

The New York State Inventory Project

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FOR statistical background to a discussion of the inventory project of New York State, it will suffice to say that the 42 New York State agencies covered by the inventory had on file in December 1955 over 49,000 record series, of which more than 15,500 exceeded 25 inches (a file drawer) in length. These series consisted of about 1.9 billion documents, extended 213 miles in length, and could fill some 200 standard freight cars. To house them, the State has invested nearly \$6,400,000 in filing equipment and utilizes 880,000 square feet of office and storage space, of which almost 44% is rented at an annual cost of some \$725,000.

Before discussing how this inventory was taken, I should like to review briefly the administrative, legal, and organizational situation that existed at the time. This situation directly affected what was done and to a great degree how the data were gathered.

Under New York State's strong executive budget system, the Governor's right arm in carrying out his duties as the general manager of the State's business is the budget director. Each of our recent Governors has been blessed by having strong, dynamic managers in this position. Paul Appleby, the present budget director, is no exception. Since January 1955 he has spearheaded Governor Harriman's administrative improvement program, in which all State agencies have been participating.

To the numerous duties of the budget director, the 1950 legislature added the responsibility for organizing and directing a record management program for all State agencies. The legislature empowered the director to authorize or require the transfer of non-current records to depositories of his choice and to inquire into the condition, character, amount, and method of keeping State records. This responsibility since 1950 has been delegated to the Administrative Management Unit of the Division of the Budget. Since then,

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an extensive and reasonably effective record disposition program has been in operation, with continuing attention directed toward more effective record management activities on the part of all State agencies. Each agency has a record officer, who in addition to his other duties is responsible for its record management activities.

In this administrative, legal, and organizational setting, the budget director decided to have an inventory taken of all the records of all State agencies as a part of the general government-wide administrative improvement program. Specifically, comprehensive data were desired to enable us to:

1. Identify, locate, and determine the volume of all records created and maintained by State departments and agencies.
2. Identify those major record holdings that were not yet scheduled for disposition or retention.
3. Determine the extent and nature of the State's present and future needs for record storage facilities.
4. Determine the improvements needed to increase the effectiveness of the present record management program.

With these objectives in mind, we in the Management Unit had to decide who should take the inventory, how we should process the data received, what time limits should be established, and what specific data we needed. Let me take up these questions individually, the considerations affecting their solution, and the decisions we made.

WHO SHOULD TAKE THE INVENTORY?

There was already a decentralized organization of agency record officers who could direct and supervise operating personnel. If the inventory was to be taken on a decentralized basis, the existing organizational units of the agencies could be used as control units and the personnel physically engaged in taking the inventory would be those most familiar with the location, nature, identity, and volume of the records being surveyed. The inventory could be finished more quickly by operating personnel than by an agency inventory team, and its costs could be readily absorbed by the use of existing personnel. All these considerations favored the decentralized inventory technique. Opposed to them was the fact that operating personnel would require training in reporting methods and that because of the numerous decentralized locations of State agencies a large number of training sessions would be required. For instance, the Department of Public Works has 10 district offices; the Department of Mental Hygiene, 27 institutions; the Depart-

ment of Correction, 17 institutions; and the Labor Department has literally hundreds of local offices in the fields of employment security, workmen's compensation, labor law enforcement, and labor regulation. As it was believed, however, that the instructional program would not be too expensive and that it could be expedited with regional meetings, the decision was made to decentralize the work and have existing organizational units take their own inventories.

HOW SHOULD WE PROCESS THE DATA RECEIVED?

In reaching a decision on this question, our thinking was greatly influenced by the fact that we had already decided to decentralize the basic work of taking the inventory. This meant that a large number of reports would be received in each agency, and that each agency would have to summarize a great deal of detailed information. If all the detailed reports were merely forwarded to the Administrative Management Unit, there would be a very heavy clerical workload even to record the data; and proper analysis would be limited. Since most of the information received would be in numerical form or could be converted to numerical form with relative ease, since the amount of information assembled would be large, and since a number of correlations would be desirable, it was decided to process the data by means of punchcards. An additional consideration influencing this decision was the fact that the services of the large-scale IBM installations of the Department of Labor and the Department of Taxation and Finance could be made available to our Division on an overtime, extra-service basis.

WHAT TIME LIMITS SHOULD BE ESTABLISHED?

In reaching a decision on this question, we canvassed the record officers of the larger State agencies. We in the Budget Division desired a quick inventory and preferred a 1-month time limitation. The agency record officers reacted variously, suggesting time limits from 1 week to 3 months. Most agreed that it would be highly advantageous to do the job quickly and be done with it. All the agency record officers agreed that, although the inventory could not be taken without inconvenience, the work to be done was necessary; and most of them wanted to have the data for their own information and future planning. With these reactions from those who would have the heaviest responsibilities in the work, it was decided to attempt to take the inventory from November 7 through December 5, 1955, a period of only 17 working days. Although a few stragglers did not complete their reports until December 29, nearly all the agencies completed their work before December 15.

WHAT SPECIFIC DATA DID WE NEED?

To achieve the objectives of the inventory, we needed comprehensive information on the major record holdings of all agencies, a description of the function of each major record series, data on the space and equipment in use or allocated for record storage purposes, and some indication of the rate at which the major series were accumulating. At this point in our planning, we drafted a list of items we thought were needed, desired, and "nice to have." We quickly reduced this list by deleting most of the "nice to have" items and deciding that many of the "desired" items could be "derived" and did not need to be furnished directly.

In the matter of filing equipment, for instance, we first outlined the various types of equipment, which might be reported by size, composition, number of drawers, or similar quantitative indications. But for a rapid inventory, taken by only moderately trained personnel, with the data to be processed mechanically, we decided that there were just too many variations to be noticed. And although some of the information was desirable, it was not absolutely essential. On this item, therefore, we compromised by requiring a report on only the number of file cabinets and the number of file drawers. For the size of the equipment (letter, legal, or card size) we devised a check system.

We decided that we should receive a detailed report on each series longer than 25 inches and that we should have to be content with knowing only the number of series that were less than 25 inches (one standard file drawer). To test the validity of this decision, we spot checked the files of two agencies. Our assumptions were confirmed as practical by these test checks. In making the checks we also found it necessary to make decisions as to what a record series was and what material should not be reported.

We took the definition of State "records" and a "record series" as promulgated by the budget director in issuing the State Records Management Rules in 1950. These definitions were:

1. The term "records" refers to books, papers, maps, photographs, microphotographs, or other documentary materials made, acquired, or received by any State agency.
2. The term "records series" refers to any group of related records which are normally used and filed as a unit and which permit evaluation as a unit for disposition purposes.

It will be noted that in New York State we do not make a distinction between record and nonrecord material. The fact that this

distinction is not made plagued us somewhat in the inventory process. In the inventory we extra-legally eliminated the reporting of directories; books used for technical research; reference catalogs; published reports of Federal, State and local agencies; soil samples; samples of material such as feathers, milk, eggs, paint, concrete, and asphalt on file in our regulatory agencies; occupational therapy materials in paper form; and stocks of publications on hand for distribution purposes. We included, however, pathological slides in our hospitals and blood-test slides in our laboratories. In this area, our hindsight is now much better than our foresight was. Had we known then what we do now, our instructions would have listed specific *do's* and *don't's* as to what to report and what not to report. If you are planning a record inventory, I would caution you to explore thoroughly those items that might be termed records and make up your mind as to those you want reported and those you can do without. When this has been done, issue specific instructions on the items not to be reported. We found the use of the negative approach in this regard most helpful.

As it is necessary to distinguish between the types of space occupied by records in terms of office space and storage space, we made these definitions: Office space we defined as space used primarily by personnel conducting current operations and using current records. Such space, we said, might be partially used for housing inactive records. Storage space we defined as any space not considered office space and used for the storage of inactive records only or as space housing inactive records together with supplies and equipment. These definitions we found to be quite satisfactory, even though technically inaccurate.

Measurements presented problems. We desired record volume data in cubic feet, space occupancy in square feet, and the dimensions of the documents constituting a record series in inches. We wanted microfilm data in linear feet per reel and in millimeters of width. For cut film we wanted the dimensions in inches. In order to simplify, so far as possible, the computation work required of the operating personnel taking the inventory, we asked the inventory personnel only to measure the areas in feet and compute the square footage. To determine the square foot space requirements of filing equipment, plus a 1.8 average allowance for use space, would have required decimal multiplication. As we desired to avoid such calculations, we provided a square foot conversion table for record storage equipment from 9" to 28" in depth and 9" to 48" in width. This table was supplemented by instructions to double the

"actual" occupancy figure to arrive at a square foot figure that would include normal work space. This procedure gave us satisfactory data, and the inventory personnel appraised this method of computation as easy and expedient. Spot checking some 25 to 30 reports for accuracy, we made actual measurements in the field and found our error factor less than 2%.

To ensure accurate data on cubic foot volume, we requested field reports in the common denominator of inches. We computed centrally all cubic-foot information, using IBM equipment. This procedure saved countless hours for the inventory personnel, agency record officers, and the Administrative Management Unit. Our formula was simple. We asked for the dimensions in inches of the commonest type of documents in each series, the length of the series in inches, and the type of space in which the series was located. With these factors punched into an IBM card and the proper programming of the IBM electronic calculating punch, we were able to have in one card for tabulating work the linear inches of each record series of 25 or more inches in length by type of space occupied, the total length of each such series, the total cubic-foot volume of the series, and the accumulation in inches in 1954 (the year just before the inventory year). The electronic calculating punch totaled the linear inches reported, multiplied this figure by the dimensions of the records in the series, and divided this result by 1,728, punching the resultant quotient to two decimal places in the basic card. Since each card had key data on the location and agency in custody of the series, we had available for agency and location summaries the length, volume, and rate of accumulation for each record series 25 or more inches long. By reducing the measurement unit to inches, we simplified our reporting, our processing, and our instructional time requirements. We also simplified our reporting by freeing inventory personnel and agency record officers from the necessity of totaling or cross-totaling entries. In this respect, we could have gone further than we did. But we balanced machine processing time against other processing and editing time and required a minimum of 12 totaling operations, 6 of these operations being the totaling of figures of not more than 2 digits. In only 6 operations were agency employees required to add figures of 3 or more digits. Because of the nature of the data reported, in most instances only 2 totaling operations of figures exceeding 3 digits were actually necessary.

We met some interesting problems in recording the dimensions of records. Since paper records vary so greatly in size, we required

the sizes to be reported to the nearest half-inch, with the half inch reported as .5. Thus, an $8\frac{1}{2}$ " x 11" size was reported as 8.5 x 11.0, a 3" x 5" size was reported as 3.0 x 5.0 and an $8\frac{1}{2}$ " x 14" size was reported as 8.5 x 14.0. We did not, however, properly assess the variability of many of the persons who participated in the survey. For efficient key punching and mechanical processing purposes, recording consistency is essential. We failed to emphasize sufficiently the need for consistency, and thus we caused ourselves considerable unnecessary editing work.

The common IBM punchcard raised problems since the card measures 3.25" x 7.375". Using the nearest half-inch measurement rule the report on this record would read 3.0" x 7.0". On this basis, the computed area would be 21.0 square inches, a figure 12.1% less than the actual size of slightly less than 24 square inches. To avoid compounding error in the large volume of such cards held by the State, we set 3.3" by 7.3" as an arbitrary dimension for IBM cards. This resulted in reducing our error factor to .5%. Our attention was drawn to this item by the fact that in 3 of our agencies we have slightly more than 19 miles of this type of record.

In the matter of film sizes, we decided to use these classes: 8, 16, 35, and 70 mm. and other. The many variations in cut film sizes would otherwise have required us to process a large number of classes. A spot check of the potential volume of this type of record indicated that detailed data on cut film were not necessary. We classed developed photographic prints as paper records, and they were so reported.

At this point let me summarize what our decisions were on the specific data we thought we needed to achieve our objectives. They were:

1. Square foot area figures for the office or storage space allocated or in use for record storage, and information as to whether the space was State-owned or rented.
2. A numerical count of the file cabinets on hand.
3. A numerical count of the file drawers on hand.
4. The length in feet of shelving, both wooden and metal, in use or available for use.
5. The total number of record series on hand in the four basic types of space, State-owned or rented office space and State-owned or rented storage space.
6. The number of record series less than and greater than 25" in length in the four basic types of space.

Specific data were required about those series that were longer than one file drawer. These data included for each series:

1. Name and function.
2. Beginning and ending dates.
3. Dimensions of the documents composing the series.
4. Whether the series was paper or film.
5. Maintenance data by type of space occupied and the normal periods of such occupancy.
6. Whether disposition was or was not scheduled.
7. Length of the series by the four basic types of space.
8. Estimated or actual accumulation during 1954.

FORM DESIGN

We now faced numerous and diverse problems of form design. To provide space for instructional information, to keep the forms simple, to permit easy mechanical processing, to enable us to control the data when submitted, and to keep costs to a minimum, we decided to use two legal-size forms, bearing on their reverse sides instructions for their preparation, and an instructional booklet. The forms were printed; the 8-page booklet was reproduced by offset equipment. In the preparation of the booklet we Varityped the text and supplemented it with freehand sketches, and then had it offset-printed. We needed many forms since we provided for one work copy, one copy for the agency centrally, one copy for the agency unit submitting the data, and one copy for the Division of the Budget for tabulation and analysis. The forms and booklets cost about \$1,600, including paper stock. Before their final clearance dummy copies were photographically reproduced and used for trial runs. At this point I should emphasize the need of field tryouts for any similar type of reports you may supervise or make. We found after our initial trial runs that substantial revisions were necessary. We knew what we needed, but we had failed to give adequate consideration to possible misinterpretations by field personnel. We failed, also, to take into account a variety of field conditions affecting the physical inventory process.

TAKING THE INVENTORY

The "status" of the inventory was established by a letter from the director of the budget to the head of each agency of the executive branch of State government. This letter explained the survey and called the orientation meeting of agency record officers. At this meeting, held in Albany in October 1955, the deputy director of

the budget related the objectives of the inventory to the overall administrative improvement program of the government, and the initial phases of the inventory proper began. The forms were explained, the procedures were outlined, and in a question-and-answer hour general substantive questions having across-the-board application were discussed. Some on-the-spot decisions were made, particularly regarding storage vaults and safes. We decided to consider a safe as equivalent to a file cabinet and vaults as record storage areas with the equipment in them to be inventoried in the same manner as if it were in use elsewhere. Some shortcuts were discussed to the mutual advantage of all agencies, and some agency instructional sessions were scheduled. We regret that we did not insist on an instructional session for each agency. Had we done so, we should have greatly reduced our editing problems.

We had top-level support for our project and used this support in our initial releases. We followed it up in our orientation meeting for agency record officers. In each of our instructional sessions the budget director's letter to the agency head was read as part of our introduction. We found it most effective in securing active cooperation.

On December 5, 1955, our first returns came in and editing began. In all, some 22,000 forms were edited, with an average editing time of 75 forms per hour. To facilitate the process we in the Management Unit arbitrarily corrected obvious errors. Where initial returns indicated common repetitive errors, agency record officers were notified and agreements were reached on the corrective action required. Substantive inaccuracies were returned for agency correction. By January 1, all reports were completed.

In the 6-week period from November 15 to New Year's Day the programing of the tabulations and the IBM cards to be used were planned. The overall report form required the use of 3 cards, and the data on each series longer than 25" required 1 card. In processing the data, however, it was necessary to split the information on equipment in use recorded on card no. 2. Similarly it was necessary to use an additional card in the calculating operation for each record series. Seven different cards were used in processing the data. In the design of the needed cards and in their processing and tabulating, it was fortunate that both John Flandreau, the senior budget examiner (management), who worked with me on the survey, and I myself had had training and experience in both record management and punchcard operations. Despite our knowledge of the subject matter and of processing techniques, we consulted with Harold

Wakefield of the Albany IBM office, who handles the New York State account on card design, punching, processing, and tabulating problems. Mr. Wakefield's technical assistance was most helpful. Should any of you plan to use mechanical punchcard equipment in tabulating similar record data and not be fully familiar with it, I suggest that early in your planning you secure competent technical advice in punchcard processing techniques. Without this assistance you may arrange your report forms and write your procedures in a way that will unnecessarily increase your processing costs.

With the raw data transferred to punchcards and the cards processed into final form for tabulation, we directed our attention to the number and types of tabulations desired. Since the IBM equipment in most State agencies is scheduled to capacity during January and February, we were forced to contract with the Albany service bureau of IBM for our tabulations. Tabulating work done on this basis, although not inordinately expensive, is not cheap. After 10 days of planning and meetings we reached an agreement as to the number and types of tabulations we would purchase. In making these decisions we had to answer these questions:

1. What would be the common comparative factors in our analysis?
2. How much basic information could we secure from any one tabulation?
3. Which tabulations would provide us with "needed" data directly and additional data on a "derived" basis?
4. What tabulations could we combine without losing information?
5. What effective use could we make of the subtotals, intermediate sub-totals, totals, and summary totals possible in each tabulation?

For an out-of-pocket cost of about \$800 we secured the following tabulations:

1. The individual data on each record series more than 25" in length, by agency, by county, by size, by age, and by disposition status. Included in each of these tabulations were cubic-foot volume data, the 1954 acquisition data, and the linear inches on file, by the four basic types of space occupied.
2. Data on square foot space occupancy, by type, by agency, and by county.
3. Data on filing equipment, file drawers, and shelving, by agency, by county, and by type of space occupied.
4. Data on the number of record series, by agency, by county, and by type of space occupied.

On the basis of these tabulations we made our analysis.

In the analysis of the data pertinent facts became immediately evident from the tabulations, and areas requiring further inquiry were highlighted. For instance, the application of recognized space-

occupancy standards indicated a fruitful field for an extensive analysis of space utilization. Comparisons of record volume and record size by agency gave clues to agency recording techniques and problems. Age distributions indicated the "hoarders" and when related to agency programs drew attention to major program operations requiring more detailed analysis. The disposition schedules in effect, in relation to age, highlighted the need for action in some of the older record series. What you will find if you take a similar inventory depends on so many variables that no reasonable predictions can be made. What you draw out of your inventory data is indicative of the carefulness of your planning, your imagination, and your competence.

SUMMARY

In conclusion, let me briefly review the value of the inventory from a management point of view. We and the agency record officers have a tremendous volume of basic information for the analysis of current record problems and for future study. We are now armed with factual material to assess our current program and have indications of areas where immediate improvements can be made.

How much use of these data have we made since April 1956? One major project can be cited. As a result of the inventory data we are now involved in a survey of the paperwork program of the Department of Correction. Substantial savings are in sight for 1957-58 in the area of criminal identification records in 17 State penal institutions. Major revisions are being planned to effect further substantial savings in case-recording practices by 1959. The extent of these savings cannot be readily computed. On the basis of present estimates and current planning, it is possible that they may amount to \$100,000 annually.

To anticipate a question I have frequently been asked by visitors from other countries when the record inventory was discussed, let me give you these personnel facts. In the Administrative Management Unit two full time professional persons worked on this project for 8 months, assisted by an intern-in-training for 5 months. The cost of agency personnel, we believe, is not a reasonable charge since they were doing only what good record management requires.

We in New York found the State record inventory a challenge to our ingenuity. It taxed our patience; it burdened us with work; it provided us with a fund of knowledge for current operations and for future planning; it was fun — and we enjoyed it.