

*Records Disposition*

GENERAL SERVICES ADMINISTRATION  
Washington 25, D. C.

TRANSCRIPT OF  
TRAINING LECTURE NO. 56

on

RECORDS DISPOSITION AND MAGNETIC TAPE

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by

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## INTRODUCTION

The purpose of this survey is to consider current practices of the various agency users of electronic data processing equipment in connection with the records disposition problems which arise from these new operations.

### Background

In its meeting of June 1960, the Federal Records Council discussed records problems involved in electronic data processing and requested the National Archives and Records Service to conduct an initial study of these problems. The questions posed were these:

1. What are the current practices and the future possibilities for the storage of long-term record material on magnetic tape?
2. What is the relationship between the erase and re-use technique in EDP and the provision of the Federal Records Act which requires Congressional disposal authorization under the Records Disposal Act of 1943?

This initial study was conceived to be one of limited scope in terms of time and effort expended, with the implication that its findings might lead to a more detailed and more technical study at a later date.

### Method

The principal fact-finding technique employed was a series of interviews with persons directly involved in EDP operations and with others involved in agency records management. (See Appendix A.) A number of EDP installations were visited and the principal literature on the subject was reviewed.

Summary of Findings

1. Few agencies have disposition plans for their electronic tapes.
2. Decisions as to whether or not to erase and reuse the tape are based on needs of the individual projects.
3. The tapes are regarded for the most part as working tools and not as records as defined in the Records Disposal Act of 1943.
4. When the tapes contain information of value for future use they are being retained indefinitely.
5. It is not possible at the present time to say that tape can safely replace long-term or permanent records because of such factors as:
  - a. Machine incompatibility; tape from one usually cannot be used in another model.
  - b. Expense of machine time, making the cost of reference service in an archival establishment prohibitive.
  - c. Present uncertainty as to the lasting quality of the tape.
6. These technical problems will doubtless be solved in time.

Recommendations

1. For the present we should depend upon other media--paper or microfilm--to retain information of long-term or permanent value.
2. The NARS should follow closely the developments in the EDP field so that changes in policy may be effected as the technical problems mentioned above are solved.
3. Tapes should be considered, for the present, as interim media even when they must be held for long periods or indefinitely.

When they contain information of long-term or possible permanent value there should be plans for retention of the information in other form, possibly on microfilm as in the case of the population census schedules.

4. Agencies should be encouraged to establish retention periods for the various kinds of tape even though, for the present, they are regarded as interim media.
5. Duplication of information on tape should not for the present be considered sufficient justification for disposal of paper records or microfilm.

THE GENERAL BACKGROUND IN THE USE OF

ELECTRONIC DATA PROCESSING

The type of operation in which EDP is generally adaptable is one in which great quantities of routine data are changed or adjusted on a regularized, cyclical basis. These operations include: supply and inventory control, personnel management and payroll, accounting and financial reporting, and statistical survey. Although the Federal Government is also widely involved in scientific computing applications, such applications are of a different nature vis-a-vis records retention and are not the subject of this study.

The Typical Operation

In the typical EDP business application, the great quantities of data are first introduced into the system on the conventional paper forms, converted by means of punched card, paper punched tape or microfilm to a magnetic tape--called the transaction tape--and entered into the computer. The computer then performs a series of operations which may involve any number of "passes" and any number of "working" tapes, and eventually produces its results on a series of "master" tapes and subsidiary report and exception tapes. The "master" tape is maintained as such until completion of the next cycle when it is replaced by a new updated master. The various report and exception tapes are printed out in punched card or "hard copy" form. The so-called working tapes function merely to move the data from one step to the next. The transaction tape reflects the raw data as taken from the paper documentation.

From the point of view of records retention, the transaction tape typically is backed up for legal purposes by retention of the source paper. The working tapes have only a transitory value and are released for re-use upon verification of the specific operation. The master tape consists of current information which is rendered obsolete by the next updated master. The report and exception tapes are printed out in a "hard copy" form which then becomes subject to the usual disposal policies.

This, in oversimplification, represents the general lines of a typical EDP application. It seems obvious, in the framework of this example, that if the original paper is retained for whatever are the retention needs, the tapes represent merely a duplication of the material for the purpose of ease of manipulation. But the whole field of EDP and the records problems which it generates are immensely more complicated and a good deal more varied than this neat model suggests. The peculiarities of a few case examples should illustrate this variety.

#### Some Case Examples

At the Bureau of the Census, the 1960 Decennial Census was computed on tape. The original schedules were microfilmed and the microfilm will be retained for preservation. A series of computer operations results in a summary tape file. From these summary tapes specific reporting tapes are produced, and the tabulations resulting are published as parts of the 1960 Census. But the summary tapes remain as the basic product of the census effort. These tapes, amounting to about 3,000, are to be retained for servicing cross-tabulation contracts and for statistical comparison with the 1970 Census but presumably, like the punch cards for earlier censuses, will lose their usefulness in time.

In the Office of The Adjutant General, U.S. Army, is a computer operation in officer personnel management. The operation is designed to keep information current and all information on tape is backed up by paper. But there is a special case. The AGO has completed on tape an information file on Korean War casualties and is about to complete another on World War II casualties. This data was extracted laboriously from Army command records and placed on punched cards. There is a plan for publication but no money is available at present. Meanwhile, the tapes are being used to service requests for casualty lists of servicemen from various locations in the country. When the information was converted to tape, the cards were scheduled for disposal. The tapes, therefore, constitute this important record which will be needed until the data is published. Should the tapes be destroyed before publication, a long and expensive search in Army Command records would have to be repeated.

The Bureau of the Public Debt in the Treasury Department runs a computer operation on ownership of Series E bonds. Upon purchase of the bond the stub is microfilmed, in sequence of receipt, and the information on it is placed on two tape files, one in alphabetic order, the other in numeric. The alphabetic tape file is becoming too long for the regular runs through the computer. Yet this tape file is the sole index key to the microfilm file which is the long-term record. The Bureau is about to convert to new EDP equipment and hopes to solve this particular problem during conversion. The Bureau sees three alternatives: (1) break off the alphabetic file and retain the tape intact for occasional runs through the computer; (2) break off the tape file and print out everything on it, then microfilm



the print-out (this would mean manual indexing on microfilm); or (3) continue the file in the new system. The new computer will achieve greater density so that the tape file will be shortened, but the problem of extension is only postponed.

The International Cooperation Administration operates on a different basis. Having no equipment of its own, the ICA contracts out the computer work to a private concern. The contractor is required, by the terms of the contract, to retain all monthly transaction tapes indefinitely. This is done to meet the need for unforeseen cross-tabulations. These tapes are the property of the contractor, and it is assumed--although not determined by the contract--that the period of retention will be at least ten years.

THE QUESTION OF RECORD STORAGE ON MAGNETIC TAPE

There are several fundamental obstacles which war against long-term record storage on magnetic tape. Each of these obstacles may in time be overcome with the development of better and more standardized equipment and methods. But for the time being these obstacles seem to determine the answer to the question on whether or not we can replace long-term or permanent records by tape. For the present the answer seems to be that we cannot do so with safety.

Machine Incompatibility

Information on a magnetic tape is utterly unintelligible without the expensive machinery to read it and convert it into some form sensible to the human operator. Beyond this, the equipment must be compatible with the type which was used to produce the tape. And further still, that machine must be programmed as it was originally programmed when the tape was produced. If record information on magnetic tape were transferred to a Federal Records Center or to the National Archives, the information could be retrieved and used only by returning the tape to the creating agency for expensive passage through the computer. Furthermore, if the current trend is viewed, we may depend upon the forecast that the creating agency will change its equipment within ten years, more probably within five. In that event, the tapes which were stored at the records center would all have to be converted during the conversion process, or else they would become totally useless. Machine incompatibility, then, involves two obstacles: incompatibility between machines in current use and between machines now in use and those which will replace them in the future.

It should be pointed out that the so-called COBOL (Common Business Oriented Language) is not a solution to this problem. COBOL is a computer language which uses English words instead of numbers or letter codes to command a machine. It concerns programming, not the means of recording the data.

#### Expense of Machine Time

A second obstacle is the present expense of the machine operation. The whole justification of an EDP operation depends upon a regularized program involving great quantities of data input and output. Machine time is quite expensive. As a rule, departures from the regular system are uneconomical. The reading of noncurrent information on stored magnetic tapes for random or occasional reference purposes would constitute such a departure.

#### Lasting Quality of the Tape

The third and most directly related obstacle to record storage on magnetic tape is the lasting quality of the tape itself. The development of magnetic tape is so recent and the opinions of experts so conflicting as to make determination on this question impossible at this time.

Some of the persons interviewed, notably those with a good deal of operational experience in handling tapes (in Census and BOAST, for instance) believe that, with normal care, the tapes can be depended upon for reliability indefinitely. Others maintain that a serious problem exists in tape unreliability due to plastic flow, tape warpage, and fading of the impulses.

Recently a seminar was conducted at the Pentagon by a research and manufacturing company that specializes in tape cleaning and rewinding equipment. Conclusions were presented based on extensive technical research over a period of five years in reliability of magnetic tape for data storage and shipment. Generally, a rather black picture was painted. There was no indication that the danger lies in fading of the magnetic impulses, rather that the problem lies in the physical quality of the tape itself. The speakers presented a good deal of technical evidence to indicate that, because of present reel construction and inadequate precision in winding equipment, the tape is adversely affected by temperature and humidity changes. The result is a delayed action warpage of the tape surface which will then prevent its passage over the read-write heads of the computer. The problem seems to lie primarily in the conditions encountered during shipment of the tapes from manufacturer to user and from one computer installation to another. Storage itself appears to be less a problem if temperature and humidity are kept reasonably constant and the tape is packaged against dust. It should be noted, however, that the effects of shipment do not develop until sometime later, presumably while in storage. These conditions can be improved, according to speakers at the seminar, by adoption of an improved reel design and by use of an improved winding machine.

Just how difficult it will be to correct these defects is apparently not yet known. The Chief Recording Engineer at the Library of Congress has concluded through his own research that tape is not yet a dependable medium for long-term record storage. (His work concerns sound recordings, but the tape medium is essentially the same.) The National Bureau of

Standards gave no opinion on this matter, but did refer this writer to the seminar just mentioned. For the time being the lasting quality problem seems to argue against long-term storage of tape records.

#### Economy of Other Means

A fourth consideration in the question of records storage on magnetic tape is the economy of other methods. The practices of several agencies in this regard seem impressive. Where huge amounts of data are involved it may not be economical to retain the paper, whether that be the source paper or the print-out. Yet the discussion above suggests that it may not be practicable to retain the tape itself. Several agencies have resolved this problem by the use of microfilm. There are methods now developed by which information can be read from microfilm directly onto magnetic tape (as is done in Census) and from magnetic tape directly onto microfilm (as in BOASI) at relatively high speeds. Both these methods utilize a cathode tube in an operation similar to that of a television screen, and the information on the microfilm is readable on a conventional microfilm reader. When it is determined that information on tape must be retained, such methods might be preferable to retention of the tape.

These factors would seem, in combination, to prohibit any present plans for the long-term storage of record material on magnetic tape rather than in some other form. But the near future will almost certainly see each of these obstacles removed by the development of a technical solution to the problem it poses. Machine incompatibility, for instance, will undoubtedly be solved both by standardization and by development of universal conversion machines. And the same problem from the point of view of random reference might be solved by development of an inexpensive tape reading

machine. The question of the lasting quality of tapes will surely be answered as the problem is first generally recognized, then defined, and finally solved.

For the purpose of this study, no distinction has been made between storage in the National Archives for long-range purposes and storage in a Records Center or elsewhere for future use by the originating agency. In both cases we are concerned with long-term, if not permanent, records retention and use. But the use of tape in an archives for private research is a good deal farther off than is its use for administrative purposes.

THE QUESTION OF RECORDS DISPOSAL AND MAGNETIC TAPE

The second basic question posed by the Federal Records Council concerns the relationship between the erase and re-use technique and disposal by Congressional authority.

To return for a moment to the model described on Page 4, if the original paper or feeder report is retained for whatever are the retention requirements, then it would seem that the tapes which contain merely a duplication of this material in another form need not be reported to the National Archives and the Congress for disposal authority. Yet the real-life examples cited in Part I cast doubt on the proposition that everything on tape is duplication of record material on paper.

In attempting to answer the above question in any given operation, one must take a series of tedious, if not difficult, steps. He must first sort out and distinguish the various tapes, which are often quite numerous; determine which paper records are the source records for the information on the various tapes; establish whether the source records in each case are being kept for the necessary retention time; and finally, determine whether the material on paper is sufficiently accessible in the event of subsequent need. Obviously, it is not within the scope of this study to make these detailed determinations in a host of agency operations. Likewise, the agencies themselves have not generally completed this task.

The problem lies in the understandable gap which exists between the operations personnel and the records management personnel of a given agency. The operations people tend to look forward in terms of what they can achieve rather than to look backward in terms of the trail they leave behind, and they are not concerned with the principles and requirements of records

disposition. On the other hand, the records management people in general have not yet mastered the complexities of the EDP operations. This condition is more or less true in any of the various agencies, and recognition of it should not be taken as criticism. But until the gap is closed the National Archives will find it difficult to make firm judgments on whether or not tape erasure amounts to records disposal in a given case.

In a given EDP operation there is a hierarchy of tapes beginning with the "scratch" and working tapes, running through the various transactions and interim tapes, and coming finally to the master and reporting tapes and the special cases.

Some of the agencies have done notably well in this regard. In the Commodity Stabilization Service a handbook on EDP management includes a section on tape retention procedure. Although the approach in this handbook is not strictly that of the records management officer concerned with records retention and disposal criteria, the handbook represents the most lucid description yet encountered of the various tapes produced in an EDP operation. A records management officer would find it less difficult to sort out and solve the disposal problems with this handbook at his elbow.

In the Navy Department the Marine Corps records management office has issued a records disposition manual which includes a tape retention schedule. In this schedule the various tapes are listed and a determination for re-use or retention is made for each. Of the thirty kinds of tape listed, four are marked for retention. These four tapes are of the "year-end summary" type. It was explained by the records officer that this determination is tentative, awaiting further experience in the operation before final decision is made. It was also explained that, although the tape schedule is a part of the larger Disposition Manual, schedule items covering tapes



were not submitted to the National Archives and the Congress for disposal approval since the disposable tapes were considered non-record working tools.

These two efforts--one by an EDP management analyst, the other by a records officer--represent the most precise efforts encountered and might be used as models by other agencies. (Copies of these schedules are attached in Appendix B.)

Another effort in managing the retention or disposal of tapes has been made through a series of memoranda issued internally by the Bureau of the Census. These memoranda break down the tapes by subject-matter and direct the length of time the tapes are to be retained. A large number of these tapes are to be retained indefinitely. The material on these tapes is the basic statistical detail from which published tabulations are derived. But it does not follow that the publication represents all the detail on the tapes. Presumably, the purpose of retention is strictly for further exploitation of the data by the Bureau, and the tapes would eventually cease to have any value as do the Census punch cards. The contents of the tapes, however, and the extended retention periods--ranging from two or three years to indefinitely--raise the question whether these tapes should be considered record material of the Census program. In short, these memoranda serve to delineate the various tapes but fail to recognize the task of determining record content and disposition.

A number of agencies are aware of the need to study the records retention problem vis-a-vis EDP, but have not published anything on the subject. Other agencies have not yet faced the problem.

We come finally to the questions of what actions the National Archives and Records Service should take (1) to prepare itself for the onslaught of electronic record-keeping, and (2) to resolve the question, in the meantime, of who

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The solution to both problems, insofar as we can solve them today, seems to lie in the development of uniform procedural disposal standards of a character about midway between the Commodity Stabilization Service Handbook and the Marine Corps Disposition Manual cited earlier. The role of NARS in this development should be one of advice, coordination, and dissemination of information.

If NARS can set the stage now by gaining general recognition of the problem and by laying down the ground rules for making judgments, it and other agencies will be better prepared in the future to face the host of problems that must soon come in EDP "records."

APPENDIX A

List of Offices Visited and Persons Interviewed

General Services Administration.

Mr. Charles Wagner, Data Processing Branch,  
Office of the Comptroller.

Mr. Vico Henriques, Data Processing Branch,  
Office of the Comptroller.

Bureau of the Census:

Mr. James McPherson, Statistical Standards Division.

Mr. Robert Drury, Chief, Electronics Systems Division.

Mr. Morris Ramsburg, Records Management Branch.

International Cooperation Administration.

Mr. H. E. Koster, Chief, Electronic Data Systems Staff.

Department of Defense.

Mr. Charles Philips, Director, Data Systems Research  
Staff, Office of the Secretary.

Department of Defense - Army.

Col. J. S. Carpenter, Data Processing Branch, Office  
of The Adjutant General.

Mr. W. A. Smith, Records Management, Office of The  
Adjutant General.

Veterans Administration.

Mr. Martin Carlin, Office Methods Division.

Mr. Louis Varnell, Office Methods Division.

Mr. R. L. Carpenter, Records Management.

Office of the Treasurer of the United States.

Mr. Pete Traver, Check Payment and Reconciliation Division.

Mr. Ed Beck, Check Payment and Reconciliation Division.

Department of Defense - Navy.

Mr. Robert Meehan, Paperwork Management, Navy Management Office.

Miss Lorna Anderson, Paperwork Management, Navy Management Office.

Department of State.

Mr. Frank DiBlasi, Data Processing Systems Staff.

Mr. Clarence Jauchem, formerly with House Sub-committee on Census and Government Statistics and with the GAO.

Department of the Treasury, Bureau of Public Debt.

Mr. Ross Heffelfinger, Deputy Commissioner.

Mr. John Adkins, Operating Procedures Assistant to the Commissioner.

General Accounting Office.

Mr. Ed Mahoney, Accounting and Auditing Policy Staff.

Mr. Paul McClenon, Accounting and Auditing Policy Staff.

Department of Defense - Marine Corps.

Mrs. Louise Joralman, Records Management.

Department of Agriculture, Commodity Stabilization Service.

Mr. Jerome Miles, Operations Analysis Staff.

Bureau of Old Age and Survivors' Insurance, HEW.

Mr. Herman Bye, Management Analysis Staff.

Mr. S. Kreps, Chief, Report Processing Branch.

Mr. Arthur Benner, Records Management.

Non-government Organizations

Documentation, Inc.

Mr. Eugene Miller.

General Kinetics, Inc.

Mr. Walter Anderson.  
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Mr. Robert Gutterman.  
Mr. Robert Egly.

Questions Discussed During Interviews

EDP and Records Management

The purpose of this survey is to gather information in regard to records retention problems in electronic data processing. The survey is a preliminary and non-technical one, approached strictly from the point of view of records management and records disposition. The following questions are offered as guidelines.

1. Which offices of the agency have or use EDP systems involving magnetic tape?
2. What various types of operations are programed in EDP, e.g., payroll, supply, statistics, etc.?
3. What are the various source records from which information is taken for EDP?  
How long are these records retained? Are they subject to disposal schedules?
4. By what method is the information converted to magnetic tape? Is there an intermediate type of record? How long is it retained? Is it subject to disposal schedules?
5. Is the program tape (or program logbook) retained as record material? How long? Subject to disposal schedule?
6. Describe the various input and output tapes which are involved in the EDP operation. To what extent are tapes a reproduction of existing documentation for the sole purpose of ease of manipulation? To what extent are new data created within the EDP system and recorded only on tape?
7. How long are the various tapes retained (transaction tapes, working tapes, master tapes, subsidiary report tapes, etc)? What are the criteria and authority for releasing tapes to be re-used? Are any of the tapes considered record material? Are any tapes subject to disposal schedules?
8. Does tape storage represent a serious problem or is such a problem foreseen? Are tapes ever created or stored at locations other than the EDP site? What problems does this present?

9. What is the life expectancy of magnetic tape? What is the life expectancy of the electronic impulses on the tape? By what means might the data on tape be accidentally lost? What safeguards are being taken?
10. Is it feasible to plan for long-term storage of record information on magnetic tape in lieu of other documents? Is it economical?
11. What are the various types of records resulting from the EDP operation? Do these records contain virtually all the record information developed in the EDP operation in view of the so-called exception reporting principle? How long are these records retained? Are they subject to disposal schedules?
12. If necessary, sketch a diagrammatic flow chart to indicate the various types of records used in the EDP operation.
13. Have you any printed material available on specific applications which may be of use in this survey?

Synopses of Key Interviews

Mr. Charles Wagner, GSA. So far as is known the source paper documents in any GSA electronic data processing operation will be the subject of the legal requirements of retention. Mr. Wagner thinks that magnetic tape will increasingly replace paper as the storage medium. He recognizes safeguarding problems: air conditioning and dust prevention, a copper screen encasing the storage room to exclude electronic static. Care must be taken against dropping the tape which may cause a rearrangement of molecules and distortion of information.

Mr. Vico Henriques, GSA. Member of same branch as Mr. Wagner. Mr. Henriques discussed the tape life problem, stating that General Kinetics, Inc., was now running studies in stresses set up on the tape reel and the tendency of plastic flow, any of which might distort information or reduce the effective life of the tape. He is aware of the disposal question because it may affect the determination of "tape library" procedures, i.e., the storage and periodic release of tapes for erasure and re-use. These procedures are just now being set up.

Dr. James McPherson, Census. The Bureau uses six computers on a statistical application. Record material in the form of microfilm of the population schedules of the decennial census is kept for transfer to the National Archives. Those of other minor censuses are retained only until publication and then disposed of. In the 1960 census the data are transferred from the paper by means of microfilm and FOSDIC to the magnetic tape. The microfilm may then replace paper as the official record. Microfilm for this census consists of about 13,000 rolls, 16 mm, 100 feet long. The data tapes are not kept for longer than needed in the operation itself. Tapes are stored on open storage shelves, no special conditions maintained. There is no discernible effect from magnet, static, or dropping. Real hazard is the human element; losses result most often from neglect in labeling. Dr. McPherson thinks it is uneconomical to plan for long-term record storage on magnetic tape. Microfilm is better.

Mr. Robert Drury, Census. The computer operation at Census is strictly substantive; there is no "housekeeping" work done on the computer. The Bureau undertakes many surveys, the largest being the decennial population survey; others include trade, manufacturing, housing, etc. The paper source document is usually retained at least until the next census, and it is always subject to disposal schedules. Microfilm is now considered an appropriate record for retention in place of the bulky paper records. In regard to magnetic tape, any application utilizes a series of intermediary tapes. These are kept only while useful, then released for re-use. The

basic summary tapes are kept longer. In the 1960 decennial census it is planned to retain the tapes of the individual 25% sample and the ED tapes (Enumerated Districts) at least until after the 1970 census for purposes of doing cross-tabulation contract work for private organizations and finally for census comparison in 1970. These tapes will be about 3000 in number. Tapes are stored on open shelving but in dust-tight containers. Tapes are safe in normal temperatures; no problem arises in temperatures under 140°. The real problem is the human element. The microfilm records will probably go to the Age-Proving Center at Pittsburg, Kansas; a duplicate copy may or may not go to the National Archives.

Mr. Morris Ramsburg, Census. Mr. Ramsburg is the records management officer. The microfilm of the original schedules is not yet on a disposal schedule, but it will be scheduled. He considers that both punch cards and magnetic tapes are non-record and therefore not subject to disposal schedules. However, he handed me a procedural memo which seems to be the equivalent of a disposal schedule. The purpose of this memo is to expedite the release of some data tapes, which are no longer being exploited, for their return to the "bathtub supply," and to distinguish those tapes which should be retained for varying lengths of time. The memo lists various tapes by subject-matter and dictates the length of time each is to be kept. This ranges from 60 days to two or three years to "indefinitely." In effect, then, many of the data tapes (but not all) are being retained for extended periods of time, although the Bureau considers them to be "non-record." The memo mentioned above is included in the appendix to this study.

Col. J. S. Carpenter, AGO, Army. The AGO runs on computer a personnel management operation pertaining to all officers in the Army. The source records are paper documents and punch cards in the field. Data is reported to the AGO by transceiver which produces a duplicate card at the Pentagon. Data is then transferred to tape. The paper documents in the field are the subject of disposal schedules. The various computer programs exist on punch card series at the console desk. These are maintained and frequently amended so long as the particular program is in use, but they are apparently not scheduled. The master tape file is updated daily by a merger of old master with new transactions to produce new master. The old masters are retained for a period of "several days." The master tapes for the last day of each month are retained for a period of three or four months, the quarter-end and year-end tapes are retained for at least a year. Any daily master tape file consists of eleven tapes. Tapes are not on authentic disposal schedules, but the EDP branch has devised a procedural schedule for internal purposes concerning release and re-use. The information is entirely duplicated in the officers' 201 files in the field and at St. Louis.

Total of 2000 tapes in AGO library are kept in sealed plastic containers in air-conditioned operations room. Col. Carpenter considers it not generally feasible to plan for permanent storage



of record material on tape.

Records resulting from the computer operation are a total of about 200 recurring reports, 20 per month, from the officer master and subsidiary tapes. These include strength reports, accession and separation statistics, assignments, etc. Information on the tapes is strictly current, not historical.

There is a special case, however. The AGO has completed on tape an information file on Korean War casualties. This information was laboriously extracted from Army records and placed on punch cards. When the information was converted to tape the cards were scheduled for disposal. The tapes, then, constitute this important record. The advantage of tape is the accessibility of discrete information. The information may someday be published, but this seems indefinite at present. These tapes are kept in locked cabinet in operations room.

Mr. H. E. Koster, DP Staff, ICA. ICA has no equipment itself, but has its work done by a private contractor, presently IBM. Bids are now in from others to negotiate a new contract. The application is one of internal financial reporting. A feasibility study is now underway to determine practicality of utilizing EDP in statistical reporting on world conditions. In the present application vouchers, accounting ledgers, and subsidiary feeder reports from the field are received and the data converted to punch cards in the ICA offices. Punch cards are then sent to contractor who puts data on magnetic tape. The punch cards are returned to ICA. They are presently being retained indefinitely in order to be able to make statistical tabulations, both for internal use and for Congress. The tapes are handled entirely by the contractor. However, the contractor is required, by the terms of the contract, to retain all monthly transaction tapes on an indefinite basis. It is planned that the tapes will replace the punch cards mentioned above for statistical tabulations. Definite retention not determined, but certainly for ten years. It is not known whether these tapes are considered records of the Federal Government. If the EDP operation expands to include the world statistical tabulations, storage of tapes would become a problem.

Mr. Ed Mahoney, GAO. GAO's interest lies in the maintenance of records for the purpose of audit and claims for the periods required by statutes of limitations. So far no concrete problem has arisen in regard to EDP and retention of records for audit. First of all, the user agencies are thus far keeping enough paper records to provide for a thorough audit procedure. Secondly, GAO feels in general that any system setup which satisfies the demands of internal management will also satisfy the audit demands of GAO. The GAO has issued two circular memos on EDP, principally devoted to feasibility but mentioning also the question of record retention. The memos have invited agencies to submit inquiries into these questions, but so

far none has done so. GAO therefore recognizes no immediate tangible problem in records retention. (The circulars mentioned are in Appendix B.)

Mr. Ross Heffelfinger, Public Debt, Treasury. The computer operation is one of recording ownership of Series E bonds, including information on original purchase and eventual retirement of the bond. When a bond is purchased the bond stub is microfilmed in sequence of receipt at a central location. Information from the stub is recorded on two tape files: one in alphabetic order by name of purchaser, the other in numeric order by bond serial number. These files are updated regularly, but since a bond is long-term by nature, the tape record is cumulative in character and the tape files increase in length continually. The microfilm is the permanent record of ownership. The information on any individual's ownership is located at random throughout the microfilm file. The alphabetic tape file is the sole index key to the microfilm. When a bond is retired reconciliation is accomplished by merging retirement transactions tapes with the numeric tape file. The alphabetic file is now becoming prohibitive in length for regular runs through the computer. The Bureau is now considering adoption of new equipment and hopes to solve this particular problem during conversion. The Bureau sees three alternatives: (1) break off the alphabetic file and retain the tape intact for occasional runs through the computer; (2) break off the tape and print out, then microfilm the print-out. Indexing to the permanent file must then be manual, using the microfilm of the print-out; and (3) continue the alphabetic file in the new system. The new computer will achieve greater density which will shorten the length of the file, but only postpone the problem. Bureau will probably adopt the third alternative.

Mr. Pete Traver, Check Payment and Reconciliation, Treasury. Computer operation records payment and reconciliation of all Government checks issued. Recording of check payment is made daily, reconciliation to disbursement lists made once a week. The checks themselves are sent to FRC for 8-year retention. The operation on tape is entirely accomplished upon reconciliation; there is no retention problem relating to tapes. Locator lists are produced in print-out from the reconciliation and sent to the FRC to serve as index to the checks file.

(PART 3)      AUTOMATIC DATA PROCESSING MACHINE MANAGEMENT (2-OA) (PAR. 8)

PART 3.    MAGNETIC TAPE PROCEDURES

8.    OFFICIAL RECORDS.

Magnetic tape shall generally be considered as a media for processing and storing data. The printed records will be the official record for the data.

9.    TAPE RETENTION AND MAINTENANCE.

It is the responsibility of the commodity offices and/or Data Processing Centers to establish tape retention requirements which will insure the ability to process data to completion. It is therefore essential that tape retention requirements be established in written procedures which will permit the reconstruction of data in the event of loss during a computer process. The cost of magnetic tape makes it important to exercise care in establishing periods for data retention which will minimize the number of reels of magnetic tape required. In order to obtain such protection and achieve uniformity in all commodity offices and/or Data Processing Centers, the following principles and standards should be incorporated into your tape handling and library system:

A.    Scratch Tape. A scratch tape is a temporary magnetic tape used by the console operators or tape handlers to facilitate general computer runs such as sort and merge runs. These tapes are, in effect, temporary working tapes with a data life usually equal to one run. These tapes are not under library control but should be tested frequently to insure reading and writing ability.

B.    Record Tape. Record tapes are magnetic tapes containing data and are required to be under firm library control including the return to the library as soon as possible after an operation is completed. Magnetic record tapes resulting from audit or verification of individual program transactions, reflecting data used in the audit or verification and the results of such operations for all transactions requiring correction or adjustment, shall be retained until such transactions have been printed out on final settlement or difference statements or the statements have been produced from another source. Tapes containing detailed data supporting all summary data included in prescribed reports shall be maintained in a manner which will permit complete analysis and reconstruction of the reported data at least for a period of 60 days after submission of

(PAR. 9)      AUTOMATIC DATA PROCESSING MACHINE MANAGEMENT (2-OA) (PART 3)

the prescribed reports. For reports containing cumulative data, this requirement shall apply only to the detailed data representing the net change during the reporting period of each total reflected on the report. Unless the detailed data is being retained in subsidiary accounts or history records which may be used to analyze and reconstruct the reported data, register tapes or other temporary tapes reflecting the detailed data shall be retained for such period. These retention requirements supersede the retention requirements stipulated under each of the following record tape classifications:

1. Raw Data Input Tape. Raw data input tapes are magnetic tapes containing data initially abstracted from source documents and which are being entered into the system for the first time. Conversion is generally from other media such as paper tape or punched cards. If the initial entry is from punched cards, the resulting tape for these purposes is classified as a raw data input tape. Retain until subsequent magnetic tapes which contain the acceptable detailed data have been created and proven to be satisfactory.
2. Working Tape. Working tapes are magnetic tapes containing output data from one run for input into a subsequent run. Basically, these tapes are a means of moving data through the system from the raw data input tape to one or more master record tapes. Retain until third generation tape has been produced (grandfather system).
3. Interim Master Record Tape. Interim master record tapes are magnetic tapes containing either detailed or summary data of the cumulative transaction items involved through the last updating process or the outstanding items or totals representing current status of a record. These tapes become the input to subsequent runs producing new updated interim or final master record tapes. Retain until third generation tape has been produced (grandfather system). After a cumulative final record tape has been produced and proven acceptable or all items have been liquidated from a current status record tape, the preceding two interim record tapes may be blanked.

(PART 3)      AUTOMATIC DATA PROCESSING MACHINE MANAGEMENT (2-OA) (PAR. 9)

4. Final Master Record Tape. Final master record tapes are magnetic tapes containing either detailed or summary data of the cumulative transaction items under a program or account. It is the last master record tape produced. Retain for at least 60 days after release of any final prescribed report reflecting data taken from the tape or which could be taken from the tape. If a final full print-out has been prescribed, also retain until such print-out has been released and approved.

5. Source Printing Data Tape. Source printing data tapes are magnetic tapes containing data extracted from the system for purposes of producing a printing tape without destroying the source tape. Retain until print-out has been released and approved.

6. Printing Tape. Printing tapes are magnetic tapes containing data extracted from the system either directly or through source printing data tapes (without destroying the source tapes) for the purpose of producing required print-outs. Retain until print-out has been released and approved.

7. Program Tape or Program Cards. Program tapes are magnetic tapes containing the sequence of instructions required to accomplish the processing of data or solving a problem and which may be read by the computer. These instructions may be contained on punched cards. A DUPLICATE PROGRAM TAPE OR SET OF CARDS SHALL BE PRODUCED AND MAINTAINED OUTSIDE THE COMPUTER ROOM IN A SAFE FIREPROOF PLACE. As a result of minor program modifications, these tapes or cards will be amended from time to time. A complete record of such amendments should be maintained and identified to each program tape or cards. Periodically, the duplicate program tape or cards should be updated. Retain both tapes or cards until the final completion of the program to which the tape applies. At this time, a print-out of the tape or cards should be made for the final updating of the related run book.

(PAR. 10) AUTOMATIC DATA PROCESSING MACHINE MANAGEMENT (2-OA) (PART 3)

10. LIBRARY MAINTENANCE.

A. Numbering.

1. Reel Numbers. Upon acquisition of a magnetic tape, assign a permanent number to the reel. This number shall be written on a conspicuous place on the tape reel and shall be referred to as the reel number.

2. Tape and Card File Numbers. All inputs and outputs to auxiliary and main frame operations should be assigned file numbers. Normally, such file numbers should relate to the run numbers involved.

B. Tape Library Control. All tape reels except scratch tapes and duplicate program tapes which are otherwise provided for shall be under the control of the tape librarian and shall be stored in the tape library when not in use. The librarian shall charge out the appropriate tape reels to a specific job or run upon receipt of an approved machine processing schedule. As soon as possible after completion of a job or run, tape reels shall be returned to the tape library and the library records updated. In instances where it may be necessary to remove a tape reel from the library other than for processing, a sign-out procedure shall be used indicating the tape reel involved, the reason for its use and the person removing the tape reel. All such tapes shall be returned to the tape library at the end of the day.

C. Records. The tape librarian shall maintain sufficient library records to insure adequate control of all tape reels. From the library records established it should be possible to determine the record content of each tape reel, all of the tape reels in a file, and the date on which tapes are available for reuse. The following tape records are recommended:

1. Tape Reel History. A separate record should be maintained for each tape reel. The reel should be identified by the tape serial number. Indicate the tape length when the tape is received and revise the record whenever tape damage necessitates cutting the tape. Each time the tape is used, the new file number should be entered on this record. Also indicate the date on which the tape may be blanked and made available for re-use.

(PART 3) AUTOMATIC DATA PROCESSING MACHINE MANAGEMENT (2-OA) (PAR. 10)

2. Tape File History. A separate record should be maintained for each tape file. This record should indicate as a minimum the reel number or numbers, if the tape file consists of more than one tape reel, the operations on which the file should be used, the date of creation and the date when it will be available for re-use.

3. Tape Availability History. This record should indicate the tape reels, by number, which are available for re-use.

4. Tape Labels. Every reel of tape except scratch reels should have an external temporary label which indicates at least the file number, reel number, job or run number, date created, blanking date, tape drive number on which the tape was created, and the reel sequence number; for example, reel two of seven.

D. Blanking. The librarian shall prepare, periodically and not less frequently than weekly, a list of tapes available for blanking. Such lists shall be approved by a responsible employee designated by the commodity office director.

E. Tape Inventories. A physical inventory shall be made of all tapes periodically and not less frequently than once each six months.

Excerpts from Records Disposition Manual  
for Marine Corps Activities

6140 RETENTION SCHEDULE FOR MAGNETIC TAPES

1. Inventory Control Point

a. Magnetic tapes used or created in receipt control processing:

(1) Receipt control master tapes:

(a) Those bearing the date of the Stock Status Cutoff.  
Re-use superseded tape after third successive updating and it has been determined that the master inventory updating was successful.

(b) All others.  
Re-use superseded tape after second successive updating.

(2) Receipt control daily action tapes.  
Re-use superseded tape after second successive updating and it has been determined that updating was successful.

(3) Receipt control completed action (daily) tapes.  
Re-use after successful merge with total completed action master tape.

(4) Receipt control total completed action master tapes. (These tapes are used for "Monthly Procurement Status Report.")  
Re-use after completion of subsequent month's "Procurement Status Report."

(5) Receipt control history tapes.  
Re-use superseded tape on or after third successive updating.

(6) Procurement status report tapes.  
Re-use after completion of subsequent month's "Procurement Status Report."

(7) Tapes used in receipt control processing, other than those referred to in paragraph 1a(1) through 1a(6), above.  
Re-use at discretion of the data processing officer.

b. Magnetic tapes created or used in the "Master Inventory Updating and Stock Status Reporting":

(1) Master inventory tapes.  
Re-use superseded tape on or after third successive updating.

(2) Transaction reporting (East and West) tapes.  
Re-use after successful merge and successful updating of "Master Inventory Record."

(3) Transaction reporting (merged) tapes.  
Re-use superseded tape on or after third successive updating.

(4) Stock status report (printer) tapes.  
Re-use after completion of subsequent month's "Stock Status Report."

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- (5) Tapes used in the "Master Inventory Run," other than those referred to in paragraph 1b(1) through 1b(4), above.  
Re-use at the discretion of the data processing officer.

c. Magnetic tapes created or used in the "Monthly Stores Reporting Runs":

- (1) Year-to-date summary tapes.  
Re-use superseded tape after it is determined that subsequent updating was successful.
- (2) Financial transaction code summary reporting (East and West) tapes.  
Re-use superseded tape after it is determined that subsequent updating was successful.
- (3) Stores reporting output (printer) tapes.  
Re-use after it is determined that the print-out was acceptable.
- (4) "Year end" summary tapes.  
Retain.
- (5) Tapes used in "Stores Returns" processing, other than those referred to in paragraph 1c(1) through 1c(4), above.  
Re-use at the discretion of the data processing officer.

d. Stratification program tapes.  
Retain.

2. Supply Centers

a. Magnetic tapes created or used during the daily inventory and stores processing:

- (1) Daily stores detail tapes.  
Re-use 6 months after submission of "Financial Transactions Code Summary Tape" in which stores details were included.
- (2) Daily voucher/invoice tapes.  
Re-use after "Daily Voucher/Invoice Tapes" have been merged into "Monthly Voucher/Invoice Tape."
- (3) Monthly voucher/invoice tapes.  
Re-use after "Monthly Voucher/Invoice Tapes" have been merged into "Semiannual Voucher/Invoice Tapes."
- (4) Semiannual voucher/invoice tapes.  
Re-use after 6 months, provided "print-out" of the data has been made.
- (5) Analysis of materials summary by expenditure classification (NAV-COMPT 870) detail tapes.  
Re-use after completion of subsequent month's NAVCOMPT 870 report.
- (6) Supply Centers' inventory tapes.  
Re-use superseded tape on or after third successive updating.

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b. Magnetic tapes used in periodic reporting of accounting data:

- (1) Weekly stores summary tapes.  
Re-use after submission of subsequent month's "Financial Transaction Code Summary Tape."
- (2) Analysis of materials summary by expenditure classification (NAV-COMPT 870) summary tapes.  
Retain.
- (3) Stores ledger tapes.  
Re-use superseded tape on or after third successive updating.
- (4) Inventory reporting tapes.  
Re-use superseded tape on or after third successive updating.
- (5) Financial Transactions Code summary tapes.  
Retain.
- (6) Tapes created or used during daily or periodic processing, other than those referred to in paragraph 2b(1) through 2b(5), above.  
Re-use at the discretion of the data processing officer.