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A Machine-Based Document Control System

M. R. Powell

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(SP Series)



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A Machine-based Document Control System

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PREFACE

This paper describes the EAM Machine-Based Document Control System used by the System Development Corporation, Santa Monica, California, to control internally generated accountable classified documents. (A modified version is used to control documents and publications from external sources.) This system encompasses five areas of control: (1) copies in file; (2) copies en-route to an employee; (3) copies issued within the facility; (4) copies transmitted from the facility; and (5) copies destroyed. The system was officially installed on July 1, 1961 and has effectively established and maintained control of over 130,000 document copies printed since that time. In addition, distribution data for more than 450,000 Secret copies printed prior to July 1, 1961 has been converted from manual records to the new machine-based system.

Appreciation is extended to Richard L. Wilson, Edmund A. Green, and William D. Wilson who assisted in the programming and implementation of the Machine-Based Document Control System. Much of their personal time was given without thought of remuneration and at great inconvenience on a number of occasions. Also deserving of mention are all members of the Document Distribution Section who worked so diligently and faithfully to convert manual records to tabulating cards and implement the new system without diminishing service to the "customer."

INTRODUCTION

Early in 1961 SDC recognized a need for improved systematic control and inventory of its Secret document holdings. At that time distribution and destruction records for over 650,000 Secret document copies were maintained on 5" x 8" Distribution Record Cards. All transmittal receipts and destruction certificates were prepared by typewriter and the information transferred in longhand to the record card. Approximately 10,000 of 40,000 receipts in file were prepared by typewriter with the remaining 30,000 on tabulating cards as a result of an automated new document announcement and order system.

We began looking for a system that would force deliberate actions when recording the movement of a document copy; a system that required the presence of both the record and the document copy before action could be taken on either one. Also, we needed a system that would provide maximum control with minimum effort and expense to meet the requirements of the Industrial Security Manual and satisfy security inspection teams who were very much interested in knowing what number of copies of Secret documents had been printed and what happened to each one.

The Industrial Security Manual (which does not dictate specific Secret document control methods) requires the contractor to:

1. maintain a record of reproduction, to be kept for 4 years;
2. maintain a record of distribution, to be kept for 4 years;
3. maintain a record of destruction, to be kept for 4 years; and
4. perform automatic, time-phased downgrading and declassification of group 3 and 4 documents.

With this in mind, we proceeded to design a document control system that would satisfy both the ISM and security inspection teams. Here is a description of the system developed.

SYSTEM DESCRIPTION

The Machine-based Document Control System was designed to record distribution and destruction of Secret documents by using tabulating cards in a Record Deck. This deck consists of a Master Summary card recording the total number of accountable copies of a document, and a Detail Card for each individual document copy number. The original Detail Card is used throughout the life of the document copy it represents to show the current location as indicated by numeric codes punched into specified fields on the card.

The numeric codes (see Table I) are sequenced to cover 98% of work flow and degree of permanency in any one location. For example, a document copy

may proceed from file (BIN) to issue on a hand-receipt (code 2) or transmittal from the facility (code 3) and then subsequently go to destruction (code 4). Seldom (less than 2% of the time) does a document copy return to the facility, and it will never return to life after destruction.

TABLE I DOCUMENT LOCATION CODES				
BIN	CODE 1	CODE 2	CODE 3	CODE 4
Unissued copies	In transit to employees within the facility	Issued to employees within the facility	Transmitted from the facility via registered mail	Destroyed
VERIFICATION				
Copy on file in vault	In possession of mailroom messenger	Signed hand-receipt in file	Transmittal receipt in file signed by recipient	Certificate of destruction on file

ESTABLISHING THE RECORD

Four tabulating card formats are used to establish and maintain accountability of Secret material; a Master Summary, a Detail Card, a Hand-Receipt card, and an Accountability Transfer Receipt card. Each card format and its use is described below.

Master Summary (Figure 1): This card serves as the base record for all copies of a particular document. It identifies the Automatic, Time-phased Downgrading and Declassification System group number, document publication date, document series and number, classification, and total number of copies printed (this number is also the last copy number assigned). As additional copies are reprinted, the Master Summary is corrected to reflect the new copy count.

Collectively, the Master Summary cards may be used to prepare group 3 and 4 downgrading and declassification guides by listing the document series and numbers by publication date within group assignment. Also, documents produced under any given contract may be selected and listed on a print-out.

For easy access, all Master Summary cards for each document series are filed in the front of the drawer containing the records for that series.

Detail Card (Figure 2): A Detail Card is made for each document copy number. It is used to record the current location of the copy it represents

from BIN through codes 1, 2, 3, and 4 (see Table I). This card exists for the life of the copy unless a new card is made to reflect a person-to-person transfer or a return to the facility for refile or reissue (from code 3 to BIN or code 2). In these cases, only new current location data are punched into the card. All past accountability (employee and outgoing control numbers) are entered on the face of the new card in longhand, and the old out-of-date card is destroyed.

Together, the Master Summary and Detail Cards make the Record Deck (Figure 3).

Hand-Receipt (Figure 4): The hand-receipt card is prepared in triplicate, each card a different color for easy visual identification by employees and control station personnel. One copy becomes the original signed receipt; the second is signed by the person accepting the document copy in the addressee's absence, and the third is held by the person accountable for the document copy. Only the first and third copies contain the addressee's name and employee number; the second is keypunched with the name and employee number of the alternate recipient.

Accountability Transfer Receipt (Figure 4): These are available in all stockrooms for use by classified document holders to transfer accountability to another cleared employee. Space is provided on the face of the card for the document series and number, publication date, copy number, name and employee number of both the transferrer and transferee, and date of transfer.

The following cards do not actually record accountability. They are used to help reduce the size of the active card files and assist in the control station inventory.

Destruction Summary (Figure 5): Prior to each control station inventory all code 4 detail cards are listed and totaled on the 402 Electronic Accounting Machine. A Destruction Summary is keypunched and placed in the Record Deck replacing the individual code 4 cards which are placed in storage.

Transmittal Summary (Figure 5): The Transmittal Summary card for code 3 Detail Cards is prepared in the same manner as the Destruction Summary card. However, care must be taken to up-date the Transmittal Summary card when document copies are returned to the facility.

EQUIPMENT

An almost unlimited type and quantity of EAM and EDPM equipment was available at SDC. Yet, to use this equipment meant releasing record cards for periods of time ranging from a few minutes to several hours. During this time a temporary loss of control would exist and if the cards were lost, permanent loss of control could have resulted. The answer was a "distribution

data processing" office housed and operated within the Document Control office for which the following equipment was installed:

	<u>Monthly Rental</u>
1. one 026 Keypunch machine	\$ 60.00
2. one 056 Verifier machine	50.00
3. one 082 Sorter	40.00
4. one 087 Collator	245.00
5. one 402 Electronic Accounting Machine	220.00

Total monthly rental: \$615.00, plus accessories and tax.

Needless to say, this equipment is not used exclusively for document control; nearly 80% of the machine time is devoted to a duplication and distribution cost accounting system that is not connected with document control.

Unskilled control station personnel were schooled and trained in the operation of this equipment. The only additional personnel added to the force were those required to convert the massive manual records to the new system. Authorized strength will once again be reached through normal attrition.

RECORDING ACCOUNTABILITY

Once generated, the Record Deck remains complete at all times except when Detail Cards are removed for recording current location (Table I) of the document copy. Periodically prepared Destruction and Transmittal Summary cards maintain a complete Record Deck of workable proportions by replacing the individual Detail Cards they represent.

Copies in File (BIN): Copies in the vault are referred to as "BIN" copies and the detail card is the BIN card. No location code is entered in the Detail Card. It remains in the Record Deck until removed to record movement of the document copy into codes 1, 2, 3, or 4.

Copies in Inter-Office Mail (Code 1): When a document copy is addressed to an employee the employee number (MN) and process date is entered in pencil on the BIN card, punched code 1, and placed in the suspense file until either the signed hand-receipt card or refused document is returned to the control station. Follow-up is accomplished if neither has been received after 5 work-days.

Hand-Receipt in File (Code 2): Upon receipt of the signed hand-receipt card, the code 1 card is pulled from the suspense file, and code 2 and the employee number are punched into the code 1 Detail Card. The code 2 card then returns to the record deck. Upon transfer of accountability from one person to another, a new code 2 Detail Card is punched showing the current

holders' employee number. The former holder's employee number is entered in longhand on the face of the new card and it is returned to Record Deck.

Transmittal from the Facility (Code 3): The BIN card is used to prepare the transmittal receipt for material being sent from the facility. The transmittal is preaddressed according to the initial distribution list or document request, assigned an outgoing (OG) control number, and put on the 402 Electronic Accounting Machine for listing from the BIN cards. The BIN cards are then keypunched to show the address code, outgoing control number, process date, and code 3 and are returned to the Record Deck.

Destruction (Code 4): Destruction certificates are produced on the 402 Electronic Accounting Machine using Detail Cards representing the document copies to be destroyed. The listing contains the document publication date, document series and number, and copy number. After listing, code 4 and the scheduled destruction date are punched into the detail card and the cards are refiled in the Record Deck.

Thus, the Record Deck is complete at all times (except for code 1 Detail Cards in temporary suspense) and verification of the completeness of the record can be made at any time.

INVENTORY

SDC's policy is to conduct a perpetual inventory of copies on file in the control station and copies issued to employees within the facility. Each inventory is scheduled for completion within a six-month period. This enables the control station to inventory its holdings and those copies held by employees twice a year.

Personal Inventory: A machine listing (Figure 6), prepared by the control station from the hand-receipt cards on file for each employee charged with Secret documents, is furnished to the employee with instructions to check the contents of his safe-file and physically sight each item listed, indicate items listed but not sighted, and add to the list all items in his possession but not shown.

Upon return of the listing to the control station, each discrepancy is checked, correct accountability is determined for added items, and searches made to account for unsighted items. Because the inventory is on an ongoing basis, these discrepancies come to light one at a time, and so resolution of each one can be performed in an orderly fashion.

Control Station Inventory: The control station record verification is accomplished on the 402 EAM by comparing the accountable copies represented by Destruction and Transmittal Summary cards, and Detail Cards, with the copy count on the Master Summary card. The 402 is programmed to read the copy count in the Master Summary card as a minus value in the counter. Added to

this minus value are the copy counts on the Destruction and Transmittal Summary cards, and each Detail Card remaining in the record deck. The result is indicated as a deficit if there are not enough cards, a credit if there are too many cards, and a balance if the totals are equal. Simultaneously, a listing (Figure 7) is printed showing the current location code on each Detail Card not accounted for by the Destruction and Transmittal Summary cards. A zero balance on the printout verifies the completeness of the record.

BIN card entries are verified by sighting the actual document copy in the control station files, and code 2 cards are matched against the signed Hand-Receipt cards upon completion of the control station and personal inventories.

One percent of the total record is verified each day. In that way, positive record verification occurs twice a year.

CLASSIFICATION REGRADING

Since distribution and destruction records are not required for Confidential or unclassified material, the Record Deck is immediately removed from file upon downgrading of the document. An accounting of all copies is made and regrading notices are sent to all holders in and out of the facility. The Master Summary card is corrected to show the regrading action by over-punching the time-phased group assignment number (or duplicating the card entirely) to read:

"C" --- Group 3 document regraded to Confidential
"D" --- Group 4 document regraded to Confidential
"E" --- Group 4 document regraded to Unclassified
"F" --- Declassified by special review
"G" --- Regraded to Confidential by special review

CONCLUSION

Over the past 14 months the system has been proved to be most effective. Each day, over 600 new Detail Cards are generated and approximately 2000 transactions are recorded with an average expenditure of 24 man-hours.

Loss of control for one document copy has resulted from a misplaced or missing Detail Card. Recording discrepancies, often occurring in the old manual system by posting distribution information from destruction certificates and transmittal receipts, have been eliminated by the new machine-based system. Now, the record (Detail Cards) actually produces the destruction certificate and transmittal receipt.

An unexpected by-product of the system has been a drastically increased confidence in the control station on the part of employees using classified material.

- ①. Cols 1 thru 7
Enter "SUMMARY"
- ②. Col 39
Automatic, Time-phased Downgrading and Declassification System group number.
- ③. Col 40
"1" indicates the old document numbering system; "2" indicates the new system.
- ④. Cols 41 thru 45
Contract under which the document was written
- ⑤. Cols 46 thru 51
Document publication date
- ⑥. Cols 52 thru 67
Document series and number
- ⑦. Col 68
Classification code
- ⑧. Cols 77 thru 80
Total number of accountable copies (highest copy number assigned).

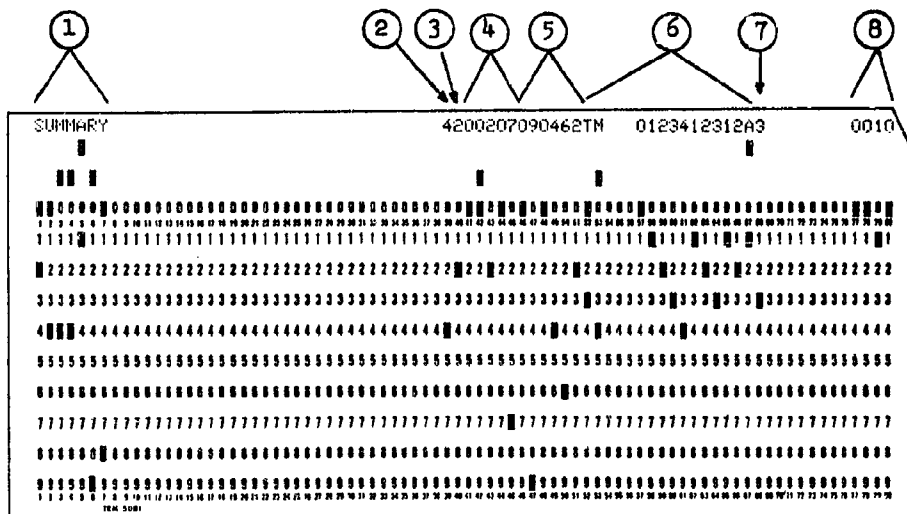


FIGURE 1. MASTER SUMMARY CARD

- ①. Cols 1 thru 9
SDC field location code or a Publication Information Register number identifying the addressee when sent outside the facility. All other addressees (less than 5%) are identified as "MM" (Misc. Military) or "MC" (Misc. Civilian).
- ②. Cols 13 and 14
Identifies the type of issue or transmittal. "OG" indicates "OutGoing" from the facility and "MN" indicates a Man (employee) Number when issued within the facility.
- ③. Cols 15 thru 20
Outgoing ("OG") control number assigned to the transmittal. Employee number ("MN") to whom issued.
- ④. Cols 21 thru 25 - PROC DATE
A date is entered only when transmitted from the facility.
- ⑤. Cols 26 thru 30 - DEST DATE
Date of the original Certificate of Destruction.
- ⑥. Cols 31 thru 40 - CONTROL
No punches means the document copy is in file.

Col 31 -- A "1" in col 31 indicates "suspense" while the copy is in-transit to an employee via the inter-office mail system

Col 32 -- A "2" in col 32 when a Hand-receipt is in file.

Col 33 -- A "3" in col 33 when transmitted out of the facility.

Col 34 -- A "4" in col 34 indicates destruction.

cols 35 thru 38 are not used.

Cols 39 and 40 described below are considered part of the control area on the detail card even though not reflecting the current status (location) of an item.

Col 39 -- Indicates Automatic, Time-phased Downgrading and Declassification System group number.

Col 40 -- Old document numbering system ("1") or the new system ("2").

FIGURE 2. DETAIL CARD (PAGE 1 of 2)

- ①. Cols 1 thru 9
Enter SUMMARY A
- ②. Col 33
Enter "3" in the TRANSMITTAL SUMMARY card
- ③. Col 34
Enter "4" in the DESTRUCTION SUMMARY card
- ④. Col 40
Old document numbering system ("1") or new system ("2")
- ⑤. Cols 52 thru 67
Document series and number
- ⑥. Col 68
Classification code
- ⑦. Cols 77 thru 80
Total number of copies destroyed (or transmitted) during the summary time period.

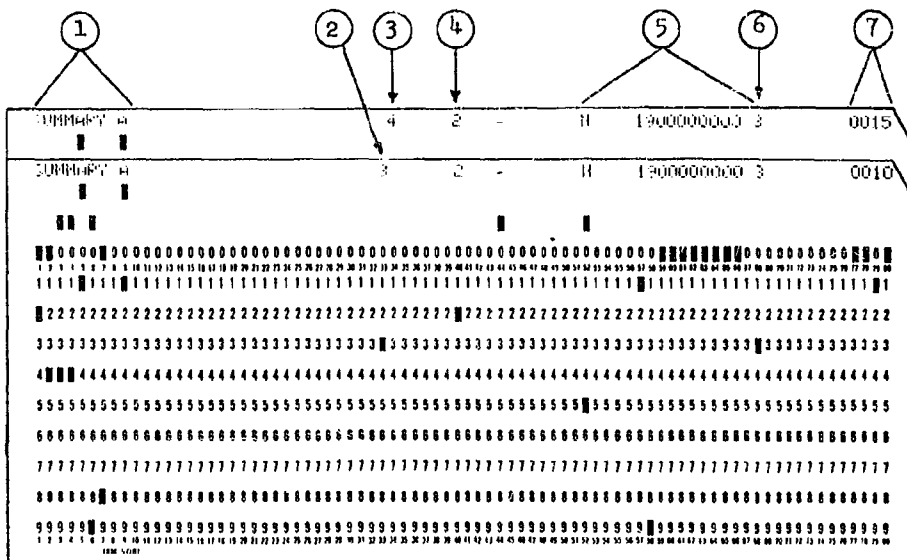


FIGURE 5. DESTRUCTION and TRANSMITTAL SUMMARY CARDS

SECRET DOCUMENT INVENTORY				DATE
DOE JOHN	01234			9 11 62
				Page Of Pages
<p>PLEASE CHECK YOUR DOCUMENT HOLDINGS AGAINST THIS LISTING. INDICATE ANY DISCREPANCIES. IF YOU HAVE SECRET DOCUMENTS IN YOUR POSSESSION NOT LISTED, PLEASE ADD TO THE BOTTOM OF THE LIST. SIGN, DATE AND RETURN TO DOCUMENT DISTRIBUTION WITHIN THREE WORKING DAYS. IF YOU HAVE QUESTIONS, CALL _____ ON EXT. _____</p>				
CLASSIFICATION	IDENTIFICATION NUMBER AND/OR TITLE (UNCLASSIFIED)			COPY NO.
SECRET	TM	00384	000 00	0089
SECRET	TM	00399	000 00	0036
SECRET	TM	00464	000 00	1141
SECRET	TM	00510	001 00	0562
SECRET	TM	00510	001 00A	0353
SECRET	TM	00510	002 00A	0353
SECRET	TM	00510	003 00	0330
SECRET	TM	00510	003 00A	0353
SECRET	FN	00524	004 01	0088
SECRET	TMD	00548	002 00	0124
SECRET	TM	00548	002 01	0039
SECRET	FN	00579	002 00	0316
SECRET	TM	00675	000 01	0596
SECRET	TM	00706	000 01	0046
SECRET	TM	00706	000 01A	0128
SECRET	SD	01348	000 00	0173
SECRET	SD	02087	000 00	0146
SECRET	FN	02965	000 00	0163
SECRET	FN	02984	002 01	0395
<p>LIST EXTRA ITEMS BELOW</p>				
<p>I CERTIFY THAT I HAVE SIGHTED THE ITEMS LISTED ABOVE EXCEPT AS INDICATED. I HAVE ADDED TO THIS LIST ALL SECRET DOCUMENTS IN MY POSSESSION WHICH WERE NOT LISTED.</p>				
DATE _____			SIGNED _____	

FIGURE 6. PERSONAL INVENTORY LIST

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System Development Corporation,
Santa Monica, California
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SYSTEM.

Scientific rept., SP-961, by
M. R. Powell. 17 September 1962,
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