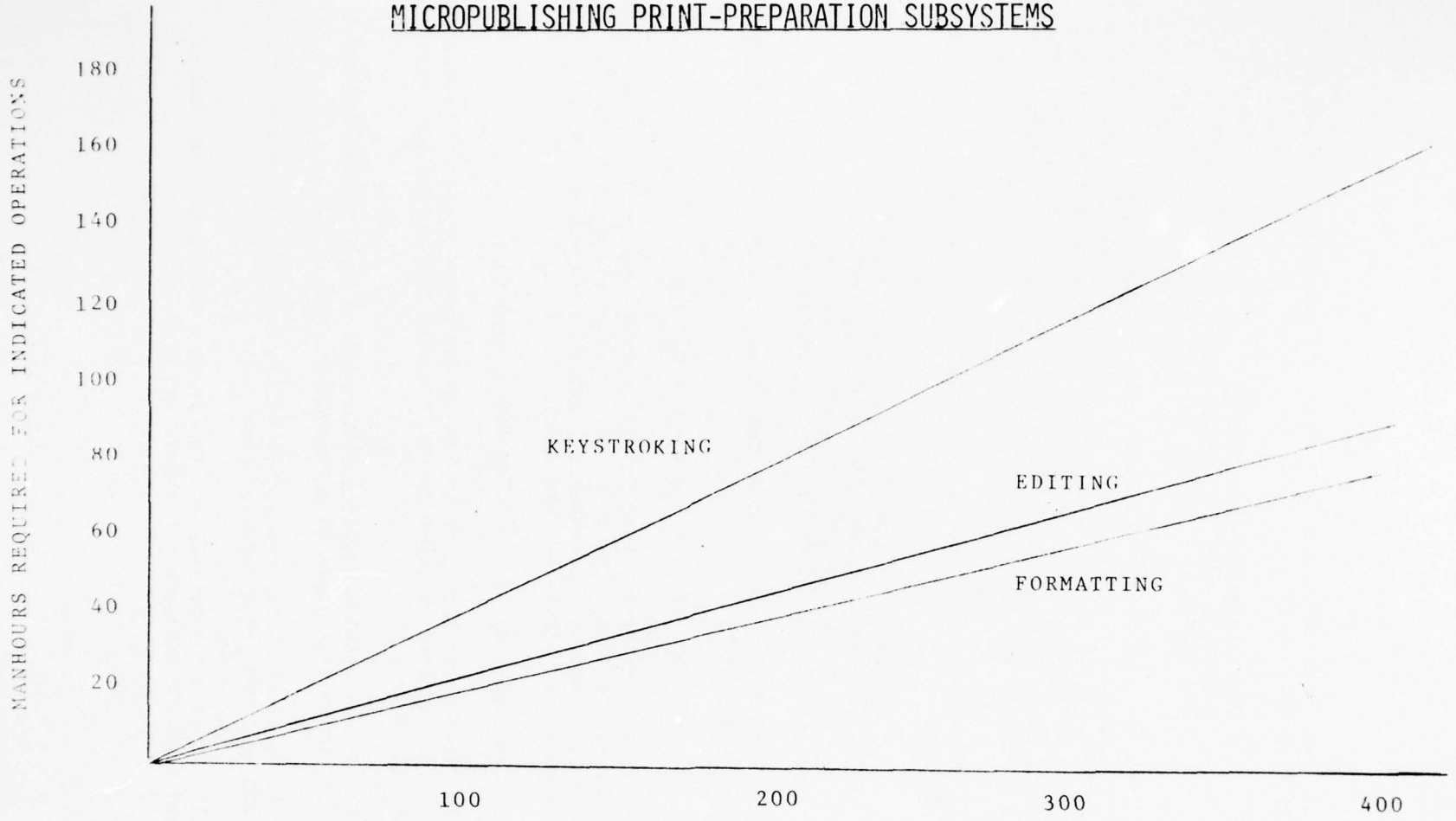


FIGURE 4-1

(1) Let Ap describe the three paths of inputting text material into working disk files where,

p=1 represents keystroking
p=2 represents OCR manuscript
p=3 represents magtape entry

The values for this discrete variable of three quantities are reciprocals of the throughput values in Table 4-1 yielding manminutes per system text line. This unit of measure is required for input data that will quantify the number of text pages for conversion in units of system text lines. The values being $(A_1, A_2, A_3) = (0.373, 0.014, 0.007)$ manminutes per system text line for keystroking, OCR and magtape entry respectively.

(2) Remaining variables in system time modeling are integer values defined as,

B, number of complete editing cycles;
C, number of complete formatting cycles;
D, number of COM tape creation cycles;
E, number of fiche shooting cycles.

b. Model definition. The system throughput time model is mathematically defined as,

$$T=NPAGE\ (K_1A_p + K_2B + K_3C + K_4D + K_5E)$$

Where T is the processing time in system hours required for alphanumeric text from system entry through master fiche creation, NPAGE is the number of manuscript pages to be converted, remaining variables are defined as above, and the constants defined below.

c. Constant definitions using values from Table 4-1.

(1) K_1 converts the Ap value into manhours per number of manuscript pages and is defined as 1.040 (manhour·system text lines) per (manmin·manuscript pages).

(2) In all constant definitions a manhour is 60 manmin and there are 62.4 system text lines in a manuscript page.

(3) K_2 is the time required to edit a manuscript page and is defined as 0.220 manhours per manuscript page.

(4) K_3 is the time required to format a manuscript page and is defined as 0.196 manhours per manuscript page.

(5) K_4 is the time required for the hardware and software of the print preparation system to convert the formatted disk material into the language compatible for processing on the COM unit. It is defined as 0.040 manhours per manuscript page.

(6) K_5 is the time required to create the fiche of the alphanumeric material and is defined as 0.002 manhours per frame.

6. Conversion Levels.

a. Assume each system channel of processing is available 6.5 hours per working day, 5 working days to the week and 52 weeks to the year. The available hours of production annually per channel is 1690 hours. One hour per day per channel is allocated to training of personnel and the rest to maintenance. A channel is defined, conventionally, as an I/O unit represented in the present system by a Selectric or a keyed CRT console. The available hours of production are 40,560 hours per year for a 24 channel system.

b. Recall (A_1, A_2, A_3) = (0.373, 0.014, 0.007) manminutes per system text line and K_1= 1.040 (manhours·system text line) per (manmin·manuscript page). The required time for inputting of an A/N page into operating disk storage is given by K_1Ap. The required time for editing of a manuscript page is given by K_2 B and the required time to format the manuscript page is given by K_3 C. The time required for complete print preparation of the manuscript is the accumulated sum, K_1 Ap + K_2 B + K_3 C. The print preparation manhours required for each manuscript page is given below for each input path assuming one complete editing cycle and three complete formatting cycles (i.e., B=1, C=3).

P	INPUT PATH	PRINT PREPARATION TIME
1	Keyboarding	1.196 manhours per page
2	OCR reading	0.823 manhours per page
3	Magtape reading	0.816 manhours per page

Modifying the above table to one complete formatting cycle (C=1) revises the print preparation time from (1.196, 0.823, 0.16) to (0.810, 0.431, 0.424) manhours per page.

c. Since the differences in print preparation time is very minute for p=2,3 we will delete the three levels of p into two. At C=3, print preparation time for p=1 and p=2 may be defined as 1.168 and .819 manhours per page respectively. For C=1 these values change to 0.810 and 0.427 respectively.

d. Each method or path of text preparation may be described as (i, j, B, C) where i describes the number of available system channels, j describes the method of text input and is synonymous to p, B describes the number of editing cycles, and C describes the number of formatting cycles. The values of (i, j, B, C) are as follows:

(1) 12 channel system, i=1

(2) 24 channel system, i=2

(3) Keystroked input, j=1

(4) Prepared input on magtape or OCR mediums, j=2

(5) One complete editing cycle, B=1

(6) Three complete formatting cycles, C=3

(7) One complete formatting cycle, C=1

The annual conversion level in number of A/N pages for each (i, j, B, C) condition is,

(i, j, B, C)	ANNUM CONVERSION LEVEL (A/N PAGES)
(1, 1, 1, 3)	16,956
(1, 2, 1, 3)	24,761
(2, 1, 1, 3)	33,918
(2, 2, 1, 3)	49,534
(1, 1, 1, 1)	25,037
(1, 2, 1, 1)	47,494
(2, 1, 1, 1)	50,074
(2, 2, 1, 1)	94,988

The complete micropublishing system annual output level is determined by the capacity of the print preparation subsystem. As indicated above the highest conversion rate will require a 24 channel preparation system with proponents providing prepared tape and OCR inputs with perfection of the print preparation subsystems to require only one complete editing cycle and one complete formatting cycle. This annum rate is 94,988 A/N pages. Using the results of the present publishing survey analysis, an average document was chosen so as to contain 75 pages - 40 A/N and 35 graphic containing a total of 40 illustrations these figures together with the conversion level allow 2,375 original documents as yearly maximum throughput.

7. Costs of equipment and maintenance, personnel and overhead, and supplies are divided into three subdivisions or cost centers representative of the modules of the prototype system. All costs are per year for (i, j, B, C) equal to (2, 2, 1, 1).

a. TC = PPC + FRC + DC.

b. Definitions are:

TC, total cost/year
PPC, costs associated with print preparation/year
FRC, costs associated with film recording/year
DDC, costs associated with duplication, merge slide preparation and developing/year.

c. Personnel costs, for a 24 channel system, are fractionally divided between the cost centers. As an example, one third of the site manager cost is assigned to each subdivision. Total personnel for all three cost centers are:

JOB TITLE	GRADE	PERSONNEL	YEARLY SALARY
Site Manager	14.5	1	$32,557
Supervisor	13.5	1	27,548
Management Analyst	12.5	1	23,166
Editor	11.5	1	19,332
Editors	8.5	7	101,241
Computer Specialist	12.5	1	23,166
Computer Specialist	11.5	1	19,332
Computer Specialists	9.5	2	31,954
Clerk Typist/Console Operator	6.5	1	11,754
Clerk Typist/Console Operators	4.5	7	65,968
Clerk Typist/Console Operators	3.5	8	67,168
Clerks	3.5	9	75,564
		40	$498,750

d. Overhead costs assignable to personnel costs as a percentage factor include fringe benefits, training and administrative overhead. These are set at 28.6 and 2% respectively based on accepted Army accounting standards. Overhead costs not assignable to personnel include site rental. Assuming present costs at the Forrestal Building for office type operations and 4,000 sq. ft. at $7.28/sq. ft./year, this cost is $29,120/year and is divided equally between the three cost centers.

e. One time costs such as special air conditioning, wiring, plumbing and room divisions are not considered in computing cost/document but are added wholly to the first year's operating costs.

8. Print Preparation.

a. Equipment and maintenance are based on lease costs during prototype operation and include:

HARDWARE ITEM	UNIT ANNUAL LEASE	24 STATION SYSTEM
Selectric I/O	$ 2,411.76	4 units
Video Display Typing Station	$ 3,144.00	18
OCR	$ 8,139.84	2 units
Serial Printer	$ 2,465.76	4
Shared Logic CPU w/options	$25,087.08	2
Magtape Drive	$ 6,158.76	2
Voltage Regulator	$ 387.60	2

24 station print preparation system. $155,648.70.

b. Personnel. Management is supplied by using one third the cost of the site manager, supervisor and management analyst, and operation and training by one third the computer specialists cost. I/O supervision and production is provided by the editors and clerk typist/console operators. These values (from paragraph 7c) are $27,757.00, $24,817.33 and $265,463.00 respectively and add up to $318,037.33.

c. Overhead.

(1) Assigned to personnel at 30.6%	$ 97,319.42
(2) Non-personnel	9,707.66
(3) Total	$107,027.08

d. Supplies.

(1) Archival tapes @$8.40/reel for the calculated 2,375 document throughput	$19,950.00
(2) Miscellaneous	$ 1,000.00
(3) Total	$20,950.00

e. Grand total print preparation. $601,663.11

9. Film Recording.

a. Equipment and maintenance are based on lease costs during prototype operation. COM unit with graphic merge capability - $161,964.00.

b. Personnel. Again as in print preparation management is supplied by using one third the cost of the site manager, supervisor and management analyst and operation and training by one third of the computer specialist cost. One clerk is also assigned to this cost center. These costs are $27,757.00, $24,817.33 and $8,396.00 respectively and total $60,970.33.

c. Overhead.

(1) Assigned to personnel at 30.6% - $18,656.92.

(2) Non-personnel - $9,706.66.

(3) Total - $35,984.87.

d. Supplies. Miscellaneous - $1,000.00.

e. Grand total film recording - $252,297.71.

10. Developing, merge slide preparation and duplication. This cost center is further divided into three sub-categories to facilitate comparisons between in-house and contractor-based operational costs.

a. Developing.

(1) Equipment and maintenance costs are based on third party lease costs at 2.6% of total costs/month and maintenance costs of .7% of total costs/month.

(a) Developer processor - $3,385.00.

(b) Silver Film Duplicator - $3,289.87.

(c) Total - $6,674.87.

(2) Personnel. Management is supplied by using one ninth the cost of the site manager, supervisor and management analyst and operation and training by one ninth of the computer specialist cost. One clerk is also assigned to this grouping. These costs are $9,252.33, $8,272.44 and $8,396.00 respectively and total $25,920.77.

(3) Overhead.

(a) Assigned to personnel at 30.6% - $ 7,931.76.

(b) Non-personnel - $3,235.55.

(c) Total - $11,167.31

(4) Supplies.

(a) 105mm microfilm at $43.69 per 200 ft. roll - $3,145.68.

(b) Developing chemicals:

Developer (150 gallons) - $ 777.00
Fixer (150 gallons) - $1,258.50.

(c) Miscellaneous - $333.33.

(d) Total - $5,514.51.

(5) Grand Total - $49,277.46.

b. Merge Slide Preparation.

(1) Equipment and maintenance costs.

Merge slide positioning camera with all auxiliary equipment - $7,440.00.

(2) Personnel (as in paragraph 10a(2)) - $25,920.77.

(3) Overhead (as in paragraph 10a(3)(c)) - $11,167.31.

(4) Supplies. Photoplast 4 x 7 inch slide at $2.52/unit - $239.400.00.

(5) Grand Total - $283,928.02.

c. Duplication.

(1) Equipment and maintenance costs.

(a) Six Diazo duplicators - $66,701.00.

(b) Six Collators - $13,543.00.

(c) Total - $80,244.00.

(2) Personnel. Six clerks and the remaining supervision and operational salaries are assigned to this operation - $67,900.80.

(3) Overhead.

(a) Assigned to personnel at 30.6% - $20,777.64.

(b) Non-personnel - $3,235.55.

(c) Total - $24,013.19.

(4) Supplies.

(a) Film - $389,550.69.

(b) Developing chemicals - $1,875.00.

(c) Total - $391,425.69.

(5) Grand Total - $563,583.69.

11. Assuming a worst case to occur at a combination where all input is through keypunching and three passes are required for the formatting cycle, corresponding to (i, j, B, C) = (2, 1, 1, 3) the conversion level in A/N pages drops to 33,918. It is further assumed that equipment, personnel and overhead costs remain the same, the only cost reduction will be in supplies. Therefore, grand totals become:

a. Print preparation - $588,193.87.

b. Film recording - $251,654.79.

c. Developing - $45,732.05.

d. Merge slide preparation - $130,012.18.

e. Duplicating - $311,926.98.

12. Micropublishing System Cost model is, MPC = NA/N (CPij) + NM (CFRij) + NM (CDEVij) + NG (CMSij) + NDUP (FICHE) (CDUPij) where:

MPC - total cost/document	$
NA/N - total A/N pages	pages
NM - total manuscript pages	pages
NG - total graphic illustrations	pages
NDUP - number of duplicate copies	copy
FICHE - total FICHE/document	(-)
CPPij - print preparation cost	$/page
CFRij - film recording cost	$/page
CDEVij - developing cost	$/page
CMSij - merge slide cost	$/page
CDUP - duplication cost	$/copy

13. Cost Benefit Summary. Micropublishing compared to present publishing.

a. Recall present publishing data base summary (ref. paragraph 2). For comparison of micropublishing to present publishing the following is the standard descriptive profile for all three publication job action categories. A random sample of 350 cases, selected from an unfiltered data base of 2,426 cases, was used to verify the statistical results of the SPSS analysis and the ratio of graphics to A/Ns.

(1) Conversion on Original Publishings.

Document size - 75 manuscript pages
Duplication - 5,237 copies
Graphics - 40 illustrations
Micropublication - 1 fiche

(2) Implementing Changes.

Document size - 29 manuscript pages
Duplication - 3,431 copies
Graphics - 15 illustrations
Micropublication - 1 fiche

(3) Reprints.

Document size - 100 pages
Duplication - 1,987 copies
Graphics - not relevant
Micropublication - 2 fiche

b. In comparison to the present publication system, micropublishing is modeled assuming an optimized and non-optimized version of the 24 channel micropublishing system. The cost model unit parameters are (i, j, B, C) = 2, 2, 1, 1 and (i, j, B, C) = 2, 1, 1, 3. These represent configurations where all inputs are by OCR or magtape with one

formatting pass, and where inputs are through keypunching with 3 formatting passes. The micropublishing cost profile is computed from the developed cost model and the present publishing cost profile as presented in paragraph 3c. The tabulation below gives comparison costs for the standard publication jobs for all three job actions defined above.

JOB ACTION	PRESENT PUBLISHING	MICROPUBLISHING (OPTIMUM)	MICROPUBLISHING (NON-OPTIMUM)
Originals	$1,338	$737	$1,564
Changes	$ 542	$344	$ 693
Reprints	$1,061	$180	$ 278

c. Five Year Micropublishing Savings, Originals, Change Job and Reprint Actions. Mean value between optimum and non-optimum systems is used for micropublishing. Throughputs are also mean values between optimum and non-optimum. Savings contain provisions for yearly TDY costs of $25,000 for micropublishing. Results are presented as present values.

YEAR	CONVERSION		PRESENT PUBLISHING	MICROPUBLISHING
1	1,611 Originals		$2,155,518	$1,852,650
		Savings	254,683	
		Present Value	242,968	
2	1,561 Originals		$2,088,618	$1,795,150
	160 Changes		86,720	82,880
	230 Reprints		244,030	52,670
		Savings	463,668	
		Present Value	402,000	
3	1,511 Originals		$2,021,718	$1,737,650
	320 Changes		173,440	165,760
	460 Reprints		488,060	105,340
		Savings	649,468	
		Present Value	511,781	
4	1,461 Originals		$1,954,818	$1,680,150
	480 Changes		260,160	248,640
	690 Reprints		732,090	158,010
		Savings	835,268	
		Present Value	598,887	

YEAR	CONVERSION		PRESENT PUBLISHING	MICROPUBLISHING
5	1,411 Originals		$1,887,918	$1,622,650
	640 Changes		346,880	331,520
	920 Reprints		976,120	210,680
		Savings	1,011,068	
		Present Value	659,216	

d. Non-recurring costs coming due before the start of operations, covering remodeling and installation of special equipment total $23,185. These are subtracted from the first years savings. The total savings on the sample conversion levels are $2,414,852.

14. Surveyed System.

a. With the component type system considered, since input-output is discrete it is possible to substitute for components without disturbing system flow paths or the characteristics of undisturbed components. In this case a new print preparation subsystem is substituted. A print preparation subsystem, already being used locally by a national magazine offers several advantages. The mathematical model used in the mainbody of the report is used again with new coefficients computed to represent the new component.

(1) The local system is working on-line with a publishing rear end component very similar to that used in our prototype configuration. The data link software is written in the same standard data format machine language, and only minor bugs are anticipated in the linkage routines. Input station and operator feedback means programming is now operating on line in several vendor packages and should be virtually trouble free.

(2) Programming aids such as preconceived fill-in forms force a major portion of the print command programming to be done efficiently and facilitates training of personnel.

(3) A more sophisticated keyboard at input and editing stations allows entering complex formatting commands with one keystroke.

(4) Instantaneous feedback of how final copy would look is available in a coded form at each input and editing station CRT. An example of a coded form would be that data appearing underlined might correspond to a particular font and character height.

(5) Feedback, with a very small time lag on the output, as it would appear in final form with all fonts, character sizes, justification, pagination, etc., painted on graphics display terminals. Queing logic for access is incorporated in the operating system.

(6) More advanced hardware and software of the print preparation system allows rapid conversion of the formatted material into a form compatible to processing on the COM unit.

b. The matrix of costing models to be considered are again confined to optimum and non-optimum choices consisting of wholly OCR and magtape, and totally keyboarded input respectively.

(1) Iterative cycles for editing and formatting are eliminated because of the final text layout feedback to composition terminals.

(2) Conversion of formatted material (14a(6) above) is handled at essentially the speed of reading magnetic tape or at approximately .007 manminutes per system text line.

(3) With entry to be either by magtape or OCR, rates are the mean of the previously calculated values of 0.14 and .007 manminutes per system text line or a combined mean of .01 manhours per manuscript page.

c. The system throughput time model as defined in paragraph 5b is, $T=NPAGE\ (K_1A + K_2B + K_3C + K_4D + K_5E)$, with variables and constants listed below:

(1) B=C=D=E=1.

(2) Ap = .01 manminutes per system text lines.

(3) K_2 = .11 manhours per A/N page. This value is based on a conservative estimate available from a time critical comparison made on the equipment using a sample previously edited with the prototype system. The comparison was made on a plant visit on 26 October 1976 arranged by courtesty of US News and World Report.

(4) K_3 = .098 manhours per A/N page.

(5) K_4 = .01 manhours per A/N page.

(6) K_5 = .002 manhours per A/N page.

d. To effect a comparison with the previous optimized micropublishing system using OCR or magtape inputs, 24 input stations and a one pass editing and formatting cycle, the system throughput was assumed identical

at 94,988 A/N pages. If this is done all costs are the same with the exception of the print preparation subsystem.

(1) The 94,988 annual A/N page figure is assumed as about the limit for linear extrapolation of the mathematical model. Considering the production hours as the unknown in this case and using cumulative print preparation time of .22 manhours/A/N page, the manhours required for this throughput is 20,902. Using the previous figure of 1,690 yearly hours of production availability per channel, 12 editing channels are required. Four input channels are included to supplement the input system, which is presumed to be mainly through magtape and OCR units.

(2) Manpower staffing and costs. Itemized.

JOB TITLE	GRADE	PERSONNEL	YEARLY SALARY
Site Manager	14.5	1	$32,557
Supervisor	13.5	1	27,548
Management Analyst	12.5	1	23,166
Editor	11.5	1	19,332
Editors	8.5	3	43,389
Computer Specialist	12.5	1	23,166
Computer Specialist	11.5	1	19,332
Computer Specialists	9.5	2	31,954
Clerk Typist/Console Operator	6.5	1	11,754
Clerk Typist/Console Operators	4.5	3	28,272
Clerk Typist/Console Operators	3.5	6	50,376
Clerks	3.5	9	75,564
		30	$386,410

(3) Comparison of the above personnel/grades to those used in the prototype system (paragraph 7c) it can be seen that they are identical except for the lesser number used for print preparation. Threfore, the only recomputations necessary are for the print preparation. These are listed below.

e. Print Preparation.

(1) Equipment and maintenance yearly costs are based on lease costs that include maintenace.

HARDWARE ITEM	UNIT ANNUAL LEASE/YEAR
Input System with 4 Input Stations	$21,684
Composition System with Telecommunications and 12 Terminals	$73,320
3 Graphic Display Terminals	$28,080
2 OCR units	$16,266
Software Lease	$ 6,000
TOTAL	$145,350

(2) Personnel - management is supplied by using one third the cost of the site manager, supervisor and management analyst and operation and training is provided by one third the computer specialist costs. I/O supervision and production is the function of the editors and clerk/typist/console operators. These values are $27,757.00, $24,817.33 and $153,123 and add up to $204,697.33/annually.

(3) Overhead.

(a) Assigned to personnel at 30.6% - $62,637.28.

(b) Non-personnel - $9,706.66.

(c) Total - $72,343.94.

(4) Supplies (from paragraph 8d(3)) - $20,950.00.

(5) Grand total print preparation - $443,341.27.

f. The three job actions are used to effect a comparison for the surveyed system studied.

JOB ACTION	SURVEYED MICROPUBLISHING (OCR & MAGTAPE INPUT)	SURVEYED MICROPUBLISHING (KEYSTROKED INPUT)
Originals	$670	$1,378
Changes	$319	$ 624
Reprints	$180	$ 278

g. These may also be compared to present publishing as shown below.

JOB ACTION	SURVEYED SYSTEM (AVERAGE)	PRESENT PUBLISHING	% SAVINGS
Originals	$1,024	$1,338	23
Changes	472	542	13
Reprints	229	1,061	78

h. Summarizing and representing the data for the four systems on a cost center basis:

OPERATION	*PROTOTYPE* SYSTEM (OPTIMUM)	*PROTOTYPE* SYSTEM (NON-OPTIMUM)	*SURVEYED* SYSTEM (OPTIMUM)	*SURVEYED* SYSTEM (NON-OPTIMUM)
Print Preparation ($/page)	$6.33	$17.34	$4.66	$12.69
Film Recording ($/page)	1.42	3.96	1.42	3.96
Film Development ($/page)	.28	.72	.28	.72
Merge Slide ($/slide)	2.99	3.83	2.99	3.83
Duplication ($/copy)	.046	.07	.046	.07

15. Resuts are promising in indicating cost savings in the production phase of micropublishing. Throughput of the print preparation module is the key factor. As this is increased, publication costs drop as the film recorder can handle the larger workload at little extra expense. Additional extrapolations with larger throughputs were not attempted as it was felt that the model might not be linear in extreme conditions.

PROJECT CONTROL FORM

SDD PROCESS CONTROL NO. (1–5)

DATE RECEIVED (YR, MO, DAY) (6–11) — 7 5

TIME RECEIVED (12–15)

PRIORITY (16)
0 - routine
1 - expedite

ACTION (17)
1 - initiate
2 - change
3 - reprint
4 - rescind

PUB NO. (NOMENCLATURE) (18–32)

PROPONENT SYMBOL (33–38)

OEA NO. (39–40)

TYPE OF PUB (41–43)

(CHECK THE APPROPRIATE BOX BELOW, AND ENTER THE CORRESPONDING NUMBER IN COL. 41–43)

DA ADMIN (310-1)	FORMS (310-2)	DOCTRINAL (310-3)		EQUIPMENT (310-4)	SUPPLY (310-6)	
101 AR	201 DA	301 FM	308 TOE	401 TM	601 SUPPLY CATALOG	
102 DOD REG	202 DD	302 ROTCH	309 TDA	402 TB	602 SUPPLY MANUAL	
103 DA CIR	203 SF	303 TC	310 GTA	403 SM	MAP (310-7)	
104 DA PAM	204 MISC	304 ATP	311 JTA	404 SB	701	
105 DA POSTER	205 DA LABELS	305 A SUBJ SCD	312 GTA	405 LO	OTHER	
106 JCS PUB		306 ATT			901	
107 MISC PUB		307 FT & TJC				

REQUISITION NO. (44–52)

NO. OF COPIES (53–57)

INVOICE NO. (58–63)

INVOICE COST (64–69)

NO. OF PAGES (70–74)

(NOT USED) (75–79)

CARD CODE (80) — A

PROJECT IMPACT DAILY PRODUCTION ACCOUNT

DATE: _____

PERIPHERAL: ___PRINT PREPARATION SYST. CRT #1 ___I/O TYPEWRITER
___PRINT PREPARATION SYST. CRT #2 ___COM RECORDER
___PRINT PREPARATION SYST. OCR

OPERATOR: _____

OPERATION/WORK MEASUREMENT: JOB # _____ JOBNAME _____

	PERIPHERAL	MANMINUTES
PREFORMATTING	OCR	
FORMATTING	CRT/OCR/I/O Typewriter	
KEYSTROKING	CRT/I/O Typewriter	
READ INPUT	OCR	
EDITING	CRT/OCR/I/O Typewriter	
PROGRAMMING	COM Recorder	
FORM PREPARATION	COM Recorder	
STRIPOUT SHOOTING	COM Recorder	
FICHE SHOOTING	COM Recorder	
MERGING	COM Recorder	
OTHER (specify):		
_____	_____	_____
_____	_____	_____
_____	_____	_____

WORK QUANTITIES:

PAGES INPUT	
PRINT PREPARATION SYSTEM LINES	
FORMS	
MERGE SLIDES	
16 mm FRAMES	
105 mm FRAMES	
OTHER (specify):	
_____	_____
_____	_____
_____	_____
_____	

(Inclosure 1a)

FILE: IMPACT (CREATION DATE = 020177) SURVEY OF PUB PROCESS

NUMBER OF PAGES (ORIGINAL)

TYPE OF DOCUMENT	SUM	MEAN	STD DEV	VARIANCE	# SAMPLES
AR	154.000	22.000	38.136	1454.333	7
DA CIR	190.000	19.000	22.361	500.000	10
DA PAM	613.000	68.111	62.762	3939.111	9
UNCLASSIFIED	448.000	448.000	.000	.000	1
FM	468.000	93.600	106.418	11324.800	5
TC	156.000	31.200	5.215	27.200	5
TO&E	436.000	24.222	6.787	46.065	18
GTA	79.000	39.500	7.778	60.500	2
TM	8092.000	112.389	478.922	220366.467	72
TB	1342.000	43.290	108.027	11669.746	31
SB	254.000	36.286	29.898	893.905	7
LO	130.000	65.000	89.095	7938.000	6
SUPPLY CAT	76.000	12.667	4.676	21.867	76
MWO	76.000	15.200	7.155	51.200	5
OTHERS	6747.000	88.776	161.983	26238.416	76
SUMMATION:	19261.000	75.238	274.087	75123.711	256

(Inclosure 2)

NUMBER OF PAGES (CHANGES)

TYPE OF DOCUMENT	SUM	MEAN	STD DEV	VARIANCE	# SAMPLES
AR	993.000	29.206	34.601	1197.259	34
DOD REG M	376.000	94.000	73.720	5434.667	4
DA CIR	187.000	15.583	27.972	782.447	12
DA PAM	58.000	29.000	38.184	1458.000	2
FM	334.000	55.667	44.657	1994.267	6
A SUBJ SCD	164.000	164.000	.000	.000	1
TO&E	6288.000	16.041	12.700	161.282	392
CTA	72.000	36.000	5.657	32.000	2
TM	10389.000	34.630	88.544	7839.966	300
TB	2149.000	27.551	129.891	16871.679	78
SB	714.000	89.250	78.841	6215.929	8
LO	6.000	2.000	.000	.000	3
SUPPLY CAT	250.000	13.889	10.521	110.693	18
MWO	5.000	5.000	.000	.000	1
OTHERS	3207.000	152.714	185.558	34431.915	21
SUMMATION:	25192.000	28.562	75.264	5664.648	882

NUMBER OF PAGES (REPRINTS)

TYPE OF DOCUMENT	SUM	MEAN	STD DEV	VARIANCE	# SAMPLES
AR	4842.000	45.558	113.414	12862.793	104
DA CIR	4.000	2.000	.000	.000	2
DA PAM	4824.000	155.613	227.620	51810.779	31
DA POSTER	5.000	1.000	.000	.000	5
JCS PUB	394.000	394.000	.000	.000	1
FM	6167.000	110.125	99.045	9809.966	56
ROTCM	168.000	168.000	.000	.000	1
TC	1054.000	58.556	58.321	3401.320	18
ATP	372.000	37.200	7.068	49.956	10
A SUBJ SCD	330.000	14.348	13.303	176.964	23
ATT	270.000	22.500	14.749	217.545	12
FT TJC	544.000	54.400	90.920	8266.489	10
TO&E	2255.000	30.067	18.132	328.766	75
UNCLASSIFIED	120.000	120.000	.000	.000	1
TM	95317.000	121.733	177.273	31425.603	783
TB	1719.000	53.719	79.073	6252.596	32
SB	618.000	56.182	58.600	3433.964	11

NUMBER OF PAGES (REPRINTS) - CONTINUED

TYPE OF DOCUMENT	SUM	MEAN	STD DEV	VARIANCE	# SAMPLES
LO	538.000	25.619	80.723	6516.248	21
SUPPLY CAT	3244.000	162.200	247.368	61191.117	20
MWO	16.000	8.000	.000	.000	2
UNCLASSIFIED	1.000	1.000	.000	.000	1
OTHERS	2709.000	90.300	149.562	22368.907	30
SUMMATION:	125511.000	100.489	160.792	25854.215	1249

NUMBER OF COPIES (ORIGINALS)

TYPE OF DOCUMENT	SUM	MEAN	STD DEV	VARIANCE	# SAMPLES
AR	95400.000	13628.571	7715.291	**********	7
DA CIR	157205.000	15720.500	11446.842	**********	10
DA PAM	81321.000	9035.667	4407.755	**********	9
UNCLASSIFIED	600.000	600.000	.000	.000	1
FM	69300.000	13860.000	16192.220	**********	5
TC	54200.000	10840.000	8823.151	**********	5
TO&E	24200.000	1344.444	299.455	89673.205	18
GTA	850.000	425.000	80.610	6498.000	2
TM	118652.000	1647.944	3314.504	**********	72
TB	94891.000	3061.000	3582.637	**********	31
SB	72180.000	10311.428	5768.514	**********	7
LO	9100.000	4550.000	3040.559	**********	2
SUPPLY CAT	18000.000	3000.000	2394.995	**********	6
MWO	13301.000	2660.200	3679.908	**********	5
OTHERS	531465.000	6992.961	9968.432	**********	76
SUMMATION:	**********	5236.973	7947.668	**********	256

* = Computer Printout Overflow.

NUMBER OF COPIES (CHANGES)

TYPE OF DOCUMENT	SUM	MEAN	STD DEV	VARIANCE	# SAMPLES
AR	583850.000	17172.059	13168.668	**********	34
DOD REG M	25100.000	6275.000	3787.149	**********	4
DA CIR	94480.000	7873.333	4913.392	**********	12
DA PAM	64400.000	32200.000	4384.062	**********	2
FM	43601.000	7266.833	4724.845	**********	6
A SUBJ SCD	1600.000	1600.000	.000	.000	1
TOGE	612788.000	1563.235	344.375	118594.106	392
CTA	43900.000	21950.000	12798.633	**********	2
TM	734877.000	2449.590	3790.328	**********	300
TB	532371.000	6825.269	3750.932	**********	78
SB	93304.000	11663.000	3449.703	**********	8
LO	13300.000	4433.333	3707.200	**********	3
SUPPLY CAT	60400.000	3355.556	2164.207	**********	18
MWO	401.000	401.000	.000	.000	1
OTHERS	121714.000	5795.905	4865.519	**********	21
SUMMATION:	**********	3430.936	5301.773	**********	882

* = Computer Printout Overflow.

NUMBER OF COPIES (REPRINTS)

TYPE OF DOCUMENT	SUM	MEAN	STD DEV	VARIANCE	# SAMPLES
AR	450745.000	4334.086	6219.541	**********	104
DA CIR	3300.000	1650.000	212.132	45000.000	2
DA PAM	201240.000	6491.613	9458.404	**********	31
DA POSTER	8200.000	1640.000	1128.273	**********	5
JCS PUB	1100.000	1100.000	.000	.000	1
FM	460850.000	8229.464	9216.935	**********	56
ROTCM	13400.000	13400.000	.000	.000	1
TC	66200.000	3677.778	4850.659	**********	18
ATP	2900.000	290.000	152.388	23222.222	10
A SUBJ SCD	32100.000	1004.348	1007.462	**********	23
ATT	3600.000	300.000	237.410	56363.636	12
FT TJC	13000.000	1300.000	1225.652	**********	10
TO&E	22115.000	294.867	282.071	79564.172	75
UNCLASSIFIED	400.000	400.000	.000	.000	1
TM	*********	1296.886	2384.561	**********	783
TB	35176.000	1099.250	1645.073	**********	32

NUMBER OF COPIES (REPRINTS) - CONTINUED

TYPE OF DOCUMENT	SUM	MEAN	STD DEV	VARIANCE	# SAMPLES
SB	35973.000	3270.273	3628.158	**********	11
LO	39260.000	1869.524	2232.455	**********	21
SUPPLY CAT	9600.000	480.000	391.488	153263.156	20
MWO	2700.000	1350.000	1767.767	**********	2
UNCLASSIFIED	5000.000	5000.000	.000	.000	1
OTHERS	68530.000	2284.333	5339.702	**********	30
SUMMATION:	*********	1987.070	4172.946	**********	1249

* = Computer Printout Overflow.

COST PER COPY (ORIGINALS)

TYPE OF DOCUMENT	SUM	MEAN	STD DEV	VARIANCE	# SAMPLES
AR	17530.000	2504.286	1870.187	**********	7
DA CIR	11795.000	1179.500	632.576	400152.719	10
DA PAM	28505.000	3167.222	1733.783	**********	9
UNCLASSIFIED	8951.000	8951.000	.000	.000	1
FM	31055.000	6211.000	6551.729	**********	5
TC	8500.000	1700.000	847.455	718182.500	5
TOGE	4437.000	246.500	93.716	8782.618	18
GTA	10243.000	5121.500	1255.115	**********	2
TM	47253.000	656.292	720.798	519550.152	72
TB	32379.000	1044.484	3018.047	**********	31
SB	14813.000	2116.143	1803.872	**********	7
LO	2882.000	1441.000	616.597	380192.000	2
SUPPLY CAT	1544.000	257.333	173.407	30069.867	6
MWO	1092.000	218.400	97.279	9463.301	5
OTHERS	121667.000	1600.882	2252.250	**********	76
SUMMATION:	342646.000	1338.461	2224.499	**********	256

* = Computer Printout Overflow.

COST PER COPY (CHANCES)

TYPE OF DOCUMENT	SUM	MEAN	STD DEV	VARIANCE	# SAMPLES
AR	79652.000	2342.706	1814.129	**********	34
DOD REG M	8621.000	2155.250	2060.151	**********	4
DA CIR	8256.000	688.000	453.880	206007.271	12
DA PAM	5833.000	2916.500	3434.418	**********	2
FM	12861.000	2143.500	1754.911	**********	6
A SUBJ SCD	2054.000	2054.000	.000	.000	1
TO&E	68092.000	173.704	107.429	11540.905	392
CTA	6612.000	3306.000	1776.252	**********	2
TM	153377.000	511.257	889.076	790455.859	300
TB	72332.000	927.333	4251.207	**********	78
SB	22549.000	2818.625	1636.762	**********	8
LO	2158.000	719.333	427.127	182437.344	3
SUPPLY CAT	5083.000	282.389	180.125	32445.076	18
MWO	63.000	63.000	.000	.000	1
OTHERS	30565.000	1455.476	1298.693	**********	21
SUMMATION:	478108.000	542.073	1555.087	**********	882

* = Computer Printout Overflow.

COST PER COPY - REPRINTS

TYPE OF DOCUMENT	SUM	MEAN	STD DEV	VARIANCE	# SAMPLES
AR	128181.000	1061.104	2424.371	**********	104
DA CIR	45.000	22.500	.707	.500	2
DA PAM	78163.000	2521.387	2891.557	**********	31
DA POSTER	1983.000	396.600	215.063	46252.301	5
JCS PUB	2323.000	2323.000	.000	.000	1
FM	199431.000	3561.268	4628.048	**********	56
ROTCM	11738.000	11738.000	.000	.000	1
TC	21685.000	1204.722	1661.433	**********	18
ATP	1611.000	161.100	23.254	540.767	10
A SUBJ SCD	2157.000	93.783	81.872	6703.087	23
ATT	1304.000	108.667	64.510	4161.515	12
FT TJC	9691.000	969.100	1549.256	**********	10
TO&E	11922.000	158.960	83.852	7031.120	75
UNCLASSIFIED	498.000	498.000	.000	.000	1
TM	757894.000	967.936	2061.453	**********	783
TB	12531.000	391.594	515.452	265690.508	32

COST PER COPY (REPRINTS) - CONTINUED

TYPE OF DOCUMENT	SUM	MEAN	STD DEV	VARIANCE	# SAMPLES
SB	8626.000	784.182	833.172	694174.969	11
LO	19781.000	941.952	1278.562	**********	21
SUPPLY CAT	18267.000	913.350	1198.080	**********	20
MWO	304.000	152.000	130.108	16928.000	2
UNCLASSIFIED	648.000	648.000	.000	.000	1
OTHERS	36536.00	1217.867	2070.947	**********	30
SUMMATION:	*********	1061.104	2424.371	**********	1249

* = Computer Printout Overflow.

APPENDIX F

MICROGRAPHICS RECONNAISSANCE ACTIVITIES

1. IMPACT Team Visits

a. Federal Sector

Defense Documentation Ctr.
Micrographics Proc'g Div.
Cameron Station
Alexandria, VA
Contact:
Mr. H. A. Schrecongost

HQ First Army
DCSPA
Ft. George Meade, MD
Contact:
COL C. E. Zimmer

HQ USA Communications Com.
Records Mgt. Branch
Ft. Huachuca, AZ
Contact:
Mr. R. Draper

HQ USAF
Directorate of Admin.
Plans & Programs Div.
5600 Columbia Pike
Falls Church, VA
Contact:
Ms. M. L. Bishop

HQ USAF System Command
Directorate of Admin.
Reproduction Division
Andrews AFB
Washington, D. C.
Contact:
Mr. W. Kastner

NAVAIR Documentation Policy
Program Office
NAVAIR Tech. Service Facility
Philadelphia, PA
Contact:
Mr. S. A. Markowitz

NAVAIR Rework Facility
Tech. Data Mgt. Branch
NAS-Jacksonville
Contact:
Mr. J. D. Richardson

USA Aviation Supply Com.
Publications Division
St. Louis, MO
Contact:
Mr. Gillespie

USA Catalog Data Agency
Products Development Div.
New Cumberland Army Depot, PA
Contact:
Mr. E. J. Okum

USAF Data Automation Agency
Data Services Center
Information Technology Division
Pentagon, Washington, D. C.
Contact:
MAJ A. R. Wylie

USAF Logistics Command
Elec. Printing System Branch
Wright-Patterson AFB, Ohio
Contact:
Mr. J. Bradley

USAF Logistics Command
Technical Order System Branch
Tinker AFB, OK
Contact:
Mr. Glen Emerson

USN Print'g & Pub. Serv. Office
Bldg. 157-2
Washington, D. C.
Contact:
Mr. B. N. Powers

b. State Sector.

State of Illinois
Div Motor Vehicles
Springfield, Illinois
Contact:
Mr. James Clancy

State of Illinois
Office Secretary of State
Central Microfilm Operations
Springfield, Illinois
Contact:
Mr. Jack La Hart

State of Illinois
State Library
Springfield, Illinois
Contact:
Mr. Anthony Miels

c. Private Sector

Chrysler Corporation
Parts Supply Division
Centerline, MI
Contact:
Mr. E. M. Colombo

Data Dissemination Syst., Inc.
2217 South Purdue Ave.
Los Angeles, CA
Contact:
Mr. Jacques D. Tournier

Ford Motor Co.
FMCC Bldg.
Photomedia Dept.
Detroit, Michigan
Contact:
Mr. Donald Wells
Mr. Ralph Newman

General Motors Corp.
GM Photographic Eng. Ctr.
Microfilm Dept.
30001 Van Dyke Ave.
Warren, Michigan 48090
Contact:
Mr. Frank Graft

HQ Chrysler Corporation
Micromation Services
Highland Park, MI
Contact:
Mr. Sterling B. Withington

Lockheed Missles & Space Co.
Data Reduction & Anal. Div.
Sunnyvale, CA
Contact:
Mr. Dave Almeleh

Sears Roebuck & Co.
Sears Tower, 28th Floor
Dept. 764 - Data Processing
Chicago, Illinois 60684
Contact:
Mr. Richard Ray

Southern Bell Telephone Co.
Systems Division
P. O. Box 2211
Atlanta, GA
Contact:
Mr. Whitney F. Robiachaux

d. Manufacturers.

Aspen Systems Corporation
11600 Nebel Street
Rockville, MD
Contact:
Mr. Lawrence H. Berul

Information International, Inc.
593 Slausen Ave.
Culver City, CA
Contact:
Mr. James Callaghan

Dest Data Corporation
1285 Forgewood Ave.
Sunnyvale, CA
Contact:
Mr. Ian H. Mallender

Kalvar Corporation
907 South Broad Street
New Orleans, LA
Contact:
Mr. James Ewing

Information Control Systems
313 Noth First Street
Ann Arbor, Michigan
Contact:
Mr. David H. Vanderyacht

Singer Simulation Products
1077 E. Arques Ave.
Sunnyvale, CA
Contact:
Mr. Charles E. Hauber

e. Foreign Government Visitors.

Central Computer Agency
Civil Service Department
Riverwalk House, Milbank
London S.W. 1
United Kingdom
Contact:
Mr. B. J. Terry

Ministry of Defense
Room 622, Turnstile House
94-99 High Holborn
London W.C. IV 6LL
United Kingdom
Contact:
Mr. R. J. Carman

Her Majesty's Stationary Off.
Govt. Reprographic Services
Gavrelle House
14 Bunhill Row
London, EC1Y 85R
Contact:
Mr. George J. York

2. IMPACT Team Contacts

a. Micrographics Vendors (Multi-Product).

Bell & Howell Business Equip.
6800 McCornick Road
Chicago, Illinois

E. I. Dupont De Nemours & Co., Inc.
Photo Products Department
Wilmington, DE

Eastman Kodak Company
343 State Street
Rochester, N. Y.

GAF Corporation
140 W. Fifty-First Street
New York, N. Y.

Quantor Corpation
520 Logue Ave.
Mountain View, CA

3M Company
3M Center 220-9E
St. Paul, MN

Stromberg Datagraphix, Inc.
P. O. Box 82449
San Diego, CA

b. Input Equipment/System Vendors.

Addressograph Multigraph Corp.
Vari Typer Division
11 Mt. Pleasant Ave.
East Hanover, N. J.

Daconics
925 Thompson Place
Sunnyvale, CA

Edit Systems, Inc.
4956 Sentinal Drive
Bethesda, MD

ATEX, Incorporated
3 Preston Court
Bedford, MA

Comptek Research Inc.
455 Cayuga Road
Buffalo, N. Y.

c. Computer Output Microfilm Vendors.

Bell & Howell Business Equip.
6800 McCornick Road
Chicago, Illinois

Quantor Corporation
520 Logue Ave.
Mountain View, CA

California Computer Products
2411 W. La Palma
Anaheim, CA

Singer Micrographics Systems
1077 E. Arques Ave.
Sunnyvale, CA

Eastman Kodak Company
343 State Street
Rochester, N. Y.

Stromberg Datagraphics, Inc.
P. O. Box 82449
San Diego, CA

Information International, Inc.
5933 Slauson Ave.
Culver City, CA

d. Micrographic Equipment/Supplies Vendors.

Access Corporation
4815 Para Drive
Cincinnati, OH

Consumer & Library Microforms
P. O. Box 450
Estes Park, CO

The Allen Products Co.
180 Wampus Lane
Milford, CT

Dietzgen Corporation
2425 N. Sheffield Ave.
Chicago, IL

Oscar Fisher Company, Inc
P. O. Box 2305
Newburgh, N. Y.

ITEK Graphics Products
1001 Jefferson Road
Rochester, N. Y.

Keuffel & Esser Company
20 Whippany Road
Morristown, NJ

Logetronics, Inc.
7001 Loisdale Road
Springfield, VA 22150

The Micobra Corporation
P. O. Box 1187
Hanover, MA

Micro Design,
A Div. of Bell & Howell Co.
857 W. State Street
Hartford, WI

National Blank Book Co., Inc.
Holyoke, MA

National Microsales Corp.
45 Symour Street
Stratford, CT

NB Jackets Company
54-18 Thirty-Seventh Ave.
Woodside, N. Y.

Northwest Microfilm, Inc
15 S. Ninth Street
Minneapolis, MN

OCE-Industries, Inc.
6500 N. Lincoln Ave.
Chicago, IL

Rochester Film Company,
A Div. of Anken Industries
237 South Street
Morristown, NJ

Scott Graphics, Inc.
Holyoke, MA

Synergraphics, Inc.
P. O. Box 7958
San Francisco, CA

Taylor Merchant Micrographics
25 W. Forty-Fifth Street
New York, N. Y.

Terminal Data Corporation
21221 Oxnard Street
Woodland Hills, CA

Visidyne, Inc.
19 Third Ave.
Burlington, MA

Washington Scientific Industries
Long Lake, MN

Xerox Corporation
Xerox Square
Rochester, N. Y.

e. Micrographic Service Bureaus.

Department of Commerce
US Patent Office
Office of Micrographics
Washington, D. C.

Dept. Housing & Urban Devel.
Office of Administration
Washington, D. C.

Nat'l Oceanic & Atmospheric Admin.
Room 2334 (FOB-4)
Suitland, MD

Dept. Health Education & Welfare
OS-Data Management Center
Washington, D. C.

Automation Industries, Inc
Vitro Laboratories Div.
1400 Georgia Ave.
Silver Spring, MD

Bell & Howell Co.
Micro-Photo Division
Drawer E, Old Mansfield Rd.
Wooster, OH

Commonwealth Information Corp.
728 E. Main Street
Richmond, VA

Computer Micrographics, Inc.
5345 W. 102nd Street
Los Angeles, CA

Computer-Output-Microfilm Corporation
Suite 550, Lakewood Center
North Building
14600 Detroit Ave.
Lakewood, OH

Information Handling Services
5500 S. Valentia Way
Englewood, CO

Mark Larwood Company
7171 E. Davison Ave.
Detroit, MI

Magnagard, Inc.
1636 Sylvania Ave.
Toledo, OH

Optimum Systems, Inc.
5615 Fishers Lane
Rockville, MD

Xidex Corporation
305 Soquel Way
Sunnyvale, CA

Zytron Corporation
2200 Sand Hill Road
Menlo Park, CA

APPENDIX G

SURVEY
PROJECT IMPACT
(DA Micropublishing)

INFORMATION SUBMITTED THROUGH THIS SURVEY IS VITAL TO PLANNING NECESSARY UNDER PROJECT 'IMPACT' (IMPLEMENTATION OF MICROPUBLISHING, ARMY CONCEPT AND TECHNOLOGY). ACCURATE AND COMPLETE INFORMATION IS REQUESTED AND APPRECIATED.

THIS SURVEY IS DIVIDED INTO THREE PARTS: (1) MANAGEMENT, (2) USER, AND (3) NON-USER. EACH RESPONDENT IS REQUESTED TO COMPLETE THE PARTS WHICH APPLY.

ALL ITEMS IN THIS SURVEY REQUIRING A LETTER RESPONSE SHOULD BE MARKED WITH A NUMBER 2 PENCIL ON THE ANSWER SHEET PROVIDED.

IF MORE SPACE IS REQUIRED FOR THE WRITTEN DISCUSSION PORTION OF ANY ITEM USE THE BACK SIDE OF THE SURVEY PAGES, BEING SURE TO NUMBER YOUR COMMENTS IN AGREEMENT WITH THE SURVEY ITEMS.

PART I - MANAGEMENT

WHAT TYPE OF PAPER FILES DO YOU MAINTAIN? (INDICATE THE PERCENTAGE OF THE TOTAL VOLUME OF EACH BY MARKING THE APPROPRIATE ANSWER ON YOUR ANSWER SHEET.)

Percent of Total

	(0-10)	(10-20)	(20-30)	(30-40)	(40-50)	(50-60)	(60-70)	(70-80)	(80-90+)
1. Correspondence	A	B	C	D	E	F	G	H	I
2. Computer printouts	A	B	C	D	E	F	G	H	I
3. Number Directives	A	B	C	D	E	F	G	H	I
4. Reference Catalogs	A	B	C	D	E	F	G	H	I
5. Reference Publications	A	B	C	D	E	F	G	H	I
6. Other (Describe)	A	B	C	D	E	F	G	H	I

WHAT ARE THE NUMBERS OF FILES-PERSONNEL THAT ARE ASSIGNED TO MAINTAIN THE FILES SHOWN IN THE PREVIOUS QUESTION? (INDICATE THE LETTER REFERRING TO THE NUMBERS OF PEOPLE IN EACH CATEGORY.)

	Numbers of People									
	0	1	2	3	4	5	6	7	8	9+
7. E-1 to E-4	A	B	C	D	E	F	G	H	I	J
8. E-5 to E-6	A	B	C	D	E	F	G	H	I	J
9. E-7 to E-9	A	B	C	D	E	F	G	H	I	J
10. W-1 to W-4	A	B	C	D	E	F	G	H	I	J
11. O-1 to O-3	A	B	C	D	E	F	G	H	I	J
12. O-4 or Above	A	B	C	D	E	F	G	H	I	J
13. GS-1 to GS-2	A	B	C	D	E	F	G	H	I	J
14. GS-3 to GS-4	A	B	C	D	E	F	G	H	I	J
15. GS-5 to GS-6	A	B	C	D	E	F	G	H	I	J
16. GS-7 to GS-8	A	B	C	D	E	F	G	H	I	J
17. GS-9 or Above	A	B	C	D	E	F	G	H	I	J

HOW MANY HOURS PER DAY DO YOUR FILES-PERSONNEL SPEND IN FILING ACTIVITIES? FOR EACH GRADE LEVEL RANGE, INDICATE THE LETTER REFERRING TO THE NUMBER OF HOURS YOUR PERSONNEL SPEND.

	Number of Hours Per Day									
	0	1	2	3	4	5	6	7	8	9+
18. E-1 to E-4	A	B	C	D	E	F	G	H	I	J
19. E-5 to E-6	A	B	C	D	E	F	G	H	I	J
20. E-7 to E-9	A	B	C	D	E	F	G	H	I	J
21. W-1 to W-4	A	B	C	D	E	F	G	H	I	J
22. O-1 to O-3	A	B	C	D	E	F	G	H	I	J
23. O-4 or Above	A	B	C	D	E	F	G	H	I	J
24. GS-1 to GS-2	A	B	C	D	E	F	G	H	I	J
25. GS-3 to GS-4	A	B	C	D	E	F	G	H	I	J
26. GS-5 to GS-6	A	B	C	D	E	F	G	H	I	J
27. GS-7 to GS-8	A	B	C	D	E	F	G	H	I	J
28. GS-9 or Above	A	B	C	D	E	F	G	H	I	J

HOW MUCH FILING EQUIPMENT IS REQUIRED TO HOUSE THE CURRENT PAPER FILES? INDICATE THE NUMBER OF UNITS OF EACH TYPE REQUIRED BY MARKING THE APPROPRIATE LETTER ON YOUR ANSWER SHEET.

	Number of Units						
	(0-2)	(2-4)	(4-6)	(6-8)	(8-10)	(10-12)	(12 +)
29. Unsecured 2DR File	A	B	C	D	E	F	G
30. Unsecured 4DR File	A	B	C	D	E	F	G
31. Unsecured 5DR File	A	B	C	D	E	F	G
32. Secured 2DR File	A	B	C	D	E	F	G
33. Secured 4DR File	A	B	C	D	E	F	G
34. Secured 5DR File	A	B	C	D	E	F	G
35. Open Shelf	A	B	C	D	E	F	G
36. Bookcase	A	B	C	D	E	F	G
37. Automatic File Equipment... (Show Makes & Models):	A	B	C	D	E	F	G

WHAT IS THE VOLUME OF EACH TYPE OF MICROFORM BEING USED WITHIN YOUR ACTIVITY? INDICATE THE NUMBER OF FILING INCHES OF EACH BY MARKING THE APPROPRIATE LETTER ON YOUR ANSWER SHEET.

	Filing Inches									
	(0-5)	(5-10)	(10-15)	(15-20)	(20-25)	(25-30)	(30-35)	(35-40)	(40-45)	(45-50)+
38. Microfiche	A	B	C	D	E	F	G	H	I	J
39. Cartridge	A	B	C	D	E	F	G	H	I	J
40. Aperture Cards	A	B	C	D	E	F	G	H	I	J
41. Roll Film 16 MM	A	B	C	D	E	F	G	H	I	J
42. Roll Film 35 MM	A	B	C	D	E	F	G	H	I	J

43. WHAT REDUCTION RATIO IS USED IN PRODUCING THE ABOVE MICROFORM(S)? INDICATE THE LETTER OF THE MOST FREQUENTLY USED REDUCTION RATIO.

16X..... A

24X..... B

30X..... C

42X..... D

48X..... E

OTHER (IDENTIFY)..... F

_____

UNKNOWN..... G

44. HAS THE READER AND READER--PRINTER EQUIPMENT TO SUPPORT THE SYSTEM(S) BEEN SATISFACTORY?

Very Unsatisfactory..... A

Unsatisfactory..... B

Uncertain..... C

Satisfactory..... D

Very Satisfactory..... E

45. ARE THE IMAGES PROPERLY MAGNIFIED WITH SUFFICIENT LIGHT TO PERMIT COMFORTABLE VIEWING AND/OR SATISFACTORY PRINTOUTS?

Very Unsatisfactory..... A

Unsatisfactory..... B

Uncertain..... C

Satisfactory..... D

Very Satisfactory..... E

DISCUSS YOUR RESPONSES TO QUESTIONS NUMBERED 44 AND 45.

HOW MUCH EXPERIENCE HAVE YOU HAD WITH MICROFORMS? (FOR EACH TYPE INDICATE THE LETTER OF THE APPROPRIATE RESPONSE ON YOUR ANSWER SHEET.)

	Experience Level			
	No Experience	Very Little Experience	Moderate Experience	Great Experience
46. Microfiche/jackets	A	B	C	D
47. Cartridges	A	B	C	D
48. Reels	A	B	C	D
49. Aperture Cards	A	B	C	D
50. Other (Identify)	A	B	C	D

_____

51. HOW ADEQUATE WAS THE TRAINING FOR MICROFILM USERS WITHIN YOUR ORGANIZATION IN THE SYSTEM(S) PRIOR TO INITIAL USE?

Non-Existent..... A

Inadequate..... B

Uncertain..... C

Adequate..... D

Very Adequate..... D

52. WHAT IS THE USER REACTION TO WORKING WITH MICROFILM VS PAPER COPY?

Very Unacceptable..... A

Unacceptable..... B

Uncertain..... C

Acceptable..... D

Very Acceptable..... E

53. HOW HAS THE WORK PRODUCTION OF ASSIGNED PERSONNEL BEEN AFFECTED THROUGH WORKING WITH MICROFILM VS HARD COPY?

Greatly slowed..... A

Slowed..... B

No Change..... C

Improved..... D

Greatly Improved..... E

54. WHAT PERCENTAGE OF MICROFILM "LOOK-UPS" REQUIRE A PAPER PRINT?

1%..... A

5%..... B

More Than 5%..... C

55. WHAT PERCENTAGE OF THE MICROFILM YOU USE IS PRODUCED BY YOUR ACTIVITY?

Percent

(0-5)	(5-10)	(10-15)	(15-20)	(20-25)	(25-30)	(30-35)	(35-40)	(40-45)+
A	B	C	D	E	F	G	H	I

56. WHERE IS THE PRODUCTION OF THIS MICROFILM ACCOMPLISHED?

In-house..... A

Service Contract..... B

Received from other sources..... C

Unknown..... D

57. ARE THERE IN-HOUSE FACILITIES AVAILABLE TO REPRODUCE YOUR MICROFILM FILES, AS REQUIRED?

Yes..... A

No..... B

58. IS MICROFILM REPRODUCTION ACCOMPLISHED WITHIN THE "MASTER FILES" AREA?

Reproduction w/n immediate area..... A

No Reproduction w/n immediate area..... B

59. IN WHAT TYPE OF ENVIRONMENT IS MICROFILM MOST OFTEN USED WITHIN YOUR ORGANIZATION? (INDICATE THE LETTER OF THE APPROPRIATE RESPONSE.)

Centralized, within the office area..... A

Library facility..... B

At individual desk(s)..... C

Outside environment (Where and under what climatological conditions or type of facility?) Discuss:..... D

60. DO YOU PERSONALLY USE MICROFILM IN YOUR WORK?

Never..... A

Sometimes..... B

Often..... C

Very Often..... D

61. HOW LONG HAVE YOU USED MICROFILMED MATERIALS? (INDICATE THE CLOSEST RANGE OF YEARS BY MARKING THE LETTER OF THE APPROPRIATE RESPONSE.)

(0-1)..... A

(1-3)..... B

(3-6)..... C

(6-10)..... D

(10 or More)..... E

62. IN THE EVENT THAT AN EXPANDED USE OF MICROFILM WOULD BE INITIATED THROUGH MICROPUBLISHING CERTAIN HQDA REGULATIONS, MANUALS, AND PAMPHLETS, HOW WOULD THIS EXPANDED USE OF MICROFILM IMPACT UPON YOUR ACTIVITY?

Very Negatively..... A

Negatively..... B

Uncertain..... C

Positively..... D

Very Positively..... E

63. WITH REFERENCE TO QUESTION #62, WHAT DO YOU FEEL WOULD BE THE EFFECTS ON WORK PRODUCTION?

Very Problematic..... A

Problematic..... B

Uncertain..... C

Beneficial..... D

Very Beneficial..... E

64. WITH REFERENCE TO QUESTION #62, GIVE AN ESTIMATE OF THE NUMBER OF ADDITIONAL READERS YOU FEEL WOULD BE REQUIRED.

One Unit..... A

Two Units..... B

Three Units..... C

Four Units..... D

Five or More Units..... E

(SHOW APPROX. NUMBER)--_____

65. WITH REFERENCE TO QUESTION #62, GIVE AN ESTIMATE OF THE NUMBER OF ADDITIONAL READER-PRINTERS YOU FEEL WOULD BE REQUIRED.

One Unit..... A

Two Units..... B

Three Units..... C

Four Units..... D

Five or More Units..... E
(SHOW APPROX. NUMBER)--

66. WOULD THE CONVERSION OF THE PAPER DOCUMENTS YOU NOW USE AND THE INSTALLATION OF A SMALL READER (PROBABLY ON A TYPEWRITER STAND OR EQUIVALENT) AND EITHER A NOTEBOOK OR SMALL BOX FILE FOR MICROFILM, PROVIDE YOU WITH AN APPRECIABLE AMOUNT OF INCREASED WORKING AREA?

Yes..... A

No..... B

67. IF THE ANSWER TO QUESTION #66 IS "YES", WHAT WOULD BE THE ESTIMATED *COST PER SQUARE FOOT OF SPACE SAVED? (INDICATE THE LETTER OF THE* APPROPRIATE COST RANGE ON YOUR ANSWER SHEET.)

Approx. Cost/Square Foot Saved

(1.25-1.50)	(1.50-1.75)	(1.75-2.00)	(2.00-2.25)	(2.25-2.50)	(2.50-2.75)	(2.75+)
A	B	C	D	E	F	G

68. WHAT IS THE PRESENT AMOUNT OF READER EQUIPMENT AVAILABLE FOR YOUR USE IN YOUR DUTY AREA?

One Unit..... A

Two Units..... B

Three Units..... C

Four Units..... D

Five or More Units..... E
(SPECIFY EXACT NUMBER)--

69. WHAT IS THE PRESENT AMOUNT OF READER-PRINTER EQUIPMENT AVAILABLE FOR YOUR USE IN YOUR DUTY AREA?

One Unit..... A

Two Units..... B

Three Units..... C

Four Units..... D

Five or More Units..... E
(SPECIFY EXACT NUMBER)--_____

WHAT TYPE OF DOCUMENTS WOULD YOU PREFER TO BE SELECTED FOR EARLY CONVERSION TO MICROPUBLISHING? (CIRCLE THE DOCUMENTS YOU PREFER IN MICROFORM AND INDICATE THE NUMBER OF EACH YOU WOULD REQUIRE. (ANSWER THIS ITEM RIGHT ON THIS PAGE.)

A. DA ADMIN		B. DOCTRINAL		C. EQUIPMENT		D. SUPPLY		E. MWO	
Type	#Cys	Type	#Cys	Type	#Cys	Type	#Cys	Type	#Cys
(1) AR	___	(8) FM	___	(20) TM	___	(25) Supply Catalog	___	(27) MWO	___
(2) DOL REG/ Manual	___	(9) ROTCM	___	(21) TB	___	(26) Supply Manual	___		
(3) DA CIRC	___	(10) TC	___	(22) SM	___				
(4) DA PAM	___	(11) ATP	___	(23) SB	___				
(5) DA Poster	___	(12) A SUBJ SCD	___	(24) LO	___				
(6) JCS PUB	___	(13) ATT	___						
(7) MICS PUB	___	(14) FT & TJC	___						
		(15) TOE	___						
		(16) TDA	___						
		(17) CTA	___						
		(18) JTA	___						
		(19) GTA	___						

70. IN YOUR ORGANIZATION, LIST WHAT EQUIPMENT IS USED FOR FILM REPRODUCTION/DUPLICATION.

71. DISCUSS WHERE AND HOW MICROFILM CAN PRODUCE SAVINGS IN YOUR OPERATIONS.

SKIP TO ITEM #72 ON YOUR ANSWER SHEET

THE NEXT TWO ITEMS ARE FOR MILITARY PERSONNEL ONLY:

72. IF YOUR MILITARY PAY GRADE APPEARS BELOW. ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #72 ON YOUR ANSWER SHEET. (IF YOUR PAY GRADE DOES NOT APPEAR BELOW. SKIP TO THE NEXT QUESTION.)

E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9
A	B	C	D	E	F	G	H	I

73. IF YOUR MILITARY PAY GRADE APPEARS BELOW, ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #73 ON YOUR ANSWER SHEET. (IF YOU ANSWERED THE PREVIOUS QUESTION, SKIP THIS ITEM)

O-1	O-2	O-3	O-4	O-5	O-6	WO-1	WO-2	WO-3
A	B	C	D	E	F	G	H	I

THE NEXT THREE ITEMS ARE FOR CIVILIAN PERSONNEL ONLY:

74. IF YOUR CIVILIAN GRADE LEVEL APPEARS BELOW, ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #74 ON YOUR ANSWER SHEET. (IF YOUR GRADE LEVEL DOES NOT APPEAR BELOW, SKIP TO THE NEXT QUESTION.)

WB-3	WB-4	WB-5	WB-6	WB-7	WB-8	WB-9	WB-10	WB-11
A	B	C	D	E	F	G	H	I

75. IF YOUR CIVILIAN GRADE LEVEL APPEARS BELOW, ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #75 ON YOUR ANSWER SHEET. (IF YOUR GRADE LEVEL DOES NOT APPEAR BELOW, SKIP TO THE NEXT QUESTION)

WB-12	WB-13	WB-14	WB-15	GS-1	GS-2	GS-3	GS-4	GS-5
A	B	C	D	E	F	G	H	I

76. IF YOUR CIVILIAN GRADE LEVEL APPEARS BELOW, ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #76 ON YOUR ANSWER SHEET. (IF YOU ANSWERED ONE OF THE PREVIOUS TWO QUESTIONS, SKIP THIS ITEM.)

GS-6	GS-7	GS-8	GS-9	GS-10	GS-11	GS-12	GS-13	GS-14	GS-15
A	B	C	D	E	F	G	H	I	J

77. PLEASE CLASSIFY YOUR INSTALLATION UNDER ONE OF THE FOLLOWING CATEGORIES BY INDICATING THE APPROPRIATE LETTER IN ITEM BLOCK #77 ON YOUR ANSWER SHEET.

Training..... A

Supply..... B

Maintenance..... C

Electronics..... D

Transportation..... E

Administration..... F

Other (Specify)..... G

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78. ON YOUR ANSWER SHEET FILL-IN LETTER BLOCK "A" FOR ITEM #78 TO INDICATE THAT YOU HAVE COMPLETED PART I - MANAGEMENT VERSION OF THIS SURVEY.

1.

RCS NO: AG-(OT)-700
25 June 1975

SURVEY
PROJECT IMPACT
(DA Micropublishing)

INFORMATION SUBMITTED THROUGH THIS SURVEY IS VITAL TO PLANNING NECESSARY UNDER PROJECT 'IMPACT' (IMPLEMENTATION OF MICROPUBLISHING, ARMY CONCEPT AND TECHNOLOGY). ACCURATE AND COMPLETE INFORMATION IS REQUESTED AND APPRECIATED. AS A USER OF MICROFILM, YOUR COMMENTS WILL BE OF PARTICULAR VALUE.

ALL ITEMS ON THIS SURVEY REQUIRING A LETTER RESPONSE SHOULD BE MARKED WITH A NUMBER 2 PENCIL ON THE ANSWER SHEET PROVIDED.

IF MORE SPACE IS REQUIRED FOR THE WRITTEN DISCUSSION PORTION OF ANY ITEM USE THE BACK SIDE OF THE SURVEY PAGES, BEING SURE TO NUMBER YOUR COMMENTS IN AGREEMENT WITH THE SURVEY ITEMS.

PART II - MICROFILM USER REPORT

1. AS PART OF YOUR DAILY DUTIES, DO YOU USE A MICROFILM SYSTEM WHICH HAS REPLACED A FORMER PAPER DOCUMENT SYSTEM?

Never.....A

Sometimes.....B

Don't Know.....C

Often.....D

Very Often.....E

2. HOW DIFFICULT DID YOU FIND IT TO CONVERT TO A MICROFORM SYSTEM?

Very Difficult.....A

Somewhat Difficult.....B

Uncertain.....C

Not Difficult.....D

Very Easy.....E

2.

3. DID YOU PARTICIPATE IN THE CONVERSION PROGRAM? (INDICATE THE LETTER OF THE APPROPRIATE RESPONSE ON YOUR ANSWER SHEET).

Never.....A

Sometimes.....B

Often.....C

Very Often.....D

4. WHAT MICROFORM ARE YOU MOST OFTEN USING IN THE SYSTEM(S) WITH WHICH YOU PRESENTLY WORK?

Microfiche.....A

Cartridges.....B

Aperture Cards.....C

Rolls.....D

Specialized Microform.....E

5. WHICH TYPE OF MICROFORM DO YOU PREFER?

Microfiche.....A

Cartridges.....B

Aperture Cards.....C

Rolls.....D

Specialized Microform.....E

FOR EACH MICROFORM THAT YOU USE, SPECIFY THE REDUCTION RATIO THAT IS USED.

	Reduction Ratio						
	16X	24X	30X	42X	48X	Other	Not Used
6. Microfiche	A	B	C	D	E	F	G
7. Cartridges	A	B	C	D	E	F	G
8. Aperture Cards	A	B	C	D	E	F	G
9. Specialized Microform	A	B	C	D	E	F	G
10. Rolls	A	B	C	D	E	F	G

HOW MUCH EXPERIENCE HAVE YOU HAD WITH MICROFORMS OTHER THAN THAT/THOSE WITH WHICH YOU ARE NOW WORKING. (RATE THEM IN TERMS OF EXPERIENCE BY INDICATING THE APPROPRIATE LETTER FOR EACH ON YOUR ANSWER SHEET).

	No Expc	Very Little Expc	Moderate Expc	Much Expc	Very Much Expc
11. Microfiche	A	B	C	D	E
12. Cartridges	A	B	C	D	E
13. Aperture Cards	A	B	C	D	E
14. Rolls	A	B	C	D	E
15. Other (Describe)	A	B	C	D	E

16. WHAT PERCENTAGE OF YOUR TIME (PER WEEK) IS SPENT WORKING WITH A MICROFORM SYSTEM? (MARK THE LETTER OF THE APPROPRIATE RESPONSE ON YOUR ANSWER SHEET).

Percent									
(0-5)	(5-10)	(10-15)	(15-20)	(20-25)	(25-30)	(30-35)	(35-40)	(40-45)	(45+)
A	B	C	D	E	F	G	H	I	J

4.

17. DID YOU RECEIVE INSTRUCTION IN THE MICROFILM SYSTEM (e.g., EXPLANATION OF THE PARTICULAR MICROFORM INVOLVED, THE INDEXING SYSTEM, AND THE RETRIEVAL SYSTEM) PRIOR TO ACTUAL USE OF THE MICROFORM?

Yes.....A

No.....B

18. DID YOU CONSIDER THIS ORIENTATION/TRAINING TO BE ADEQUATE TO THOROUGHLY ACQUAINT YOU WITH THE SYSTEM? IF NOT, DISCUSS THE PROBLEM.

Non-Existent.....A

Inadequate.....B

Uncertain.....C

Adequate.....D

Very Adequate.....E

DISCUSSION:

19. HOW ADEQUATE WAS THE INSTRUCTION ON THE USE OF THE RELATED READER OR READER-PRINTER EQUIPMENT?

Non-Existent.....A

Inadequate.....B

Uncertain.....C

Adequate.....D

Very Adequate.....E

DISCUSSION:

20. HOW ACCEPTABLE IS THE ENLARGED IMAGE (ON THE SCREEN) FOR YOUR REQUIREMENTS (GOOD CONTRAST, CLEAR LETTERING, ETC.)?

Very Unacceptable.....A

Somewhat Unacceptable.....B

Uncertain.....C

Acceptable.....D

Very Acceptable.....E

IF YOUR ANSWER IS "UNACCEPTABLE," DISCUSS WHAT YOU DO NOT LIKE.

21. DO YOU PREFER TO WORK WITH NEGATIVE IMAGES (WHITE LETTERS ON A DARK BACKGROUND) OR WITH POSITIVE IMMAGES (BLACK LETTERS ON A WHITE BACKGROUND)?

Negative Images.....A

Positive Images.....B

No Preference.....C

Undecided.....D

22. DO YOU FIND THAT YOUR WORK CAN BE MORE EASILY AND QUICKLY ACCOMPLISHED USING A MICROFILM OR A PAPER DATA BASE?

Better With Microfilm.....A

Better With Paper.....B

23. IN YOUR DAY TO DAY WORK WITH MICROFILM, WHAT PERCENTAGE OF "LOOK-UPS" ACTUALLY <u>REQUIRE</u> A PAPER COPY?

1%.....A

5%.....B

More Than 5%.....C

24. WHAT IS THE PAPER COPY MOST FREQUENTLY NEEDED FOR?

Long Term Reference Where No Personal Reader Is Available..A

Making Notations For Later Reference.....B

To Forward To A Requestor.....C

Other (Specify The Purpose).....D

25. WHERE IS MOST OF YOUR MICROFORM USING EQUIPMENT LOCATED?

Centralized Within The Office Area.....A

Library Facility.....B

On Your Desk.....C

At Your Work Station (Other Than Your Desk).....D

In An Outside Environment.....E

Discuss Where And Under What Conditions:

In A Special Environment.....F

(Inside A Tank, A Mobile Repair Unit, Or Manuevers, Etc.)

26. DO YOU PRESENTLY HAVE A NEED FOR YOUR OWN MICROFILM FILE AND A READER AT YOUR DESK OR WORK STATION?

Yes.....A

No.....B

27. IF ALL HQDA OFFICIAL, NUMBERED PUBLICATIONS WERE ISSUED IN A MICROFORM INSTEAD OF IN A PRINTED FORM, AND ADEQUATE READER EQUIPMENT WAS AVAILABLE, WOULD YOU EXPECT THIS CHANGE TO MAKE YOUR WORK EASIER AND QUICKER?

Much More Difficult.....A

More Difficult.....B

Uncertain.....C

Easier.....D

Much Easier.....E

28. IS THERE ANY ADDITIONAL INFORMATION YOU WOULD LIKE TO SUBMIT RELATIVE TO WORKING WITH A MICROFORM FILE, WITH EMPHASIS ON MICROFICHE?

Yes.....A

No.....B

DISCUSS YOUR RESPONSE:

SKIP TO ITEM #72 ON YOUR ANSWER SHEET

THE NEXT TWO ITEMS ARE FOR MILITARY PERSONNEL ONLY:

72. IF YOUR MILITARY PAY GRADE APPEARS BELOW, ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #72 ON YOUR ANSWER SHEET. (IF YOUR PAY GRADE DOES NOT APPEAR BELOW, SKIP TO THE NEXT QUESTION).

E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9
A	B	C	D	E	F	G	H	I

73. IF YOUR MILITARY PAY GRADE APPEARS BELOW, ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #73 ON YOUR ANSWER SHEET. (IF YOU ANSWERED THE PREVIOUS QUESTION, SKIP THIS ITEM).

O-1	O-2	O-3	O-4	O-5	O-6	WO-1	WO-2	WO-3
A	B	C	D	E	F	G	H	I

THE NEXT THREE ITEMS ARE FOR CIVILIAN PERSONNEL ONLY:

74. IF YOUR CIVILIAN GRADE LEVEL APPEARS BELOW, ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #74 ON YOUR ANSWER SHEET. (IF YOUR GRADE LEVEL DOES NOT APPEAR BELOW, SKIP TO THE NEXT QUESTION).

WB-3	WB-4	WB-5	WB-6	WB-7	WB-8	WB-9	WB-10	WB-11
A	B	C	D	E	F	G	H	I

75. IF YOUR CIVILIAN GRADE LEVEL APPEARS BELOW, ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #75 ON YOUR ANSWER SHEET. (IF YOUR GRADE LEVEL DOES NOT APPEAR BELOW, SKIP TO THE NEXT QUESTION).

WB-12	WB-13	WB-14	WB-15	GS-1	GS-2	GS-3	GS-4	GS-5
A	B	C	D	E	F	G	H	I

76. IF YOUR CIVILIAN GRADE LEVEL APPEARS BELOW, ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #76 ON YOUR ANSWER SHEET. (IF YOU ANSWERED ONE OF THE PREVIOUS TWO QUESTIONS, SKIP THIS ITEM).

GS-6	GS-7	GS-8	GS-9	GS-10	GS-11	GS-12	GS-13	GS-14	GS-15
A	B	C	D	E	F	G	H	I	J

9.

77. PLEASE CLASSIFY YOUR INSTALLATION UNDER ONE OF THE FOLLOWING CATAGORIES BY INDICATING THE APPROPRIATE LETTER IN ITEM BLOCK #77 ON YOUR ANSWER SHEET.

Training.....A

Supply.....B

Maintenance.....C

Electronics.....D

Transportation.....E

Administrative.....F

Other (Specify).....G

---

78. ON YOUR ANSWER SHEET FILL-IN LETTER BLOCK "B" FOR ITEM #78 TO INDICATE THAT YOU HAVE COMPLETED PART II - MICROFILM USER VERSION OF THIS SURVEY.

SURVEY
PROJECT IMPACT
(DA Micropublishing)

PART III - MICROFILM NON-USER REPORT

INFORMATION SUBMITTED THROUGH THIS SURVEY IS VITAL TO PLANNING NECESSARY UNDER PROJECT 'IMPACT' (IMPLEMENTATION OF MICROPUBLISHING, ARMY CONCEPT AND TECHNOLOGY). ACCURATE AND COMPLETE INFORMATION IS REQUESTED AND APPRECIATED.

AS A NON-USER OF MICROFILM AT THIS TIME, YOUR COMMENTS WILL BE OF PARTICULAR VALUE. WHEN ANSWERING THE FOLLOWING QUESTIONS, KEEP IN MIND THE POTENTIAL IMPACT UPON YOUR FUNCTION SHOULD YOU BEGIN TO RECEIVE ALL REGULATORY AND DIRECTIVE ITEMS IN A MICROFORM AS OPPOSED TO THE CURRENT PAPER PRODUCT.

ALL ITEMS ON THIS SURVEY REQUIRING A LETTER RESPONSE SHOULD BE MARKED WITH A NUMBER 2 PENCIL ON THE ANSWER SHEET PROVIDED.

IF MORE SPACE IS REQUIRED FOR THE WRITTEN DISCUSSION PORTION OF ANY ITEM USE THE BACK SIDE OF THE SURVEY PAGES, BEING SURE TO NUMBER YOUR COMMENTS IN AGREEMENT WITH THE SURVEY ITEMS.

WHAT TYPE OF DOCUMENTS DO YOU NORMALLY USE OR REFER TO IN YOUR DAILY WORK?

	FREQUENCY LEVEL				
	Very Infrequent	Infrequent	Not Certain	Frequent	Very Frequent
1. Numbered Regulations (All command levels)	A	B	C	D	E
2. Technical Manuals	A	B	C	D	E
3. Technical Bulletins	A	B	C	D	E
4. Research Publications	A	B	C	D	E
5. Supply Catalogs	A	B	C	D	E
6. Engineering Drawings	A	B	C	D	E
7. Specifications and Standards	A	B	C	D	E
8. Management Data Reports	A	B	C	D	E

	Frequency Level				
	Very Infrequent	Infrequent	Not Certain	Frequent	Very Frequent
9. Finance Records	A	B	C	D	E
10. Microfilmed Correspondence Files/Records	A	B	C	D	E
11. Other (Describe)	A	B	C	D	E

12. APPROXIMATELY WHAT PERCENTAGE OF TIME PER MONTH WOULD YOU REQUIRE A PAPER COPY OF THE DOCUMENTS YOU WORK WITH?

1%.....A

5%.....B

More Than 5%.....C

UNDER WHAT CONDITIONS DO YOU NORMALLY USE THESE PUBLICATIONS? (INDICATE FREQUENCY OF USE FOR EACH AREA).

	Frequency Level				
	Very Infrequent	Infrequent	Not Certain	Frequent	Very Frequent
13. Central Research Area	A	B	C	D	E
14. General Office Area	A	B	C	D	E
15. Computer Facility	A	B	C	D	E
16. Laboratory Facility	A	B	C	D	E
17. Library Area	A	B	C	D	E
18. Show/Warehouse Area	A	B	C	D	E
OUTSIDE:					
19. Construction Inspection	A	B	C	D	E

	Frequency Level				
	Very Infrequent	Infrequent	Not Certain	Frequent	Very Frequent
20. Maintenance Performance/ Inspection	A	B	C	D	E
21. Airborne Duty	A	B	C	D	E
22. Field Exercises	A	B	C	D	E
23. Remote Site Locations	A	B	C	D	E
24. Mobile Vans	A	B	C	D	E

25. IF YOU ARE LOCATED OUTSIDE CONUS, WHAT TYPE OF ELECTRICAL POWER IS AVAILABLE FOR YOUR USE?

AC.....A

DC.....B

AC/DC.....C

110-115V, 60Hz.....D

210-225V, 50Hz.....E

26. AS A NON-USER OF MICROFILM IN YOUR DAILY DUTIES, HAVE YOU EVER USED MICROFILM ELSEWHERE?

No.....A

Yes, for library research.....B

Yes, for occasional work requirements.....C

Yes, for other reasons (DESCRIBE).....D

WHAT MICROFORM(S) HAVE YOU USED? (INDICATE YOUR FREQUENCY OF USAGE BY MARKING THE PROPER LETTER FOR EACH ON YOUR ANSWER SHEET.)

	Not Used	Seldom Used	Often Used	Very Often Used
27. Microfiche/Jackets	A	B	C	D
28. Cartridges	A	B	C	D
29. Aperture Cards	A	B	C	D
30. Roll Film	A	B	C	D
31. Other (SPECIFY)	A	B	C	D

32. HAVE YOU OBSERVED OTHER PERSONNEL USING MICROFILM IN THE COURSE OF THEIR DUTIES? (IF YOUR RESPONSE IS "YES", COMPLETE ITEMS #33 - #38, OR IF YOUR RESPONSE IS "NO", SKIP TO ITEM #39.)

Yes.....A

No.....B

WHAT WAS YOUR IMPRESSION CONCERNING THE FOLLOWING FACTORS, AFTER WATCHING INDIVIDUALS USE MICROFILM? (FOR EACH FACTOR INDICATE THE LETTER OF THE APPROPRIATE RESPONSE.)

	Strongly Disliked	Disliked	Uncertain	Liked	Strongly Liked
33. Reduced Document Size	A	B	C	D	E
34. Working With Miniaturized Documents	A	B	C	D	E
35. Speed of Information Retrieval	A	B	C	D	E
36. Reading The Viewing Screen	A	B	C	D	E
37. Using The Printer and Printout	A	B	C	D	E
38. The Quality Of The Printed Copy	A	B	C	D	E

39. IF YOU WERE TO USE A READER, WOULD YOU PREFER THE SCREEN TO SHOW A BACKGROUND COLOR OF...(SELECT ONE, BY MARKING THE APPROPRIATE RESPONSE LETTER ON YOUR ANSWER SHEET.)

Green Tint.....A

Grey Tint.....B

Blue Tint.....C

Uncertain.....D

40. ARE YOU AWARE OF THE MANY DIFFERENT SIZES AND TYPES OF READING EQUIPMENT AVAILABLE FOR YOUR USE, RANGING FROM LARGE FLOOR MODELS TO THOSE SMALL ENOUGH TO ATTACH TO A BELT OR OTHER ITEM OF CLOTHING?

Yes.....A

No.....B

41. ARE YOU ACQUAINTED WITH READERS WHICH CAN ALSO BE USED FOR PROJECTORS TO ENABLE A SMALL GROUP TO VIEW AND DISCUSS MATERIAL IN A MICROFORM?

Yes.....A

No.....B

42. WOULD YOU BE WILLING TO SERIOUSLY TRY USING MICROFILMED PUBLICATIONS ASSUMING THAT ADEQUATE READERS WERE AVAILABLE?

Yes.....A

No.....B

IF THE ANSWER TO QUESTION #42 IS "NO", PLEASE DISCUSS THE REASON FOR THIS COMMENT.

43. ARE THERE ANY PUBLICATIONS WHICH YOU WOULD SUGGEST BE CONVERTED TO MICROFORM?

Yes.....A

No.....B

IF THE ANSWER IS "YES", NAME THEM AND TELL WHY YOU SUGGEST EACH ONE, e.g., VOLUME, UP-DATING REQUIREMENTS, COST OF PUBLICATION, COST OF MAILING, DIFFICULTY IN HANDLING, ETC.)

44. WOULD THE REDUCED FILING TIME (WORKING WITH MICROFILM) WHERE NO POSTING IS REQUIRED, BE OF ANY VALUE TO YOU OR YOUR STAFF?

No Value At All.....A

Not Very Valuable.....B

Uncertain.....C

Some Value.....D

Great Value.....E

45. DISCUSS WHERE AND HOW MICROFILM CAN PRODUCE SAVINGS IN YOUR OPERATION?

SKIP TO ITEM #72 ON YOUR ANSWER SHEET

THE NEXT TWO ITEMS ARE FOR MILITARY PERSONNEL ONLY:

72. IF YOUR MILITARY PAY GRADE APPEARS BELOW, ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #72 ON YOUR ANSWER SHEET.
(IF YOUR PAY GRADE DOES NOT APPEAR BELOW, SKIP TO THE NEXT QUESTION.)

E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9
A	B	C	D	E	F	G	H	I

73. IF YOUR MILITARY PAY GRADE APPEARS BELOW, ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #73 ON YOUR ANSWER SHEET.
(IF YOU ANSWERED THE PREVIOUS QUESTION, SKIP THIS ITEM)

O-1	O-2	O-3	O-4	O-5	O-6	WO-1	WO-2	WO-3
A	B	C	D	E	F	G	H	I

THE NEXT THREE ITEMS ARE FOR CIVILIAN PERSONNEL ONLY:

74. IF YOUR CIVILIAN GRADE LEVEL APPEARS BELOW, ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #74 ON YOUR ANSWER SHEET.
(IF YOUR GRADE LEVEL DOES NOT APPEAR BELOW, SKIP TO THE NEXT QUESTION.)

WB-3	WB-4	WB-5	WB-6	WB-7	WB-8	WB-9	WB-10	WB-11
A	B	C	D	E	F	G	H	I

75. IF YOUR CIVILAIN GRADE LEVEL APPEARS BELOW, ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #75 ON YOUR ANSWER SHEET.
(IF YOUR GRADE LEVEL DOES NOT APPEAR BELOW, SKIP TO THE NEXT QUESTION.)

WB-12	WB-13	WB-14	WB-15	GS-1	GS-2	GS-3	GS-4	GS-5
A	B	C	D	E	F	G	H	I

76. IF YOUR CIVILAIN GRADE LEVEL APPEARS BELOW, ENTER THE LETTER OF THAT GRADE IN ITEM BLOCK #76 ON YOUR ANSWER SHEET.
(IF YOU ANSWERED ON THE PREVIOUS TWO QUESTIONS, SKIP THIS ITEM.)

GS-6	GS-7	GS-8	GS-9	GS-10	GS-11	GS-12	GS-13	GS-14	GS-15
A	B	C	D	E	F	G	H	I	J

77. PLEASE CLASSIFY YOUR INSTALLATION UNDER ONE OF THE FOLLOWING CATAGORIES BY INDICATING THE APPROPRIATE LETTER IN ITEM BLOCK #77 ON YOUR ANSWER SHEET.

Training.....A

Supply.....B

Maintenance.....C

Electronics.....D

Transportation.....E

Administrative.....F

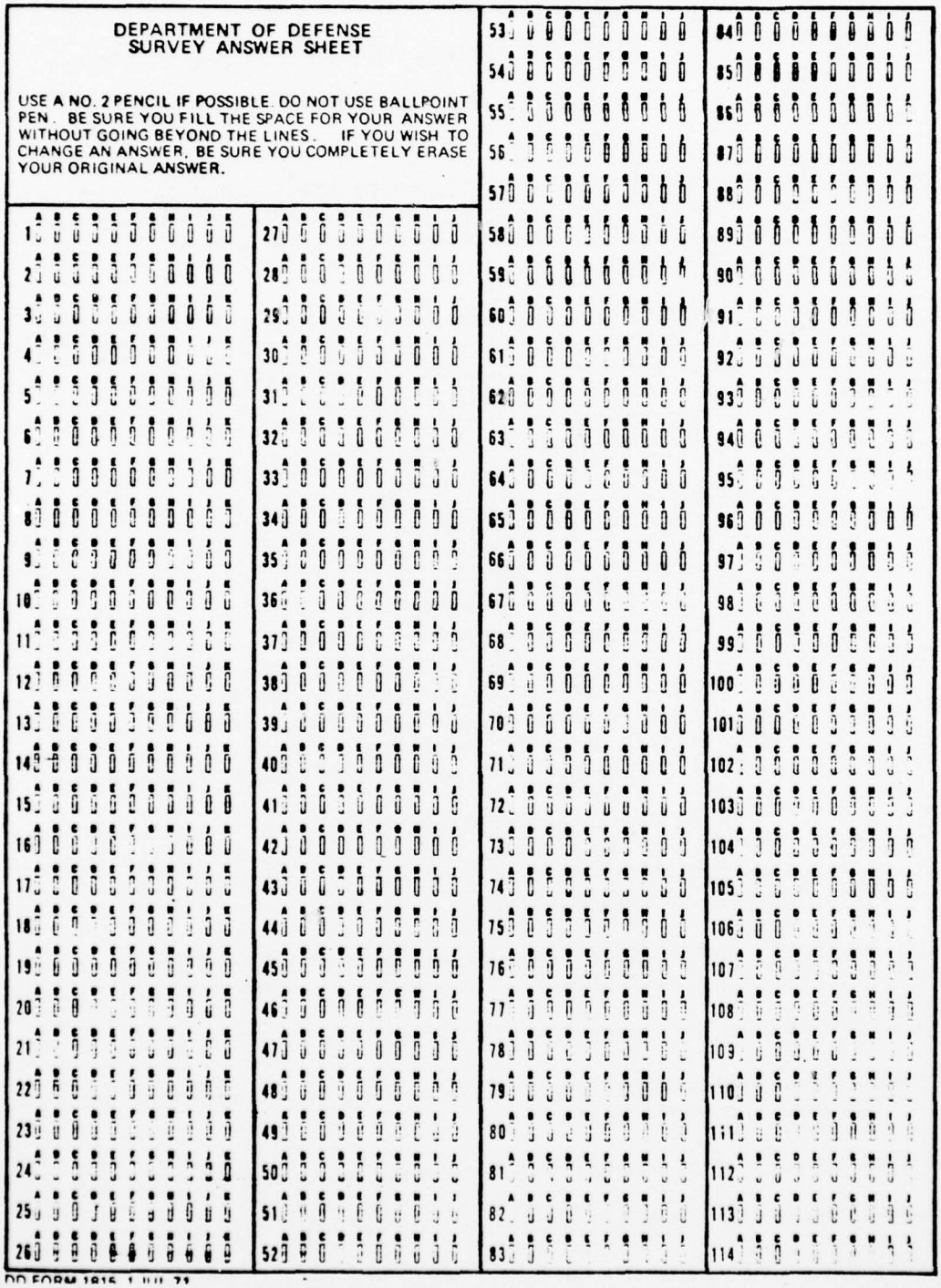
Other (Specify).....G

---

78. ON YOUR ANSWER SHEET FILL-IN LETTER BLOCK "C" FOR ITEM #78 TO INDICATE THAT YOU HAVE COMPLETED PART III - MICROFILM NON-USER VERSION OF THIS SURVEY.

DEPARTMENT OF DEFENSE SURVEY ANSWER SHEET

USE A NO. 2 PENCIL IF POSSIBLE. DO NOT USE BALLPOINT PEN. BE SURE YOU FILL THE SPACE FOR YOUR ANSWER WITHOUT GOING BEYOND THE LINES. IF YOU WISH TO CHANGE AN ANSWER, BE SURE YOU COMPLETELY ERASE YOUR ORIGINAL ANSWER.



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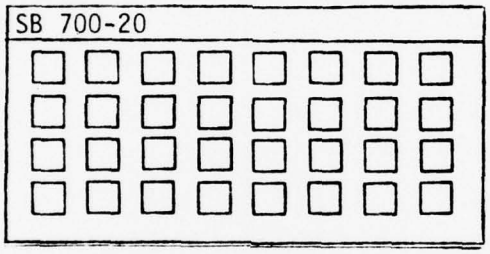
APPENDIX H

IMPLEMENTATION OF MICRO-PUBLISHING, ARMY CONCEPT AND TECHNOLOGY

(SYSTEMS DEVELOPMENT DIRECTORATE, THE ADJUTANT GENERAL CENTER)

Each year the Army spends over $40 million to print and distribute its publications. Printing costs are going up and available manpower is going down. This problem can be handled by putting more of the Army's publications on microfiche.

If you're in the supply area, you know that a microfiche isn't a little fish. Catalog Data Agency sends out the Management Data List (ML) and Tailored Master Cross Reference List (TMCRL) on microfiche. A microfiche is a thin sheet of film a little bigger than 4 x 6 inches.



Across the top of a fiche is a title. Below the title area is a grid of from 98 to 270 images. Each image can contain one full page. You need a microfiche reader in order to use the fiche. Reader equipment ranges from large desk-top units to those small enough to attach to a belt or other item of clothing. Many portable units are battery powered.

When a book is written and issued on microfiche - that's micropublishing. Wards, Sears, and most major airlines use shop guides and repair manuals on microfiche. Micropublishing cuts publication costs and saves space. How can the Army use micropublishing?

A special study group (Project IMPACT) was directed by The Adjutant General to find the best approach to implement micropublishing Army-wide.

IMPACT is trying to determine "what", "when", and "how" to micropublish.

-What paper publications could be converted to a microfiche version (also what shouldn't be)?

-When should paper publications be converted to microfiche?

-How should paper publications be converted to microfiche?

You can help IMPACT to help the Army. Read the attached survey before you start to answer. Then do the best you can.

(TEAR-OFF THIS PAGE BEFORE RETURNING THE SURVEY)

THE IMPACT PROJECT SURVEY

INSTRUCTIONS: READ EACH QUESTION BEFORE YOU ANSWER. PRINT YOUR ANSWER IN THE BOX (OR BOXES) PROVIDED. BE SURE TO COMPLETE ALL ITEMS. YOU MAY WRITE COMMENTS AND EXPLANATIONS IN THE SPACE PROVIDED AT THE END OF THE SURVEY.

A. WHAT IS YOUR PRESENT PAY GRADE LEVEL? (EXAMPLE: E4, 04, W4, IF YOU'RE A CIVILIAN JUST ENTER THE LETTERS GS, WB, WG, AS APPROPRIATE) (1) (2)

B. CLASSIFY YOUR DUTIES UNDER THE ARMY BRANCH TO WHICH THEY BELONG. (3) (4)

- 01. MEDICAL/DENTAL
- 02. JUDGE ADVOCATE GENERAL
- 03. FINANCE
- 04. QUARTERMASTER
- 05. ADJUTANT GENERAL
- 06. ORDNANCE
- 07. ENGINEERS
- 08. MILITARY POLICE
- 09. CHEMICAL
- 10. TRANSPORTATION
- 11. ARMOR
- 12. FIELD ARTILLERY
- 13. SIGNAL
- 14. MILITARY INTELLIGENCE
- 15. INFANTRY
- 16. CHAPLAIN
- 17. AVIATION
- 18. AIR DEFENSE ARTILLERY
- 19. OTHER _____

C. IF YOU ARE IN A SUPERVISORY POSITION, HOW MANY PEOPLE DO YOU DIRECTLY SUPERVISE? (IF NOT A SUPERVISOR, ENTER 0) (5) (7)

D. AT WHAT ORGANIZATIONAL LEVEL DO YOU PERFORM YOUR WORK? (8)

1. DIVISION
2. BRIGADE
3. GROUP
4. BATTALION OR SQUADRON
5. HEADQUARTERS COMPANY
6. COMPANY, BATTERY OR TROOP
7. PLATOON
8. OTHER _____

E. WOULD YOUR UNIT BE CONSIDERED A "QUICK REACTION UNIT", THAT IS, WITH A MISSION TO BE READY FOR DEPLOYMENT ON VERY SHORT NOTICE? (9)

1. YES 2. NO 3. DON'T KNOW

TYPES OF DA PUBLICATIONS

(USE THE NUMBERS FROM THIS LIST FOR QUESTIONS F THROUGH J)

- 01. ARMY REGULATION
- 02. DOD REG/MANUAL
- 03. DA CIRCULAR
- 04. DA PAMPHLET
- 05. DA POSTER
- 06. JOINT CHIEFS STAFF PUB
- 07. MISCELLANEOUS PUB
- 08. FIELD MANUAL
- 09. ROTCM MANUAL
- 10. TRAINING CIRCULAR
- 11. ARMY TRAINING PROGRAM
- 12. ARMY SUBJECT SCHEDULE
- 13. ARMY TRAINING TESTS
- 14. FIRING TABLES AND TRAJECTORY CHARTS
- 15. TABLE OF ORGANIZATION AND EQUIPMENT
- 16. TABLES OF DISTRIBUTION AND ALLOWANCES
- 17. COMMON TABLES OF ALLOWANCES
- 18. JOINT TABLES OF ALLOWANCES
- 19. GRAPHIC TRAINING AIDS
- 20. TECH MANUAL
- 21. TECH BULLETIN
- 22. SUPPLY MANUAL
- 23. SUPPLY BULLETIN
- 24. LUBRICATION ORDERS
- 25. SUPPLY CATALOG
- 26. MODIFICATION WORK ORDERS

F. WHICH PUBLICATION TYPES ARE YOU CURRENTLY USING AS PART OF YOUR NORMAL WORK ROUTINE? (INDICATE IN ORDER THE THREE MOST OFTEN USED TYPES)
1ST = (10) (11)
2ND = (12) (13)
3RD = (14) (15)

G. WHICH PUBLICATION TYPES DO YOU USE UNDER FIELD CONDITIONS (OUT OF GARRISON)? (INDICATE THE TWO MOST OFTEN USED IN THE FIELD; IF NEVER IN THE FIELD, ENTER ZEROS FOR BOTH ANSWERS)
1ST = (16) (17)
2ND = (18) (19)

H. FOR WHICH PUBLICATION TYPE DO YOU NEED THE GREATEST NUMBER OF COPIES? (20) (21)

I. WHAT IS THE MOST OFTEN USED PUBLICATION TYPE THAT IS MAINTAINED IN YOUR WORK AREA REFERENCE LIBRARY? (22) (23)

J. WHICH PUBLICATION TYPE TAKES LONGEST TO RECEIVE AFTER ORDERING? (24) (25)

K. ABOUT HOW MANY WEEKS DOES IT TAKE TO RECEIVE THE PUBLICATION TYPE REFERRED TO IN QUESTION (J)? (26) (27)

L. HOW OFTEN DO YOU FIND IT NECESSARY TO ORDER GREATER QUANTITIES OF PUBLICATIONS THAN YOU ACTUALLY NEED? (28)

1. ALL THE TIME
2. OFTEN
3. OCCASIONALLY
4. NEVER

M. HOW OFTEN DO YOU FIND IT NECESSARY TO SHARE A PUBLICATION WITH SOMEONE ELSE FOR LACK OF SUFFICIENT COPIES? (29)

1. VERY FREQUENTLY
2. FREQUENTLY
3. INFREQUENTLY
4. VERY INFREQUENTLY

N. HOW OFTEN ARE CHANGES POSTED TO THE PUBLICATIONS YOU USE? (30)

1. WEEKLY
2. MONTHLY
3. EVERY COUPLE MONTHS
4. ONCE OR TWICE/YEAR
5. AS RECEIVED

O. HOW OFTEN ARE PUBLICATIONS YOU USE DESTROYED BY GETTING DIRTY, TORN, OR WET? (31)

1. VERY FREQUENTLY
2. FREQUENTLY
3. INFREQUENTLY
4. VERY INFREQUENTLY

P. DO YOU FIND IT NECESSARY TO MAKE WRITTEN NOTES DIRECTLY ON THE PUBLICATIONS YOU USE? (32)

1. ALL THE TIME
2. OFTEN
3. OCCASIONALLY
4. NEVER

Q. DO YOU EVER FIND IT NECESSARY TO TAKE DA PUBLICATIONS HOME FOR USE OR STUDY? (33)

1. VERY OFTEN
2. OFTEN
3. OCCASIONALLY
4. NEVER

R. WHAT IS YOUR PRIOR EXPERIENCE WITH ANY TYPE OF MICROFILM OR MICROFICHE? WOULD YOU SAY THAT YOU HAVE . . . (34)

1. USED IT BEFORE
2. SEEN IT BEFORE
3. WATCHED OTHERS USE IT
4. HEARD OF IT ONLY
5. NEVER SEEN OR HEARD OF IT

S. HOW MANY MICROFICHE READERS ARE CURRENTLY AVAILABLE IN YOUR WORK AREA, WHETHER IN USE OR NOT? (35) (36)

ESTIMATE HOW MANY MICROFICHE READERS YOU WOULD NEED IN YOUR WORK AREA IF . . . (CONSIDER EACH SITUATION SEPARATELY)

T. ALL ADMINISTRATIVE PUBLICATIONS WERE ON MICROFICHE (37) (38)

U. ALL DOCTRINAL PUBLICATIONS WERE ON MICROFICHE (39) (40)

V. ALL EQUIPMENT PUBLICATIONS WERE ON MICROFICHE (41) (42)

W. ALL SUPPLY PUBLICATIONS WERE ON MICROFICHE (43) (44)

RCS (AG-(OT)-700)

X. MICROPUBLISHING OFFERS MANY BENEFITS, SOME ARE MORE IMPORTANT THAN OTHERS. WHICH BENEFITS WOULD BE IMPORTANT TO YOU IN YOUR JOB? SELECT THE TWO MOST IMPORTANT ONES FROM THE FOLLOWING LIST.

1. PUBLICATIONS TAKE LESS SPACE
2. MORE COPIES OF PUBLICATIONS AVAILABLE
3. NO CHANGE-PAGE POSTING
4. COSTS THE ARMY LESS TO ISSUE
5. LESS ORDERING DELAY
6. FASTER LOOK-UPS
7. LESS BULK FOR FIELD CARRY
8. LARGER REFERENCE LIBRARY POSSIBLE

[ ] (45)
[ ] (46)

Y. WHAT DO YOU FEEL WOULD BE THE REACTION IN YOUR UNIT TOWARD USING PUBLICATIONS ON MICROFICHE, ASSUMING ADEQUATE READERS WERE AVAILABLE?

1. MUCH ACCEPTANCE
2. SOME ACCEPTANCE
3. SOME RESISTANCE
4. MUCH RESISTANCE

[ ] (47)

Z. HOW DO YOU FEEL MICRO-PUBLICATIONS WOULD AFFECT YOUR UNIT'S WORK PRODUCTION?

1. MUCH IMPROVEMENT
2. SOME IMPROVEMENT
3. SOME HINDERANCE
4. MUCH HINDERANCE

[ ] (48)

INSTRUCTIONS: THE NEXT FEW QUESTIONS WILL ASK YOU TO FILL-IN A PUBLICATION NUMBER. FOR EACH ANSWER, THE FIRST TWO BOXES ON THE LEFT REQUIRE THAT YOU LOOK AT THE LIST BEFORE QUESTION (F). USE ONE OF THE PUB TYPE NUMBERS FROM THIS LIST. THE REST OF THE BOXES ARE FOR WRITING-IN THE ACTUAL PUBLICATION NUMBER. SEPARATE THE PARTS OF THE PUBLICATION NUMBER THAT ARE NORMALLY SEPARATED BY DASHES. DO THIS BY OBSERVING THE DASHES THAT SEPARATE THE GROUPS OF BOXES. HERE ARE SOME EXAMPLES.

	TYPE OF PUB	PUB NUMBER
FOR A TM (9-2300-378-35P)	2 0	9 — 2 3 0 0 — 3 7 8 — 3 5 P
FOR AN SB (740-1400-92-127)	2 3	7 4 0 — 1 4 0 0 — 9 2 — 1 2 7
FOR AN AR (310-2)	0 1	3 1 0 — 2 — — —
FOR A SUBJ SCD (9-45820)	1 2	9 — 4 5 B 2 0 — — —

AA. WHICH DA PUBLICATION DO YOU USE MOST FREQUENTLY FOR YOUR NORMAL WORK NEEDS? (PUT THE PUBLICATION NUMBER BELOW)

(49) TYPE OF PUB [ ] PUB NUMBER [ ] (69)

BB. WHAT PUBLICATION DO YOU POST CHANGES TO MOST FREQUENTLY? (PUT THE PUBLICATION NUMBER BELOW)

(1) TYPE OF PUB [ ] PUB NUMBER [ ] (21)

CC. WHAT PUBLICATIONS WOULD YOU MOST LIKE TO SEE IN MICROFICHE? (PUT THE PUBLICATION NUMBERS OF YOUR TWO TOP CHOICES BELOW)

(22) TYPE OF PUB [ ] PUB NUMBER [ ] (42)

(43) TYPE OF PUB [ ] PUB NUMBER [ ] (63)

COMMENTS:

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IMPLEMENTATION OF MICROPUBLISHING, ARMY CONCEPT AND TECHNOLOGY --ETC(U)
FEB 77 R T ALLSOP, M A CARPENTIER, A N CARRAS

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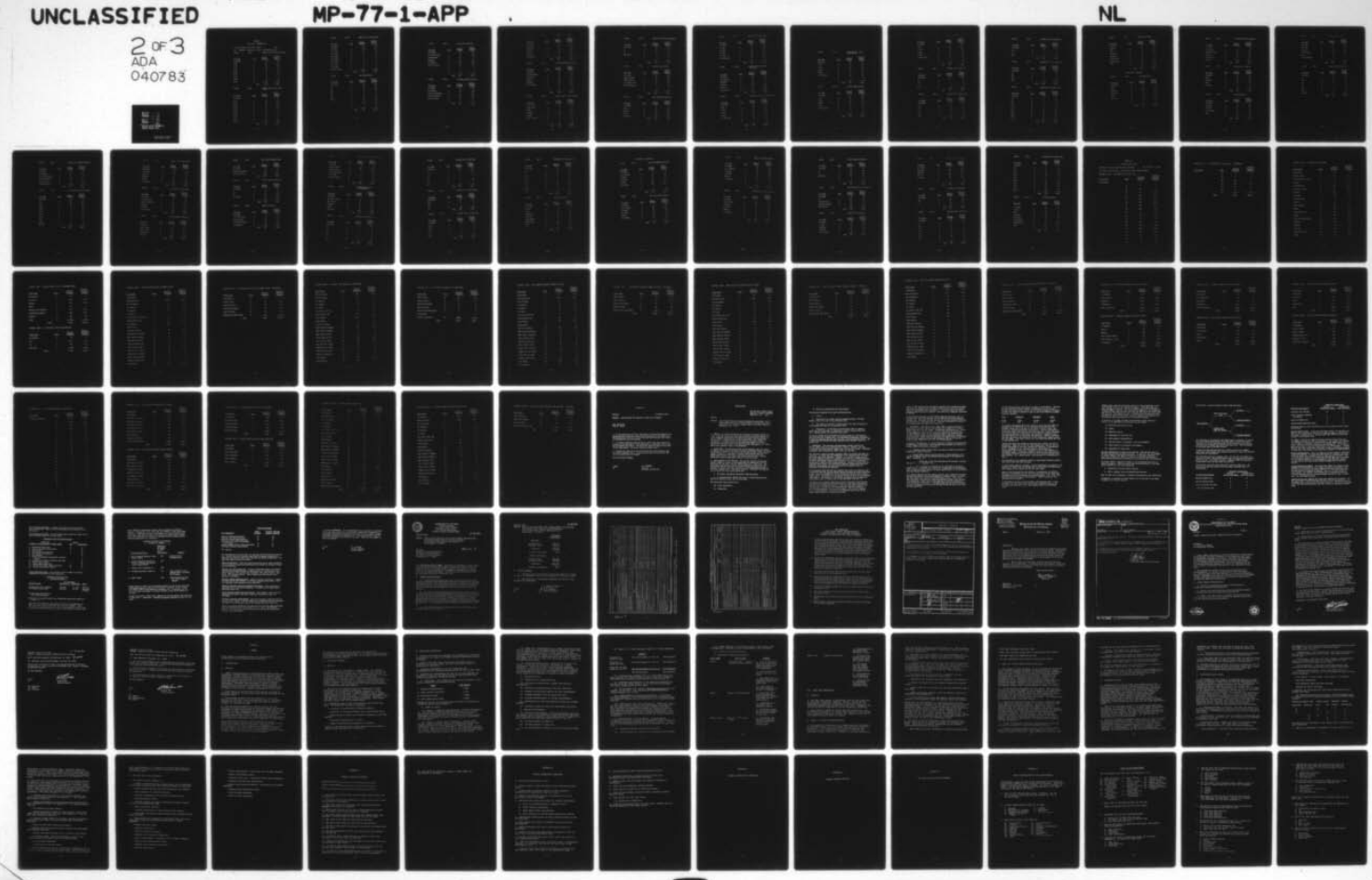


APPENDIX I

TRIAL SURVEY - MANAGEMENT DATA

STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES 112475

FILE MANAGEMENT (CREATION DATE = 112475) MICROFORM SURVEY DATA

VARIABLE ITEM 4 REFERENCE CATS % OF TOTAL PAPER FILES

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		21	8.0
0-10%	A	159	60.5
10-20%	B	39	14.8
20-30%	C	18	6.8
30-40%	D	4	1.5
40-50%	E	4	1.5
60-70%	G	2	.8
70-80%	H	3	1.1
80-90%	I	13	4.9
	TOTAL	263	100.0

VARIABLE ITEM 5 REFERENCE PUBS % OF TOTAL PAPER FILES

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		9	3.4
0-10%	A	98	37.3
10-20%	B	62	23.6
20-30%	C	38	14.4
30-40%	D	11	4.2
40-50%	E	16	6.1
50-60%	F	3	1.1
60-70%	G	5	1.9
70-80%	H	3	1.1
80-90%	I	18	6.8
	TOTAL	263	100.0

VARIABLE ITEM 38 NUMBER FILING INCHES-MICROFICHE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		46	17.5
0-5 INCHES	A	150	57.0
5-10 INCHES	B	25	9.5
10-15 INCHES	C	11	4.2
15-20 INCHES	D	6	2.3
20-25 INCHES	E	3	1.1
25-30 INCHES	F	2	.8
30-35 INCHES	G	1	.4
35-40 INCHES	H	2	.8
45-50 PLUS INCHES	J	17	6.5
	TOTAL	263	100.0

VARIABLE ITEM 43 MOST REDUCTION RATIO

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		53	20.2
16X	A	22	8.4
24X	B	37	8.4
30X	C	3	1.1
42X	D	1	.4
48X	E	23	8.7
OTHER	F	10	3.8
	G	112	42.6
	H	1	.4
	J	1	.4
	TOTAL	263	100.0

VARIABLE ITEM 45 READER IMAGE ACCEPTABILITY

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		53	20.2
VERY UNSATISFACTORY	A	22	8.4
UNSATISFACTORY	B	19	7.2
UNCERTAIN	C	34	12.9
SATISFACTORY	D	120	45.6
VERY SATISFACTORY	E	12	4.6
	F	1	.4
	G	1	.4
	J	1	.4
	TOTAL	263	100.0

VARIABLE ITEM 46 MICROFORM EXPERIENCE-MICROFICHE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		31	11.8
NO EXPERIENCE	A	70	26.6
VERY LITTLE EXPERIENCE	B	67	25.5
MODERATE EXPERIENCE	C	83	31.6
GREAT EXPERIENCE	D	11	4.2
	E	1	.4
	TOTAL	263	100.0

VARIABLE ITEM 51 MICROFORM TRAINING ADEQUACY

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		37	14.1
NON-EXISTANT	A	82	31.2
INADEQUATE	B	18	6.8
UNCERTAIN	C	60	22.8
ADEQUATE	D	65	24.7
VERY ADEQUATE	E	1	.4
	TOTAL	263	100.0

VARIABLE ITEM 52 USER REACTION-MICROFORM VS PAPER

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		41	15.6
VERY UNACCEPTABLE	A	13	4.9
UNACCEPTABLE	B	30	11.4
UNCERTAIN	C	63	24.0
ACCEPTABLE	D	101	38.4
VERY ACCEPTABLE	E	13	4.9
	F	1	.4
	J	1	.4
	TOTAL	263	100.0

VARIABLE ITEM 53 MICROFORM AFFECT ON WORK PRODUCTION

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		55	20.9
GREATLY SLOWED	A	7	2.7
SLOWED	B	34	12.9
NO CHANGE	C	88	33.5
IMPROVED	D	65	24.7
GREATLY IMPROVED	E	11	4.2
	F	2	.8
	J	1	.4
	TOTAL	263	100.0

VARIABLE ITEM 54 PERCENT OF TIME PAPER COPY REQUIRED

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		55	20.9
1%	A	71	27.0
5%	B	56	21.3
MORE THAN 5%	C	77	29.3
	D	2	.8
	J	2	.8
	TOTAL	263	100.0

VARIABLE ITEM 59 MICROFORM USE ENVIRONMENT

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		42	16.0
CENTRAL IN OFFICE	A	135	51.3
LIBRARY FACILITY	B	54	20.5
AT INDIVIDUAL DESKS	C	27	10.3
OUTSIDE ENVIRONMENT	D	3	1.1
	E	1	.4
	J	1	.4
	TOTAL	263	100.0

VARIABLE ITEM 60 AMOUNT PERSONAL MICROFORM USE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		13	4.9
NEVER	A	59	22.4
SOMETIMES	B	154	58.6
OFTEN	C	24	9.1
VERY OFTEN	D	13	4.9
	TOTAL	263	100.0

VARIABLE ITEM 61 YEARS OF PERSONAL MICROFORM USE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		28	10.6
0-1 YEARS	A	51	19.4
1-3 YEARS	B	49	18.6
3-6 YEARS	C	69	26.2
6-10 YEARS	D	38	14.4
10 OR MORE YEARS	E	27	10.3
	J	1	.4
	TOTAL	263	100.0

VARIABLE ITEM 63 EXPAND MICROFORM-EXPECT WORK-PROD EFFECT

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		20	7.6
VER PROBLEMATIC	A	18	6.8
PROBLEMATIC	B	45	17.1
UNCERTAIN	C	113	43.0
BENEFICIAL	D	60	22.8
VERY BENFICIAL	E	7	2.7
	TOTAL	263	100.0

VARIABLE ITEM 64 EXPAND MICROFORM-EXPECT ADD READERS REQ

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		44	16.7
1 UNIT	A	86	32.7
2 UNITS	B	48	18.3
3 UNITS	C	33	12.5
4 UNITS	D	16	6.1
5 or MORE UNITS	E	34	12.9
	F	1	.4
	J	1	.4
	TOTAL	263	100.0

VARIABLE ITEM 65 EXPAND MICROFORM - EXPECT ADD RDR-PTRS REQ

VALUE LABEL	VALUE		ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE			45	17.1
1 UNIT	A		123	46.8
2 UNITS	B		43	16.3
3 UNITS	C		20	7.6
4 UNITS	D		9	3.4
5 OR MORE UNITS	E		20	7.6
	F		2	.8
	J		1	.4
		TOTAL	263	100.0

VARIABLE ITEM 68 # PRESENT READERS AVAILABLE

VALUE LABEL	VALUE		ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE			75	28.5
1 UNIT	A		103	39.2
2 UNITS	B		34	12.9
3 UNITS	C		19	7.2
4 UNITS	D		5	1.9
5 OR MORE UNITS	E		24	9.1
	F		2	.8
	J		1	.4
		TOTAL	263	100.0

VARIABLE ITEM 69 # PRESENT READER-PRINTING AVAILABLE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		97	36.9
1 UNIT	A	113	43.0
2 UNITS	B	21	8.0
3 UNITS	C	10	3.8
4 UNITS	D	6	2.3
5 OR MORE UNITS	E	10	3.8
	F	5	1.9
	J	1	.4
	TOTAL	263	100.0

VARIABLE ITEM 72 RESPONDENT MIL PAY GRADE E1-E9

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		253	96.2
E-4	D	1	.4
E-6	F	2	.8
E-7	G	2	.8
E-8	H	5	1.9
	TOTAL	263	100.0

VARIABLE ITEM 73 RESPONDENT MIL PAY GRADE 01-WO3

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		232	88.2
O-3	C	12	4.6
O-4	D	5	1.9
O-5	E	10	3.8
O-6	F	3	1.1
WO-1	G	1	.4
	TOTAL	263	100.0

VARIABLE ITEM 74 RESPONDENT CIV PAY GRADE WB3-WB11

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		260	98.9
WB-5	C	1	.4
WB-7	E	1	.4
WB-8	F	1	.4
	TOTAL	263	100.0

VARIABLE ITEM 75 RESPONDENT CIV PAY GRADE WB12-GS5

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		251	95.4
GS-1	E	1	.4
GS-3	G	1	.4
GS-4	H	5	1.9
GS-5	I	5	1.9
	TOTAL	263	100.0

VARIABLE ITEM 76 RESPONDENT DIV PAY GRADE GS6-GS15

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		58	22.1
GS-6	A	4	1.5
GS-7	B	1	.4
GS-9	D	12	4.6
GS-10	E	1	.4
GS-11	F	25	9.5
GS-12	G	44	16.7
GS-13	H	70	26.6
GS-14	I	39	14.8
GS-15	J	9	3.4
	TOTAL	263	100.0

VARIABLE ITEM 77 INSTALLATION CATEGORY

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		21	8.0
TRAINING	A	9	3.4
SUPPLY	B	74	28.1
MAINTENANCE	C	15	5.7
ELECTRONICS	D	20	7.5
TRANSPORTATION	E	4	1.5
ADMINISTRATION	F	48	18.3
OTHER	G	71	27.0
	I	1	.4
	TOTAL	263	100.0

TRIAL SURVEY - USER DATA

VARIABLE ITEM 1 DAILY MICROFORM USE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		1	.3
NEVER	A	24	7.9
SOMETIMES	B	152	50.0
DONT KNOW	C	6	2.0
OFTEN	D	76	25.0
VERY OFTEN	E	43	14.1
	F	1	.3
	H	1	.3
	TOTAL	304	100.0

VARIABLE ITEM 2 DIFFICULTY CONVERTING TO MICROFORM

VALUE LABEL	VALUE		ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE			7	2.3
VERY DIFFICULT	A		15	4.9
SOMEWHAT DIFFICULT	B		47	15.5
UNCERTAIN	C		38	12.5
NOT DIFFICULT	D		127	41.8
VERY EASY	E		70	23.0
		TOTAL	304	100.0

VARIABLE ITEM 3 PARTICIPATION IN CONVERSION

VALUE LABEL	VALUE		ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE			5	1.6
NEVER	A		200	65.8
SOMETIMES	B		67	22.0
OFTEN	C		16	5.3
VERY OFTEN	D		15	4.9
	E		1	.3
		TOTAL	304	100.0

VARIABLE ITEM 4 MICROFORM MODE USED

VALUE LABEL	VALUE		ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE			5	2.0
MICROFICHE	A		121	39.8
CARTRIDGES	B		115	37.8
APERTURE CARDS	C		45	14.8
ROLLS	D		16	5.3
	F		1	.3
		TOTAL	304	100.0

VARIABLE ITEM 5 MICROFORM MODE PREFERRED

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		13	4.3
MICROFICHE	A	113	37.2
CARTRIDGES	B	122	40.1
APERTURE CARDS	C	37	12.2
ROLLS	D	16	5.3
SPECIAL MICROFORM	E	2	.7
	F	1	.3
	TOTAL	304	100.0

VARIABLE ITEM 6 REDUC RATIO USED MICROFICHE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		70	23.0
16X	A	19	6.3
24X	B	37	12.2
30X	C	5	1.6
42X	D	5	1.6
48X	E	81	26.6
OTHER	F	15	4.9
NOT USED	G	72	23.7
	TOTAL	304	100.0

VARIABLE ITEM 11 EXPERIENCE WITH MICROFORMS-MICROFICHE

VALUE LABEL	VALUE		ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE			35	11.5
NO EXPERIENCE	A		97	31.9
VERY LITTLE EXPERIENCE	B		64	21.1
MODERATE EXPERIENCE	C		59	19.4
MUCH EXPERIENCE	D		27	8.9
VERY MUCH EXPERIENCE	E		22	7.2
		TOTAL	304	100.0

VARIABLE ITEM 16 % TIME PER WEEK WORK WITH MICROFORMS

VALUE LABEL	VALUE		ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE			10	3.3
0-5%	A		149	49.0
5-10%	B		56	18.4
10-15%	C		27	8.9
15-20%	D		18	5.9
20-25%	E		13	4.3
25-30%	F		6	2.0
30-35%	G		5	1.6
35-40%	H		4	1.3
40-45%	I		2	.7
45% PLUS	J		14	4.6
		TOTAL	304	100.0

VARIABLE ITEM 18 ADEQUACY OF MICROFORM TRAINING

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		19	6.3
NON-EXISTENT	A	109	35.9
INADEQUATE	B	17	5.6
UNCERTAIN	C	16	5.3
ADEQUATE	D	124	40.8
VERY ADEQUATE	E	19	6.3
	TOTAL	304	100.0

VARIABLE ITEM 20 ACCEPTABILITY OF READER IMAGE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		9	3.0
VERY UNACCEPTABLE	A	21	6.9
SOMEWHAT UNACCEPTABLE	B	58	19.1
UNCERTAIN	C	32	10.5
ACCEPTABLE	D	165	54.3
VERY ACCEPTABLE	E	19	6.3
	TOTAL	304	100.0

VARIABLE ITEM 21 NEGATIVE OR POSITIVE IMAGE PREF

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		9	3.0
NEGATIVE IMAGES	A	89	29.3
POSITIVE IMAGES	B	108	35.3
NO PREFERENCE	C	78	25.7
UNDECIDED	D	20	6.6
	TOTAL	304	100.0

VARIABLE ITEM 22 WORK EASIER-MICROFORM OR PAPER

VALUE LABEL	VALUE		ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE			14	4.6
BETTER WITH MICROFORM	A		156	51.3
BETTER WITH PAPER	B		134	44.1
		TOTAL	304	100.0

VARIABLE ITEM 23 % LOOK UP REQUIRING PAPER COPY

VALUE LABEL	VALUE		ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE			16	5.3
1%	A		121	39.8
5%	B		54	17.8
MORE THAN 5%	C		112	36.8
	D		1	.3
		TOTAL	304	100.0

VARIABLE ITEM 24 PURPOSE OF PAPER COPY

VALUE LABEL	VALUE		ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE			13	4.3
LONG TERM REFERENCE	A		72	23.7
MAKING NOTATIONS	B		113	37.2
TO FORWARD TO A RQTR	C		81	26.6
OTHER PURPOSE	D		25	8.2
		TOTAL	304	100.0

VARIABLE ITEM 25 LOCATION OF MICROFORM USING EQUIPMENT

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		9	3.0
CENTRAL IN OFFICE	A	164	53.9
LIBRARY FACILITY	B	55	18.1
AT INDIVIDUAL DESKS	C	7	2.3
IN DUTY AREA	D	61	20.1
OUTSIDE ENVIRONMENT	E	7	2.3
	F	1	.3
	TOTAL	304	100.0

VARIABLE ITEM 27 HQDA MICROFORM CONVERSION WORK EASE EXPECT

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		2	.7
MUCH MORE DIFFICULT	A	50	16.4
MORE DIFFICULT	B	42	13.8
UNCERTAIN	C	115	37.8
EASIER	D	76	25.0
MUCH EASIER	E	19	6.3
	TOTAL	304	100.0

VARIABLE ITEM 72 RESPONDENT MIL PAY GRADE E1-E9

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		296	97.4
E-3	C	1	.3
E-4	D	1	.3
E-5	E	1	.3
E-6	F	1	.3
E-7	G	3	1.0
E-9	I	1	.3
	TOTAL	304	100.0

VARIABLE ITEM 73 RESPONDENT MIL PAY GRADE 01-WO3

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		287	94.4
O-2	B	3	1.0
O-3	C	4	1.3
O-4	D	2	.7
O-5	E	6	2.0
O-6	F	1	.3
WO-3	I	1	.3
	TOTAL	304	100.0

VARIABLE ITEM 74 RESPONDENT CIV PAY GRADE WB3-WB11

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		298	98.0
WB-3	A	1	.3
WB-8	F	2	.7
WB-9	G	3	1.0
	TOTAL	304	100.0

VARIABLE ITEM 75 RESPONDENT CIV PAY GRADE WB12-GS5

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		282	92.8
WB-12	A	1	.3
WB-14	C	1	.3
GS-2	F	2	.7
GS-4	H	1	.3
GS-5	I	17	5.6
	TOTAL	304	100.0

VARIABLE ITEM 76 RESPONDENT CIV PAY GRADE GS6-GS15

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		55	18.1
GS-6	A	13	4.3
GS-7	B	15	4.9
GS-9	D	52	17.1
GS-10	E	1	.3
GS-11	F	53	17.4
GS-12	G	66	21.7
GS-13	H	40	13.2
GS-14	I	8	2.6
GS-15	J	1	.3
	TOTAL	304	100.0

VARIABLE ITEM 77 INSTALLATION CATEGORY

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		15	4.9
TRAINING	A	4	1.3
SUPPLY	B	90	29.6
MAINTENANCE	C	21	6.9
ELECTRONICS	D	29	9.5
TRANSPORTATION	E	3	1.0
ADMINISTRATION	F	48	15.8
OTHER	G	93	30.6
	H	1	.3
	TOTAL	304	100.0

TRAIL SURVEY - NON-USER DATA

VARIABLE ITEM 1 FREQ OF USE-NUMBERED PUBLICATIONS

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		2	.3
VERY INFREQUENT	A	44	5.6
INFREQUENT	B	114	14.5
NOT CERTAIN	C	10	1.3
FREQUENT	D	362	46.1
VERY FREQUENT	E	249	31.7
	F	3	.4
	I	1	.1
	TOTAL	785	100.0

VARIABLE ITEM 2 FREQ OF USE-TECHNICAL MANUALS

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		23	2.9
VERY INFREQUENT	A	324	41.3
INFREQUENT	B	223	28.4
NOT CERTAIN	C	18	2.3
FREQUENT	D	150	19.1
VERY FREQUENT	E	45	5.7
	I	2	.3
	TOTAL	785	100.0

VARIABLE ITEM 3 FREQ OF USE-TECHNICAL BULLETINS

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		25	3.2
VERY INFREQUENT	A	367	46.8
INFREQUENT	B	211	26.9
NOT CERTAIN	C	23	2.9
FREQUENT	D	132	16.8
VERY FREQUENT	E	25	3.2
	I	1	.1
	N	1	.1
	TOTAL	785	100.0

VARIABLE ITEM 5 FREQUENCY OF USE-SUPPLY CATALOGS

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		31	3.9
VERY INFREQUENT	A	446	56.8
INFREQUENT	B	201	25.6
NOT CERTAIN	C	12	1.5
FREQUENT	D	62	7.9
VERY FREQUENT	E	31	3.9
	I	1	.1
	S	1	.1
	TOTAL	785	100.0

VARIABLE ITEM 12 % LOOK UP REQUIRING PAPER COPY

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		19	2.4
1%	A	133	16.9
5%	B	153	19.5
MORE THAN 5%	C	476	60.6
	D	3	.4
	E	1	.1
	TOTAL	785	100.0

VARIABLE ITEM 26 OTHER THAN PRESENT JOB MICROFILM USE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		10	1.3
NO	A	298	38.0
LIBRARY RESEARCH	B	179	22.8
OCCASIONAL WORK REQ	C	268	34.1
OTHER REASONS	D	30	3.8
	TOTAL	785	100.0

VARIABLE ITEM 27 FREQUENCY OF USE-MICROFICHE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		75	9.6
NOT USED	A	420	53.5
SELDON USED	B	179	22.8
OFTEN USED	C	91	11.6
VERY OFTEN USED	D	20	2.5
	TOTAL	785	100.0

VARIABLE ITEM 39 READER SCREEN COLOR PREFERENCE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		13	1.7
GREENT TINT	A	225	28.7
GREY TINT	B	63	8.0
BLUE TINT	C	166	21.1
UNCERTAIN	D	316	40.3
	F	1	.1
	J	1	.1
	TOTAL	785	100.0

VARIABLE ITEM 42 WILLINGNESS TO TRY MICROFORMS

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		12	1.5
YES	A	690	87.9
NO	B	82	10.4
	F	1	.1
	TOTAL	785	100.0

VARIABLE ITEM 72 RESPONDENT MIL PAY GRADE E1-E9

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		732	93.2
E-3	C	2	.3
E-4	D	2	.3
E-5	E	4	.5
E-6	F	8	1.0
E-7	G	15	1.9
E-8	H	14	1.8
E-9	I	7	.9
	J	1	.1
	TOTAL	785	100.0

VARIABLE ITEM 76 RESPONDENT CIV PAY GRADE GS6-GS15

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		293	37.3
GS-6	A	17	2.2
GS-7	B	19	2.4
GS-8	C	8	1.0
GS-9	D	30	3.8
GS-10	E	2	.3
GS-11	F	84	10.7
GS-12	G	106	13.4
GS-13	H	149	19.0
GS-14	I	61	7.8
GS-15	J	16	2.0
	TOTAL	785	100.0

VARIABLE ITEM 77 INSTALLATION CATEGORY

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		43	5.5
TRAINING	A	37	4.7
SUPPLY	B	48	6.1
MAINTENANCE	C	22	2.8
ELECTRONICS	D	78	9.9
TRANSPORTATION	E	6	.8
ADMINISTRATION	F	317	40.4
OTHER	G	233	29.7
	6	1	.1
	TOTAL	785	100.0

APPENDIX J

REVISED SURVEY DATA

STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES NO. OF CASES - 4,308

FILE TIPS (CREATION DATE = 041676) THE IMPACT PROJECT SURVEY

VARIABLE ITEM A. RESPONDENTS PAY GRADE LEVEL

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE		3	.1
	E1	10	.2
	E2	92	2.1
	E3	213	4.9
	E4	618	14.3
	E5	575	13.3
	E6	604	14.0
	E7	491	11.4
	E8	259	6.0
	E9	71	1.6
	GS	89	2.1
	LN	3	.1
	01	149	3.5
	02	217	5.0
	03	468	10.9
	04	173	4.0
	05	55	1.3
	06	7	.2
	07	2	.0

VARIABLE ITEM A. RESPONDENTS PAY GRADE LEVEL - (CONTINUED)

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
	08	2	.0
	WG	2	.0
	W1	30	.7
	W2	106	2.5
	W3	48	1.1
	W4	15	.3
TOTAL		4,308	100.0

VARIABLE ITEM B. RESPONDENTS ARMY BRANCH

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	33	.8
MEDICAL-DENTAL	1	228	5.3
JUDGE ADVOCATE GENERAL	2	75	1.7
FINANCE	3	77	1.8
QUARTERMASTER	4	632	14.7
ADJUTANT GENERAL	5	411	9.5
ORDNANCE	6	302	7.0
ENGINEERS	7	182	4.2
MILITARY POLICE	8	31	.7
CHEMICAL	9	31	.7
TRANSPORTATION	10	128	3.0
ARMOR	11	238	5.5
FIELD ARTILLARY	12	414	9.6
SIGNAL	13	338	7.8
MILITARY INTELLIGENCE	14	137	3.2
INFANTRY	15	387	9.0
CHAPLAIN	16	14	.3
AVIATION	17	311	7.2
AIR DEFENSE ARTY	18	96	2.2
OTHER	19	242	5.6

VARIABLE ITEM D. ORGANIZATIONAL LEVEL OF RESPONDENT WORK

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	31	.7
DIVISION	1	600	13.9
BRIGADE	2	451	10.5
GROUP	3	32	.7
BATTALION OR SQUADRON	4	872	20.2
HEADQUARTERS COMPANY	5	1,308	30.4
PLATOON	7	399	9.3
OTHER	8	341	7.9
TOTAL		4,308	100.0

VARIABLE ITEM E. IS YOUR UNIT A QUICK REACTION UNIT

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	34	.7
YES	1	3,411	79.2
NO	2	674	15.6
DONT KNOW	3	189	4.4
TOTAL		4,308	100.0

VARIABLE ITEM F1. PUB MOST USED AS PART OF NORMAL DUTIES

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	37	.9
ARMY REGULATION	1	2,407	55.9
DOD REG-MANUAL	2	51	1.2
DA CIRCULAR	3	35	.8
DA PAMPHLET	4	56	1.3
DA POSTER	5	2	.0
JOINT CHIEFS OF STAFF PUB	6	10	.2
MISCELLANEOUS PUB	7	57	1.3
FIELD MANUAL	8	349	8.1
ROTCM MANUAL	9	3	.1
TRAINING CIRCULAR	10	89	2.1
ARMY TRAINING PROGRAM	11	48	1.1
ARMY SUBJECT SHEDULE	12	10	.2
ARMY TRAINING TESTS	13	7	.2
FIRING TBLS-TRAJ CHT	14	12	.3
TBLS OF ORG & EQUIP	15	81	1.9
TBLS OF DIST & ALLOW	16	23	.5
COMMON TBLS OF ALLOW	17	14	.3
JOINT TABLS OF ALLOW	18	3	.1
GRAPHIC TRAINING AID	19	3	.1
TECH MANUAL	20	773	17.9

VARIABLE ITEM F1. PUB MOST USED AS PART OF NORMAL DUTIES - CONTINUED

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
TECH BULLETIN	21	10	.2
SUPPLY MANUAL	22	71	1.6
SUPPLY BULLETIN	23	61	1.4
LUBRICATION ORDERS	24	26	.6
SUPPLY CATALOG	25	60	1.4
MODIFICATION WORK ORDER	26	10	.2
TOTAL		4,308	100.0

VARIABLE ITEM G1. PUB MOST USED UNDER FIELD CONDITIONS

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
ARMY REGULATION	1	988	22.9
DOD REG-MANUAL	2	27	.6
DA CIRCULAR	3	14	.3
DA PAMPHLET	4	28	.6
DA POSTER	5	4	.1
JNT CHIEFS STAFF PUB	6	8	.2
MISCELLANEOUS PUB	7	69	1.6
FIELD MANUAL	8	1,182	27.4
ROTCM MANUAL	9	2	.0
TRAINING CIRCULAR	10	84	1.9
ARMY TRAINING PROGRAM	11	56	1.3
ARMY SUBJECT SCHEDULE	12	7	.2
ARMY TRAINING TESTS	13	35	.8
FIRING TBLS-TRAJ CHT	14	45	1.0
TBLS OF ORG & EQUIP	15	58	1.3
TBLS OF DIST & ALLOW	16	13	.3
COMMON TBLS OF ALLOW	17	14	.3
JOINT TBLS OF ALLOW	18	5	.1
GRAPHIC TRAINING AID	19	18	.4
TECH MANUAL	20	805	18.7
TECH BULLETIN	21	13	.3

VARIABLE ITEM G1. PUB MOST USED UNDER FIELD CONDITIONS

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
SUPPLY MANUAL	22	58	1.3
SUPPLY BULLETIN	23	54	1.3
LUBRICATION ORDERS	24	11	.3
SUPPLY CATALOG	25	28	.6
MODIFICATION WORK ORDER	26	7	.2
NO RESPONSE		7	.0
NEVER IN THE FIELD	99	668	15.5
TOTAL		4,308	100.0

VARIABLE ITEM H. PUB REQUIRING GREATEST NUMBER OF COPIES

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	179	4.0
ARMY REGULATION	1	1,349	31.3
DOD REG-MANUAL	2	24	.6
DA CIRCULAR	3	57	1.3
DA PAMPHLET	4	83	1.9
DA POSTER	5	18	.4
JNT CHIEFS STAFF PUB	6	9	.2
MISCELLANEOUS PUB	7	152	3.5
FIELD MANUAL	8	527	12.2
ROTCM MANUAL	9	2	.0
TRAINING CIRCULAR	10	128	3.0
ARMY TRAINING PROGRAM	11	41	1.0
ARMY SUBJECT SCHEDULE	12	14	.3
ARMY TRAINING TESTS	13	12	.3
FIRING TBLS-TRAJ CHT	14	25	.6
TBLS OF ORG & EQUIP	15	59	1.4
TBLS OF DIST & ALLOW	16	23	.5
COMMON TABLS OF ALLOW	17	23	.5
JOINT TBLS OF ALLOW	18	9	.2
GRAPHIC TRAINING AID	19	25	.6
TECH MANUAL	20	1,160	26.9
TECH BULLETIN	21	25	.6

VARIABLE ITEM H. PUB REQUIRING GREATEST NUMBER OF COPIES - CONTINUED

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
SUPPLY MANUAL	22	79	1.8
SUPPLY BULLETIN	23	79	1.8
LUBRICATION ORDERS	24	38	.9
SUPPLY CATALOG	25	144	3.3
MODIFICATION WORK ORDER	26	23	.5
TOTAL		4,308	100.0

VARIABLE ITEM I. MOST USED PUB IN WORK REFERENCE LIBRARY

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	86	1.9
ARMY REGULATION	1	1,929	44.8
DOD REG-MANUAL	2	41	1.0
DA CIRCULAR	3	21	.5
DA PAMPHLET	4	60	1.4
DA POSTER	5	2	.0
JNT CHIEFS STAFF PUB	6	5	.1
MISCELLANEOUS PUB	7	86	2.0
FIELD MANUAL	8	458	10.6
ROTCM MANUAL	9	2	.0
TRAINING CIRCULAR	10	77	1.8
ARMY TRAINING PROGRAM	11	31	.7
ARMY SUBJECT SCHEDULE	12	6	.1
ARMY TRAINING TESTS	13	6	.1
FIRING TBLS-TRAJ CHT	14	22	.5
TBLS OF ORG & EQUIP	15	69	1.6
TBLS OF DIST & ALLOW	16	13	.3
COMMON TABLS OF ALLOW	17	27	.6
JOINT TBLS OF ALLOW	18	3	.1
GRAPHIC TRAINING AID	19	8	.2
TECH MANUAL	20	998	23.2

VARIABLE ITEM I. MOST USED PUB IN WORK REFERENCE LIBRARY - *CONTINUED*

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
TECH BULLETIN	21	27	.6
SUPPLY MANUAL	22	94	2.2
SUPPLY BULLETIN	23	113	2.6
LUBRICATION ORDERS	24	15	.3
SUPPLY CATALOG	25	96	2.2
MODIFICATION WORK ORDER	26	13	.3
TOTAL		4,308	100.0

VARIABLE ITEM J. PUB WITH LONGEST ORDER RECEIPT TIME

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	362	8.3
ARMY REGULATION	1	1,571	36.5
DOD REG-MANUAL	2	62	1.4
DA CIRCULAR	3	67	1.6
DA PAMPHLET	4	165	3.8
DA POSTER	5	26	.6
JNT CHIEFS STAFF PUB	6	23	.5
MISCELLANEOUS PUB	7	113	2.6
FIELD MANUAL	8	416	9.7
ROTCM MANUAL	9	1	.0
TRAINING CIRCULAR	10	41	1.0
ARMY TRAINING PROGRAM	11	23	.5
ARMY SUBJECT SCHEDULE	12	41	1.0
ARMY TRAINING TESTS	13	19	.4
FIRING TBLS-TRAJ CHT	14	14	.3
TBLS OF ORG & EQUIP	15	42	1.0
TBLS OF DIST & ALLOW	16	16	.4
COMMON TBLS OF ALLOW	17	28	.6
JOINT TBLS OF ALLOW	18	5	.1
GRAPHICS TRAINING AID	19	34	.8
TECH MANUAL	20	805	18.7

VARIABLE ITEM J. PUB WITH LONGEST ORDER RECEIPT TIME - CONTINUED

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
TECH BULLETIN	21	49	1.1
SUPPLY MANUAL	22	78	1.8
SUPPLY BULLETIN	23	76	1.8
LUBRICATION ORDERS	24	37	.9
SUPPLY CATALOG	25	142	3.3
MODIFICATION WORK ORDER	26	52	1.2
TOTAL		4,308	100.0

VARIABLE ITEM M. NEED FOR PUB SHARING FOR LACK OF COPIES

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	40	.9
VERY FREQUENTLY	1	1,292	30.0
FREQUENTLY	2	1,812	42.1
INFREQUENTLY	3	815	18.9
VERY INFREQUENTLY	4	349	8.1
TOTAL		4,308	100.0

VARIABLE ITEM N. FREQUENCY CHANGES ARE POSTED TO PUBS

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	44	1.0
WEEKLY	1	315	7.3
MONTHLY	2	313	7.3
EVERY COUPLE MONTHS	3	273	6.3
ONCE OR TWICE A YEAR	4	250	5.8
AS RECEIVED	5	3,113	72.3
TOTAL		4,308	100.0

VARIABLE ITEM O. FREQUENCY PUBS GET DIRTY TORN OR WET

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	36	.7
VERY FREQUENTLY	1	240	5.6
FREQUENTLY	2	741	17.2
INFREQUENTLY	3	1,607	37.3
VERY INFREQUENTLY	4	1,684	39.1
	TOTAL	4,308	100.0

VARIABLE ITEM P. NEED FOR NOTE-TAKING ON PUBS YOU USE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	32	.7
ALL THE TIME	1	265	6.2
OFTEN	2	726	16.9
OCCASIONALLY	3	2,216	51.4
NEVER	4	1,069	24.8
	TOTAL	4,308	100.0

VARIABLE ITEM Q. NEED FOR TAKING PUBS HOME FOR STUDY

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	41	1.0
VERY OFTEN	1	583	13.5
OFTEN	2	937	21.8
OCCASIONALLY	3	2,156	50.0
NEVER	4	591	13.7
	TOTAL	4,308	100.0

VARIABLE ITEM R. NATURE OF PRIOR MICROFICHE EXPERIENCE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	27	.6
USED IT BEFORE	1	2,050	47.6
SEEN IT BEFORE	2	604	14.0
WATCHED OTHER USE IT	3	840	19.5
HEARD OF IT ONLY	4	553	12.8
NEVER SEEN OR HEARD	5	234	5.4
	TOTAL	4,308	100.0

VARIABLE ITEM S. # OF READERS CURRENTLY IN WORK AREA

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO READERS AVAILABLE	0	2,473	57.4
	1	1,058	24.6
	2	359	8.3
	3	139	3.2
	4	74	1.7
	5	53	1.2
	6	41	1.0
	7	11	.3
	8	13	.3
	9	11	.3
	10	29	.7
	11	8	.2
	12	8	.2
	13	3	.1
	15	1	.0
	17	1	.0
	18	3	.1
	20	13	.3
	21	1	.0
	22	1	.0
	23	1	.0

VARIABLE ITEM X1. ONE PERCEIVED MICROPUBLISHING BENEFIT

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	215	5.0
PUBS TAKE LESS SPACE	1	1,274	29.6
MORE COPS AVAILABLE	2	470	10.9
NO CHANGE-PAGE POST	3	486	11.3
COSTS THE ARMY LESS	4	282	6.5
LESS ORDERING DELAY	5	311	7.2
FASTER LOOK-UPS	6	612	14.2
LESS BULK FOR FIELD	7	208	4.8
BIG REF LIBRARY POSS	8	450	10.4
TOTAL		4,308	100.0

VARIABLE ITEM X2. 2ND PERCEIVED MICROPUBLISHING BENEFIT

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	231	5.4
PUBS TAKE LESS SPACE	1	238	5.5
MORE COPS AVAILABLE	2	280	6.5
NO CHANGE-PAGE POST	3	415	9.6
COSTS THE ARMY LESS	4	246	5.7
LESS ORDERING DELAY	5	343	8.0
FASTER LOOK-UPS	6	694	16.1
LESS BULK FOR FIELD	7	459	10.7
BIG REF LIBRARY POSS	8	1,402	32.5
TOTAL		4,308	100.0

VARIABLE ITEM Y. ESTIMATED REACTION OF UNIT TO MICROPUBS

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	189	4.3
MUCH ACCEPTANCE	1	2,059	47.9
SOME ACCEPTANCE	2	1,226	28.5
SOME RESISTANCE	3	608	14.1
MUCH RESISTANCE	4	226	5.2
	TOTAL	4,308	100.0

VARIABLE ITEM Z. BELIEVED MICRO-PUB EFFECT-WORK PRODUCTION

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	212	4.9
MUCH IMPROVEMENT	1	1,474	34.2
SOME IMPROVEMENT	2	1,879	43.6
SOME HINDRANCE	3	554	12.9
MUCH HINDRANCE	4	189	4.4
	TOTAL	4,308	100.0

VARIABLE ITEM BB1. PUB TYPE-OF MOST CHANGED PUB

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	1,022	23.6
ARMY REGULATION	1	1,879	43.6
DOD REG-MANUAL	2	33	.8
DA CIRCULAR	3	20	.5
DA PAMPHLET	4	127	2.9
JNT CHIEFS STAFF PUB	6	1	.0
MISCELLANEOUS PUB	7	45	1.0
FIELD MANUAL	8	95	2.2
ROTCM MANUAL	9	1	.0
TRAINING CIRCULAR	10	36	.8
ARMY TRAINING PROGRAM	11	4	.1
ARMY SUBJECT SCHEDULE	12	20	.5
FIRING TBLS-TRAJ CHT	14	2	.0
TBLS OF ORG & EQUIP	15	29	.7
TBLS OF DIST & ALLOW	16	6	.1
COMMON TBLS OF ALLOW	17	6	.1
TECH MANUAL	20	857	19.9
TECH BULLETIN	21	10	.2
SUPPLY MANUAL	22	13	.3
SUPPY BULLETIN	23	78	1.8
LUBRICATION ORDERS	24	5	.1
SUPPLY CATALOG	25	18	.4
MODIFICATION WORK ORDER	26	1	.0
TOTAL		4,308	100.0

VARIABLE ITEM CC1. PUB TYPE-OF MOST PREFERRED PUB FOR FICHE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
NO RESPONSE	0	1,110	25.7
ARMY REGULATION	1	1,485	34.5
DOD REG-MANUAL	2	35	.8
DA CIRCULAR	3	5	.1
DA PAMPHLET	4	215	5.0
DA POSTER	5	1	.0
JNT CHIEFS STAFF PUB	6	4	.1
MISCELLANEOUS PUB	7	25	.6
FIELD MANUAL	8	135	3.1
ROTCM MANUAL	9	1	.0
TRAINING CIRCULAR	10	29	.7
ARMY TRAINING PROGRAM	11	11	.3
ARMY SUBJECT SCHEDULE	12	24	.6
ARMY TRAINING TESTS	13	1	.0
TBLS OF ORG & EQUIP	15	26	.6
TBLS OF DIST & ALLOW	16	14	.3
COMMON TBLS OF ALLOW	17	30	.7
GRAPHIC TRAINING AID	19	1	.0
TECH MANUAL	20	823	19.1
TECH BULLETIN	21	23	.5
SUPPLY MANUAL	22	25	.6

VARIABLE ITEM CC1. PUB TYPE-OF MOST PREFERRED PUB FOR FICHE - CONTINUED

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)
SUPPLY BULLETIN	23	222	5.2
LUBRICATION ORDERS	24	5	.1
SUPPLY CATALOG	25	53	1.2
MODIFICATION WORK ORDER	26	5	.1
TOTAL		4,308	100.0

APPENDIX K

DAAG-SD 15 October 1975

SUBJECT: Letter Request for Approval of New Start Proposal

HQDA (DALO-OMD)
WASH DC 20310

1. In accordance with AR 235-5, Management of Resources Commercial and Industrial-Type Functions, effective 15 January 1973, a Six Month (6) Micropublishing In-House Prototype Test New Start Proposal (Red TAB A) is forwarded for your concurrence.

2. In further compliance with AR 235-5, the US Army Audit Agency was requested to do an audit of cost comparison on a new start proposal by Project IMPACT (Red TAB B). US Army Audit Agency's response is at Red TAB C; Audit Report: EC 76-631, dated 10 October 1975.

3. Request your concurrence on the attached New Start Proposal (Red TAB A) by 1 November 1975. If no nonconcurrence is received by that date concurrence will be assumed.

FOR THE ADJUTANT GENERAL:

3 Incl
as

W. F. FAUGHT
COL, GS
Director, Sys Dev Dir

The Adjutant General Center
DAAG-SD, Forrestal Building
Washington, DC 20314

DAAG-SD

SUBJECT: Six (6) Month Micropublishing In-House Prototype Test - T817 - Other (Micropublishing Prototype System at Systems Development Directorate, The Adjutant General Center, Forrestal Building, Washington, DC 20314)

1. PROBLEM. To determine whether an exception to national policy as cited in AR 235-5 should be approved to authorize in-house operation of a COM (Computer Output Microfilm) Micropublishing Prototype System by Project IMPACT (Implementation of Micropublishing, Army Concept and Technology). It would be physically operated by Project IMPACT's personnel, and located within the Systems Development Directorate, The Adjutant General Center, Forrestal Building, Washington, DC 20314. Exact room location is yet to be determined.

2. ASSUMPTIONS. The micropublishing system prototype must be capable of meeting the scope of the Army's current and projected needs, including the production of illustrated technical manuals as well as pure alpha-numeric documents on microform. Further, the prototype must be sufficiently flexible to permit experimental manipulation. Project IMPACT will require operational control of the prototype.

3. FACTS BEARING ON THE PROBLEM. The Adjutant General has directed Project IMPACT to develop a micropublishing implementation plan and prototype for the Army, (Project IMPACT Directive, 6 Feb 1975). The development and operation of the micropublishing prototype does not properly fit under functional code T806, Printing and Reproduction or Code T807, Photographic, Film and TV Services. The major functions of the prototype micropublishing system are:

a. To convert copy-marked manuscript into microfiche.

b. To provide Project IMPACT with hands-on operating experience, empirical production cost, and thru-put data.

The system has three subfunctions:

(1) Input preparation.

(2) Production.

(3) Microform reproduction and distribution.

The prototype components and their subfunctions are:

a. Input:

1. Astrocomp D (or equal) converts manuscript/text to 9-track magnetic tape to be run on the production unit.

2. Copy camera to provide a 105mm negative for each illustration to be merged with text in the production unit.

b. Production. An Information International COMp 80 computer-output microfilm recorder (or equivalent), merges illustrations with text, composes pages, and generates microfiche.

The Project IMPACT Micropublishing Prototype System is a new activity and will exist for 6 months only. No performance background information is available because the Army does not have a micropublishing system. The 6 month prototype system has been budgeted within Program 9 for FY 76 and FY 76-T.

4. DISCUSSION. The prototype micropublishing system required for Project IMPACT will be in existence for 6 months. Further, the cost of equipment purchase greatly exceeds the total project budget. Therefore, government owned alternatives (GOGO, GOCO) are excluded.

The contractor owned-government operated (COGO) alternative has merit in principle. It would free the government of the responsibility of equipment maintenance and ownership. However, the contractor would have to guarantee complete control of equipment and authority to IMPACT personnel to modify the system, together with authority for constant production monitoring by IMPACT's Study Group personnel. Failure to obtain such an agreement would render this alternative useless because experimentation would not be possible, nor would acquisition of necessary data or production information be available.

The alternative COCO and COGO are possible only under the condition that a contractor has the micropublishing system prototype as briefly described above. A close approximation of this system was found at only one contractor site. An exception to the policy covered in AR 235-5 is requested under Code E. Procurement of the product or service from a commercial source will result in higher cost to the government (See Incl 3).

The National Micrographic Association listing of service companies was consulted to determine potential contractors. These were contacted by phone and letter (See Inclosure 1). Only one firm, Data Dissemination Systems, Inc., was able to approximate Project IMPACT's requested micropublishing system prototype requirements. All others responded with a verbal negative; four since have responded negative by letter; eight others declined to respond in writing.

Eight (8) DOD organizations and Federal Agencies were contacted by phone and letter to determine if a suitable prototype test site was available within the government (See Inclosure 3). A total of eight (8) verbal responses were recorded as negative; four have since responded negatively in writing.

Of all service companies and DOD/Federal Agencies contacted, only one informational quote was received and that was from Data Dissemination Systems, Inc. This data has been entered on the Cost Analysis Worksheet (DA Form 3207-R), (See Inclosure 3). The cost differential in favor of an in-house prototype operation is $102,526.

5. CONCLUSIONS: None of the COCO, GOGO, COGO, or GOCO situations is applicable to Project IMPACT's requirement for a temporary (6 month) micropublishing prototype system. The approach alternative is: Project IMPACT lease with option to buy, all major prototype micropublishing system components; and, project personnel operate the system as part of their regular duties with no organizational or personnal changes being required. Lesser items of equipment and supply would be purchased. A decision to pursure this approach was made by TAG on 18 July 1975 during Project IMPACT's Phase I IPR (In-Process Review).

To support this decision, the entire spectrum of possible micropublishing alternatives, listed below, were considered and analyzed as outlined in Project IMPACT's Directive, Inclosure 5:

a. Consider whether IMPACT should proceed as stated in the Project Directive or change direction.

b. Should IMPACT expend budgeted dollars to lease equipment for a six-month computer output micropublishing prototype to be operated by IMPACT personnel? Or,

c. Should IMPACT use contractual services on COM systems to produce the same empirical results? Or,

d. If IMPACT decided that COM was not an acceptable alternative, should IMPACT's personnel try to make use of less advanced technologies such as step-and-repeat cameras for micro-republishing, in non-compliance with the Project Directive.

To structure IMPACT's decision-making process, data collected throughout the Data Acquisition and Analysis portion of IMPACT's Phase I operation has been input into a series of decision-making steps. These steps were sequential and directed toward determining the What, When and How to micropublish - while specifically keeping in mind the implementation objective of the project. The What, When and How also establishes the test proceudres and workload to be used during the entire prototype in-house operation.

The following rationale establishes the what to micropublish: Analysis of data acquired in Project IMPACT's investigation of the current headquarters publications revealed the following breakdown of documents by type, and notes the percent of each in the total publication makeup. Forms are excluded.

ADMIN	DOCTRINAL	EQUIPMENT	TOTAL
3,000	2,500	23,000	28,500
10.5%	8.8%	80.7%	100%

It is these percentages which will influence the choice and number of documents to be considered for the micropublishing prototype test. Document choices are to be made on the basis of dollar return, user acceptance, and micropublishing applicability. Further consideration of any particular item requires a two-step analysis. First, determination must be made as to what degree the document is compatable with micropublishing, both in production and usability. Second, consideration must be given to the selection of best choices on a dollar return per item basis. This would include both the quantities needed and size of each publication.

Publications which are limited to text only are a natural for micropublishing. These are of the "AR" (Army Regulation) type and are the smaller percentage of the total publication inventory - approximately 10.5%. Documents of the "Technical Manual" type account for approximately 80% of the total inventory and are a large segment of the fiscal outlay. In addition, IMPACT's survey of the total publication makeup revealed that over 60% of the total Technical Manual pages have graphics, e.g., either photos, line drawings, or a combination of both.

The inclusion of such graphics requires a significantly greater preparation effort than text-only printing.

In the document selection process, a prime consideration was given to the frequency or possibility of changes over the life span of a publication. Such changes can be significant time and cost items.

Based on the foregoing data and factors, the composition of IMPACT's test group of documents will be in direct proportion to the percentage breakdown of types of documents as previously stated - 10% - 10% - 80%. This establishes the what to micropublish. IMPACT's prototype test schedule is at Inclosure 4.

In determining the when to micropublish, what happened here? It was concluded that items which need significant preparation such as new documents and those with 10% or more changes, should be considered first.

IMPACT's base prototype production figure will be approximately 20,000 pages making up 100 to 200 separate documents. These must meet the what and when constraints. The 20,000 sample pages will be produced in a parallel mode. That is, each item will be compared in its production, reproduction and distribution as to time and costs with the conventional GPO products. This empirical data, information and findings will form the basis on which Project IMPACT will do a complete cost analysis of a conventional publishing system vs a COM microform system.

In addition to the what and when considerations, actual production factors to be investigated and analyzed are as follows:

(1) Style size and style of type.

(2) Format.

(3) Reduction ratios.

(4) Development of operating SOP.

(5) Environmental considerations.

(6) Type and quality of supplies - film and equipment.

(7) Identification of personnel requirements.

(8) Compression of image data.

The last consideration is How to micropublish. This decision must be derived from the what and when decisions. In addition, for the purposes of Project IMPACT, this must be amenable to a prototype operation. A prototype as defined by IMPACT is a system of hardware and software which can be evaluated for application to an on-going real-life operation.

In Project IMPACT's extensive reviews of the micropublishing world of vendors and users - IMPACT concluded that micropublishing, at this date, can be divided into two basic approaches.

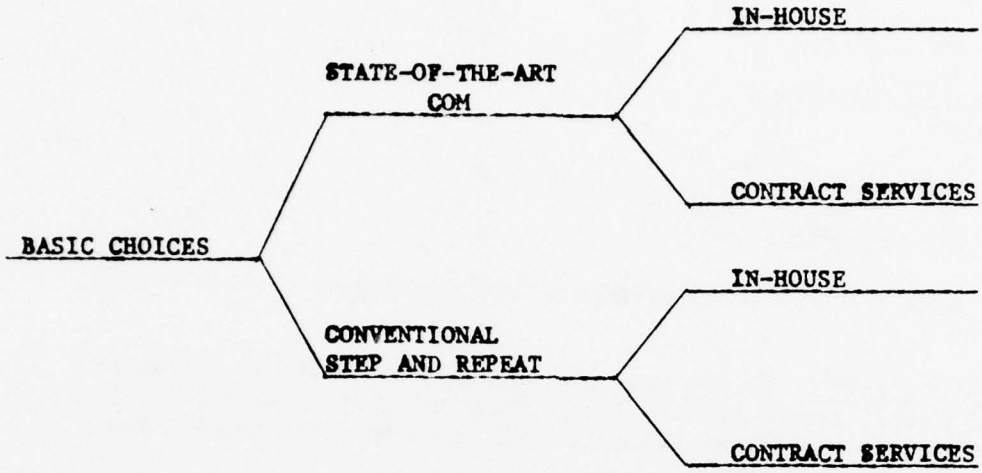
a. Conventional step-and-repeat concepts.

b. COM or computer output micropublishing concepts.

Each of these can be designed in numerous configurations and combinations.

In addition, a prototype of either makeup can be operated in two modes: In-house or by contract services.

This defines a two-step decision tree as depicted below:



The following is the approach that IMPACT used to determine its choice. The first decision was whether to go COM with an illustration merge capability or to use the conventional re-micropublishing technique of step-and-repeat filming from camera-ready hard-copy. This is similar to processes used in the RAM2 project.

To make this decision/determination, IMPACT constructed a summary table which could compare each system's capability to meet the Project's objectives and requirements.

The following layout is a summary table. On the left are listed the decision criteria. The alternatives of COM or conventional are entered across the top. This table is used to summarize IMPACT's findings by noting which option can best meet the criteria.

X's indicate a yes and a zero indicates a negative condition. The intent is to find the system which best meets a maximum number of requirements.

	PROTOTYPE ALTERNATIVES	
PROTOTYPE REQUIREMENTS	COM WITH ILLUSTRATION MERGE	CONVENTIONAL STEP AND REPEAT
MAXIMUM THRUPUT RATE	X	0
EASIEST CHANGE/UPDATE	X	0
FLEXIBLE/MODULAR EQUIPMENT	X	X
LOWEST PRODUCTION COST	X	0

PROTOTYPE REQUIREMENTS	PROTOTYPE ALTERNATIVES: COM WITH ILLUSTRATION MERGE	PROTOTYPE ALTERNATIVES: CONVENTIONAL STEP AND REPEAT
COMPATIBLE GPO LINOTRON	X	O
LOWEST OPERATING PERSONNEL REQUIREMENT	X	O
LOWEST EQUIPMENT COST	O	X
MINIMUM NUMBER PRODUCTION STEPS	X	O

Proceeding down the list of determinants is a discussion of each item's significance.

MAXIMUM THRUPUT RATES. As has been previously noted - all decisions are based on the publications defined in the what and when to micropublish. This means a consideration of original copy, and copy with significant changes to its original form.

The thruput includes all operations after receipt of error-free copy (or changed information) from the proponents. For conventional methods this includes the extensive preparation to produce camera-ready copy: typing, pasting, printing, composition and photography. COM procedures simply place data on tape for composition by the COM programs. Lockheed Missiles and Space Corporation found their thruput increased by a factor of three when they changed from conventional systems to a COM operation.

EASIEST CHANGES/UPDATE. This is a function in which computer operations cannot be surpassed. A single paragraph added to a document can cause a cascade effect upon following pages by down-shifting all data. This is an expensive operation in conventional systems which must re-produce all the involved pages for re-photographing. The COM device simply reorganizes its data base through console commands and is ready for reprint.

FLEXIBLE/MODULAR EQUIPMENT. This means that IMPACT can change the sub-systems of the prototype to test various equipment or processes. The conventional procedures can change cameras for various experimentation. The COM system can change its concepts - that is, it could alter its input system - for example, from keyboarding to scanning OCR devices. It could likewise alter its storage systems from disk to tape to video-disk - as technology develops.

COMPATIBLE WITH GPO LINOTRON AND OTHER PHOTO COMPOSITION EQUIPMENT. The mag-tape output of the COM system front-end can also be used as input to the Merganthaler Linotron and photo-comp equipment. This permits optional output for user discrimination, that is, a choice of hard-copy or micro-film.

LEAST OPERATING PERSONNEL. Conventional systems require extensive manual preparation: Much of this is performed by the computer in the COM system.

MINIMUM PRODUCTION STEPS. The COM system requires half the steps of the step-and-repeat operation as shown below:

PRODUCTION STEPS IN MICROPUBLISHING

OPERATIONS (COMMENCING WITH PROPONENT'S FINAL DRAFT)	SYSTEM COM	CONVENTIONAL
1. Keyboarding Final Copy	X	X
2. Editing and Final Proofreading	X	X
3. Typesetting		X
4. Art Preparation/Inspection	X	X
5. Page Layout and Strip-up		X
6. Art Proofing		X
7. Final Text/Graphics Organization; Collate Master		X
8. Preparation of Table of Content and Index		X
9. Prepare Title Header		X
10. Expose Master Microfilm	X	X
11. Develop and Inspect Master Microfilm	X	X
12. Produce Distribution Copies	X	X

LOWEST PRODUCTION COSTS. The following table is based on industry standards and indicates the COM superiority.

COMPARATIVE DOCUMENTATION*
PRODUCTION COST**

PRODUCTION MODE	COST BREAKDOWN PREPARATION	PRODUCTION	TOTAL
Conventional (Step & Repeat)	$216,800	$ 400	$217,200
COM (Compositional Type)	$ 94,000	$50,000	$144,000
			$ 73,200

*10,000 pages documentation
61% illustrated pages

**Industry Averages from AERO Space Industries Association Symposium, 12 Sep 74

From this data IMPACT has supported the decision to recommend to go state-of-the-art using a COM based micropublishing system. IMPACT personnel have discussed delivery, price, lease periods, training, and service with several manufacturers and find no problems in these areas.

During IMPACT's reconnaisance phase, project personnal performed a thorough investigation of DA, DOD, GPO, JCP, Federal, State and Private industry. A majority of users, approximately 90%, have indicated that both thruput and cost per page of production are substantially reduced from former operations. In addition, savings surveys by several users indicate substantial cost reducation.

COM-BASED MICROPUBLISHING SYSTEMS
STUDIED BY "IMPACT

SYSTEM IDENTIFICATION	PERCENTAGE OF SAVINGS ($) OVER PAPER PUBLICATIONS	COMMENTS
1. USAF Automated Technical Order System (ATOUS)	62%	Estimated after implementation.
2. US Navy Technical Review and Update of Manuals and Publications Program (TRUMP)	87%	
3. Southern Bell Telephone Co.	85%	
4. Lockheed Missiles & Space Co.	25%	Total production cost savings over a linotron/ FR 80 system.
5. MISUR (DDSI)	34%	Over conventional step-and repeat camera system.

Having chosen to adhere to the original direction of the project directive, a COM based prototype, IMPACT must now decide on whether to go in-house, with project IMPACT Team members as operators - or - to contract out for our 20,000 page requirement on similar equipment using IMPACT members as monitors.

To make this choice, IMPACT again compared two options against the objectives of the project. These were: In-house vs Contract Services as shown on this table.

	TEST ALTERNATIVES	
TEST OBJECTIVES	TOTAL IN-HOUSE	IN-HOUSE COM WITH CONTRACT SERVICES
Hands-on Learning Experience	X	X
Detailed Cost Data Collection	X	P*
Microform Format Experimentation	X	X
Determine Most Effective Equipment Utilization	X	P
Develop Maximum Thruput Rate Methodology	X	P
Determine Personnel Requirements	X	P

*P - Partial

The determinants are listed down the left side and the choices across the top. As with the first decision table IMPACT is making comparisons to determine the selection which best fulfills the project's objectives. On this table many choices are obvious.

HANDS-ON EXPERIENCE. These are experiences which can be later transfered to an operational system and experiences which cannot be achieved through contract services.

DETAILED COST DATA COLLECTION. Although IMPACT Team members can observe contractors and time (stop-watch) some operations - contractors do not permit access to their actual cost breakdown. The profit factor - sunk costs - R&D recovery efforts - have a significant influence on their charges to customers.

MICROFORM FORMAT EXPERIMENTATION. Again an obvious conclusion - requests for work must be well defined - in-process changes are new costs - and very expensive when requested from a contractor.

DETERMINE THE MOST EFFECTIVE EQUIPMENT UTILIZATION. There is no way to experiment with a contractor's methods. In-house control would permit operation variations.

DEVELOP MAXIMUM THRUPUT RATE METHODOLOGY. With hands-on control we can experiment and record, but with a contractor this data is just not available.

DETERMINE PERSONNEL REQUIREMENTS. Over the prototype's life this will be fall-out data. Again, it is not possible to compare contractor's personnel because of limitations and scope of the federal personnel structure.

Based on the above information and presented with the four micropublishing alternatives as outlined in paragraph 5a, b, c, and d, The Adjutant General, on 18 July 1975, made the decision to go with an in-house COM operated prototype system.

6. ACTION RECOMMENDED: It is recommended that an exception to national policy as cited in AR 235-5, be approved to authorize the operation of a COM-based micropublishing system prototype by Project IMPACT, Systems Development Directorate, Washington, DC. Prototype operation will be physically located in the Forrestal Building. Floor and room number is yet to be decided.

5 Incl
as

R. T. ALLSOP
Project Director
Project IMPACT

DEPARTMENT OF THE ARMY
East Central District
U. S. ARMY AUDIT AGENCY
6701 Elkridge Landing Road
Linthicum Heights, Maryland 21090

10 OCT 1975

IGAA-ECD (PAO)

SUBJECT: Audit of Cost Comparison, T817, Project IMPACT (Implementation of Micropublishing, Army Concept and Technology)
The Adjutant General Center, Washington, D. C.
Audit Report: EC 76-631

Appendix O

Director
Systems Development Directorate
The Adjutant General Center
Room 5B138, Forrestal Building
Washington, D. C. 20314

1. PURPOSE AND SCOPE OF AUDIT. This report is in response to your letter (DAAG-SD, dated 20 August 1975) requesting audit verification of the comparative cost to start Project IMPACT in-house or by contract. Project IMPACT is a 6 month prototype for the purpose of determining the in-house cost of a micropublishing system. The audit was made in accordance with the provisions of AR 235-5, 30 November 1972.

2. SUMMARY RESULTS OF AUDIT.

a. A Cost Analysis Worksheet was used to compare the total cost of contract operations to the total cost of Government operations for the function being reviewed. The Cost Analysis Worksheet (Inclosure 1) prepared by the Adjutant General Center (AGC) showed that the cost of performing the mission in-house would be $93,486 less than the cost of performing it by contract.

b. Our review of the Cost Analysis Worksheet and available supporting data showed that substantial adjustments were needed to present contract and Government costs more accurately. These cost adjustments, however, do not affect command's position that performance of the function in-house would be less costly than by contract. The USAAA revised Cost Analysis Worksheet with detailed explanations for significant adjustments is attached as Inclosure 2. Minor adjustments totaling $449 were made on lines 12 and 19.

c. The following schedule summarizes the AGC's cost estimates and the USAAA revised cost estimates.

IGAA-ECD (PAO) 10 OCT 1975

SUBJECT: Audit of Cost Comparison, T817, Project IMPACT (Implementation of Micropublishing, Army Concept and Technology)
The Adjutant General Center, Washington, D. C.
Audit Report: EC 76-631

	Six Months of Operation
AGC Costs	
Contract Costs	$332,211
Government Costs	238,725
Difference	$ 93,486
Percent of Difference	39.2
USAAA Revised Costs	
Contract Costs	$356,854
Government Costs	242,396
Difference	$114,458
Percent of Difference	47.2

3. GENERAL COMMENTS.

a. The results of our audit were discussed with responsible command personnel on 19 September 1975, and they agreed to our recommended changes.

b. The courtesies and cooperation extended to the auditors during the audit are appreciated.

T P B Barnett

M. R. DiFULGO
District Manager

2 Incl
as

INCL 1

K-15

COST ANALYSIS [illegible]

For use of this form, see AR 235-5; the proponent agency is Office of the Deputy Chief of Staff for Logistics.

NAME OF INSTALLATION/ACTIVITY

COST ELEMENTS	6 months FIRST YEAR OF OPERATION	SECOND YEAR OF OPERATION	THIRD YEAR OF OPERATION	FOURTH AND FOLLOWING YEARS OF OPERATION
CONTRACT OPERATIONS				
1. CONTRACT COST *(Price paid to supplier)*	240,000			
2. TRANSPORTATION				
3. CONTRACT ADMINISTRATION AND RELATED COSTS 101,251 *1/	92,211 *2/			
4. GOVERNMENT FURNISHED MATERIALS AND SUPPLIES				
5. CONTRACTOR USE OF GOVERNMENT OWNED EQUIPMENT AND FACILITIES				
6. REHABILITATION, MODIFICATION OR EXPANSION OF GOVERNMENT OWNED EQUIPMENT AND FACILITIES				
7. INCENTIVE OR PREMIUM COSTS				
8. STANDBY MAINTENANCE COST				
9. OTHER COSTS				
9A. TOTAL	332,211			
GOVERNMENT OPERATIONS				
10. MILITARY PERSONNEL SERVICES				
11. CIVILIAN PERSONNEL SERVICES	66,461			
12. OTHER PERSONNEL COSTS	6,141			
13. MATERIALS, SUPPLIES, UTILITIES AND OTHER SERVICES	159,864			
14. MAINTENANCE AND REPAIR				
15. OVERHEAD COSTS				
15A. SUBTOTAL *(Sum of elements 10 through 15)*	232,466			
16. FEDERAL TAXES	2,773			
17. DEPRECIATION				
18. INTEREST				
19. INSURANCE	455			
20. OTHER INDIRECT COSTS	3,031			
20A. TOTAL				
GOVERNMENT OPERATIONS - OTHER (ISS/IDS/IAS)				
21. REIMBURSABLE COSTS				
22. ADMINISTRATION COSTS				
23. TRANSPORTATION				
24. MATERIALS, SUPPLIES, UTILITIES AND OTHER SERVICES				
25. PERSONNEL COSTS				
26. OTHER COSTS				
26A. TOTAL	238,725			

DA FORM 3207-R, 1 Nov 72 EDITION OF 1 NOV 69 IS OBSOLETE. *(Paper size: 10½" x 8"; Image size: 9-9/10" x 7-2/6")*

*1/ If full team participation is required at contractor location

*2/ If partial team participation is required at contractor location - TDY and training.

Inclosure 2

USAAA REVISED COST ANALYSIS WORKSHEET

COST ANALYSIS WORKSHEET

For use of this form, see AR 235-5; the proponent agency is Office of the Deputy Chief of Staff for Logistics.

NAME OF INSTALLATION/ACTIVITY: Systems Development Directorate, The Adjutant General Center

FUNCTION: T817: Project IMPACT

COST ELEMENTS		6 Months ~~XXX~~ OF OPERATION	SECOND YEAR OF OPERATION	THIRD YEAR OF OPERATION	FOURTH AND FOLLOWING YEARS OF OPERATION
CONTRACT OPERATIONS					
1. CONTRACT COST (Price paid to supplier)		240,000			
2. TRANSPORTATION					
3. CONTRACT ADMINISTRATION AND RELATED COSTS	(1)	36,757			
4. GOVERNMENT FURNISHED MATERIALS AND SUPPLIES					
5. CONTRACTOR USE OF GOVERNMENT OWNED EQUIPMENT AND FACILITIES					
6. REHABILITATION, MODIFICATION OR EXPANSION OF GOVERNMENT OWNED EQUIPMENT AND FACILITIES					
7. INCENTIVE OR PREMIUM COSTS					
8. STANDBY MAINTENANCE COST					
9. OTHER COSTS	(2)	80,097			
9A. TOTAL		356,854			
GOVERNMENT OPERATIONS					
10. MILITARY PERSONNEL SERVICES					
11. CIVILIAN PERSONNEL SERVICES	(3)	70,119			
12. OTHER PERSONNEL COSTS		6,351			
13. MATERIALS, SUPPLIES, UTILITIES AND OTHER SERVICES	(4)	151,959			
14. MAINTENANCE AND REPAIR					
15. OVERHEAD COSTS	(5)	3,000			
15A. SUBTOTAL (Sum of elements 10 through 15)		231,429			
16. FEDERAL TAXES	(6)	4,392			
17. DEPRECIATION	(7)	751			
18. INTEREST		501			
19. INSURANCE		694			
20. OTHER INDIRECT COSTS	(8)	4,629			
20A. TOTAL		242,396			
GOVERNMENT OPERATIONS - OTHER (ISS/IDS/IAS)					
21. ~~XXXXXXXXXXXXXX~~ DIFFERENCE BETWEEN CONTRACT AND					
22. ~~XXXXXXXXXXXXXX~~ IN-HOUSE COSTS FOR 6-MONTH					
23. ~~XXXXXXXXXXXX~~ PROTOTYPE TEST		114,458			
24. MATERIALS, SUPPLIES, UTILITIES AND OTHER SERVICES					
25. PERSONNEL COSTS					
26. OTHER COSTS					
26A. TOTAL					

DA FORM 3207-R, 1 Nov 72 EDITION OF 1 NOV 69 IS OBSOLETE.

COST COMPARISON
T-817, PROJECT IMPACT (IMPLEMENTATION OF
MICROPUBLISHING, ARMY CONCEPT AND TECHNOLOGY)
FOOTNOTES TO USAAA REVISED COST ANALYSIS WORKSHEET

1. Contract administration and related costs were reduced by $55,454 due to the following adjustments: temporary duty and transportation costs were increased by $11,007 to allow per diem for weekends, insurance (0.3 percent) and other indirect costs (2 percent); personnel salaries were increased by $5,270 to show actual pay steps and an anticipated pay raise, to include Government contributions, insurance and other indirect costs; and $71,731 of the salary cost was transferred to line 9 since the personnel from the Adjutant General Center would be required to perform similar functions whether work were contracted or done in-house.

2. An amount of $80,097 was included on line 9 for other costs, as follows: salary costs of $71,731 were transferred from line 3, as explained above; $2,826 for travel costs was included to allow for visits to test sites; an amount of $957 was included for equipment required under contract operations; postal expenses of $1,514 were included; and $3,069 was included for consultation services which would be required under either method of operation.

3. Civilian personnel costs were increased by $3,658 to reflect actual pay steps and an anticipated pay raise.

4. The cost for materials, supplies, utilities and other services was adjusted by $7,905 to show $5,060 for rental cost of facilities; a decrease of $12,214 for materials and supplies due to lack of documentation; and a decrease of $751 caused by the transfer of depreciation for capital equipment to line 17 of the Cost Analysis Worksheet.

5. An amount of $3,000 was added to line 15, overhead costs, to allow for consultation fees.

6. The cost of Federal taxes was increased by $1,619 to reflect 1.83 percent of line 1.

7. Depreciation costs of $751 were transferred from line 13, as explained above.

8. Other indirect costs were increased by $1,598 to reflect 2.0 percent of line 15A, as adjusted.

MEMO FOR
- ☐ DTAG
- ☒ TAG
- ☐ ADCSPER
- ☐ DCSPER
- ☐

COVER SHEET

ACTION OFFICER	Date	TELEPHONE NO	OFC/DIR
Mr. R. Allsop	6 Aug 75	31927	SDD- Dev

SUBJECT: Project IMPACT

☐ INFORMATION ☒ APPROVAL ☐ SIGNATURE ☐ INITIALS

SUSPENSE	TAGO	DCSPER	DAS	OSA	OSD

COMMENTS

1. My review of the 18 July IPR for IMPACT pointed out the fact we recommended a decision briefing the week of 25 Aug, after the team gathered further supportive documentation from the field.

2. In view of your decision to proceed with an in-house COM-based prototype I see no purpose in a 25 August decision briefing.

3. Recommend next event of IMPACT be an IPR o/a 1 Nov 75 following receipt of survey results and final approval from DCSLOG and JCP for procurement of equipment for prototype.

COORDINATION	APPROVAL	INITIALS	DATE	ACTION TAKEN	CONCUR	APPROVE	NOTED	SEE ME
Non required	DIV CHIEF	[illegible]	6 Aug '75	DTAG				
	DIR	[illegible]	6 Aug 75	TAG		[illegible]		
	XO	[illegible]		ADCSPER				
				DCSPER				

EXEC OFC ACTION ☐ STAMP ☐ DISPATCH ☐ READING FILE

TAGO Form 1-8 1 Oct 74

HOWARD W. CANNON, SENATOR FROM NEVADA, CHAIRMAN
WAYNE L. HAYS, REPRESENTATIVE FROM OHIO, VICE CHAIRMAN
JAMES B. ALLEN, SENATOR FROM ALABAMA
MARK O. HATFIELD, SENATOR FROM OREGON
JOHN BRADEMAS, REPRESENTATIVE FROM INDIANA
WILLIAM L. DICKINSON, REPRESENTATIVE FROM ALABAMA

DENVER DICKERSON, STAFF DIRECTOR
ROSEMARY S. CRITCHEN, ASSISTANT STAFF DIRECTOR
PAUL C. BEACH, ASSISTANT STAFF DIRECTOR

Congress of the United States
Joint Committee on Printing

COMMITTEE ROOM
S-151, U.S. CAPITOL
PHONE: 224 5241

ADDRESS MAIL TO—
CHAIRMAN
JOINT COMMITTEE ON PRINTING
% U.S. SENATE P.O.
WASHINGTON, D.C. 20510

25378

October 21, 1975

My dear Sir:

Reference your request for authorization to establish an in-house prototype micropublishing test system for a six month period. Based on the information provided in your letter and the excellent briefing on Project Impact presented by your representatives to the Joint Committee staff and the Federal Electronic Printing and Microform Committee your request for the six month test and lease or purchase of the equipment listed on the enclosure to the letter is approved.

The six month test will begin after the equipment has been installed and is operational. A detailed report of all phases of the test including documented cost analysis of each cost center shall be submitted to the Joint Committee on Printing.

Very sincerely yours,

Howard W. Cannon
HOWARD W. CANNON
Chairman

Secretary
Department of the Army
Washington, D.C.

DISPOSITION FORM

For use of this form, see AR 340-15, the proponent agency is The Adjutant General's Office.

REFERENCE OR OFFICE SYMBOL	SUBJECT
DAAG-AMS-M	Project IMPACT

TO DAAG-SDD FROM DAAG DATE [illegible] 1975 CMT 1

Mr. McLaughlin/rw/31965

1. Reference DF, DAAG-SDD, subject: Submission of DA 1500 MICRODIS Summary for project IMPACT, dtd 3 Jul 75.

2. Your request for a pilot test MICRODIS is approved and is assigned MICRODIS number 5050-3XY4. Use this MICRODIS approval number in all correspondence concerning this pilot test.

3. Request that copies of interim findings and progress reports be provided to assist this office in evaluating field requests for micropublishing efforts.

FOR THE ADJUTANT GENERAL:

JOHN V. FERRY
MAJ, AGC
Director, Army Microforms Program

DA FORM 1 FEB 62 2496 REPLACES DD FORM 96, EXISTING SUPPLIES OF WHICH WILL BE ISSUED AND USED UNTIL 1 FEB 63 UNLESS SOONER EXHAUSTED.

GPO : 1968 O - 323-600

APPENDIX M

DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL AND THE ADJUTANT GENERAL CENTER
WASHINGTON, D.C. 20314

DAAG-PLP

7 JUN 76

SUBJECT: Request for Project IMPACT Field Test Assistance

Commander
US Army Forces Command
Fort McPherson, GA 30330

1. Project IMPACT (Implementation of Micro-Publishing, the Army Concept and Technology) was begun in February 1975 following an ad hoc study at Headquarters, Department of the Army. The Project has been tasked to investigate if savings could be obtained through conversion of part of the HQDA printed publications. The costs of paper products and printing operations emphasize the need for the Department of the Army to explore technologies which may offer cost reductions in these areas.

2. Micropublishing is capable of producing new publications in a microfilm medium. It can also reissue material which previously was printed on paper and produce (publish) it on microfilm (microfiche) instead. Depending on the need, the conditions, and the user environment, certain publications would continue to be published in paper copy at the same time they were micropublished.

3. Project IMPACT's objectives are:

a. Develop a micropublishing system to include plans for conversion to microfilm where applicable.

b. Analyze the current Department of the Army publishing system to establish the scope of micropublishing applications.

c. Design, test, and evaluate a prototype micropublishing system that will incorporate what would reasonably be expected to exist in a real life Army micropublishing operation.

DAAG-PLP
SUBJECT: Request for Project IMPACT Field Test Assistance

d. Investigate and document current problems in DA micropublishing and the impact they will have on implementation.

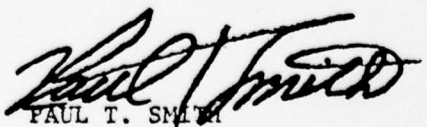
e. Determine user requirements and user acceptance of microfilm versus hardcopy both at Department of the Army and the Army in the field.

4. The development of a micropublishing system proposal for the Army is the primary objective of Project IMPACT. The prototype system of producing microfiche publications is now being tested, but the test would not be complete without taking into the account the objective listed in paragraph 3e above. Results of attitude and information surveys indicate that publications such as Field Manuals, Technical Manuals and Army Regulations could be used in a microfiche/microfilm medium in lieu of bound paper copies, but it must still be determined if this new form of publishing has application in TOE units. Although microfiche readers are currently used for supply information, Project IMPACT must determine if other types of publications should be converted and are operationally acceptable within combat divisions, brigades and battalions. In other words, how far down in the organization can micropublications be used successfully? The field test procedures attached at Incl 1 are designed to determine use and acceptability at brigade level.

5. In December 1975, staff researchers from HQDA visited Ft Knox, KY, and in particular, the 194th Armored Brigade to determine what the potential-user reaction would be to the use of micropublications. An indication of user attitude and current publications usage across various functional areas was obtained. Based on this visit and four other installation visits over the past several months since December 1975, it will be necessary to physically observe and evaluate the soldiers' use of and reaction to micropublications as part of their normal work routine. To do less would provide only subjective estimates of micropublishing's contributions to combat effectiveness.

6. The 194th Armored Brigade or a similar FORSCOM unit meets all user testing program requirements. Request that authorization be provided this headquarters so that on-site user testing can be initiated during June 1976. Point of contact is Mr. Robert Allsop, Project IMPACT Director, AV 223-0313, 223-0315.

BY ORDER OF THE SECRETARY OF THE ARMY:



1 Incl
as

PAUL T. SMITH
Major General, USA
The Adjutant General

S: 18 June 1976

AFAG-ASP (7 Jun 76) 1st Ind
SUBJECT: Request for Project IMPACT Field Test Assistance

HQ, US Army Forces Command, Fort McPherson, GA 30330 11 JUN 1976

TO: Commander, 194th Armored Brigade, Fort Knox, KY 40121

Request your concurrence to conduct the program described in the basic correspondence. Point of contact at HQ FORSCOM is Mr. Joseph F. Sulkowsky, AV 588-4240, 588-2179.

FOR THE COMMANDER:

W. H. CRISP
Colonel, AGC
Adjutant General

1 Incl
nc

CF: (less incl)
Cdr, TRADOC
Cdr, Fort Knox

AFAG-ASP (7 Jun 76) 4th Ind
SUBJECT: Request for Project IMPACT Field Test Assistance

HQ US Army Forces Command, Fort McPherson, GA 30330 30 JUN 1976

TO: HQDA (DAAG-PLP), Washington, D.C. 20314

1. The 194th Armored Brigade cannot provide field test assistance at this time. Subject unit is heavily committed to existing and anticipated requirements in both operational and administrative areas.

2. The 197th Infantry Brigade at Fort Benning has been selected to provide the field test assistance. Brigade officials have tentatively agreed to provide the assistance.

3. This correspondence confirms telephone conversations on this subject by Mr. Sulkowsky, HQ FORSCOM and Mr. Carpentier, HQDA.

FOR THE COMMANDER:

1 Incl
wd

W. H. CRISP
Colonel, AGC
Adjutant General

CF:
Cdr, USAARMC
Cdr, 194th Armd Bde
Cdr, TRADOC

APPENDIX N

IMPACT

Field Testing of Micropublications for Usability and Acceptability within Brigade Level Functions.

I. INTRODUCTION.

A. General.

1. IMPACT (Implementation of Micro-Publishing Army Concept and Technology) has been tasked to determine the range and scope of conversion of HQDA publications to microfilm. Problem areas associated with this conversion must be determined. Presently, technical manuals are being used in microfiche formats in depot-level maintenance operations by both civilian and military technicians. Selected catalogue data is currently widely distributed within the Army in microfiche form. However, no studies on user problems, implementation and documentation are available to the Army for specific applications in the field.

2. Staff visits to various CONUS installations were made to ascertain the areas of microfiche usage and the attitudes of the potential users.

3. Two attitude surveys have been submitted to the total spectrum of the Army's users and possible users of microfiche. Analysis of this data is input to the user testing program planned for a FORSCOM brigade.

4. This usability/acceptability testing program has been designed to establish the areas and levels of usage for possible conversion of HQDA publications to microfilm (microfiche). The test will include a representative sampling of all applicable elements of a single FORSCOM brigade. The goal of the test is to aggregate data through various on-site personnel testing procedures which will assist in determining the HQDA publications which should be recommended for early conversion to microfiche.

Since this program requires "user" response as to his productivity gains, the overall testing will be directed at the "real-life" applications of microfilm. Therefore the participants will be drawn from the full spectrum of possible brigade users. The exact number of participants from each brigade element/function will be selected in proportion to their relative size to the brigade's total complement.

The test will be conducted to preclude any significant interference with daily operations. It will be so constructed as to be aborted when required to meet the brigade's mission in case of any mobilization actions.

II. USER TEST CONCEPT.

A. General.

1. The goal of the User Test is stated above. Two related efforts are needed to achieve it. First, the use of microfiche versions of HQDA publications must be compared with the use of conventional hardcopy publications. Such a comparison will point up potential sources of difficulty and make beneficial suggestions for implementation. Second, an evaluation of the factors which can control the utilization of micropublications is needed to permit the analysis and interpretation of the first efforts results. Such an evaluation will also yield information for production system requirements.

2. The utility of microforms and micropublishing has been established in the business community. The office - like environment of an Army's major command headquarters is very similar to that of business. IMPACT decided to take a "worst case" approach for the user test. The operating environment of a FORSCOM unit is the most demanding in the Army. Therefore, the User Test will be conducted in that environment. This would provide a severe test for micropublishing.

3. A FORSCOM brigade is the best possible site for the User Test. It offers the following advantages:

- A variety of functionally different elements.

- Diversity of user environments (HQ to maintenance shop).

- Organizational control and structure compatible with test program.

- Personnel representative of Army.

- Combat orientation and emphasis on readiness.

Further, a brigade size unit is most compatible with IMPACT's time, funding, and personnel restraints.

B. Major Test Objectives.

1. Collect data which can determine the parameters of conversion to microfiche in respect to standard operating procedures within a brigade.

2. Collect data from tests (structured and field) on the productivity, specific usage, and user acceptance aspects of conversion to microfilm.

3. Establish requirements as to the durability and maintainability of micropublications system at the brigade level.

4. Determine the requirements for the use of both hardcopy and microfiche - that is, the where and why of publications which cannot be exclusively in microfilm form.

a. Test Phase. The conduct of the test will proceed in four phases, sequential and non-overlapping.

PHASE	TIME PERIOD
I Baseline Reconnaissance	1 week
II Fiche Factors Evaluation	1 week
III Performance Study	2 weeks
IV Field Application Study	8 weeks

(Phases II and III will include familiarization and training on microfiche systems and equipment).

b. Scope of Phases.

(1) Phase I - Baseline Reconnaissance. Detailed information on: The brigade's specific publication usage; the relative workload and workmix of publications; and the day-to-day operational requirements will be collected prior to any testing. This will be conducted by means of actual on-site observations and interviews.

(2) Phase II - Fiche Factor Evaluation. Various fiche designs (reading patterns, density of information, header data, indexing methods) will be tested and evaluated for both performance impact and user acceptance. This phase will include the initial training required to use the equipment and comprehend the system. This data will be obtained from time simulated tasks which require retrieval, search, and re-store activities.

(3) Phase III - Performance Study. Actual microfiche usage will be tested and the performance results recorded. These tasks will be representative of those actually performed by the participating users - especially in the areas of high usage of individual publications. Again, this phase will include training necessary to meet the micropublications system needs. NOTE: In this phase, as in Phase II the data collection will be handled by the IMPACT study group.

(4) Field Application Study. Based on the findings from Phase I, II and III all areas will be tested in a field environment. This will be under normal brigade operating conditions - at the work sites. Self reporting techniques will be used to capture individual performance/usage data. IMPACT team personnel will hold spot-interviews to provide additional and/or supportive information in respect to user attitudes.

c. Responsibilities.

(1) IMPACT will be responsible for:

(a) Initiation, coordination, conduct and training requirements.

(b) Providing micropublications and test materials.

(c) Supplying microfiche readers and their maintenance.

(2) Brigade commander will be responsible for:

(a) Brigade responsiveness to testing requirements.

(b) Coordination of test participation within the brigade elements.

(c) Providing classroom space and associated facilities.

d. Resource Requirements.

(1) Personnel Requirements. 3840 total manhours away from work sites. Hours to be spead over three week period and among 480 individuals. No period to exceed eight hours in length or 16 hours total per any individual during Phases II and III.

(a) 320 participants in Phase II.

(b) 320 participants in Phase III.

(c) 160 participants of Phase II will be included in Phase III.

(d) Phase II = 4 hour sessions, Phase III = 8 hour sessions.

SUMMARY

Personnel in Phase II Only	160 participants x 4 hrs ea	640 manhours
Personnel in Phase III Only	160 participants x 8 hrs ea	1280 manhours
Personnel in both Phase II and III	160 participants x 12 hrs ea	1920 manhours
	480 Participants	3840 manhours

(2) Participating personnel will be interviewed during and after testing on a non-interference basis. They will complete a Microfiche User Evaluation Questionnaire following Phase IV.

(3) Personnel participating in the Baseline Reconnaissance and the Field Test Study Phase I and IV will not be withdrawn from their normal duties or work sites.

(4) The commander will assign a coordination officer for the duration of the test. This assignment is part-time and its primary purpose will be for:

(a) Brigade Material Resource Requirements. The brigade will make available a large classroom space for the Phase II and III microfiche factors and data retrieval testing and performance sessions.

(b) IMPACT User's Test Team Commitments. IMPACT will supply two test team members who will have the overall responsibility for the conduct of all phases of Project IMPACT's User Test. These assigned individuals will handle all actions relevant to test completion and will provide microfiche publications, test materials, microfiche readers with required maintenance, and all micrographics training excercises required for brigade personnel orientation.

e. Preliminaries - Plan of Action. Detailed action procedures for each of the four test phases are found in each of the detailed procedure discussions (Sections 2 thru 5). Prior to Phase I the preliminary plan of action on selection of test unit will:

(1) Determine FORSCOM brigade availabilities.

(2) Choose brigade for testing in coordination with FORSCOM.

(3) Brief commander of selected brigade on test scope, test implementation, brigade resource requirements, and time frame.

(4) Arrange for baseline study.

f. Milestone Schedule and Outputs.

TIME FRAME	TEST PHASES	OUTPUTS
Week 1	Preliminaries - Phase I Baseline Reconnaissance	1. List of most frequent operating tasks requiring publication usage applicable to test objectives. 2. List of most frequently used publications. 3. Spot-check data on standard operating task completion times with paper copy. 4. Final list of selected documents to be used in testing.
Week 2	Phase II Fiche Factors	1. Individual Data Sheets containing simulated task completion times on all participants. 2. Consolidation of simulated task completion times. 3. Microfiche format for micropublications to be used in Phase III and IV.
Weeks 3 and 4	Phase III Performance Study	1. Individual Data Sheets with Operating Task Completion Times on all participants.

		2. Consolidation of Operating Task Completion Times.
Weeks 5-12	Phase IV Field Test	1. Job-keyed log sheets with micro-publication usage and problem data.
		2. Spot-check data on operating task completion times with micropublications.
		3. Consolidation of micropublication usage data.
		4. Consolidation of spot-check operating task completion data.

III. USER TEST METHODOLOGY

A. General.

1. The User Test employs a methodology based on the principles of scientific behavioral research. Phases I and IV utilize observational techniques, participant's record keeping, and interviews conducted by the User Test Team (UTT). Phases II and III are scientific experiments and are conducted accordingly.

2. Each Phase is needed to achieve the Test Objectives. All information developed in the first three phases will be utilized in the conduct and analysis of Phase IV. However, Phases II-IV each address specific areas of concern.

B. Phase I - Baseline Reconnaissance.

1. The purpose of this phase is to obtain detailed information on publication usage and on workload and workmix in day-to-day operations. This information will be used to develop test materials for the Fiche Factors Evaluation (Phase II) and Performance Study (Phase III). Further, it provides comparative

data for the Field Application Study (Phase IV). The following areas of concern are addressed: productivity, publication usage, and copy requirements.

2. This study is to be conducted on a non-interference basis. Some personnel will participate to the extent of answering a few interviewer's questions. Beyond this there are no personnel requirements.

3. A combination of direct observation and interview techniques are employed. First the User Test Team (UTT) will contact the brigade coordination officer to establish a schedule of visits to representative units including the HQ elements. Second, oberservational visits will be conducted. The procedure for a typical visit is as follows:

- Meet with unit's senior officer, informally discuss IMPACT's mission and the purpose of the visit.

- Administer the general interview schedule (See Appendix A).

- Inspect the unit's area to establish observation vantage points.

- Select areas for observation and allocate available time to each area.

- Within each area, observe, using the general observation guidelines (see Appendix B).

- At the conclusion of each observation period interview a minimum of five personnel using the general interview schedule.

Third, when all observations of a particular unit have been completed, the observational data and interviews will be examined and consolidated. Frequently, occurring tasks requiring high publication usage will be studied to determine their suitability for use in the Performance study. These findings will be reviewed with the unit's senior officers. Fourth, at the conclusion of all units visits review all identified tasks to determine if they are adequate for the Performance study. Repeat unit visits is as necessary to obtain a sufficient number of suitable tasks for use in the Performance study.

4. The areas of concern addressed by this study were stated above. The analysis is guided by a number of questions given below. These will be answered through the use of standard descriptive statistical procedures.

- What tasks occur most frequently in day-to-day operations?

- Does task frequency vary over time?

- What tasks require greater use of publications than others?

- How many tasks are completed per day?

- Is task completion time related to publication usage?

C. Phase II - Fiche Design Factor Evaluation.

1. The purpose of this evaluation is to determine how microfiche design factors (reading patterns, information density, header data, indexing methods) influence the performance of information retrieval tasks. Further, an indication of how these factors influence user acceptance will be obtained. Durability and maintainability of micropublication system elements can be observed as well. Evaluation results will be used in the development of the micropublication production system and will provide information essential to the analysis of the Field Application Study. Further, they provide an estimate of the micrographic skills level of participants in Phase III and IV.

2. 320 participants are needed for this study. They will be selected so that every member of the brigade has the same chance of being selected. However, the total number taken from any particular unit shall be determined by the relationship of the unit's size to the brigade's size. Each individual will participate in only one four hour test session. All testing will be completed during a one week period.

3. A controlled observation approach is used. Basically, each participant will perform a number of information look-up tasks using specially prepared microfiche. Measures of time to complete tasks and task accuracy are taken. The study is initiated when UTT contacts the coordination officer to confirm testing, assure room availability, select subjects, and establish the testing schedule. The next step is the installation of microfiche readers in the testing room. With the set-up operation complete, the actual testing portion of the study begins. Two testing sessions are held each day with up to 40 persons participating per session. A typical testing session will run as follows:

- First, participants receive an introduction to the study and each is assigned to a microfiche reader station.

- Second, each participant is given a test material packet containing an instruction sheet, data sheet, and a set of specially prepared microfiche. Each microfiche set will be made

up using one of eight possible combinations of fiche factors.

- Third, a UTT member will review the instructions, answer any questions, and start the test session.

- Fourth, a participant works on assigned tasks, recording information requested and completion times on the data sheet.

- Fifth, a UTT member reviews data sheets and dismisses participants after they complete the final assigned tasks.

The study is complete after eight test sessions if a minimum of 20 persons have participated in each session.

4. Standard analysis of variance statistical procedures will be used to answer the question, does reading pattern, header data, information density or indexing aids significantly alter performance of an information retrieval task.

D. Performance Study.

1. Performance on a set of tasks which would require high publication usage and would be representative of tasks in the normal operating environment will be examined by a controlled observational approach. These tasks will be developed from baseline study data. This study focuses on the effects of microform system factors (microfiche reader type, reader availability and hardcopy access) on the productivity, publication usage, user acceptance, durability, and maintainability areas of concern. Test materials will be developed in accordance with the Fiche Factors Study findings. Performance Study results provide input for the Field Application Study.

2. Half of the personnel tested in the Microfiche Study will participate in this study as well. An equal number of personnel who did not participate in the Fiche Factors Study will be selected from the brigade. The selection procedure employed for the Fiche Factors Study will be used. Each participant will be needed for not more than eight hours. All testing will be completed within a two week period.

3. The basic procedure employed in this study is similar to that of the Microfiche Factors Study. The testing room used in the previous study will be used again. First, the UTT contacts coordination officer to finalize participant selection and to establish the testing schedule. Second, UTT inspects testing room and microfiche readers. As soon as arrangements are complete, the testing portion of the study will be indicated. The

procedures for testing are the same as those for the Fiche Factors Study. There are two major differences between the studies:

a. The microfiche used in the Performance Study incorporate the best features identified in the Fiche Factors Study.

b. The tasks used will be developed from the Baseline Study. The Performance Study is complete after eight test sessions if a minimum of 30 persons have participated in each session.

4. Standard analysis of variance statistical procedures will be used to answer the question, does microfiche reader type, reader availabiity, or hardcopy access significantly alter the performance of simulated operational-type tasks.

E. Field Application Study.

1. The purpose of this study is to determine what will be the effect of replacing conventional hardcopy DA publications with microfiche versions. There will be a limited implementation of micropublications in selected elements of the participating FORSCOM brigade (brigade HQ, battalion HQ, company HQ, maintenance shops). The determination of elements will be based on the observation of all areas of concern and on the evaluation of the effects of all combinations of the user and micropublication system factors. The study will be conducted on a non-interference basis. However, in order to accomplish the objective, commanders of participating elements must restrict personnel to the use of microfiche versions of selected HQDA publications, when provided. The duration of such usage will be determined by the User Test Team (UTT), however it will not exceed two months. Further, this phase may be aborted immediately in the event of participating units' mobilization.

a. Methodology/Areas of Concern. Data for this portion is obtained from participant/user log books and from User Test Team spot-checks. A methodology statement for each area of concern is given below:

- Productivity: Determine time to accomplish operational and maintenance actions from user log. All actions will be performed in accordance with SOP.

- Publication usage: Number and type of publications used per action from user log. User Test Team will include publication usage questions in their spot-check interviews.

- User acceptance: Microform user evaluation questionnaire

(See Appendix F) will be administered to participants by the User Test Team. This will include an attitude toward micropublications section.

- Adaptability: The microform user evaluation questionnaire will provide information in this area. User logs will also provide data.

- Durability: User Test Team will inspect a representative sample of micropublications for physical defects at the conclusion of the Field Application Study.

- Maintainability: User will record maintenance time required to keep micropublications and readers operational.

- Hardcopy Requirements: During the study access to microfiche printer equipment will be controlled and the following will be recorded:

Total number of copies made, total number of originals.

Type data reproduced.

Type personnel requiring most hardcopy

Reasons for making hardcopy.

In addition the microform user evaluation questionnaire will address this area.

(b) Methodology/Factors Evaluation: Brigade elements will be assigned one of the following combination of microform system factors:

MICROFICHE READER TYPE		READER ACCESS		HARDCOPY ACCESS	
Table-Top	Briefcase	High	Low	Normal	Restricted
X		X		X	
X		X			X
X			X	X	
X			X		X
	X	X		X	
	X	X			X
	X		X	X	
	X		X		X

Productivity data provided by each element will be analyzed for this evaluation.

2. There is no personnel requirement for this study as it is

conducted on a non-interference basis. The exact number of participants is unknown as this number depends on the usage of micropublications. Some participants will be interviewed by UTT during the course of the study. All participants will complete a microform user evaluation questionnaire at the completion of the study.

3. This study will be conducted in the normal brigade operating environment. Self-report techniques such as log keeping are to be used to obtain information on micropublication usage, reader operations, maintainability, and productivity. UTT will conduct several spot-check interviews during the two month period of this study. These interviews will provide additional information on the areas listed above and information on adaptability and user acceptance. UTT action sequence is as follows:

- Finalize study plan details with brigade commander and select participating elements (See Appendix C - for a general participation schedule).

- Arrange micrographics training program for participant's with coordination officer (See Appendix D - for general program outline).

- UTT conducts training program.

- Install microfiche readers in participants' operational areas and distribute user log books (See Appendix E - for log book data collection schedule).

- Initiate access control to hardcopy versions of selected publications and supply user/participants with microfiche versions.

- Start log book data collection program.

Establish UTT spot-check interview schedule and coordinate with brigade commander.

- Execute interview schedule over a period of two months.

- Shut-down study: debrief participants, remove fiche readers, restore hardcopy versions of publications.

- Brief brigade Commander.

- Consolidate and analyze data.

4. Standard analysis of variance statistical procedures will be used to answer the question, do reader type, reader availability, hardcopy access, user's organizational level, or user functional

level, individually or in combination, significantly alter the performance of regularly occurring operational tasks requiring publication usage.

F. The User Test Action Sequence.

1. The overall action sequence is:

- Determine FORSCOM brigade availabilities (brief commanders on test plan, participation, and responsibilities, as required).

- Select brigade for User Test and coordinate with FORSCOM

- Brief commander of selected brigade.

- Complete arrangements for Baseline Reconnaissance.

- Execute Baseline Study.

- Determine number and type of microfiche readers required for the Field Application Study.

- Order microfiche readers.

- Initiate preparation of test materials for studies.

- Consolidate and analyze observational data collected during Baseline Study.

- Make preliminary selection of individual units for Field Application Study and coordinate selection with brigade commander.

- Secure classroom space.

- Finalize study plan.

- Install microfiche readers.

- Complete test material preparation.

- Select participants - coordinate with brigade commander.

- Execute Microfiche Factors Study.

- Complete test material preparation.

- Finalize study plan.

- Select participants - coordinate with brigade commander.

- Execute Performance Study.

- Finalize study plan - coordinate with brigade commander.

- Complete test material preparation.

- Select participating elements - coordinate with brigade commander.

- Execute Field Application Study.

- Brief brigade commander.

- Close out UTT operations.

APPENDIX A

GENERAL INTERVIEW SCHEDULE

Shop/Office Name: _____

Person Interviewed: _____

Date: _____

1. What specific publications get the highest usage within your organization?

2. What jobs within your organization always require one or more publications to accomplish?

3. Where and under what conditions are jobs performed that require publications to complete?

4. Would there be room in the area of high publication usage jobs to install one or more microfiche readers?

5. Are there certain publications that are almost always used together? For what specific jobs would this be the case?

6. How close to the work are publications shelved?

7. How many people share the same set of publications?

8. For which job-specific-publications must each individual have his own copy?

9. How are publications used in your shop aside from hands-on job situations?

10. For which job in your work area is speed of retrieving information from publications important?

11. Which publication-use-jobs performed in your work area, must be performed in the field?

12. For which publications would a different text format make certain jobs easier? What changes do you suggest?

13. If certain of the publications you use could be segmented or combined for more efficient use, which would you suggested?

14. Are there any jobs which require a large number of publications to complete?

APPENDIX B

GENERAL OBSERVATION GUIDELINES

A. Baseline Reconnaissance Phase:

1. Examine types of jobs performed in high publication usage areas.

2. By spot-check, determine amount of time consumed in performing high publication usage job types.

3. Observe and document physical characteristics of high publication usage environment.

4. Determine work areas best suited for reader installation.

   a. Check for centralization to immediate users.

   b. Check lighting conditions.

   c. Check power source availability.

   d. Check location of present paper publication library.

5. Observe what publications are being used most often in any one work area.

6. Note numbers and levels of personnel using most active publications.

7. Observe frequency and kind of publication sharing if applicable.

8. Examine any mobile equipment where publications would be used, for micropublication suitability.

9. Document personnel make-up of likely work area sites for field application study.

10. Look for publication usage jobs where speed of information retrieval is important; this data to be used later in the Performance study.

   - By spot-check note speed of information retrieval with publications likely to be used in the Performance Study.

B. Field Application Phase (During Spot-Check Visits).

1. Determine prevailing attitudes toward working with micropublications by spot-check interviews.

2. Examine usage logs for proper and complete recording of information.

3. Check for any unresolved reader problems.

4. Check physical condition of fiche and readers.

5. Look for any hardcopy violations where micropublications should be used.

6. Pass through all test work areas.

   - Be receptive to complaints.

7. Note how micropublications are being used - suggest and aid where appropriate to make usage easier.

APPENDIX C

GENERAL PARTICIPATION SCHEDULE

APPENDIX D

GENERAL PROGRAM OUTLINE

APPENDIX E

LOG BOOK DATA COLLECTION SCHEDULE

APPENDIX F

ARMY MICROPUBLICATION USER QUESTIONNAIRE

INSTRUCTIONS: BASED ON YOUR RECENT EXPERIENCE WITH MICROFICHE PUBLICATIONS ANSWER EACH OF THE FOLLOWING QUESTIONS. PRINT YOUR ANSWER IN THE BOX (OR BOXES) PROVIDED. BE SURE TO COMPLETE ALL ITEMS. YOU MAY WRITE COMMENTS AND EXPLANATIONS IN THE SPACE PROVIDED AT THE END OF THE SURVEY.

A. WHAT IS YOUR PRESENT GRADE LEVEL? (EXAMPLE: E4, 04, W4, IF YOU'RE A CIVILIAN ENTER THE LETTERS GS, WB, WG AS APPROPRIATE).

B. AT WHAT ORGANIZATIONAL LEVEL DO YOU WORK?

1. Brigade
2. Battalion or Squadron
3. Headquarters Company
4. Company, Battery or Troop
5. Platoon
6. Detachment
7. Other_____

C. WHAT TYPE OF UNIT DO YOU WORK IN?

01. Headquarters
02. Finance
03. Supply and Service
04. Ordnance
05. Engineer
06. Medical
07. Chemical
08. Transportation
09. Armor
10. Field Artillary
11. Signal
12. Military Intelligence
13. Infantry
14. Cavalry
15. Aviation
16. Maintenance
17. Other:_____

TYPES OF DA PUBLICATIONS

(USE THE NUMBERS FROM THIS LIST FOR QUESTIONS D & J)

01. Army Regulation
02. DOD REG/Manual
03. DA Circular
04. DA Pamphlet
05. Joint Chiefs Staff Pub
06. Field Manual
07. Training Circular
08. Army Training Program
09. Army Subject Schedule
10. Army Training Test
11. Table of Organization and Equipment
12. Tables of Distribution and Allowances
13. Common Tables of Allowances
14. Joint Tables of Allowances
15. Technical Manual
16. Technical Bulletin
17. Supply Manual
18. Supply Bulletin
19. Lubrication Orders
20. Supply Catalog
21. Modification Work Order

D. WHAT TYPES OF MICROPUBLICATIONS DID YOU USE?

(Enter the Appropriate Code from List above).

E. HOW OFTEN DID YOU USE MICROPUBLICATIONS?

1. Daily, one or more times per day
2. Not daily, but one or more time per week
3. Less than once per week

F. HOW DID THE PEOPLE YOU WORK WITH FEEL ABOUT USING MICROFICHE PUBLICATIONS?

1. Very Favorable
2. Favorable
3. Unfavorable
4. Very Unfavorable

G. INDICATE THE TYPE OF MICROFICHE READER YOU USED MOST FREQUENTLY? IF NEVER USED ENTER ZERO.

1. Hand Held
2. Table/Desk Top
3. Briefcase

H. HOW DID YOUR USE OF CONVERTED PUBLICATIONS CHANGE DURING THE COURSE OF THE TEST?

1. Much Increase
2. Some Increase
3. No Change
4. Some Decrease
5. Much Decrease

I. WAS THE IMPACT TEAM AVAILABLE ENOUGH THROUGH VISITS OR BY PHONE TO ANSWER QUESTIONS OR HELP WITH PROBLEMS?

1. Always
2. Usually
3. Seldom
4. Never

J. WHAT WOULD BE YOUR TWO TOP PUBLICATION TYPE CHOICES FOR CONVERSION TO MICROFICHE? (SELECT THE PUBLICATION TYPE FROM THE LIST ABOVE QUESTION D).

K. HOW WOULD YOU SAY FILE MAINTENANCE TIME OR MICROFICHE PUBLICATION COMPARES WITH PAPER COPIES?

1. Much Less Time Required
2. Less Time Required
3. Same Time Required
4. More Time Required
5. Much More Time Required

L. HOW OFTEN DID YOU EXPERIENCE A NEED FOR A PAPER COPY OF ALL OR PART OF A MICROFICHE PUBLICATION?

1. Daily, One or More Times Per Day
2. Not Daily, But One or More Times Per Week
3. Less Than Once Per Week

M. WHEN YOU EXPERIENCED A NEED FOR A PAPER COPY OF ALL OR PART OF A MICROFICHE PUBLICATION, WHAT WAS MOST OFTEN THE REASON?

1. Higher Command Request
2. Filing
3. Correspondence
4. Note Taking
5. Briefings
6. Unable To Use Reader
7. Never Needed a Paper Copy
8. Other_____

N. CONSIDERING YOUR NEEDS FOR PAPER COPIES OF ALL OR PART OF THE MICROFICHE PUBLICATIONS, HOW WERE YOU AFFECTED BY HAVING TO GO TO AN AREA WHERE A PAPER COPY COULD BE MADE?

1. Completely Unaffected
2. Mostly Unaffected
3. Somewhat Hastled
4. Very Hastled

O. HOW ACCEPTABLE WAS THE PRINTED PAPER COPY THAT COULD BE OBTAINED FROM THE MICROFICHE PUBLICATIONS?

1. Very Acceptable
2. Acceptable
3. Never Obtained a Paper Copy
4. Unacceptable
5. Very Unacceptable

ANSWER THE FOLLOWING QUESTIONS FOR THE READER TYPE YOU USED MOST OFTEN.

P. HOW WOULD YOU DESCRIBE THE INSTRUCTION YOU RECEIVED IN THE READER?

1. Everything You Need to Know
2. OK
3. Left Something Out
4. Didn't Do the Job

Q. HOW DO YOU FEEL THE READER WILL HOLD UP?

1. Very Well
2. OK
3. Not Too Good
4. Won't Last

R. WAS THE READER SUITABLE FOR THE KIND OF MICROPUBLICATIONS YOU USED?

1. Works Well
2. Does Alright
3. Could Be Better
4. Won't Work

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IMPLEMENTATION OF MICROPUBLISHING, ARMY CONCEPT AND TECHNOLOGY --ETC(U)
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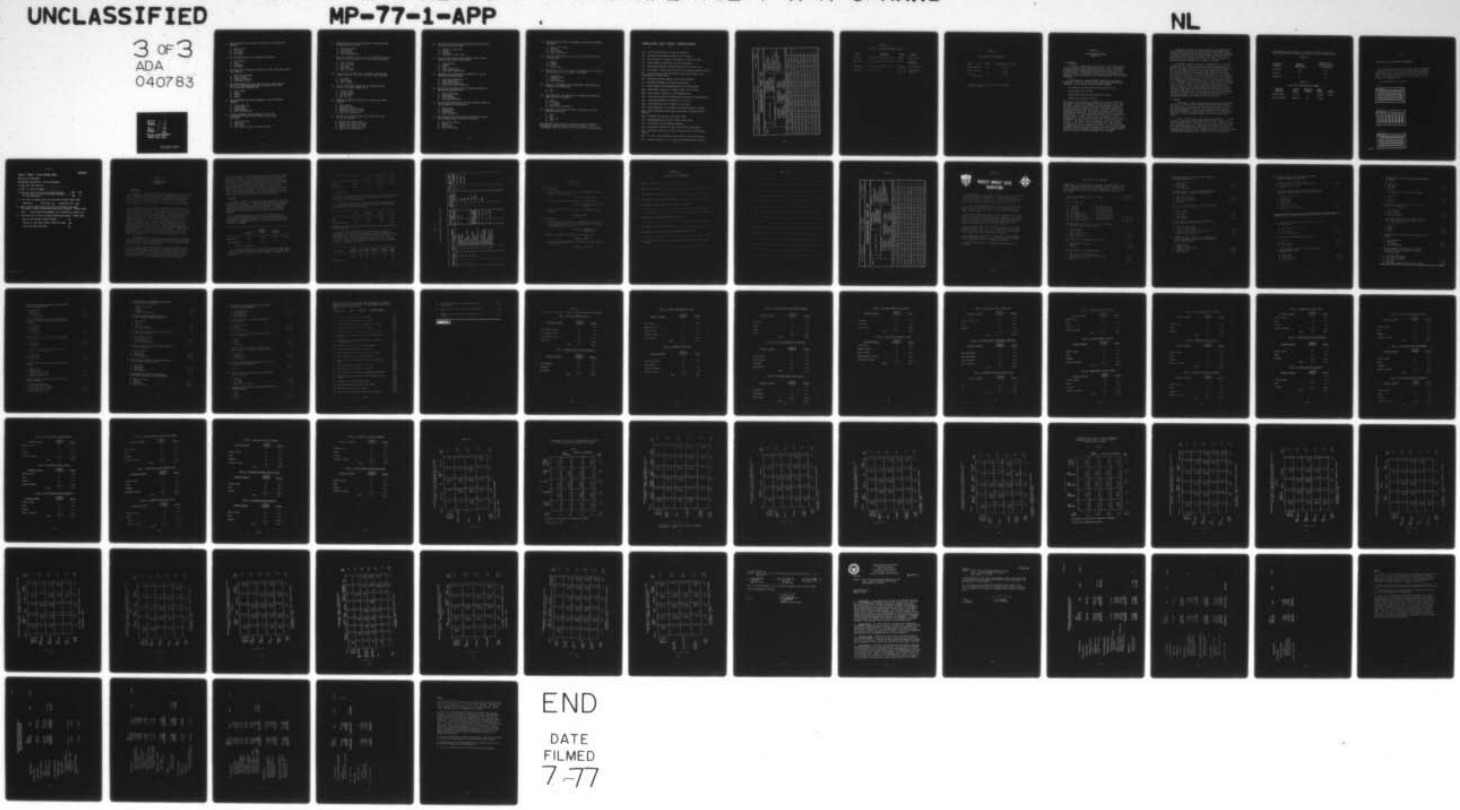

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FILMED
7-77

S. HOW DIFFICULT DO YOU FEEL IT WOULD BE TO MAINTAIN THE READER?

1. Easy to Do
2. Not Hard
3. Not Easy
4. Difficult

T. HOW DIFFICULT WAS IT TO OPERATE THE READER?

1. No Problem
2. Easy
3. Not Easy
4. Difficult

U. HOW WOULD YOU DESCRIBE THE EFFECT ON YOUR EYES FROM USING THIS READER?

1. Very Easy to Read
2. Easy to Read
3. Slight Eye Strain
4. Much Eye Strain

V. HOW OFTEN WOULD YOU HAVE LIKE TO GET A PAPER COPY OF ONE OF THE MICROPUBLICATIONS, BUT FOUND YOU COULD DO JUST AS WELL WITHOUT IT?

1. Very Often
2. Often
3. Rarely
4. Never

W. HOW CONVENIENT WAS THE PLACEMENT OF THE MICROFICHE READER?

1. Very Convenient
2. Convenient
3. Inconvenient
4. Very Inconvenient

X. OF THE DIFFERENT STYLE READERS YOU HAD THE OPPORTUNITY TO USE, WHICH STYLE DID YOU LIKE THE MOST?

1. Table/Desk Top
2. Briefcase
3. Hand Held
4. Only Used One Style, Cannot Compare

Y. HOW ACCEPTABLE WAS THE CONTAINER FOR STORING YOUR MICROFICHE PUBLICATIONS?

1. Very Acceptable
2. Acceptable
3. Unacceptable
4. Very Unacceptable

Z. DID YOUR FREQUENCY OF USE OF THE CONVERTED PUBLICATIONS DIFFER FROM YOUR USE OF THE PAPER VERSIONS?

1. Much Increase
2. Some Increase
3. No Change
4. Some Decrease
5. Much Decrease

AA. DID THE WAY YOU USED THE CONVERTED PUBLICATIONS DIFFER FROM THE WAY YOU USED THE PAPER VERSIONS?

1. No Change
2. Some Change
3. Great Change

BB. DO YOU FEEL THAT MICROFICHE IS DURABLE ENOUGH TO HOLD UP UNDER NORMAL USAGE?

1. In All Cases
2. In Most Cases
3. In Few Cases
4. Not At All

CC. COMPARE MICROFICHE PUBLICATION USAGE WITH PAPER VERSION.

1. Much Easier
2. Somewhat Easier
3. About the Same as Paper
4. Somewhat More Difficult
5. Much More Difficult

DD. HOW DO YOU BELIEVE MORALE WAS AFFECTED BY THE USE OF MICROFICHE?

1. Morale was Much Higher
2. Morale was Slightly Higher
3. Morale was About the Same
4. Morale was Slightly Lower
5. Morale was Much Lower

EE. HOW DID THE USE OF MICROPUBLICATIONS AFFECT YOUR ABILITY TO DO YOUR JOB?

1. Helped a Great Deal
2. Helped
3. Hindered
4. Hindered a Great Deal

FF. HOW HAS YOUR WORK ROUTINE CHANGED USING MICRO-PUBLICATIONS RATHER THAN PAPER?

1. Much Simpler
2. Simpler
3. Same
4. More Complicated
5. Much More Complicated

GG. DESCRIBE THE EXPERIENCE OF ADAPTING TO USE OF MICROFICHE PUBLICATIONS.

1. Very Easy Transition
2. Easy Transition
3. Difficult Transition
4. Very Difficult Transition

HH. HOW DO YOU FEEL THAT YOUR CO-WORKERS REACTED TO MICROFICHE PUBLICATIONS?

1. Very Interested
2. Interested
3. Disinterested
4. Very Disinterested

II. DID YOU MISS THE ABILITY TO MAKE WRITTEN NOTES ON THE MICROFICHE PUBLICATIONS?

1. Not At All
2. Infrequently
3. Frequently
4. Very Frequently

JJ. HOW ADEQUATE WAS THE NUMBER OF COPIES OF MICRO-FICHE PUBLICATIONS THAT WERE SUPPLIED?

1. More Than Enough
2. Enough
3. Not Enough
4. Need A Lot More

KK. HOW SUFFICIENT WERE THE NUMBER OF MICROFICHE READERS SUPPLIED?

1. More Than Enough
2. Enough
3. Not Enough
4. Need a Lot More

LL. WERE ANY MICROFICHE PUBLICATIONS YOU USED EVER LOST OR MISPLACED?

1. Never
2. Seldom
3. Often
4. Very Often

MM. HOW DIFFICULT DID YOU FIND IT TO RETRIEVE THE DESIRED MICROFICHE FROM THE STORAGE CONTAINER?

1. Very Easy
2. Somewhat Easy
3. Difficult
4. Very Difficult

NN. WOULD YOU RECOMMEND THAT ADDITIONAL PUBLICATIONS BE PRODUCED ON MICROFICHE?

1. Yes
2. No

OO. HOW OFTEN DID YOU EXPERIENCE A READER FAILURE WHICH MADE THE UNIT UNUSABLE?

1. Never
2. 1-2 Times
3. 3-5 Times
4. More Than Five Times

PP. WERE ANY FICHE DAMAGED DURING THE COURSE OF USING MICROPUBLICATIONS?

1. Many
2. Few
3. Very Few
4. None

TELL HOW MUCH YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS REGARDING MICROFICHE PUBLICATIONS. USE THE NUMBERS FROM THE SCALE BELOW FOR MAKING YOUR RESPONSE.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
1	2	3	4

QQ. A Microfiche Reader is Easy to Operate.

RR. Microfiche Publications Make My Job Easier.

SS. The Microfiche Image on the Reader is Easy to Read.

TT. Fiche Header Information is Very Readable.

UU. Microfiche Versions of Publications Do Not Get Lost.

VV. The People I Work with Adjusted to Micropublications Easily.

WW. I Would Like to Recommend Many Other Publications for Conversion to Microfiche.

XX. Micropublications Require Little Maintenance.

YY. Microfiche Readers are Easy to Maintain.

ZZ. Paper Copies of Micropublications are Not Needed.

AAA. Microfiche Indexing is Better Than a Book Index.

BBB. Any Soldier Could Use a Micropublication.

CCC. Publication Usage Increases with Microfiche Publications.

DDD. Portable Readers are Needed in the Field.

EEE. Two People Can Use a Reader at One Time.

FFF. User Education is the Key to Micropublication Success.

GGG. Some Publications Are More Suited for Microfiche Than Others.

HHH. A Reader Can Be Used in Bright Light.

III. Micropublications Can be Used in The Field.

JJJ. Microfiche Are Not Easily Damaged.

KKK. Micropublications Will Make More Copies Available.

LLL. Microfiche Quality Is More Consistant Than for Printed Paper.

MMM. In Time, Most Personnel Will Prefer Micropublications.

NNN. Command Support Is the Key to Micropublication Success.

READER CODE: ☐☐☐ (1 - 3) UNIT CODE: ☐☐ (4 - 5) LOCATION CODE: ☐☐ (6 - 7)

MICROPUBLICATION USAGE LOG

KEY:

JOB TYPES:

1.
2.
3.
4. (TO BE DETERMINED BY BASELINE STUDY)
5.
6.
7.
ETC.

USES OF MICROPUBLICATIONS:

1. REGULATIONS INQUIRY
2. TRAINING REQUIREMENT
3. *TECHNICAL ADVICE*
4. MATERIELS/PARTS ORDERING
5. SPECIFICATIONS INFORMATION
6. MAINTENANCE INFORMATION
7. HISTORICAL RESEARCH
8. PERSONAL INTEREST/STUDY
9. OTHER

TYPES OF PROBLEMS:

1. FICHE PHYSICALLY DAMAGED
2. FICHE HARD TO READ
3. *INFORMATION HARD TO FIND*
4. READER HARD TO GET TO
5. BULB BURNED OUT
6. HARD TO FOCUS
7. HARD TO HOLD FOCUS
8. TOO MUCH SCREEN GLARE
9. FICHE CARRIER HARD TO OPERATE
10. *SCREEN TOO SMALL*
11. READER VIBRATION
12. COPIES OF INDIVIDUAL PAGES HARD TO GET
13. COULDN'T GET COPIES OF INDIVIDUAL PAGES
14. READER TOO FAR FROM JOB
15. COULDN'T TAKE READER TO JOB
16. READER HARD TO USE
17. POWER FAILURE
18. OTHER

TYPES OF MICROPUBLICATIONS:

01. ARMY REGULATION
02. DOD REG/MANUAL
03. DA PAMPHLET
04. DA CIRCULAR
05. JOINT CHIEFS STAFF PUBLICATION
06. FIELD MANUAL
07. TRAINING CIRCULAR
08. *ARMY TRAINING PROGRAM*
09. ARMY SUBJECT SCHEDULE
10. ARMY TRAINING TESTS
11. TABLES OF ORGANIZATION AND EQUIPMENT
12. TABLES OF DISTRIBUTION AND ALLOWANCES
13. COMMON TABLES OF ALLOWANCES
14. JOINT TABLES OF *ALLOWANCES*
15. TECHNICAL MANUAL
16. TECHNICAL BULLETIN
17. SUPPLY MANUAL
18. SUPPLY BULLETIN
19. LUBRICATION *ORDERS*
20. SUPPLY CATALOG
21. MODIFICATION WORK ORDERS

1 - 11	12 - 13	14 - 15	16 - 17	18	19 - 20	21	22 - 23	24	25 - 26	27	28 - 29	30 - 31	32 - 33	34 - 80
ENTRY DATE	USER PAY GRADE	JOB TYPE	TYPE MICROPUB USED ON THIS JOB	USED FOR:	TYPE MICROPUB USED ON THIS JOB	USED FOR:	TYPE MICROPUB USED ON THIS JOB	USED FOR:	TYPE MICROPUB USED ON THIS JOB	USED FOR:	PROBLEMS (IF ANY)			
DAY / MONTH	(E1,02,W2, ETC.)	(SEE KEY ABOVE)	(SEE KEY)		(SEE KEY)		(SEE KEY)		(SEE KEY)		1	2	3	
☐☐ ☐☐	☐☐	☐☐	☐☐	☐	☐☐	☐	☐☐	☐	☐☐	☐	☐☐	☐☐	☐☐	
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APPENDIX O

FIELD TEST PROGRAM MICROFICHE READERS

TYPE	DIMENSIONS	MODEL	VENDOR
Table Top	13 1/4" w X 17 3/4" H X 19 1/2"	SR1010	Bell & Howell
Desk Top	12 1/2" w X 18 1/4" H X 12 1/2"	NMI-75	Northwest Microfilm
Briefcase	12 5/8" w X 6 1/4" H x 10 1/2"	Briefcase	Bell & Howell
Hand-held	3" w x 3" H x 8	Mini View II	Creative Micro-graphics

APPENDIX P

MICROFICHE READER DISTRIBUTION

MODEL (type)	#ISSUED	#RETAINED BY 197 INF BDE
SR1010 (tabletop)	12	4 (33%)
NMI 75 (desktop)	12	5 (42%)
Briefcase (briefcase)	29*	12 (41%)

* includes a special 24v model loaned to IMPACT by Bell & Howell

APPENDIX Q

FICHE FACTORS EVALUATION
(PHASE II)

1. Methodology.

a. Subjects. Subjects for this study were 197th Infantry Brigade personnel assigned to micropublication user test sites. No attempt was made to select subjects and participation was largely determined by availability. A representative cross-section of the entire user group was obtained. Thirty-three officers and men participated in the evaluation. Most had experience with micropublications in the horizontal arrangement.

b. Test Materials. The publication selected for conversion to microfiche for use in this test was AR 31-200, Commissary Operating Procedures. It was selected for the following reasons:

- All potential subjects would have been exposed to ARs,

- Required more than one fiche,

- Predominately text, and non-technical in nature,

- Unfamiliar to potential subjects.

Three sets of silver masters were prepared, one per each fiche frame arrangement. Sufficient quantities of diazo duplicates of each set were made. Each task set consisted of seven individual tasks. Half of these required the subject to do some reading while the others required nothing more than visual search. The frames containing the information to be retrieved were distributed across the three fiche containing the publication. The task set was presented on a single sheet of paper. Subjects recorded their answers and start/stop times on these sheets. A sample sheet is shown in figure Q2. Three equivalent task sets were constructed, one per fiche frame/information arrangement (see figure Q1 for description). Six NMI 75 microfiche readers were used. These were arranged in two rows of three oriented back to back on a large conference table. Each reader had an adequate amount of work space at its sides. The test room in which the readers were located was the brigade AG conference room. Overhead florescent fixtures provided the primary source of illumination while windows covered by venetian blinds supplied the remainder.

c. Experimental Design. The evaluation utilized a single factor repeated measures (each subject does all tasks) experimental design. Information arrangement was the factor studied. Each subject completed 21 different factual information look-up tasks in groups of seven, one group for each of the three arrangements. The order in which the subjects worked on the groups was randomized. This was done so that work order could not influence the outcome of the study.

d. Procedure. Subjects were tested in groups of six. The same procedure was followed for all groups. A subject arrived at the test room and was told to seat himself in front of a microfiche reader. When all six subjects scheduled for the test session had been seated, the door was closed and the test session was started. First, the data collection sheet was distributed. When it had been filled out, the study coordinator gave a brief explanation of the test's purpose and procedures. After any questions had been answered, task assignment/data sheets and micropublications were given-out, one set per tester in accordance with the randomization plan. A start-time was announced by the coordinator, which the subjects were told to record on their data sheets. Further, subjects were instructed to record the time at which they completed the tasks assigned. The coordinator monitored the subjects performance and provided appropriate, consistent assistance as needed. Data sheets and micropublications were collected as the subjects finished their work on the task set. This was the procedure followed for one test unit. When all material had been turned-in, the next unit was begun. Three units constituted a test session. The approximate duration of any given session was one hour.

2. Results.

a. Preliminary. Several different look-up tasks had been prepared for the test. However, their suitability as test materials had not been determined. A pilot test was needed for this purpose. Therefore, the study coordinator utilized the first two groups of subjects to make this determination. The only data reported on these groups was the general information from the data collection sheets (summarized in figure Q2). Final selection of tasks to be used was made at that time.

b. Test. Test data sheets were inspected to determine if all tasks had been completed and if start/stop times had been recorded. Those which were incomplete or lacked times were discarded. Completion times were calculated. Sheets were sorted into groups depending on the micropublication arrangement used. This data (see Table Q-1) was analyzed by one-way analysis of variance techniques for unequal size groups, a recognized statistical procedure. Summary statistics required to determine if a meaningful difference existed between the results obtained for

each group are given in Table Q-2. The results of this analysis indicate that the differences observed could have come about by chance alone.

TABLE Q-1

INFORMATION LAYOUT	NUMBER OF OBSERVATIONS	AVERAGE TIME TO COMPLETE TASK SET (IN MINUTES)
Horizontal	18	11.7
Vertical	20	15.5
Serpentine	21	11.1

TABLE Q-2

ANALYSIS OF VARIANCE (ANOV) SUMMARY

SOURCE OF VARIATION	SUM OF SQUARES	DEGREES OF FREEDOM	MEAN SQUARE	F RATIO
Between Groups	227.715	2	113.858	2.482
Within Subjects	2568.421	56	45.865	

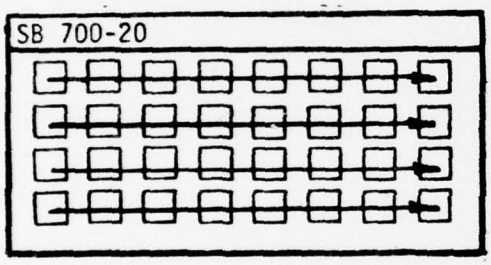
FIGURE Q-1

MICROFICHE TEXTUAL INFORMATION ARRANGEMENTS

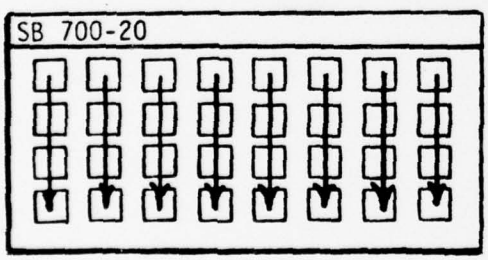
1. The illustrations below show the three textual information arrangements used in the Microfiche Design Factor Evaluation. Arrows indicate the direction in which a fiche would be read. Pages/frames would run sequentially from tail to head of the arrow. The drawings do not show the actual number of rows or columns on a standard fiche.

2. The arrangements are as follows:

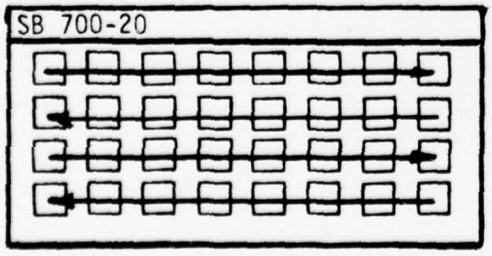
horizontal



vertical



serpentine



incl 1

FIGURE Q-2

009142

PROJECT IMPACT: FICHE FACTORS STUDY

DATA COLLECTION SHEET

BACKGROUND INFORMATION (FILL-IN BLANKS)

1. WHAT UNIT ARE YOU IN? _____

2. WHAT IS YOUR PAY GRADE? _____

3. HAVE YOU USED A MICROFICHE READER BEFORE? ____ Yes 24
   (if your answer is no, go to the study coordinator for task assignment) No 9

4. WHAT TYPE OF READER HAVE YOU USED MOST OFTEN? (CHECK ONE)

   HAND HELD BRIEFCASE - 6 TABLE/DESK TOP - 18

5. WHAT TYPE OF ARMY MICROFICHE PUBLICATION HAVE YOU USED, OR LOOKED AT MOST OFTEN WITHIN THE LAST 3 MONTHS? (CIRCLE ONE)

   NONE ADMINISTRATIVE/PERSONNEL - 17 TECHNICAL - 3 SUPPLY - 4

6. HOW OFTEN DID YOU USE OR READ MICROPUBLICATIONS? (CHECK ONE)

   DAILY, ONE OR MORE TIMES PER DAY 5

   NOT DAILY, BUT ONE OR MORE TIMES PER WEEK 16

   LESS THAN ONCE PER WEEK 3

Incl 2

APPENDIX R

PERFORMANCE TEST
(PHASE III)

1. Methodology.

a. Subjects. Twenty-eight (28) subjects were drawn from the brigade using stratified random sampling as much as brigade activities would permit. Eighteen (18) of the subjects had some prior experience with microfiche, if only to include the use of IMPACT User Test products (see Table R-1). The remaining ten (10) subjects had no prior microfiche experience of any kind. Subjects included 27 enlisted personnel and one officer.

b. Test Conditions and Materials. Subjects were run in groups of four in a small briefing room. Lighting conditions included a combination of natural and florescent. Three members of each group were assigned one of three reader types; desk model (NMI-75), briefcase style (Bell & Howell) or hand model (Creative Micrographics). The fourth member had only paper copies of two selected publications and no reader. Each reader using subject was supplied with one microfiche set of each of two selected publications. All four subjects per group received a set of data - recording sheets including a request sheet for basic demographic information. This sheets is included as Inclosure 2 and the related data is summarized in Table R-1. The two selected publications for the Performance Test were AR 31-200, and AR 37-104-3. These publications were chosen in an effort to start all subjects on as equal an experience level as possible. Only 10% of the subjects had ever seen or used these publications and this percentage experienced only a one or two time contact.

c. Experimental Design. This test was designed to make comparisons on two factors: the subject's experience with microfiche and the resource used by the subject. The effects of these factors on the speed of information retrieval performance was examined.

d. Procedure. Upon orienting the subjects to the experiment, all four subjects as a group, were assigned six information retrieval tasks. These tasks were divided equally between the two selected publications (see task list Inclosure 1). Each task was verbally assigned, one at a time. With each task, the subjects recorded the retrieval information on their data sheet. The experimenter recorded the task completion

times as each subject verbally announced his completion of the current retrieval assignment. Each announced completion was verified by the experimenter. All four subjects per group were allowed to complete the current task before the next was assigned. For each subject group this resulted in one completion time score per subject for each of the six retrieval tasks. Each set of four completion time scores will indicate differences in information retrieval time based on the experimenter - assigned resources. The above procedures were repeated until all experimental groups were run. Total experimental time per group varied from 30 to 60 minutes. Questions and comments were entertained in any time remaining between test group appointments.

2. Results.

a. General. Raw data sheets were grouped according to reader type or paper copy assignment. A consolidated data sheet was then prepared for an analysis of variance. These statistical procedures would then indicate the presence of any significant differences in information retrieval times between reader types and paper copy. In addition, differences between experienced and non-experienced users would be examined.

b. Experience Comparison. A t-test was run between those 18 subjects who had some prior experience using a microfilm product and those subjects who had no experience. This test yielded no significant difference in information retrieval time between the two groups (see following test summary).

	#SUBJECTS	MEAN PERFORMANCE TIME	STANDARD DEVIATION	t
Experienced	18	11.64	7.87	0.315
Non-experienced	10	12.14	7.15	

c. Subject-Group Comparison.

(1) After determining that experience did not significantly contribute to retrieval time scores, a one way analysis of variance (ANOVA) was run on the scores for the four subject groups. The summary tabulation follows:

	SS	df	MS	F
Between	689.06	3	229.69	6.41*
Within (Error)	860.31	24	35.85	

*.01 significance

The above F ratio indicates that overall, there is a significant difference in the speed of information retrieval depending on the kind of search tools in use (readers or paper copy).

(2) The mean performance time scores for each subject group appear to be different but are in close proximity for the three reader using subject groups (see following tabulation).

	DESK	BRIEFCASE	HAND	PAPER
Mean	14.46	14.28	15.29	3.25
Standard Deviation	5.87	7.28	7.45	0.64

Standard Deviations were considerably higher for the three reader groups than for paper copy.

(3) The F ratio for ANOVA across the four subject groups was significant at the .01 level. This significance suggests that there was a meaningful difference somewhere between the mean performance scores of the four groups. Additional statistical tests were necessary to locate the difference(s) among the four experimental means. This need was met by performing t-tests between all combinations of experimental means. The results are as follows.

MEAN PAIRS	DESK BRIEFCASE	DESK HAND	DESK PAPER	BRIEFCASE HAND	BRIEFCASE PAPER	HAND PAPER
t	0.051	0.23	4.98	0.60	3.97	4.22
Significant .01			*		*	*

TABLE R-1

SUBJECT DEMOGRAPHIC INFORMATION SUMMARY

SUBJECT RANK		KIND OF DUTY ASSIGNMENT		PRIOR MICROFILM USAGE		KIND OF PRIOR MICROFILM USAGE		PRIOR USAGE READER TYPE	
#	RANK	#	KIND	#	RESPONSE	#	RESPONSE	#	RESPONSE
2	E2	4	Records Clerk	17	Yes	4	TMs	14	Desk Type
		3	Admin Clerk						
1	E3	3	SIDPERS Clerks	11	No	15	ARs	8	Briefcase
		1	Welder						
9	E4	1	PLL Clerk			3	PAMs	1	Hand Type
		1	Shop Supply Clerk						
10	E5	1	Legal Clerk			2	CIRs		
		1	Typist						
5	E6	1	Electrical Maint.	LENGTH OF PRIOR MICROFILM USAGE		2	Supply		
		1	Squad Leader						
1	02	1	Armor Sgt.	#	RESPONSE	2	SIDPERS		
		1	Water Purification Tech	13	1-6 mos.	1	IL		
		1	Postal Clerk						
		1	Elimination Clerk	2	1 year	1	MCRL		
		1	Materiel Readiness Clerk	1	1 week				
		1	Shop Supply Clerk						
		1	Machine Gunner	1	Few mins.				
		1	MOS Testing Clerk						

INCLOSURE R-1

TASK LIST

From: AR 37-104-3

1. Look on page 1-67 and tell me what DA form number is used for payment of an enlistment bonus.

   (Response: DA Form 2139)

2. Look on page 4-57 and tell me the title of DA Form 20.

   (Response: Enlisted Qualification Record)

3. Look on page 6-67 and tell me, what is the abbreviation for Oregon?

   (Response: OR)

From: AR 31-200

1. Look-up authorized purchasers at commissaries and tell me if Red Cross Personnel can use the commissary and if so tell me the paragraph where it says so.

   (Response: paragraph 11-17, page 11-2.1)

2. What is the subject of paragraph 11-26 on page 11-3?

   (Response: YMACA)

3. Tell me what page paragraph 8-108 (Abstract of Ice Issues and Sales) is on?

   (Response: Page 8-23)

INCLOSURE R-2

MICROFICHE STUDY INFORMATION

1. What is your rank? _____

2. What unit do you work in? _____

3. What kind of work do you do? _____

4. Have you ever used microfiche before? _____

5. What kinds of publications have you used on microfiche?

_____

_____

6. What kind of microfiche reader have you used?

_____

7. How long have you used microfiche? _____

8. What type of reader have you been assigned for this study?

_____

9. Have you ever used either of the publications that are being used in this study?

_____

ANSWER SHEET

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

READER CODE: ___ UNIT CODE: ___ LOCATION CODE: ___

MICROPUBLICATION USAGE LOG

KEY:

JOB TYPES:

1.
2.
3.
4. (TO BE DETERMINED BY BASELINE STUDY)
5.
6.
7.
ETC.

USES OF MICROPUBLICATIONS:

1. REGULATIONS INQUIRY
2. TRAINING REQUIREMENT
3. TECHNICAL ADVICE
4. MATERIELS/PARTS ORDERING
5. SPECIFICATIONS INFORMATION
6. MAINTENANCE INFORMATION
7. HISTORICAL RESEARCH
8. PERSONAL INTEREST/STUDY
9. OTHER

TYPES OF PROBLEMS:

1. FICHE PHYSICALLY DAMAGED
2. FICHE HARD TO READ
3. INFORMATION HARD TO FIND
4. READER HARD TO GET TO
5. BULB BURNED OUT
6. HARD TO FOCUS
7. HARD TO HOLD FOCUS
8. TOO MUCH SCREEN GLARE
9. FICHE CARRIER HARD TO OPERATE
10. SCREEN TOO SMALL
11. READER VIBRATION
12. COPIES OF INDIVIDUAL PAGES HARD TO GET
13. COULDN'T GET COPIES OF INDIVIDUAL PAGES
14. READER TOO FAR FROM JOB
15. COULDN'T TAKE READER TO JOB
16. READER HARD TO USE
17. POWER FAILURE
18. OTHER

TYPES OF MICROPUBLICATIONS:

01. ARMY REGULATION
02. DOD REG/MANUAL
03. DA PAMPHLET
04. DA CIRCULAR
05. JOINT CHIEFS STAFF PUBLICATION
06. FIELD MANUAL
07. TRAINING CIRCULAR
08. ARMY TRAINING PROGRAM
09. ARMY SUBJECT SCHEDULE
10. ARMY TRAINING TESTS
11. TABLES OF ORGANIZATION AND EQUIPMENT
12. TABLES OF DISTRIBUTION AND ALLOWANCES
13. COMMON TABLES OF ALLOWANCES
14. JOINT TABLES OF ALLOWANCES
15. TECHNICAL MANUAL
16. TECHNICAL BULLETIN
17. SUPPLY MANUAL
18. SUPPLY BULLETIN
19. LUBRICATION ORDERS
20. SUPPLY CATALOG
21. MODIFICATION WORK ORDERS

1 - 11 ENTRY DATE		12 - 13 USER PAY GRADE (E1,02,W2, ETC.)	14 - 15 JOB TYPE (SEE KEY ABOVE)	16 - 17 TYPE MICROPUB USED ON THIS JOB (SEE KEY)	18 USED FOR:	19 - 20 TYPE MICROPUB USED ON THIS JOB (SEE KEY)	21 USED FOR:	22 - 23 TYPE MICROPUB USED ON THIS JOB (SEE KEY)	24 USED FOR:	25 - 26 TYPE MICROPUB USED ON THIS JOB (SEE KEY)	27 USED FOR:	28 - 29 PROBLEMS (IF ANY) 1	30 - 31 2	32 - 33 3	34 - 50

APPENDIX T

PROJECT IMPACT USER DEBRIEFING

Project IMPACT is a study sponsored by Major General Paul T. Smith, The Adjutant General. Its purpose is to design a micropublishing system that will meet the Army's needs. The soldier who reads the microfiche publication is the critical element in the system. The system must turn out fiche that can be used effectively.

The User Field Test was designed to collect as much information as possible about the actual use of microfiche publications under Army conditions. The 197th was selected by HQ FORSCOM to assist IMPACT in this effort.

For the past few weeks you have had the opportunity to try using Army publications in a different way - on microfiche. You have been helping Project IMPACT to learn how and where micropublications can be used in a tactical brigade environment. During the microfiche test, brigade personnel have given Project IMPACT much help in determining the best use of microfiche publications.

Now the Project IMPACT test has been completed in your brigade. This questionnaire will let you tell us how micropublications have worked out for you. Your answers will be used to help TAG design a micropublication system best suited to your needs.

Be sure to answer all questions. Your name or service number are not requested or required. To assure an accurate and complete picture of your needs your honest answers are essential.

Begin the questionnaire by reading the instructions on the next page.

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PROJECT IMPACT USER DEBRIEFING

INSTRUCTIONS: BASED ON YOUR RECENT EXPERIENCE WITH MICROFICHE PUBLICATIONS ANSWER EACH OF THE FOLLOWING QUESTIONS. PRINT YOUR ANSWER IN THE BOX (OR BOXES) PROVIDED. BE SURE TO COMPLETE ALL ITEMS. YOU MAY WRITE COMMENTS AND EXPLANATIONS IN THE SPACE PROVIDED AT THE END OF THE SURVEY.

1. WHAT IS YOUR PRESENT PAY GRADE? (EXAMPLE: E4, 04, W4)

2. WHERE DO YOU WORK?

01.	1/58 PAC	10.	AG, Admin Services
02.	2/10 PAC	11.	AG, Executive Office
03.	2/69 PAC	12.	Co D, 197th Support Bn, Elec Maint Shop
04.	3/7 PAC	13.	Co D, 197th Support Bn, Elec Maint Shop
05.	AG, Personnel Actions	14.	2/69 Motor Pool/Maint
06.	AG, Personnel Mgt	15.	197th Bde Maint Office
07.	AG, Enlisted Records		
08.	AG, Officer Records		
09.	AG, In/Out Processing		

3. WHAT WAS YOUR EXPERIENCE WITH ANY TYPE OF MICROFILM OR MICROFICHE BEFORE PROJECT IMPACT?

1. Used it before
2. Seen it before
3. Watched others use it
4. Only heard of it
5. Never seen or heard of it

4. WHAT TYPES OF MICROPUBLICATIONS DID YOU USE?

1. Administrative/Personnel
2. Technical
3. Supply

5. HOW OFTEN DID YOU USE MICROPUBLICATIONS?

1. Daily, one or more times per day
2. Not daily, but one or more times per week
3. Less than once per week
4. Never used

6. HOW DID THE PEOPLE YOU WORK WITH FEEL ABOUT USING MICROFICHE PUBLICATIONS?

1. Very favorable
2. Favorable
3. Unfavorable
4. Very Unfavorable

☐

7. INDICATE THE TYPE OF MICROFICHE READER YOU USED MOST FREQUENTLY? IF NEVER USED ENTER ZERO.

1. Desk top (tan case)
2. Table top (blue case)
3. Briefcase (collapsible)
4. Mini-cat

☐

8. HOW DID YOUR USE OF MICROFICHE PUBLICATIONS CHANGE DURING THE COURSE OF THE TEST?

1. Much increase
2. Some increase
3. No change
4. Some decrease
5. Much decrease

☐

9. IF YOU HAD ANY PROBLEMS WITH YOUR MICROFICHE OR READER WHERE DID YOU GO FOR HELP?

1. Never had any problems
2. Talked to my co-workers
3. Talked to higher ranking NCO or officer
4. Talked to the Brigade AG office
5. Took care of it myself

☐

10. COMPARE THE TIME IT TAKES TO LOOK SOMETHING UP IN A MICROFICHE PUBLICATION WITH THE TIME IT TAKES WITH THE PAPER VERSION

1. Much faster
2. Somewhat faster
3. About the same as paper
4. Somewhat slower
5. Much slower

☐

11. HOW OFTEN DID YOU NEED A PAPER COPY OF ALL OR PART OF A MICROFICHE PUBLICATION?

1. Daily, one or more times per day
2. Not daily, but one or more times per week
3. Less than once per week
4. Never

12. WHEN YOU DID NEED A PAPER COPY OF ALL OR PART OF A MICROFICHE PUBLICATION, WHAT WAS USUALLY THE REASON?

1. Higher command request
2. Filing
3. Correspondence
4. Note taking
5. Briefings
6. Unable to use reader
7. Never needed a paper copy
8. Other_____

FOR QUESTIONS 13-21, CONSIDER THE READER TYPE THAT YOU USED MOST OFTEN.

13. HOW WOULD YOU DESCRIBE THE INSTRUCTION YOU RECEIVED ON THE READER?

1. Everything you need to know
2. OK
3. Left something out
4. Didn't do the job

14. HOW DO YOU FEEL THE READER WILL HOLD UP?

1. Very well
2. OK
3. Not too good
4. Won't last

15. WAS THE READER SUITABLE FOR THE KIND OF MICRO-PUBLICATIONS YOU USED?

1. Works well
2. Does alright
3. Could be better
4. Won't work

16. HOW DIFFICULT DO YOU FEEL IT WOULD BE TO MAINTAIN THE READER?

1. Easy to do
2. Not hard
3. Not easy
4. Difficult

17. HOW DIFFICULT WAS IT TO OPERATE THE READER?

1. No problem
2. Easy
3. Not easy
4. Difficult

18. HOW WOULD YOU DESCRIBE THE EFFECT ON YOUR EYES FROM USING THIS READER?

1. Very easy to read
2. Easy to read
3. Slight eye strain
4. Much eye strain

19. HOW OFTEN DID YOU WANT A PAPER COPY OF ALL OR PART OF MICROPUBLICATION, BUT FOUND YOU COULD DO JUST AS WELL WITHOUT IT?

1. Very often
2. Often
3. Rarely
4. Never

20. HOW CONVENIENT WAS THE PLACEMENT OF THE MICROFICHE READER?

1. Very convenient
2. Convenient
3. Inconvenient
4. Very inconvenient

21. OF THE DIFFERENT STYLE READERS YOU HAD THE OPPORTUNITY TO SEE OR USE, WHICH STYLE DID YOU LIKE THE BEST?

1. Table top (blue case)
2. Briefcase (collapsible)
3. Desk top (tan case)
4. Mini-cat
5. Only saw or used one style, cannot compare

22. HOW ACCEPTABLE WAS THE CONTAINER FOR STORING YOUR MICROFICHE PUBLICATIONS?

1. Very acceptable
2. Acceptable
3. Unacceptable
4. Very unacceptable

23. HOW DID YOUR FREQUENCY OF USE OF THE MICROFICHE PUBLICATIONS DIFFER FROM YOUR USE OF THE PAPER VERSIONS?

1. Much increase
2. Some increase
3. No change
4. Some decrease
5. Much decrease

24. DID THE WAY YOU USED THE MICROFICHE PUBLICATIONS DIFFER FROM THE WAY YOU USED THE PAPER VERSIONS?

1. No change
2. Some change
3. Great change

25. DO YOU FEEL THAT MICROFICHE IS DURABLE ENOUGH TO HOLD UP UNDER NORMAL USAGE?

1. In all cases
2. In most cases
3. In few cases
4. Not at all

26. COMPARE MICROFICHE PUBLICATION USAGE WITH PAPER VERSION.

1. Much easier
2. Somewhat easier
3. About the same as paper
4. Somewhat more difficult
5. Much more difficult

27. HOW DO YOU BELIEVE MORALE WAS AFFECTED BY THE USE OF MICROFICHE?

1. Morale was much higher
2. Morale was slightly higher
3. Morale was about the same
4. Morale was slightly lower
5. Morale was much lower

28. HOW DID THE USE OF MICROPUBLICATIONS AFFECT YOUR ABILITY TO DO YOUR JOB?

1. Helped a great deal
2. Helped
3. Hindered
4. Hindered a great deal

29. HOW HAS YOUR WORK ROUTINE CHANGED USING MICROPUBLICATIONS RATHER THAN PAPER?

1. Much simpler
2. Simpler
3. Same
4. More complicated
5. Much more complicated

30. DESCRIBE YOUR EXPERIENCE ADAPTING TO THE USE OF MICROFICHE PUBLICATIONS.

1. Very easy transition
2. Easy transition
3. Difficult transition
4. Very difficult transition

31. HOW DO YOU FEEL THAT YOUR CO-WORKERS REACTED TO MICROFICHE PUBLICATIONS?

1. Very interested
2. Interested
3. Disinterested
4. Very disinterested

32. DID YOU MISS THE ABILITY TO MAKE WRITTEN NOTES ON THE MICROFICHE PUBLICATIONS?

1. Not at all
2. Infrequently
3. Frequently
4. Very frequently

33. HOW ADEQUATE WAS THE NUMBER OF COPIES OF MICROFICHE PUBLICATIONS THAT WERE SUPPLIED?

1. More than enough
2. Enough
3. Not enough
4. Need a lot more

34. HOW DO YOU FEEL MICROPUBLICATIONS WOULD AFFECT YOUR UNIT'S WORK PRODUCTION?

1. Much improvement
2. Some improvement
3. Some hinderance
4. Much hinderance

35. HOW SUFFICIENT WERE THE NUMBER OF MICROFICHE READERS SUPPLIED?

1. More than enough
2. Enough
3. Not enough
4. Need a lot more

36. WERE ANY MICROFICHE PUBLICATIONS YOU USED EVER LOST OR MISPLACED?

1. Never
2. Seldom
3. Often
4. Very often

37. HOW DIFFICULT DID YOU FIND IT TO RETRIEVE THE DESIRED MICROFICHE FROM THE STORAGE CONTAINER?

1. Very easy
2. Somewhat easy
3. Difficult
4. Very difficult

38. WOULD YOU RECOMMEND THAT ADDITIONAL PUBLICATIONS BE PRODUCED ON MICROFICHE?

1. Yes
2. No

39. HOW OFTEN DID A READER FAILURE OCCUR WHICH MADE THE UNIT UNUSABLE?

1. Never
2. 1-2 times
3. 3-5 times
4. More than five times

40. WERE ANY FICHE DAMAGED DURING THE COURSE OF USING MICROPUBLICATIONS?

1. Many
2. Few
3. Very few
4. None

TELL HOW MUCH YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS REGARDING MICROFICHE PUBLICATIONS. USE THE NUMBERS FROM THE SCALE BELOW FOR MAKING YOUR RESPONSE.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
1	2	3	4

41. A microfiche reader is easy to operate. ☐
42. Microfiche publications make my job easier. ☐
43. The microfiche image on the reader is easy to read. ☐
44. Fiche title information is very readable. ☐
45. Microfiche versions of publications do not get lost. ☐
46. The people I work with adjusted to micropublications easily. ☐
47. I would like to recommend the Army issue all publications on microfiche. ☐
48. Micropublications require little maintenance. ☐
49. Microfiche readers are easy to maintain. ☐
50. Paper copies of micropublications are not needed. ☐
51. Any soldier could use a micropublication. ☐
52. Publication usage increases with microfiche publications. ☐
53. Portable readers are needed in the field. ☐
54. Two people can use a reader at one time. ☐
55. User education is the key to micropublication success. ☐
56. Some publications are more suited for microfiche than others. ☐
57. A reader can be used in bright light. ☐
58. Micropublications can be used in the field. ☐
59. Microfiche are not easily damaged. ☐
60. Micropublications will make more copies available. ☐

61. Microfiche quality is more consistant than for printed paper. ☐

62. In time, most personnel will prefer micropublications. ☐

63. Command support is the key to micropublication success. ☐

COMMENTS:

APPENDIX U

FILE: PDQ (CREATION DATE = 111076) PROJECT DEBRIEFING QUESTIONNAIRE

ITEM 5. MICROPUB FREQUENCY OF USE

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	1	1.6
ONE OR MORE TIME-DAY	10	15.9
ONE OR MORE TIME-WK	29	46.0
LESS THAN ONE PER-WK	17	27.0
NEVER USED	6	9.5
TOTAL	63	100.0

ITEM 6. COWORKERS FEELINGS ABOUT MICROPUBS

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	4	6.3
VERY FAVORABLE	16	25.4
FAVORABLE	34	54.0
UNFAVORABLE	9	14.3
TOTAL	63	100.0

ITEM 10. LOOKUP TIME MICROPUB VS PAPER

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	4	6.3
MUCH FASTER	15	23.8
SOMEWHAT FASTER	13	20.6
SAME AS PAPER	12	19.0
SOMEWHAT SLOWER	12	19.0
MUCH SLOWER	7	11.1
TOTAL	63	100.0

ITEM 18. READER EFFECT ON EYES

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	2	3.2
VERY EASY TO READ	11	17.5
EASY TO READ	21	33.3
SLIGHT EYE STRAIN	23	36.5
MUCH EYE STRAIN	6	9.5
TOTAL	63	100.0

ITEM 19. NEEDED PAPER COPY BUT COULD DO WITHOUT

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	3	4.8
VERY OFTEN	9	14.3
OFTEN	23	36.5
RARELY	14	22.2
NEVER	14	22.2
TOTAL	63	100.0

ITEM 23. PUB USAGE-MICROFICHE VS PAPER COPY

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	2	3.2
MUCH INCREASE	12	19.0
SOME INCREASE	13	20.6
NO CHANGE	30	47.6
SOME DECREASE	6	9.5
TOTAL	63	100.0

ITEM 24. PUB USAGE METHOD-FICHE VS PAPER

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	2	3.2
NO CHANGE	18	28.6
SOME CHANGE	29	46.0
GREAT CHANGE	14	22.2
TOTAL	63	100.0

ITEM 24. PUB USAGE METHOD-FICHE VS PAPER

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	2	3.2
NO CHANGE	18	28.6
SOME CHANGE	29	46.0
GREAT CHANGE	14	22.2
TOTAL	63	100.0

ITEM 26. EASE OF PUB USE FICHE VS PAPER

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
MUCH EASIER	17	27.0
SOMEWHAT EASIER	14	22.2
SAME AS PAPER	16	25.4
SOMEWHAT MORE DIFFICULT	14	22.2
MUCH MORE DIFFICULT	2	3.2
TOTAL	63	100.0

ITEM 28. MICROFICHE EFFECT ON DOING JOB

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	5	7.9
HELPED A GREAT DEAL	11	17.5
HELPED	37	58.7
HINDERED	9	14.3
	1	1.6
TOTAL	63	100.0

ITEM 34. BELIEVED EFFECT OF MICROPUB ON WORK PROD

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	2	3.2
MUCH IMPROVEMENT	12	19.0
SOME IMPROVEMENT	41	65.1
SOME HINDERANCE	7	11.1
MUCH HINDERANCE	1	1.6
TOTAL	63	100.0

ITEM 38. RECOMMEND ADDITIONAL PUBS ON FICHE

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	3	4.8
YES	52	82.5
NO	8	12.7
TOTAL	63	100.0

ITEM 41. A READER IS EASY TO OPERATE

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
STRONGLY AGREE	25	39.7
AGREE	35	55.6
DISAGREE	2	3.2
STRONGLY DISAGREE	1	1.6
TOTAL	63	100.0

ITEM 42. MICROPUBS MAKE JOB EASIER

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	2	3.2
STRONGLY AGREE	10	15.9
AGREE	31	49.2
DISAGREE	17	27.0
STRONGLY DISAGREE	3	4.8
TOTAL	63	100.0

ITEM 43. READER IMAGE IS EASY TO READ

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
STRONGLY AGREE	8	12.7
AGREE	37	58.7
DISAGREE	16	25.4
STRONGLY DISAGREE	2	3.2
TOTAL	63	100.0

ITEM 44. TITLE INFORMATION IS READABLE

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	1	1.6
STRONGLY AGREE	15	23.8
AGREE	42	66.7
DISAGREE	5	7.9
TOTAL	63	100.0

ITEM 45. MICROPUBS DO NOT GET LOST

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	2	3.2
STRONGLY AGREE	9	14.3
AGREE	30	47.6
DISAGREE	19	30.2
STRONGLY DISAGREE	3	4.8
TOTAL	63	100.0

ITEM 46. COWORKERS ADJUSTED TO MICROPUBS

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	1	1.6
STRONGLY AGREE	13	20.6
AGREE	37	58.7
DISAGREE	10	15.9
STRONGLY DISAGREE	2	3.2
TOTAL	63	100.0

ITEM 47. RECOMMEND ALL PUBS ON FICHE

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
STRONGLY AGREE	24	38.1
AGREE	20	31.7
DISAGREE	16	25.4
STRONGLY DISAGREE	3	4.8
TOTAL	63	100.0

ITEM 48. MICROPUBS NEED LITTLE MAINTENANCE

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	2	3.2
STRONGLY AGREE	25	39.7
AGREE	32	50.8
DISAGREE	4	6.3
TOTAL	63	100.0

ITEM 49. READERS ARE EASY TO MAINTAIN

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	3	4.8
STRONGLY AGREE	28	44.4
AGREE	29	46.0
DISAGREE	3	4.8
TOTAL	63	100.0

ITEM 50. COPIES OF MICROPUBS NOT NEEDED

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	1	1.6
STRONGLY AGREE	6	9.5
AGREE	21	33.3
DISAGREE	27	42.9
STRONGLY DISAGREE	8	12.7
TOTAL	63	100.0

ITEM 51. ANY SOLDIER COULD USE MICROPUBS

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	1	1.6
STRONGLY AGREE	17	27.0
AGREE	37	58.7
DISAGREE	7	11.1
STRONGLY DISAGREE	1	1.6
TOTAL	63	100.0

ITEM 52. PUB USE INCREASES WITH MICROPUBS

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	4	6.3
STRONGLY AGREE	8	12.7
AGREE	32	50.8
DISAGREE	17	27.0
STRONGLY DISAGREE	2	3.2
TOTAL	63	100.0

ITEM 53. THE FIELD NEEDS PORTABLE READERS

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
STRONGLY AGREE	23	36.5
AGREE	22	34.9
DISAGREE	16	25.4
STRONGLY DISAGREE	2	3.2
TOTAL	63	100.0

ITEM 54. TWO PEOPLE CAN USE A READER

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
STRONGLY AGREE	9	14.3
AGREE	29	46.0
DISAGREE	20	31.7
STRONGLY DISAGREE	5	7.9
TOTAL	63	100.0

ITEM 55. KEY TO MICROPUB SUCCESS-EDUCATION

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
STRONGLY AGREE	19	30.2
AGREE	34	54.0
DISAGREE	8	12.7
STRONGLY DISAGREE	2	3.2
TOTAL	63	100.0

ITEM 56. SOME PUBS BETTER ON FICHE THAN OTHERS

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	3	4.8
STRONGLY AGREE	21	33.3
AGREE	28	44.4
DISAGREE	10	15.9
STRONGLY DISAGREE	1	1.6
TOTAL	63	100.0

ITEM 57. READER CAN BE USED IN BRIGHT LIGHT

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	2	3.2
STRONGLY AGREE	7	11.1
AGREE	27	42.9
DISAGREE	22	34.9
STRONGLY DISAGREE	5	7.9
TOTAL	63	100.0

ITEM 58. MICROPUBS CAN BE USED IN FIELD

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	1	1.6
STRONGLY AGREE	14	22.2
AGREE	34	54.0
DISAGREE	12	19.0
STRONGLY DISAGREE	2	3.2
TOTAL	63	100.0

ITEM 59. MICROFICHE NOT EASILY DAMAGED

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	2	3.2
STRONGLY AGREE	8	12.7
AGREE	36	57.1
DISAGREE	14	22.2
STRONGLY DISAGREE	3	4.8
TOTAL	63	100.0

ITEM 60. MICROPUBS MAKE MORE COPIES AVAILABLE

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	2	3.2
STRONGLY AGREE	20	31.7
AGREE	31	49.2
DISAGREE	10	15.9
TOTAL	63	100.0

ITEM 61. FICHE QUALITY MORE CONSISTANT

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	3	4.8
STRONGLY AGREE	13	20.6
AGREE	30	47.6
DISAGREE	17	27.0
TOTAL	63	100.0

ITEM 62. PERSONNEL WILL PREFER MICROPUBS

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	5	7.9
STRONGLY AGREE	15	23.8
AGREE	30	47.6
DISAGREE	11	17.5
STRONGLY DISAGREE	2	3.2
TOTAL	63	100.0

ITEM 63. KEY TO MICROPUB SUCCESS-CMD SUPPORT

RESPONSE CATEGORY	ABSOLUTE FREQUENCY	PERCENT
	4	6.3
STRONGLY AGREE	25	39.7
AGREE	26	41.3
DISAGREE	7	11.1
STRONGLY DISAGREE	1	1.6
TOTAL	63	100.0

CROSSTABULATION OF ITEM 49. READERS ARE EASY TO MAINTAIN
BY ITEM 14. *FEELINGS ABOUT READER HOLDING UP*

ITEM 49.		ITEM 14. VERY WELL 0.	1.	OK 2.	NOT TOO GOOD 3.	WONT LAST 4.	ROW TOTAL
	COUNT	0	0	3	0	0	3
	ROW PCT	.0	.0	100.0	.0	.0	4.8
	COL PCT	.0	.0	9.7	.0	.0	
	TOT PCT	.0	.0	4.8	.0	.0	
1.	STRONGLY AGREE	0	19	9	0	0	28
		.0	67.0	32.1	.0	.0	44.4
		.0	70.4	29.0	.0	.0	
		.0	30.2	14.3	.0	.0	
2.	AGREE	1	7	18	3	0	29
		3.4	24.1	62.1	10.3	.0	46.0
		100.0	25.9	58.1	100.0	.0	
		1.6	11.1	28.6	4.8	.0	
3.	DISAGREE	0	1	1	0	1	3
		.0	33.3	33.3	.0	33.3	4.8
		.0	3.7	3.2	.0	100.0	
		.0	1.6	1.6	.0	1.6	
	COLUMN TOTAL	1	27	31	3	1	63
		1.6	42.9	49.2	4.8	1.6	100.0

ITEM 49

CHI = 36.85175 WITH 12 DEGREES OF FREEDOM

SIGNIFICANCE = .0002

CROSSTABULATION OF ITEM 42. MICROPUBS MAKE JOB EASIER
BY ITEM 6. COWORKERS FEELINGS ABOUT MICROPUBS

ITEM 6.

ITEM 42		VERY FAVORABLE 0.	FAVORABLE 1.	UNFAVORABLE 2.	3.	ROW TOTAL
0.	COUNT	1	0	0	1	2
	ROW PCT	50.0	.0	.0	50.0	3.2
	COL PCT	25.0	.0	.0	11.1	
	TOT PCT	1.6	.0	.0	1.6	
1. STRONGLY AGREE		0	6	4	0	10
		.0	60.0	40.0	.0	15.9
		.0	37.5	11.8	.0	
		.0	9.5	6.3	.0	
2. AGREE		1	10	19	1	31
		3.2	32.3	61.3	3.2	49.2
		25.0	62.5	55.9	11.1	
		1.6	15.9	30.2	1.6	
3. DISAGREE		2	0	10	5	17
		11.8	.0	58.8	29.4	27.0
		50.0	.0	29.4	55.6	
		3.2	.0	15.9	7.9	
4. STRONGLY DISAGREE		0	0	1	2	3
		.0	.0	33.3	66.7	4.8
		.0	.0	2.9	22.2	
		.0	.0	1.6	3.2	
COLUMN TOTAL		4	16	34	9	63
		6.3	25.4	54.0	14.3	100.0

CHI SQUARE = 35.37862 WITH 12 DEGREES OF FREEDOM

SIGNIFICANCE = .0004

CROSSTABULATION OF ITEM 42. MICROPUBS MAKE JOB EASIER
BY ITEM 10. LOOKUP TIME MICROPUB VS PAPER

ITEM 42

ITEM 10.	MUCH FASTER 0.	SOMEWHAT FASTER 1.	SAME AS PAPER 2.	SOMEWHAT SLOWER 3.	MUCH SLOWER 4.		ROW TOTAL
0.							
COUNT	1	0	0	1	0	0	2
ROW PCT	50.0	.0	.0	50.0	.0	.0	3.2
COL PCT	25.0	.0	.0	8.3	.0	.0	
TOT PCT	1.6	.0	.0	1.6	.0	.0	
1.							
STRONGLY AGREE	.0	4	4	1	1	0	10
	.0	40.0	40.0	10.0	10.0	.0	15.9
	.0	26.7	30.8	8.3	8.3	.0	
	.0	6.3	6.3	1.6	1.6	.0	
2.							
AGREE	1	11	9	8	1	1	31
	3.2	35.5	29.0	25.8	3.2	3.2	49.2
	25.0	73.3	69.2	66.7	8.3	14.3	
	1.6	17.5	14.3	12.7	1.6	1.6	
3.							
DISAGREE	2	0	0	2	9	4	17
	11.8	.0	.0	11.8	52.9	23.5	27.0
	50.0	.0	.0	16.7	75.0	57.1	
	3.2	.0	.0	3.2	14.3	6.3	
4.							
STRONGLY DISAGREE	0	0	0	0	1	2	3
	.0	.0	.0	.0	33.3	66.7	4.8
	.0	.0	.0	.0	8.3	28.6	
	.0	.0	.0	.0	1.6	3.2	
COLUMN TOTAL	4	15	13	12	12	7	63
	6.3	23.8	20.6	19.0	19.0	11.1	100.0

CHI SQUARE = 56.06284 WITH 20 DEGREES OF FREEDOM
SIGNIFICANCE = .0000

CROSSTABULATION OF ITEM 42. MICROPUBS MAKE JOB EASIER
BY ITEM 28. MICROFICHE EFFECT ON DOING JOB

ITEM 42.		ITEM 28. HELPED A GREAT DEAL 0.	1.	HELPED 2.	HINDERED 3.	4.	ROW TOTAL
	COUNT	1	0	0	1	0	2
	ROW PCT	50.0	.0	.0	50.0	.0	3.2
	COL PCT	20.0	.0	.0	11.1	.0	
	TOT PCT	1.6	.0	.0	1.6	.0	
1.	STRONGLY AGREE	0	5	5	0	0	10
		.0	50.0	50.0	.0	.0	15.3
		.0	45.5	13.5	.0	.0	
		.0	7.9	7.9	.0	.0	
2.	AGREE	0	6	24	1	0	31
		.0	19.4	77.4	3.2	.0	49.2
		.0	54.5	64.9	11.1	.0	
		.0	9.5	38.1	1.6	.0	
3.	DISAGREE	3	0	8	5	1	17
		17.6	.0	47.1	29.4	5.9	27.0
		60.0	.0	21.6	55.6	100.0	
		4.8	.0	12.7	7.9	1.6	
4.	STRONGLY DISAGREE	1	.0	0	2	0	3
		33.3	.0	.0	66.7	.0	4.8
		20.0	.0	.0	22.2	.0	
		1.6	.0	.0	3.2	.0	
	COLUMN TOTAL	5	11	37	9	1	63
		7.9	17.5	58.7	14.3	1.6	100.0

CHI SQUARE = 44.50318 WITH 16 DEGREES OF FREEDOM
SIGNIFICANCE = .0002

CROSSTABULATION OF ITEM 42. MICROPUBS MAKE JOB EASIER
BY ITEM 29. WORK ROUTINE-FICHE VS PAPER

ITEM 42.		ITEM 29. 0. MUCH SIMPLER	1. SIMPLER	2. SAME	3. MORE COMPLICATED	4.	ROW TOTAL
	COUNT	1	0	0	1	0	2
	ROW PCT	50.0	.0	.0	50.0	.0	3.2
	COL PCT	25.0	.0	.0	3.7	.0	
	TOT PCT	1.6	.0	.0	1.6	.0	
1. STRONGLY AGREE		0	3	5	2	0	10
		.0	30.0	50.0	20.0	.0	15.9
		.0	33.3	33.3	7.4	.0	
		.0	4.8	7.9	3.2	.0	
2. AGREE		0	6	10	13	2	31
		.0	19.4	32.3	41.9	6.5	49.2
		.0	66.7	66.7	48.1	25.0	
		.0	9.5	15.9	20.6	3.2	
3. DISAGREE		2	0	0	11	4	17
		11.8	.0	.0	64.7	23.5	27.0
		50.0	.0	.0	40.7	50.0	
		3.2	.0	.0	17.5	6.3	
4. STRONGLY DISAGREE		1	0	0	0	2	3
		33.3	.0	.0	.0	66.7	4.8
		25.0	.0	.0	.0	25.0	
		1.6	.0	.0	.0	3.2	
COLUMN TOTAL		4	9	15	27	8	63
		6.3	14.3	23.8	49.9	12.7	100.0

CHI SQUARE = 42.66447 WITH 16 DECREES OF FREEDOM
SIGNIFICANCE = .0003

CROSSTABULATION OF ITEM 42. MICROPUBS MAKE JOB EASIER
BY ITEM 34. BELIEVED EFFECT OF MICROPUB ON WORK

ITEM 42.		ITEM 34. MUCH IMPROVEMENT 0.	1.	SOME IMPROVEMENT 2.	SOME HINDRANCE 3.	MUCH HINDRANCE 4.	ROW TOTAL
	COUNT	1	0	1	0	0	2
	ROW PCT	50.0	.0	50.0	.0	.0	3.2
	COL PCT	50.0	.0	2.4	.0	.0	
	TOT PCT	1.6	.0	1.6	.0	.0	
1.							
STRONGLY		0	6	4	0	0	10
AGREE		.0	60.0	40.0	.0	.0	15.9
		.0	50.0	9.8	.0	.0	
		.0	9.5	6.3	.0	.0	
2.							
		.0	6	25	0	0	31
AGREE		.0	19.4	80.6	.0	.0	49.2
		.0	50.0	61.0	.0	.0	
		.0	9.5	39.7	.0	.0	
3.							
		1	0	10	5	1	17
DISAGREE		5.9	.0	58.8	29.4	5.9	27.0
		50.0	.0	24.4	71.4	100.0	
		1.6	.0	15.9	7.9	1.6	
4.							
STRONGLY		0	0	1	2	0	3
DISAGREE		.0	.0	33.3	66.7	.0	4.8
		.0	.0	2.4	28.6	.0	
		.0	.0	1.6	3.2	.0	
COLUMN		2	12	41	7	1	63
TOTAL		3.2	19.0	65.1	11.1	1.6	100.0

CHI SQUARE = 52.29819 WITH 16 DEGREES OF FREEDOM
SIGNIFICANCE = GREATER THAN .00001

CROSSTABULATION OF ITEM 34. BELIEVED EFFECT OF MICROPUBS ON WORK PROD. BY ITEM 6. COWORKERS FEELINGS ABOUT MICROPUBS

ITEM 6.

ITEM 34		0. VERY FAVORABLE	1. FAVORABLE	2. UNFAVORABLE	3.	ROW TOTAL
0.	COUNT	1	0	0	1	2
	ROW PCT	50.0	.0	.0	50.0	3.2
	COL PCT	25.0	.0	.0	11.1	
	TOT PCT	1.6	.0	.0	1.6	
1.		1	7	4	0	12
MUCH IMPROVEMENT		8.3	58.3	33.3	.0	19.0
		25.0	43.8	11.8	.0	
		1.6	11.1	6.3	.0	
2.		1	9	30	1	41
SOME IMPROVEMENT		2.4	22.0	73.2	2.4	65.1
		25.0	56.3	88.2	11.1	
		1.6	14.3	47.6	1.6	
3.		1	0	0	6	7
SOME HINDRANCE		14.3	.0	.0	85.7	11.1
		25.0	.0	.0	66.7	
		1.6	.0	.0	9.5	
4.		0	0	0	1	1
MUCH HINDRANCE		.0	.0	.0	100.0	1.6
		.0	.0	.0	11.1	
		.0	.0	.0	1.6	
COLUMN TOTAL		4	16	34	9	63
		6.3	25.4	54.0	14.3	100.0

CHI SQUARE = 62.49437 WITH 12 DEGREES OF FREEDOM

SIGNIFICANCE = GREATER THAN .00001

CROSSTABULATION OF ITEM 34. BELIEVED EFFECT OF MICROPUB ON WORK PROD
BY ITEM 10. LOOKUP TIME MICROPUB VS PAPER

ITEM 34.		ITEM 10. 0. MUCH FASTER	1. SOMEWHAT FASTER	2. SAME AS PAPER	3. SOMEWHAT SLOWER	4.	5. MUCH SLOWER	ROW TOTAL
0.	COUNT	1	0	0	1	0	0	2
	ROW PCT	50.0	.0	.0	50.0	.0	.0	3.2
	COL PCT	25.0	.0	.0	8.3	.0	.0	
	TOT PCT	1.6	.0	.0	1.6	.0	.0	
1. MUCH IMPROVEMENT		1	6	3	1	1	0	12
		8.3	50.0	25.0	8.3	8.3	.0	19.0
		25.0	40.0	23.1	8.3	8.3	.0	
		1.6	9.5	4.8	1.6	1.6	.0	
2. SOME IMPROVEMENT		1	9	10	10	10	1	41
		2.4	22.0	24.4	24.4	24.4	2.4	65.1
		25.0	60.0	76.9	83.3	83.3	14.3	
		1.6	14.3	15.9	15.9	15.9	1.6	
3. SOME HINDRANCE		1	0	0	0	1	5	7
		14.3	.0	.0	.0	14.3	71.4	11.1
		25.0	.0	.0	.0	8.3	71.4	
		1.6	.0	.0	.0	1.6	7.9	
4. MUCH HINDRANCE		0	0	0	0	0	1	1
		.0	.0	.0	.0	.0	100.0	1.6
		.0	.0	.0	.0	.0	14.3	
		.0	.0	.0	.0	.0	1.6	
COLUMN TOTAL		4	15	13	12	12	7	63
		6.3	23.8	20.6	19.0	19.0	11.1	100.0

CHI SQUARE = 56.39583 WITH 20 DEGREES OF FREEDOM
SIGNIFICANCE = .0000

CROSSTABULATION OF ITEM 34. BELIEVED EFFECT OF MICROPUB ON WORK PROD
BY ITEM 28. MICROFICHE EFFECT ON DOING JOB

ITEM 28

ITEM 34		0. HELPED A GREAT DEAL	1.	2. HELPED	3. HINDERED	5.	ROW TOTAL
0.	COUNT	1	0	0	0	0	2
	ROW PCT	50.0	.0	.0	.0	.0	3.2
	COL PCT	20.0	.0	.0	50.0	.0	
	TOT PCT	1.6	.0	.0	1.6	.0	
1.	MUCH IMPROVEMENT	0	6	6	0	0	12
		.0	50.0	50.0	.0	.0	19.0
		.0	54.5	16.2	.0	.0	
		.0	9.5	9.5	.0	.0	
2.	SOME IMPROVEMENT	1	5	31	3	1	41
		2.4	12.2	75.6	7.3	2.4	65.1
		20.0	45.5	83.8	33.3	100.0	
		1.6	7.9	49.2	4.8	1.6	
3.	SOME HINDRANCE	2	0	0	5	0	7
		28.6	.0	.0	71.4	.0	11.1
		40.0	.0	.0	55.6	.0	
		3.2	.0	.0	7.9	.0	
4.	MUCH HINDRANCE	1	0	0	0	0	1
		100.0	.0	.0	.0	.0	1.6
		20.0	.0	.0	.0	.0	
		1.6	.0	.0	.0	.0	
COLUMN TOTAL		5	11	37	9	1	63
		7.5	17.5	58.7	14.3	1.6	100.0

CHI SQUARE = 60.67234 WITH 16 DEGREES OF FREEDOM
SIGNIFICANCE = .0000

CROSSTABULATION OF ITEM 34. BELIEVED EFFECT OF MICROPUB ON WORK PROD
BY ITEM 29. WORK ROUTINE-FICHE VS PAPER

ITEM 29

ITEM 34		MUCH SIMPLER 0.	SIMPLER 1.	SAME 2.	MORE COMPLICATED 3.	4.	ROW TOTAL
0.	COUNT	0	0	0	2	0	2
	ROW PCT	.0	.0	.0	100.0	.0	3.2
	COL PCT	.0	.0	.0	7.4	.0	
	TOT PCT	.0	.0	.0	3.2	.0	
1.	MUCH IMPROVEMENT	0	4	6	2	0	12
		.0	33.3	50.0	16.7	.0	19.0
		.0	44.4	40.0	7.4	.0	
		.0	6.3	9.5	3.2	.0	
2.	SOME IMPROVEMENT	1	5	9	22	4	41
		2.4	12.2	22.0	53.7	9.8	65.1
		25.0	55.6	60.0	81.5	50.0	
		1.6	7.9	14.3	34.9	6.3	
3.	SOME HINDRANCE	2	0	0	1	4	7
		28.6	.0	.0	14.3	57.1	11.1
		50.0	.0	.0	3.7	50.0	
		3.2	.0	.0	1.6	6.3	
4.	MUCH HINDRANCE	1	0	0	0	0	1
		100.0	.0	.0	.0	.0	1.6
		25.0	.0	.0	.0	.0	
		1.6	.0	.0	.0	.0	
	COLUMN TOTAL	4	9	15	27	8	63
		6.3	14.3	23.8	42.9	12.7	100.0

CHI SQUARE = 51.02900 WITH 16 DEGREES OF FREEDOM
SIGNIFICANCE = .0000

CROSSTABULATION OF ITEM 34. BELIEVED EFFECT OF MICROPUB ON WORK PROD
BY ITEM 42. MICROPUBS MAKE JOB EASIER

ITEM 34

	ITEM 42.	0. STRONGLY AGREE	1. AGREE	2. DISAGREE	3. STRONGLY DISAGREE	4.	ROW TOTAL
0.	COUNT	1	0	0	1	0	2
	ROW PCT	50.0	.0	.0	50.0	.0	3.2
	COL PCT	50.0	.0	.0	5.9	.0	
	TOT PCT	1.6	.0	.0	1.6	.0	
1.	MUCH IMPROVEMENT	0	6	6	0	0	12
		.0	50.0	50.0	.0	.0	19.0
		.0	60.0	19.4	.0	.0	
		.0	9.5	9.5	.0	.0	
2.	SOME IMPROVEMENT	1	4	25	10	1	41
		2.4	9.8	61.0	24.4	2.4	65.1
		50.0	40.0	80.0	58.8	33.3	
		1.6	6.3	39.7	15.9	1.6	
3.	SOME HINDRANCE	0	0	0	5	2	7
		.0	.0	.0	71.4	28.6	11.1
		.0	.0	.0	29.4	66.7	
		.0	.0	.0	7.9	3.2	
4.	MUCH HINDRANCE	0	0	0	1	0	1
		.0	.0	.0	100.0	.0	1.6
		.0	.0	.0	5.9	.0	
		.0	.0	.0	1.6	.0	
	COLUMN TOTAL	2	10	31	17	3	63
		3.2	15.9	49.2	27.0	4.8	100.0

CHI SQUARE = 52.29819 WITH DEGREES OF FREEDOM

SIGNIFICANCE = .0000

CROSSTABULATION OF ITEM 23. PUB USAGE-MICROFICHE VS PAPER COPY
BY ITEM 8. MICROPUB USAGE CHANGE DURING TEST

ITEM 8

ITEM 23		0. MUCH INCREASE	1. SOME INCREASE	2. NO CHANGE	3. SOME DECREASE	4.	ROW TOTAL
0.	COUNT	2	0	0	0	0	2
	ROW PCT	100.0	.0	.0	.0	.0	3.2
	COL PCT	40.0	.0	.0	.0	.0	
	TOT PCT	3.2	.0	.0	.0	.0	
1. MUCH INCREASE	COUNT	2	8	2	0	0	12
	ROW PCT	16.7	66.7	16.7	.0	.0	19.0
	COL PCT	40.0	57.1	9.1	.0	.0	
	TOT PCT	3.2	12.7	3.2	.0	.0	
2. SOME INCREASE	COUNT	0	2	9	2	0	13
	ROW PCT	.0	15.4	69.2	15.4	.0	20.6
	COL PCT	.0	14.3	40.9	9.5	.0	
	TOT PCT	.0	3.2	14.3	3.2	.0	
3. NO CHANGE	COUNT	1	4	7	18	0	30
	ROW PCT	3.3	13.3	23.3	60.0	.0	47.6
	COL PCT	20.0	28.6	31.8	85.7	.0	
	TOT PCT	1.6	6.3	11.1	28.6	.0	
4. SOME DECREASE	COUNT	0	0	4	1	1	6
	ROW PCT	.0	.0	66.7	16.7	16.7	9.5
	COL PCT	.0	.0	18.2	4.8	100.0	
	TOT PCT	.0	.0	6.3	1.6	1.6	
COLUMN TOTAL		5	14	22	21	1	63
		7.9	22.2	34.9	33.3	1.6	100.0

CHI SQUARE = 70.03853 WITH 16 DEGREES OF FREEDOM
SIGNIFICANCE = .0000

CROSSTABULATION OF ITEM 23. PUB USAGE-MICROFICHE VS PAPER COPY
BY ITEM 52. PUB USE INCREASES WITH MICROPUBS

ITEM 52

ITEM 23		0. STRONGLY AGREE	1. AGREE	2. DISAGREE	3.	4. STRONGLY DISAGREE	ROW TOTAL
0.	COUNT	1	0	0	0	1	2
	ROW PCT	50.0	.0	.0	.0	50.0	3.2
	COL PCT	25.0	.0	.0	.0	50.0	
	TOT PCT	1.6	.0	.0	.0	1.6	
1.	MUCH INCREASE	0	4	8	0	0	12
		.0	33.3	66.7	.0	.0	19.0
		.0	60.0	25.0	.0	.0	
		.0	6.3	12.7	.0	.0	
2.	SOME INCREASE	0	1	9	3	0	13
		.0	7.7	69.2	23.1	.0	20.6
		.0	12.5	28.1	17.6	.0	
		.0	1.6	14.3	4.8	.0	
3.	NO CHANGE	1	1	15	12	1	30
		3.3	3.3	50.0	40.0	3.3	47.6
		25.0	12.5	46.9	70.6	50.0	
		1.6	1.6	23.8	19.0	1.6	
4.	SOME DECREASE	2	2	0	2	0	6
		33.3	33.3	.0	33.3	.0	9.5
		50.0	25.0	.0	11.8	.0	
		3.2	3.2	.0	3.2	.0	
	COLUMN TOTAL	4	8	32	17	2	63
		6.3	12.7	50.8	27.0	3.2	100.0

CHI SQUARE = 49.67515 WITH 16 DEGREES OF FREEDOM
SIGNIFICANCE = .0000

CROSSTABULATION OF ITEM 11. FREQ PAPER COPY NEEDED
BY ITEM 12. REASON FOR PAPER COPY NEED

ITEM 11	ITEM 12	0.	1. HIGHER CMD REQUEST	2. FILING	3. CORRESPON-DENCE	4. NOTE TAKING	5. BRIEFINGS	6. UNABLE TO USE READER	7. NEVER NEEDED A PAPER COPY	8. OTHER	ROW TOTAL
0.	COUNT	1	0	0	0	0	0	0	0	0	1
	ROW PCT	100.0	.0	.0	.0	.0	.0	.0	.0	.0	1.6
	COL PCT	25.0	.0	.0	.0	.0	.0	.0	.0	.0	
	TOT PCT	1.6	.0	.0	.0	.0	.0	.0	.0	.0	
1.	DAILY, ONE OR MORE TIMES PER DAY	0	1	0	1	0	0	1	0	0	3
		.0	33.3	.0	33.3	.0	.0	33.3	.0	.0	4.8
		.0	25.0	.0	16.7	.0	.0	50.0	.0	.0	
		.0	1.6	.0	1.6	.0	.0	1.6	.0	.0	
2.	NOT DAILY, BUT ONE OR MORE TIMES PER WEEK	0	2	1	3	2	0	1	1	2	12
		.0	16.7	8.3	25.0	16.7	.0	8.3	8.3	16.7	19.0
		.0	50.0	33.3	50.0	33.3	.0	50.0	3.8	28.6	
		.0	3.2	1.6	4.8	3.2	.0	1.6	1.6	3.2	
3.	LESS THAN ONCE PER WEEK	1	1	2	2	1	5	0	1	3	16
		6.3	6.3	12.5	12.5	6.3	31.3	.0	6.3	18.8	25.4
		25.0	25.0	66.7	33.3	16.7	100.0	.0	3.8	42.9	
		1.6	1.6	3.2	3.2	1.6	7.9	.0	1.6	4.8	
4.	NEVER	2	0	0	0	3	0	0	23	2	30
		6.7	.0	.0	.0	10.0	.0	.0	76.7	6.7	47.6
		50.0	.0	.0	.0	50.0	.0	.0	88.5	28.6	
		3.2	.0	.0	.0	4.8	.0	.0	36.5	3.2	
7.		0	0	0	0	0	0	0	1	0	1
		.0	.0	.0	.0	.0	.0	.0	100.0	.0	1.6
		.0	.0	.0	.0	.0	.0	.0	3.8	.0	
		.0	.0	.0	.0	.0	.0	.0	1.6	.0	
COLUMN TOTAL		4	4	3	6	6	5	2	26	7	63
		6.3	6.3	4.8	9.5	9.5	7.9	3.2	41.3	11.1	100.0

CHI SQUARE = 83.20335 WITH 40 DEGREES OF FREEDOM
SIGNIFICANCE = .0001

CROSSTABULATION OF ITEM 6. COWORKERS FEELINGS ABOUT MICROPUBS
BY ITEM 31. COWORKERS REACTION TO MICROPUBS

ITEM 31

ITEM 6		VERY INTERESTED 0.	INTERESTED 1.	DISINTER-ESTED 2.	VERY DISINTERESTED 3.	4.	ROW TOTAL
0.	COUNT	2	1	1	0	0	4
	ROW PCT	50.0	25.0	25.0	.0	.0	6.3
	COL PCT	100.0	7.1	2.7	.0	.0	
	TOT PCT	3.2	1.6	1.6	.0	.0	
1. VERY FAVORABLE		0	8	8	0	0	16
		.0	50.0	50.0	.0	.0	25.4
		.0	57.1	21.6	.0	.0	
		.0	12.7	12.7	.0	.0	
2. FAVORABLE		0	5	25	4	0	34
		.0	14.7	73.5	11.8	.0	54.0
		.0	35.7	67.6	44.4	.0	
		.0	7.9	39.7	6.3	.0	
3. UNFAVORABLE		0	0	3	5	1	9
		.0	.0	33.3	55.6	11.1	14.3
		.0	.0	8.1	55.6	100.0	
		.0	.0	4.8	7.9	1.6	
COLUMN TOTAL		2	14	37	9	1	63
		3.2	22.2	58.7	14.3	1.6	100.0

CHI SQUARE = 60.91125 WITH 12 DEGREES OF FREEDOM

SIGNIFICANCE = .0000

CROSSTABULATION OF ITEM 18. READER EFFECT ON EYES
BY ITEM 21. READER STYLE PREFERENCE

ITEM 18.		ITEM 21. TABLE-TOP (BLUE CASE) 0.	BRIEFCASE (COLLAPSIBLE) 1.	DESK TOP (TAN CASE) 2.	MINI-CAT 3.	SAW ONE STYLE CANT COMPARE 4.	5.	ROW TOTAL
0.	COUNT	1	1	0	0	0	0	2
	ROW PCT	50.0	50.0	.0	.0	.0	.0	3.2
		100.0	3.4	.0	.0	.0	.0	
		1.6	1.6	.0	.0	.0	.0	
1.	VERY EASY TO READ	0	5	1	1	3	1	11
		.0	45.5	9.1	9.1	27.3	9.1	17.5
		.0	17.2	14.3	11.1	60.0	8.3	
		.0	7.9	1.6	1.6	4.8	1.6	
2.	EASY TO READ	0	10	3	4	1	3	21
		.0	47.6	14.3	19.0	4.8	14.3	33.3
		.0	34.5	42.9	44.4	20.0	25.0	
		.0	15.9	4.8	6.3	1.6	4.8	
3.	SLIGHT EYE STRAIN	0	9	3	4	1	6	23
		.0	39.1	13.0	17.4	4.3	26.1	36.5
		.0	31.0	42.9	44.4	20.0	50.0	
		.0	14.3	4.8	6.3	1.6	9.5	
4.	MUCH EYE STRAIN	0	4	0	0	0	2	6
		.0	66.7	.0	.0	.0	33.3	9.5
		.0	13.8	.0	.0	.0	16.7	
		.0	6.3	.0	.0	.0	3.2	
	COLUMN TOTAL	1	29	7	9	5	12	63
		1.6	46.0	11.1	14.3	7.9	19.0	100.0

CHI SQUARE = 43.25002 WITH 20 DEGREES OF FREEDOM
SIGNIFICANCE = .0019

CROSSTABULATION OF ITEM 30. EXPERIENCE ADPATING TO FICHE
BY ITEM 46. COWORKERS ADJUSTED TO MICROPUBS

ITEM 30		ITEM 46 STRONGLY AGREE 0.	1.	AGREE 2.	DISAGREE 3.	STRONGLY DISAGREE 4.	ROW TOTAL
0.	COUNT	1	1	1	1	1	5
	ROW PCT	20.0	20.0	20.0	20.0	20.0	7.9
	COL PCT	100.0	7.7	2.7	10.0	50.0	
	TOT PCT	1.6	1.6	1.6	1.6	1.6	
1.	VERY EASY TRANSITION	0	8	11	1	0	20
		.0	40.0	55.0	5.0	.0	31.7
		.0	61.5	29.7	10.0	.0	
		.0	12.7	17.5	1.6	.0	
2.	EASY TRANSITION	0	4	23	4	0	31
		.0	12.9	74.2	12.9	.0	49.2
		.0	30.8	62.2	40.0	.0	
		.0	6.3	36.5	6.3	.0	
3.	DIFFICULT TRANSITION	0	0	2	4	1	7
		.0	.0	28.6	57.1	14.3	11.1
		.0	.0	5.4	40.0	50.0	
		.0	.0	3.2	6.3	1.6	
COLUMN TOTAL		1	13	37	10	2	63
		1.6	20.6	58.7	15.9	3.2	100.0

CHI SQUARE = 39.27544 WITH 12 DEGREES OF FREEDOM
SIGNIFICANCE = .0001

DACA-CAF (18 Nov 76)
SUBJECT: Request Concurrence in the Methodology used for Commercial-Industrial Type Audit

TO HQDA (DAAG-PLP)
Forrestal
WASH DC 20314

FROM HQDA (DACA-CA)
Pentagon
WASH DC 20310

DATE 29 NOV 1976
Mr. Dee/bmg/51132

CMT 2

Concur in the methodology for the Cost Benefit Analysis used in Project IMPACT.

FOR THE COMPTROLLER OF THE ARMY:

2 Incl
nc

A. R. GRIFFIN
LTC, GS
Executive Officer, ODCA

DEPARTMENT OF THE ARMY
East Central District
U. S. ARMY AUDIT AGENCY
6701 Elkridge Landing Road
Linthicum Heights, Maryland 21090

IGAA-ECD

21 MAR 1977

SUBJECT: Audit of the Cost Benefit Analysis for the Army's Proposed Micropublishing System
Audit Report: EC 77-502

HQDA (DAAG-PLZ-A)
WASH DC 20314

1. Introduction. In response to your request of 18 November 1976, the U. S. Army Audit Agency reviewed the cost data involved in the cost benefit analysis (CBA) for the Army's prototype micropublishing system. The CBA submitted for our review was based on a 6-month in-house prototype micropublishing test system conducted by the Office of The Adjutant General and The Adjutant General Center. The test began in May 1976. In addition, the Office of The Adjutant General and The Adjutant General Center's draft report to the Joint Committee on Printing, Congress of the United States extrapolates data from the CBA for the purpose of proposing a 25-entry station micropublishing system to the Committee. In response to your request of 11 January 1977, we have also reviewed the cost data involved in the proposed 25-entry station micropublishing system.

2. Scope of Audit. Our audit was made to evaluate the reasonableness and accuracy of the cost data included in the CBA and the proposed 25-entry station micropublishing system. The audit was made during the period 14 February - 4 March 1977. The audit was made in accordance with generally accepted auditing standards and included such tests of the supporting documentation as we considered necessary in the circumstances.

3. Results of Audit. The results of our audit are shown on Exhibits A and B of this report. Except as discussed in the notes to the exhibits, the cost data involved in the CBA for the prototype micropublishing system and the proposed 25-entry station micropublishing system appear reasonable.

4. Other Matters. The CBA for the prototype micropublishing system was submitted to the Office of the Comptroller of the Army (OCA) for approval of the methodology used in compiling the data and projecting the benefits to be derived from a micropublishing system. The methodology was approved on 29 November 1976. However, the methodology used in compiling the data and projecting cost avoidance for the proposed "best choice" 25-entry station micropublishing system has not been submitted to OCA for approval. In our opinion, the proposed best choice system should also be submitted

21 MAR 1977

IGAA-ECD
SUBJECT: Audit of the Cost Benefit Analysis for the Army's Proposed Micropublishing System
Audit Report: EC 77-502

to OCA for approval since several new concepts, such as the introduction of an expensive step-and-repeat camera operation, have been added to the methodology previously approved.

5. The results of our audit were discussed with Mr. Andrew Carras, Office of Plans and Operations, The Adjutant General Center on 10 March 1977. We appreciate the courtesies extended to the auditors during the review.

M. R. DiFULGO
District Manager

2 Incl
1. Exhibit A
2. Exhibit B

EXHIBIT A

PROTOTYPE MICROPUBLISHING SYSTEM
(Optimum Production Level)

Description	Cost Benefit Analysis	AAA	Diff.	Notes
ANNUAL COSTS				
Space Cost:	$29,120	$29,120		
Personnel Costs:				
Salary	$498,750	$498,750		
Fringe Benefits	142,642	142,642		
Training	62,344	0	$62,344	a
Admin. Overhead	9,975	9,975		
	$713,711	$651,367	$62,344	
Print Preparation:				
Hardware Costs -				
Selectric I/O	$ 9,647	$ 9,647		
Video Display Typing Terminal	56,592	56,592		
OCR	16,280	16,280		
Serial Printer	9,863	9,863		
Shared Logic CPU W/Options	50,174	50,174		
Magtape Drive	12,318	12,318		
Voltage Regulator	775	775		
	$155,649	$155,649		
Supplies -				
Archival Tapes	$22,900	$19,950	$ 2,950	b
Miscellaneous	1,000	1,000	0	c
	$23,900	$20,950	$ 2,950	

Description	Cost Benefit Analysis	AAA	Diff.	Notes
Film Recording:				
Supplies -	$ 1,000	$ 1,000		c
Equipment -				
COM Unit	161,964	161,964		
	$162,964	$162,964		
Developing:				
Developer Processor	$ 3,385	$ 3,385		d
Silver Film Duplicator	3,290	3,290		d
105 MM Microfilm	3,146	3,146		
Developing Chemicals	2,035	2,035		
Miscellaneous	333	333		c
	$12,189	$12,189		
Merge Slide Preparation:				
Cameras w/Aux. Equip	$ 7,440	$ 7,440		
Photoplast Slides	239,400	239,400		
	$246,840	$246,840		
Duplication:				
Diazo Duplicators	$66,701	$66,701		d
Collators	13,543	13,543		
Film	389,551	389,551		
Developing Chemicals	1,875	1,875		
	$471,670	$471,670		
TOTAL ANNUAL COSTS	$1,816,043	$1,750,749	$65,294	

Description	Cost Benefit Analysis	AAA	Diff.	Notes
FIXED COSTS				
Start-Up Costs				
Plumbing	$ 5,000	$ 5,000		
Special Wiring	3,000	3,000		
Separating Walls	6,000	6,000		
Air Conditioning	9,185	9,185		
TOTAL FIXED COSTS	$23,185	$23,185		

NOTES:

a. Training costs were estimated as 1 hour per day of on-the-job training for each employee, or 12.5 percent of total salaries. However, salary costs included were based on a full 8 hours per day. The combined costs therefore equate to 9 hours per day for each employee. Accordingly, training costs were excluded by the auditors.

b. The cost per tape used in the analysis differed from the price listed in the most current General Services Administration (GSA) catalog.

c. Although the costs for miscellaneous office supplies were not supported, the estimates were not unreasonable.

d. The costs for leasing and maintenance of equipment were based on applying a 39.6 percent factor to the purchase price of the equipment. Two manufacturers, when queried by personnel from the Office of The Adjutant General and The Adjutant General Center as to lease and maintenance costs, indicated that their firms did not lease directly to the Government. These firms indicated that third party leasing was available. A representative of the Atex Corporation, one of the manufacturers contacted, indicated that 39.6 percent of purchase cost would cover third party leasing and maintenance costs on a yearly basis. Although subject to negotiation and competitive bidding, the costs used in the CBA for the prototype system and the proposed 25-entry station system appear reasonable. Purchase prices for equipment included in the studies were validated.

EXHIBIT B

PROPOSED MICROPUBLISHING SYSTEM
FULL SCALE 25 ENTRY SYSTEM
(Optimum Production Level)

Description	Cost Benefit Analysis	AAA	Diff.	Notes
ANNUAL COSTS				
Space Cost:	$29,120	$29,120		
Personnel Costs:				
Salary	$442,578	$442,578		
Fringe Benefits	126,577	126,577		
Training	55,322	0	$55,322	a
Admin. Overhead	8,852	8,852		
	$633,329	$578,007	$55,322	
Print Preparation:				
Hardware Costs -				b
Input System				
Disk Drive, CPU, 4 Input Stations and Software	$27,522	$27,522		
12 Additional Input Stations	13,781	13,781		
Composition System				
CPU	17,820	17,820		

Description	Cost Benefit Analysis	AAA	Diff.	Notes
Drive and Controller	$11,880	$11,880		
Magtape 800/1600 (BPI)	7,920	7,920		
Line Printer	7,920	7,920		
Edit Stations	19,008	19,008		
Composition Software	7,128	7,128		
Graphics Display Terminal	11,880	11,880		
Intelligent OCR	17,424	17,424		
OCR Interface Hardware and Software	5,940	5,940		
Film Recorder Interface Hardware and Software	11,880	11,880		
Additional Software				
Page Makeup	5,940	5,940		
Book Pagination	5,940	5,940		
	$171,983	$171,983		
Supplies -				
Archival Tapes	$20,328	$17,640	$2,688	c
Miscellaneous	1,000	1,000		d
	$21,328	$18,640	$2,688	
Film Recording:				
Supplies -	$ 1,000	$ 1,000		d
Equipment -				
COM Unit w/Teletype reader and 9-track MTU	$77,220	$77,220		b

Description	Cost Benefit Analysis	AAA	Diff.	Notes
CRT Monitor	2,475	2,475		
8K Memory Ext.	6,336	6,336		
Disk Drive	14,256	14,256		
Optical Merge	15,246	15,246		
High Speed Graphics Arts Generator	10,890	10,890		
High Speed Thruput Feature	8,910	8,910		
Line Draw Features	10,395	10,395		
Microfilm Camera (24:1, 42:1)	11,286	11,286		
Microfilm Camera (48:1)	12,474	12,474		
Conversion Kit	1,049	1,049		
2 extra Magazines (105MM)	2,099	950	$1,149	e
1 extra Magazine (15MM)	396	273	123	e
	$173,032	$171,760	$1,272	
Developing:				
Developer Processor	$ 3,385	$ 3,385		b
Silver Film Duplicator	3,290	3,290		b
105 MM Microfilm	4,377	4,377		
Developing Chemicals	2,036	2,036		
Miscellaneous	333	333		d
	$13,421	$13,421		
Merge Slide Preparation:				
Cameras w/Aux. Equip.	$ 6,178	$ 6,178		b
Photoplast Slides	211,680	211,680		
Miscellaneous	333	333		d
	$218,191	$218,191		

Description	Cost Benefit Analysis	AAA	Diff.	Notes
Step and Repeat Operation:				
Camera	$28,241	$28,241		b
Miscellaneous	333	333		d
Stationery Type Supplies	1,000	1,000		d
	$29,574	$29,574		
TOTAL ANNUAL COST	$1,290,978	$1,231,696	$59,282	
FIXED COSTS				
Start Up Costs:				
Plumbing	$ 5,000	$ 5,000		
Special Wiring	3,000	3,000		
Separated Walls	6,000	6,000		
Air Conditioning	9,185	9,185		
TOTAL FIXED COSTS	$23,185	$23,185		

NOTES:

a. Training costs were estimated as 1 hour per day of on-the-job training for each employee, or 12.5 percent of total salaries. However, salary costs included were based on a full 8 hours per day. The combined costs therefore equate to 9 hours per day for each employee. Accordingly, training costs were excluded by the auditors.

b. The costs for leasing and maintenance of equipment were based on applying a 39.6 percent factor to the purchase price of the equipment. Two manufacturers, when queried by personnel from the Office of The Adjutant General and The Adjutant General Center as to lease and maintenance costs, indicated that their firms did not lease directly to the Government. These firms indicated that third party leasing was available. A representative of the Atex Corporation, one of the manufacturers contacted, indicated that 39.6 percent of purchase cost would cover third party leasing and maintenance costs on a yearly basis. Although subject to negotiation and competitive bidding, the costs used in the CBA for the prototype system and the proposed 25-entry station system appear reasonable. Purchase prices for equipment included in the studies were validated.

c. The cost per tape used in the analysis differed from the price listed in the most current General Services Administration (GSA) catalog.

d. Although the costs for miscellaneous office supplies were not supported, the estimates were not unreasonable.

e. The cost was taken incorrectly from a manufacturer's catalog.