

STANDARD FORM NO. 64

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Office Memorandum • UNITED STATES GOVERNMENT

TO : **Members of RASAC**

DATE: **8 Aug 55**

FROM : **Executive Secretary, RASAC**

SUBJECT: **Trip Report - Eastern Kodak Company**

The attached trip report is forwarded herewith for information and retention of RASAC members.

Ann M. Marley
Ann M. Marley

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Trip Report - Eastern Kodak Company

MEMBERS OF RASAC

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- Col. R. J. Davis - COMSEC**
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Trip Report - Eastman Kodak Company
Re: Minicard Data Handling System

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22 July 1955
M.C. Cook/pmo/408

1. Identification of Trip:

- a. Eastman Kodak Company
- b. Rochester, N. Y.
- c. 27 to 29 June 1955
- e. FREEZER
- f. 354-7205

2. Representatives:

NSA: Mr. M. C. Cook, R/D 3542

3. Enclosed is a report entitled "Conference on Minicard Data Handling System", prepared by Mr. G. B. Brown, LIB.

4. The undersigned concurs in this report.

MCCook

M. C. COOK

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CONFERENCE ON MINICARD DATA HANDLING SYSTEM
Eastman Kodak Company
Rochester, N. Y.
June 28-29, 1955

1. Participants

This conference was sponsored jointly by the Rome Air Development Center and the Eastman Kodak Company and was attended by approximately one hundred representatives of Government and Industry. Government representation included the Air Force, Army, Navy, CIA, NSA, and Library of Congress. NSA participants were the following:

Mr. Eugene G. Moran, PROD
Mr. William J. Marston, COMP
Mr. Myron C. Cook, R/D
Mr. George B. Brown, LIB

2. Purpose

The purposes of the conference included reporting on the status of the Minicard machines, demonstrating prototypes of those which have been constructed, and discussing the future research program in data handling systems.

3. Summary of Meetings

- a. Representatives from Eastman Kodak and from the Air Force presented a general review of the Minicard development program extending from initial efforts of Eastman on its own, beginning about five years ago, through the interest expressed by the Air Force resulting in a research and development contract in June 1954, to the present status of the program which indicated that the first installation will be made at USAF Headquarters in the Pentagon about January 1956 for field test purposes.
- b. A second presentation described the operations of a Minicard System in a typical document center.
- c. A third report gave detailed information on the status of each of the machines involved in this program, as follows:

(1) Perforator

This is a rotary type high-speed film perforator used solely for the purpose of slotting raw film at specified intervals to provide the necessary slot required in housing the Minicards on a metal stick. An experimental model has been produced and is in use.

(2) Camera

The camera is designed to perform the function of filming the binary codes which control the filing, sorting, selecting, and retrieval tasks, plus filming the documents to be recorded into the system. A prototype model was demonstrated and the experimental model is due for delivery to Air Force about October 1955.

(3) Film Processor

This is a high-speed film processor designed to develop the roll film automatically. An experimental model is in existence and delivery is expected about 1 September 1955.

(4) Cutter

This is a high-speed machine designed to cut with extreme accuracy the roll film into Minicards 16 x 32 mm in size. A prototype was demonstrated and delivery is scheduled for 1 September 1955.

(5) Block sorter

This machine is designed to sort the Minicards by reading the coded information and depositing the Minicards in hoppers as designated by the file control codes. An experimental model is available and delivery is expected about 1 October 1955.

(6) Selector

This machine is the central piece in the information retrieval system and is designed to operate by scanning the coded information in a file of Minicards and select out those Minicards which fulfill a request. It is activated by a properly punched tape. Delivery of this item is expected in October 1955.

(7) Duplicator

This machine is designed to take the master Minicard and duplicate it automatically. It also has the capability of adding new codes to the Minicard and is used for preparing the various copies of Minicards to be filed under different subjects, areas or other desired headings. The design of the duplicator has been completed and assembly is in process. Delivery is expected in September 1955.

(8) Enlarger-printer

The enlarger is designed to take the Minicard and produce an enlargement print at high speed. The designing has been completed and the unit is under construction for delivery in November 1955.

(9) Viewers

The problem on viewers has not yet been completely solved. Under development are a hand model, a desk type and one designed for inspection of reels before cutting. The desk type will probably be ready in late December.

(10) Converter

Still to be designed is a converter for use in converting existing files to Minicard from IBM cards, from roll film, or from other forms. The present system is designed primarily to store on film digital information for searching and sorting purposes plus texts taken from hard copy in sizes up to 8-1/2 x 14 inches. Further study is necessary in order to incorporate in this system original documents of larger size such as maps and aerial photographs and information in forms which require a much greater resolution than is possible with existing equipment. The goal is to design a lens with a resolution of 750 lines per millimeter. Such a lens will be required to provide the necessary detail in reducing aerial photographs to Minicard size and then enlarging them back to original size without loss of detail. Such a lens is now under development by contract at the University of Rochester in cooperation with the Hawkeye Works of the Eastman Kodak Company.

- d. An Air Force representative described a comprehensive intelligence data handling system designated as System 438L of which Minicard will be a part. In addition the equipment will be designed for operational intelligence processing and the future contract will provide funds for a study project to determine requirements and write design specifications. This is a long range program with initial deadline of December 1959 and a supplementary program going into 1962.
- e. An Eastman representative presented a discussion on problems of indexing systems and a need for a machine language to solve indexing problems which result from non-specific meanings in our language and differences between structural meanings and lexical meanings which cannot be sensed by machines.

4. Production of Minicard Equipment

As pointed out earlier the equipment to be delivered in January 1956 will all be considered experimental and naturally has been custom made. After this equipment has undergone tests extending perhaps to 18 months a program for a review of machine requirements, redesign of equipment and general production design for final models will be instituted. It is probable that only at that stage will it be possible for other agencies to obtain the desired equipment.

5. Reference

Details of the system may be found in an article entitled "The Application of the Kodak Minicard System to Problems of Documentation", by A. W. Tyler, W. L. Myers, and J. W. Kuipers, in American Documentation, vol. VI, No. 1, January 1955.

6. Comment

Based on the presentations, discussions, and demonstrations at this conference the NSA representatives decided that there would be extensive applications of Minicards in the National Security Agency and will therefore recommend that steps be taken to plan the use of Minicard in the Library and Information Processing activities of the Agency and that studies be undertaken to determine other areas of possible use of the equipment.