

The Library of Congress
Office of the Inspector General



Library Services:
Rare Book and
Special Collections
Division

*Statistical Measure of the Condition and
Accountability of the RBSC Holdings*

Attestation Report No. 2010-AT-101
August 2010

FOR PUBLIC RELEASE





UNITED STATES GOVERNMENT

LIBRARY OF CONGRESS

Memorandum

Office of the Inspector General

TO: James H. Billington
Librarian of Congress

August 26, 2010

FROM: Karl W. Schornagel
Inspector General

SUBJECT: *Statistical Measure of the Condition and Accountability
of the Rare Book and Special Collections' Holdings*
Attestation No. 2010-AT-101

This transmits our final report summarizing the results of the Office of the Inspector General's attestation on the condition and accountability of the Rare Book and Special Collections' holdings. The executive summary begins on page *i* and our recommendation appears on page 7.

Based on the written comments to the draft report, we consider the recommendation resolved. Please provide, within 30 calendar days, an action plan addressing implementation of the recommendation, including an implementation date, in accordance with LCR 211-6 §11.A.

We appreciate the cooperation and courtesies extended by the Rare Book and Special Collections Division during this project.

cc: Chief of Staff
Associate Librarian for Library Services
Director, Office of Security and Emergency Preparedness

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▶▶ EXECUTIVE SUMMARY

The Rare Book and Special Collections Division (RBSC) has custodial responsibility for more than 800,000 items ranging from the medieval world to modern-day acquisitions. To measure the Library's progress in maintaining and improving its collection controls in RBSC and all of the Library's other special collections, we contracted in 1998 with KPMG, a consulting firm, to develop a methodology for statistically measuring changes in both the condition and accountability (i.e. ability to locate items) of a collection over time.¹ Since then, we have applied this methodology in several of the Library's collections.

This is the first assessment we have performed in the RBSC and establishes the baseline for materials known to be held as of the date of our report. We plan to continue testing in RBSC periodically to confirm the existence of the baseline items and to assess any changes in their condition. While evaluating their condition, we also expanded our testing protocol by noting whether the test items had identification markings, and attempting to locate a random sample of items we chose from the RBSC shelflist (a sequential list of holdings).

Based on our testing, we project that nearly 80 percent of RBSC's collection is in "good" or better condition. In addition, we confirmed that RBSC is complying with the Library's policy for marking rare materials. Markings are important because it may be difficult to prove ownership in their absence. To improve control further, we recommend that RBSC explore the costs and benefits of using high-resolution photography to assist in proving Library ownership of rare materials. Finally, we were able to physically locate one hundred percent of items we randomly chose from the RBSC shelflist.

Management concurred with our recommendation. The full text of management's response is included as appendix E.

¹ KPMG is an international network of member firms offering audit, tax, and advisory services. KPMG consulted with Dr. Francis M. Ponti for advice on the statistical methodology used in this assessment. Dr. Ponti has substantial experience in the federal government as a statistician and has taught statistics at the university level for nearly 50 years. He is currently a Research Professor of Statistics at George Washington University in Washington, DC.

▶▶ BACKGROUND

The Library of Congress (LC) estimates that it possesses over 144 million items in its collections. Some date back centuries, and many are priceless, or have prohibitively high replacement costs. The extraordinary value, size, and, in many cases, cultural and historical significance of items in the collections pose a wide array of risks which the Library must continuously address. The Library has carefully designed and implemented controls to effectively counter risks.

Given its stewardship responsibilities, the Library is continually instituting policy and procedural changes to reduce the risk of loss, theft, or degradation to its collections. To measure the Library's progress in maintaining and improving its controls, we contracted in 1998 with KPMG, a consulting firm, to develop a methodology for statistically assessing the strength of controls safeguarding some of the Library's collections. This methodology was designed to measure changes in both the condition and accountability (i.e. ability to locate items) of a collection over time.

Specifically, the methodology entails selecting a random sample of items requested by and served to readers over a three-month test period. Each item's condition is assessed as excellent, good, fair, or poor. The assessment includes factors such as the extent of discoloration, brittleness, paper folds and tears, insect damage, and ink oxidation (known as foxing). The first year of testing establishes a statistical baseline for future evaluations of the condition of requested items, which are re-examined in subsequent years.

We have applied the methodology twice in the Manuscript Division (August 2002 and March 2005), four times in Prints and Photographs (January 1999, December 2000, August 2002, and March 2005), and once in Geography and Maps (March 2006). Subsequent tests can track changes in condition and availability of items in each tested division. Appendix A lists each of the above cited reports.

The Rare Book and Special Collections Division (RBSC) is a vast treasure trove of over 800,000 items, containing books, broadsides, pamphlets, prints, posters, photographs, and some manuscripts. The entire RBSC collection actually includes over 100 separate collections, such as the personal libraries of

Thomas Jefferson, Harry Houdini, and Woodrow Wilson. It includes many priceless, one-of-a-kind, irreplaceable treasures.

Last year, we conducted an audit of the policies and procedures for protecting collection items managed by the RBSC (*Rare Book and Special Collections' Internal Control Requires Improvements to Reduce the Risk of Internal Losses*, audit report No. 2008-PA-101, issued March 2009). We found that those policies and procedures were well-designed and effectively protecting the collection against outside threats. However, we also identified certain weaknesses in internal control which exposed the collection to internal threats. Since we issued the report for that audit, RBSC has been taking action to respond to our recommendations.

This assessment, along with future evaluations, will allow us to evaluate the effectiveness of RBSC's controls by measuring changes in both condition and accountability of the collection over time. Based on similar statistical analyses we conducted in Manuscript and Prints and Photographs, we concluded that these divisions significantly reduced the exposure of their collections to high risks of loss, theft, or degradation by implementing safeguarding controls and increasing security measures.

►► OBJECTIVES, SCOPE, AND METHODOLOGY

The objectives of our review were to (1) establish a baseline for materials in the RBSC for future audits, (2) assess the condition of a representative sample of items in the RBSC, (3) determine the existence of LC markings² on each of the items in our sample, and (4) evaluate the reliability of the RBSC shelflist. Our scope was limited to those items under the control of RBSC; we excluded from our sample items in the custody of the Interpretive Programs Office or the Preservation Directorate.

To accomplish our objectives, we used the KPMG methodology to sample items RBSC served to researchers. Using a 90 percent confidence level and an expected error rate of less than 5 percent, we determined that we needed to randomly sample 150 items. We drew our sample by randomly selecting 15 business days over a three-month period on which to conduct testing. Our statistical expert consultant, Dr. Ponti, advised us that staggering the sample over a longer period would make our results more reliable.

RBSC reading room personnel assisted us by sequestering all items viewed on the previous day so we could easily isolate the day's test population. To establish the sample population, we counted the number of items requested and served to researchers the previous day and selected 10 items from the sample population (10 items based on evenly distributing the 150 total sample items over the 15 test dates).

We worked with RBSC staff to assess the condition of items using condition assessment guidelines agreed to by RBSC management and the Library's Preservation Directorate. To help us assess changes in the condition of items over time, we took a digital photograph of each of the 150 items we sampled. While evaluating their condition, we also noted whether the test items had identification markings.

² LC markings could include perforations, embossings, stamps, gilded lettering, divisional markings (e.g., Rare Book, Copyright, and Cataloging), and affixed bookplates.

Finally, we traced from inventory records to the shelf, a sample of 109 titles randomly selected from the RBSC shelflist (universe) of approximately 162,700 titles. The RBSC shelflist is a hardcopy card file of all titles acquired and cataloged before the suspension of the card catalog in March 1997. The RBSC shelflist is arranged in universal order³ of the items on the shelves regardless of their separate named collections, (e.g., Susan B. Anthony, Sigmund Freud, Walt Whitman, etc). Separate shelflists for individual collections also exist. Our sample provided 95 percent confidence level with an expected error rate of 1 percent.

We conducted this attestation engagement from November 23, 2009 through April 9, 2010 in accordance with generally accepted government auditing standards and LCR 211-6, *Functions, Authority, and Responsibility of the Inspector General*. Those standards require that we plan and perform the engagement to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our objectives. We believe that the evidence we obtained provides a reasonable basis for our conclusions based on our objectives.

³ Universal order describes a list of all RBSC holdings in call number order, despite the fact that materials are actually shelved by collection in call number order.

▶▶ RESULTS

This is the first assessment we performed in the RBSC to assess the accountability (i.e. ability to locate items over time) and condition of collection materials over time. It establishes the baseline for materials known to be held as

of the date of our report. We plan to continue testing in RBSC periodically to confirm the continued existence of the baseline items and to assess any changes in their condition. While evaluating the baseline items, we noted whether the item had identification markings as detailed in the following sections.

I. Condition of Materials

Based on our sample testing, we project that nearly 80 percent of RBSC’s collection items are in “good” or better condition. Specifically, we conclude with 90 percent confidence that 28 percent (+/- 6 percent margin of error) of the items are in “excellent” condition, and that 51 percent (+/- 7 percent margin of error) are in “good” condition. Table 1 details the criteria we used to assess

Table 1: Condition Assessment	
Excellent	Readable and in pristine or nearly pristine condition. There are no spots but may have a crease or two. There is no fading, mold, insect, water, or light damage. There is no stiffness when opening the book.
Good	Readable, but may have a spot or crease on a page or two. Slight evidence of mold, insect, water, or light damage. A few pages may stick, but very minimally. There is no stiffness when opening the book.
Fair	Readable, but has significant spots, creases, or marginalia (writing in the margins). May have evidence of mold, insect, water, or light damage, but not to the extent that it affects readability. A few pages may be missing or stuck.
Poor	Portions may not be readable. Contains significant spots, creases, fading, mold, insect, water, and/or light damage. Pages may be brittle so that it disintegrates on touch and/or portions are missing. There may be stiffness when opening the book.

the condition. Our condition assessment results are summarized in Table 2 and in detail in Appendix B. Appendix C presents pictures of selected test items chosen to illustrate the conditions we found.

Management Response

Management expressed concern that our report may give the impression that conditions such as foxing, staining, and mold occurred after RBSC acquired the items. In particular, management stated that the mold stains were not due to live mold. Further, management clarified that RBSC plays a critical role in “stabilizing” the condition of materials after their acquisition.

OIG Response

Our assessment established the condition at the time of our fieldwork to use as a baseline (i.e. starting point) to assess condition changes, if any, during future testing. It was not our intent to imply that any poor conditions noted were attributable to RBSC’s handling or storage. Testing for environmental conditions such as live mold or insect infestation was outside the scope of this review.

Management’s concerns about whether a poor condition occurred pre- or post-acquisition illustrate the need to take high-definition pictures whenever RBSC acquires a new rare item. Pictures are valuable in assessing changes in condition as well as proving ownership as we discuss in section II.

II. Markings

We tested our sample of materials to determine if they were properly marked as Library property. See Appendix D for examples of LC markings. Of the 150 items we tested,

- 145 items were books and had ownership markings,
- 4 items were not books, and as such, were unmarked, and
- 1 item was in an exhibit and unavailable for testing.

It is Library policy not to mark non-book items such as sheets within a container, medieval manuscripts, and incunabula (books printed between 1455 and 1501 CE). Additionally, it is a challenge to mark physical objects such as Woodrow Wilson’s Nobel Peace Prize.

RBSC believes that the challenge of marking rare non-book items to aid in proving ownership could be resolved by the use of high resolution photography, such as was used for the vases in the J. Kislak collection.

We cannot project how many of the RBSC population of more than 800,000 items may be unmarked because not all items are books. Nevertheless, markings are important because it may be difficult for the Library to prove

Table 2: Summary of Condition Test Results		
Condition	Result (Percentage)	Margin of Error (Percentage)
Excellent	28.0	6.0
Good	51.3	6.7
Fair	14.7	4.8
Poor	6.0	3.2

ownership of an item with no permanent marking or photo documentation.

Recommendation

We recommend that the RBSC explore the costs and benefits of using high-resolution photography to assist in proving Library ownership of rare materials.

Management Response

Management concurred with our results and recommendation.

III. Test of the RBSC Holdings

Our final test was intended to examine the reliability of the RBSC shelflist and the accuracy of placement of items on the shelf. For this test, we chose a random sample of items from the shelflist, and physically traced each item to the shelf. The RBSC staff successfully located all 109 items in our sample, including one in remote storage.

Given the total population of the RBSC shelflist holdings of approximately 162,700 titles, we commend the RBSC staff for locating all of the items in our sample.

» CONCLUSION

We concluded that most of the RBSC collection items are in “good” or better condition. In addition, RBSC items are properly marked and division staff are ensuring that 1) the catalog record, shelf list record, and call number label are accurate and in agreement, and 2) each item is shelved in the correct shelf location. This helps ensure that items requested by readers will be easily located.

We will follow up on this first assessment of the RBSC in future years with continued reviews.

We believe this statistical assessment together with similar assessments in other Library special collections provides Library management with an added tool to assess and improve its security and preservation efforts.

Major Contributors to This Report:

Nicholas Christopher, Assistant Inspector General for Audits

Patrick Cunningham, Senior Lead Auditor

Cornelia Jones, Auditor

Jennifer Dunbar, Management Analyst

▶▶ APPENDIX A: ASSESSMENTS PERFORMED IN OTHER LIBRARY COLLECTIONS

Prints & Photographs Division, *Statistical Measure of the Effectiveness of Collection Controls* (KPMG), January 1999.

Prints & Photographs Division, *Statistical Measure of the Effectiveness of Collection Controls* (KPMG), December 2000.

Manuscripts Division, *Statistical Measure of the Effectiveness of Collection Controls* (KPMG), August 2002.

Prints & Photographs Division, *Statistical Measure of the Effectiveness of Collection Controls* (KPMG), August 2002.

Manuscript Division, *Assessment of the Accountability and the Condition of the Manuscript Division Collections*, March 2005.

Prints and Photographs Division, *Assessment of the Accountability and the Condition of the Prints and Photographs Division Collections*, March 2005.

Geography and Map Division, *Statistical Assessment of the Accountability and the Condition of the Geography and Map Collections*, March 2006 (Not for Public Release).

►► APPENDIX B: CONDITION OF 150 SAMPLED ITEMS

Condition Assessment of 150 Sampled Items								
Test Day	Date	Total Population*	Percent of Total	Number Sampled	Condition Assessment Per Category			
					Excellent	Good	Fair	Poor
1	12/11/09	23	2	10	5	5		
2	12/15/09	255	25	10		10		
3	12/28/09	99	10	10	4	5	1	
4	01/07/10	15	1	10	2	4	4	
5	01/21/10	111	11	10	3	6		1
6	01/26/10	219	22	10	2	7	1	
7	01/28/10	37	4	10	1	6	3	
8	02/18/10	103	10	10	1	3	4	2
9	02/23/10	17	2	10	8	1	1	
10	02/25/10	22	2	10	4	4	2	
11	03/01/10	29	3	10	2	6		2
12	03/02/10	26	2	10	1	7	1	1
13	03/08/10	25	2	10	3	5	1	1
14	03/10/10	15	1	10	5	1	3	1
15	03/12/10	20	2	10	1	7	1	1
Total		1016	100	150	42	77	22	9
Point Estimate (Percentage)					28.0	51.3	14.7	6.0
* items served to researchers the previous day								

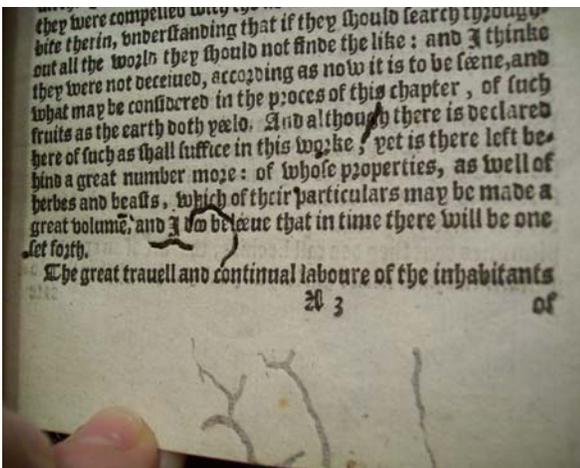
►► APPENDIX C: EXAMPLES OF VARIOUS CONDITIONS



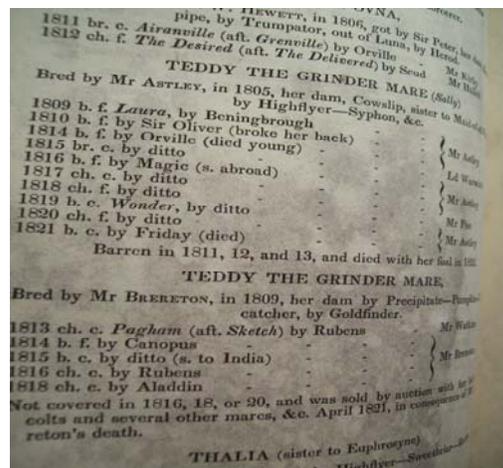
Torn, Discolored, and Mold



Brittle and Stained



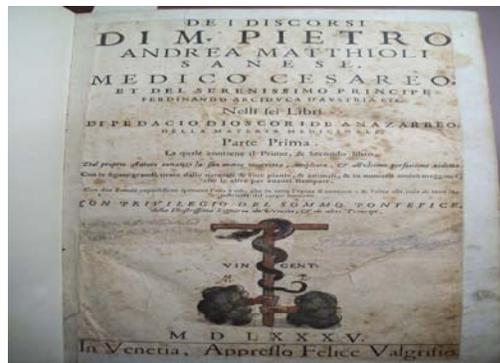
Insect Damage



Mold

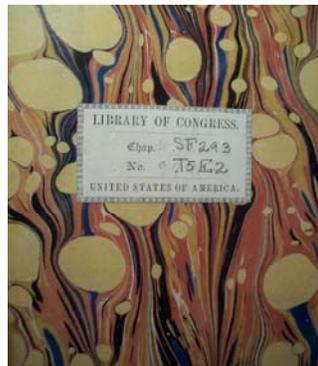
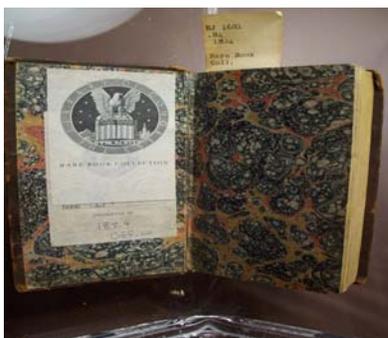
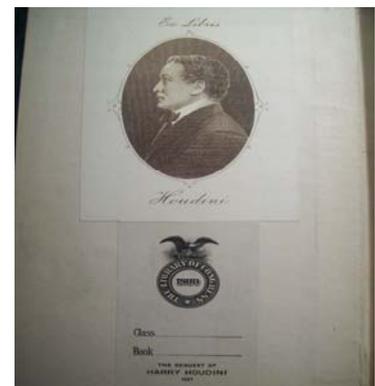
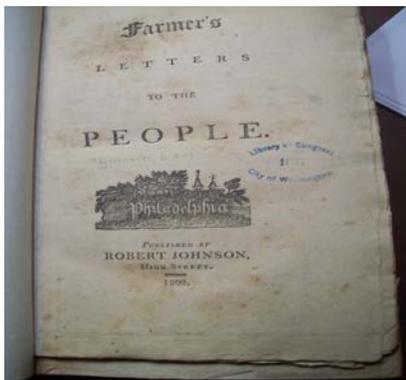
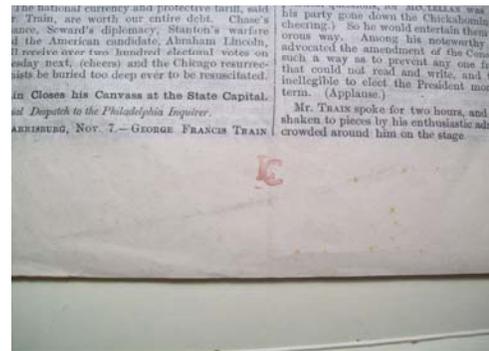
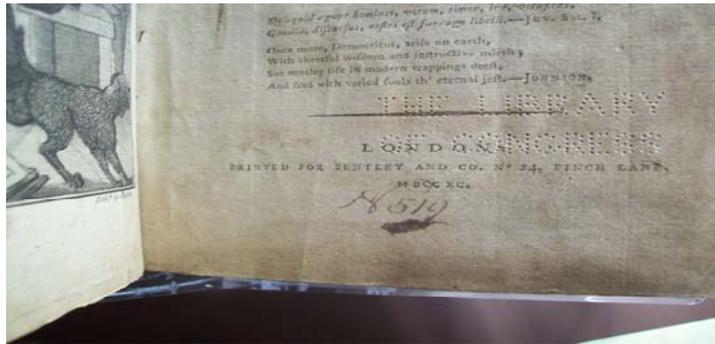
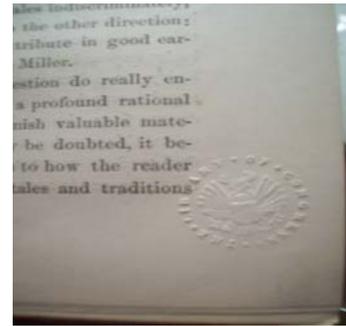
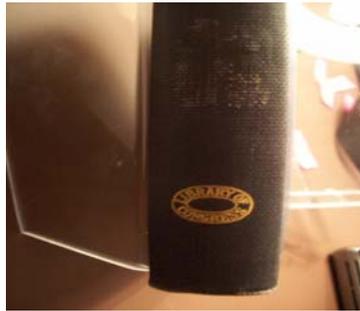


Detached Front Binding Board and Cockling



Foxing and Stained

APPENDIX D: EXAMPLES OF IDENTIFICATION MARKINGS



►► APPENDIX E: MANAGEMENT RESPONSE

UNITED STATES GOVERNMENT
MEMORANDUM

Library of Congress
Library Services

DATE: August 12, 2010

TO: Karl W Schornagel
 Inspector General

FROM: Deanna B. Marcum
 Associate Librarian for Library Services

m. Handy for D. Marcum

SUBJECT: *Statistical Measure of the Condition and Accountability of the Rare Book and Special Collections' Holdings.* Attestation No. 2010-AT-101

Library Services is quite pleased with the outcome of the recent OIG assessment of collection controls in the Rare Book and Special Collections Division. It confirms the success of the Division's efforts over the past decade to vet and improve procedures for storing and retrieving materials. It is especially gratifying to see that the test for inventory control was met with a 100% retrieval of materials.

Library Services agrees with the recommendation that RBSCD explore the costs and benefits of using high-resolution photography as a device to record ownership. The Division has already begun to explore this as a means to capture copy-specific information that can be linked to catalog metadata. It is a reasonable extension of this capability to apply it to the documentation of objects that are otherwise lacking Library ownership markings.

There are a few aspects of the study that beg further elaboration in order to be clear. It should be indicated in the report that it is understood that the condition of the antiquarian materials in the RBSCD collection is a reflection of the vast age and treatment of these materials over centuries of use. Conditions such as staining, foxing, and insect damage predate the objects' arrival in the RBSCD collections. The measure of the condition of materials, then, is a measure of successful stabilization of condition while in the hands of the Library.

References to mold in Appendix C should be clarified to indicate that the stains from previous mold infestation are present, rather than suggesting the presence of live mold.

Calculating the size of the RBSCD shelflist is at best an inexact science. The number presented in the report seems lower than what traditional figures would indicate. It would be helpful if the process for determining the size of the shelflist was revealed.

Thank you for this report. The outcome is most encouraging, and I too share in your commendation of the staff of the Rare Book and Special Collections Division.