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JOINT COMMITTEE ON THE LIBRARY OF CONGRESS

FINAL REPORT TO CONGRESS

ON THE

JOINT RESOLUTION TO ESTABLISH A NATIONAL POLICY ON PERMANENT PAPERS

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LETTER OF TRANSMITTAL

DECEMBER 30, 1995.

TO THE SECRETARY OF THE UNITED STATES SENATE:

Pursuant to the provisions of Public Law 101–423, the Librarian of Congress, the Archivist of the United States, and the Public Printer herewith submit the final report in accordance with section 3 of the Joint Resolution to Establish a National Policy on Permanent Papers.

Respectfully,

JAMES H. BILLINGTON,
The Librarian of Congress.
JOHN W. CARLIN,
Archivist of the United States.
MICHAEL F. DIMARIO,
Public Printer.

EXECUTIVE SUMMARY

This report to Congress is the last of three in which the Librarian of Congress, Archivist of the United States, and the Public Printer summarize the Federal Government's progress on implementing Public Law 101–423. Much has been accomplished since the law was passed in October 1990, particularly during the period 1994 through 1995. Highlights of these achievements, discussed in detail in the following report, include:

Joint Committee on Printing (JCP) specifications developed for 4 new permanent papers and 16 new alkaline papers;

JCP issued *Government Paper Specification Standards (No. 10),* from which the 20 newly specified papers can be procured;

National Archives and Records Administration (NARA) issued *NARA Bulletin No. 95–7,* "Procurement of Writing, Copying, and Printing Papers for Federal Records," which provides guidance to Federal agencies in the use of alkaline and permanent papers;

Library of Congress (LC) continues research to identify new and improved methods for the artificial aging of paper;

Research on the aging of lignin-containing alkaline papers initiated in both the United States (including LC and NARA) and Canada;

New or revised standards for paper permanence issued by the American National Standards Institute (ANSI), the American Society for Testing and Materials (ASTM), and the International Organization for Standards (ISO);

Continued increase in U.S. production of alkaline paper; 99.9 percent of book papers procured through bulk purchase by the Government Printing Office (GPO) in 1995 were alkaline; and

General Services Administration (GSA) provided papers for purchase that match the JCP specifications.

Submission of this report discharges responsibilities assigned to the Librarian of Congress, Archivist of the United States, and the Public Printer, as set forth in Pub. L. 101–423. However, since important work remains to be done, they have agreed to continue monitoring, on an ad hoc basis, progress in the implementation of the Government's permanent paper policy.

INTRODUCTION

Public Law 101–423, A Joint Resolution to Establish a National Policy on Permanent Papers (Section 3), states the following:

> The Librarian of Congress, the Archivist of the United States, and the Public Printer shall jointly monitor the Federal Government's progress in implementing the national policy * * * regarding acid free permanent papers and shall report to the Congress regarding such progress on December 31, 1991, December 31, 1993 and December 31, 1995.

The Librarian of Congress, the Archivist of the United States, and the Public Printer (the monitoring agencies) have been working together to monitor implementation of the law since it was signed by the President on October 12, 1990. In addition, the agencies worked jointly to enhance the general level of knowledge in the Federal Government about the national policy on permanent paper, and to ensure that Federal agencies understand the criteria to be used to determine whether documents have enduring (i.e., long-term) value. This report is the last of three reports to Congress required by Pub. L. 101–423.

PROGRESS IN MONITORING PUB. L. 101–423

Definition of permanence

Pub. L. 101–423 (Appendix 1) recommends the use of "acid free permanent paper" using the specifications established by the Joint Committee on Printing (JCP). For purposes of clarity, this report adheres to the JCP specifications. Thus, an acid free permanent paper is defined to be a fully bleached sheet with a pH of 7.5 or above, an alkaline reserve of 2 percent or more, a minimum MIT folding endurance in either direction of 30 double folds, and a minimum tearing strength in either direction of 25 grams for a 30 lb paper and proportionately higher tearing strengths for heavier papers. This definition matches most closely the first specification for permanent paper, ANSI Z39.48–1984, developed by National Information Standards Organization, which has strong support in the archival and library communities.

Standards and specifications

Federal. When Public Law 101–423 was passed five years ago, the Government had only one specification for permanent paper: JCP A270, uncoated permanent book, white and cream white. With the issuance in July 1994 of the latest version of the *"Government Paper Specification Standards (No. 10),"* the number of permanent papers available for Government use increased from one to five. The four new permanent papers are:

JCP G40, Option A, 25 percent bond, white and colored (with 50 percent recovered material);

JCP G60, Option A, 25 percent opacified bond, white and buff (with 50 percent recovered material);

JCP H30, Option A, imitation parchment, laser-finish, white and colored; and

JCP O–60, Option A, plain copier, xerographic, white, natural and colored.

A number of alkaline papers have been added as option A to many existing specifications. The specification standards advise that option A should be specified if the printed product must have above average permanence. The alkaline option is available in 16 paper grades (Appendix 2). All of these JCP papers available through the Government Printing Office (GPO) and General Services Administration (GSA) are recyclable within the programs Federal agencies now operate.

The monitoring agencies have been working with the GSA to ensure that some of the same papers available to Federal agencies in the Washington, DC area through the GPO will be available nationwide. GSA now offers three permanent papers and two alkaline papers (Table 1).

TABLE 1.—PERMANENT AND ALKALINE PAPERS AVAILABLE FROM GSA

Permanent/alkaline	GSA order number	Description
Permanent	GSA NSN 7530–01–398–2656 [1]	25% bond, white, 20 lb, 8½″×11″.
Permanent	GSA NSN 7530–01–398–2654	Plain copier, xerographic, white, 20 lb, 8½″×11″.
Permanent	GSA NSN 7530–01–398–2655	Plain copier, xerographic, white, 20 lb, 8½″×14″.
Alkaline	GSA NSN 7530–01–398–2652 [1]	Recycled plain copier, xerographic, 20 lb, 8½″×11″.
Alkaline	GSA NSN 7530–01–398–2653 [1]	Recycled plain copier, xerographic, 20 lb, 8½″×14″.

[1] Meets recovered and post consumer materials percentages cited in Executive Order 12873, Federal Acquisition, Recycling, Acquisition, and Waste Prevention.

Private. In the United States, two organizations write consensus standards, specifications, or guidelines for papers that may be used for permanent records and publications intended for long-term retention. They are the National Information Standards Organization (NISO) and the American Society for Testing and Materials (ASTM). Both organizations develop standards or specifications by committees, which then submit them to the organization as a whole for a vote. The National Archives and Records Administration (NARA) and the Library of Congress (LC) are voting members of NISO and ASTM and are also represented on various committees.

NISO develops American National Standards Institute (ANSI) standards, the primary function of which is to disseminate information. NISO published its first standard, "Permanence of Paper for Printed Library Materials," Z39.48–1984, in 1984. The criteria for permanence established in this standard were used as a starting point for the JCP A270 (uncoated permanent book, white and cream white) specification. In 1992, the ANSI standard was revised to include coated papers and expanded to include archives materials. Thus, its new title, "Permanence of Paper for Publications

and Documents in Libraries and Archives," Z39.48–1992. Other changes included dropping the folding endurance requirement and replacing tear resistance with a tear index (Appendix 3).

ASTM develops specifications, guides, and test methods for a wide variety of manufactured products. Its paper standards are written to incorporate requirements within the same standard for papers expected to have different life expectancies. The category "maximum life expectancy," which replaced the category "maximum permanence, high usage," defines the permanence requirements for manifold papers (D3208–94), for bond and ledger papers (D3290–94), and for papers used in office copying machines (D3458–94). These specifications, together with the *"Guide for the Selection of Permanent and Durable Offset and Book Papers," (D5634–94),* comprise the ASTM work on permanent paper.

In the course of revising these ASTM specifications, the question arose whether an alkaline paper might still be considered permanent if it also contained more lignin (a component of wood that is almost completely removed by "traditional" chemical pulping and bleaching) than any of the specifications allowed. Because lignin-containing papers have traditionally been produced by an acidic process, no studies of historic papers exist to which scientists can refer in their search for an answer to that question. Valid methods for determining the potential longevity of alkaline papers with a high lignin content are needed because increasing quantities of these papers are now coming on the market. To facilitate this research, valid and reliable methods of artificial aging must be developed. The Library of Congress Research and Testing Office has been engaged in such research for the past three years, and has recently received support from ASTM to accelerate this effort.

To spearhead this effort, ASTM (under the auspices of their Institute for Standards Research (ISR)) held a workshop in 1994 on the effects of aging on printing and writing papers. From this workshop evolved a series of research proposals pertaining to the development of aging methods using light, pollutants, heat, and humidity; and to the fundamental chemistry of the aging phenomena. The proposed research was estimated to require 3 years and to cost over $2.5 million. Although the research is not yet fully funded, initial work is proceeding on two projects. One is an investigation of the fundamentals of light aging to determine how aging can be accelerated without altering the chemical reactions from those that occur during natural aging. The second is an investigation of the effects of aging in low levels of air pollutants (including nitrogen dioxide, sulfur dioxide, and ozone).

International. The body that develops standards for the international community, the International Organization for Standards (ISO), works closely with NISO. Thus, it is no coincidence that the requirements of the standard, ISO 9706, "Information and Documentation—Paper for Documents—Requirements for Permanence," are similar to those of ANSI standard Z39.48–1992. ISO 9706 differs slightly from ANSI Z39.48–1992 in fiber content (lignin, ground woodpulp, and unbleached pulp) and tear resistance measurement. In 1995, ISO developed a standard for archival papers, ISO/DIS 11108, "Information and Documentation—Archival

Paper—Requirements for Permanence and Durability" (Appendix 3).

A number of countries have developed standards for permanent papers that will probably be replaced by the ISO standard. The most debated of these is undoubtedly the German standard, DIN 6738, which has not met acceptance from either the archival or library communities, even within Germany. Like the United States, the Canadian Government has established a policy on the use of permanent paper. However, in trying to devise specifications for that paper, it met with even stiffer resistance than had NISO, ASTM, or ISO to the requirement that the paper not contain a significant quantity of lignin.

As a result, the Government of Canada, together with the Government of Alberta and a consortium of Canadian pulp and paper manufacturers, joined forces to fund and carry out its own research program on the effect of lignin on paper permanence. This research may supplement the ASTM/ISR program. However, it concentrates on Canadian pulps and does not address the problem of light aging, so cannot supply all the answers.

Guidance to Federal agencies

On September 8, 1995, the National Archives and Records Administration (NARA) issued *NARA Bulletin No. 95–7,* "Procurement of Writing, Copying, and Printing Papers for Federal Records" (Appendix 4). The bulletin advises Federal agencies to procure either permanent or alkaline paper grades when creating all Federal records. Permanent paper is recommended for routine use in offices that create and file a high proportion of long-term and permanent records, whereas alkaline paper is recommended for routine use throughout agencies for all other documents. In keeping with the intent of Executive Order 12873 ("Federal Acquisition, Recycling, and Waste Prevention," October 20, 1993) and Environmental Protection Agency (EPA) guidance, the bulletin also states that any paper is suitable for mass publications. The caveat accompanying this position is that, if the record set of the publication has long-term or permanent value, the official file copy should be printed on alkaline or permanent paper, or should be maintained electronically or on microform.

The NARA bulletin was completed after extensive discussions with records officers, printing officials, GPO, and GSA. NARA representatives met with records officers to discuss drafts of the bulletin in order to ascertain problems that could arise in the agencies upon issuance of this guidance. Representatives also worked with GPO and GSA to ensure that adequate quantities of permanent and alkaline papers, a list of which is attached to the bulletin, were available to agencies for purchase.

Ordinarily, NARA bulletins are distributed to agency heads and records officers only. Since this bulletin has wide-ranging implications for the Government in the printing and procurement field, copies were also distributed to printing and procurement officials as well as to State Governors and records officials.

During the past 2 years, representatives of the monitoring agencies also spoke at conferences, meetings, and training courses on implementation of the Public Law (Appendix 5). The monitoring

agencies perceive that if agencies are to grasp the significance of preserving permanent documents through the use of permanent and alkaline papers, more was needed than mere words in a bulletin. It was important to get out and physically communicate with those Federal officials that will have a major part to play in the implementation of the law.

Information dissemination

Federal. In addition to advising and assisting the Federal community, the monitoring agencies are communicating with all those who have a part in making Pub. L. 101–423 work. In 1994, the Librarian of Congress, Acting Archivist of the United States, and Public Printer sent each State Governor the "Second Report to Congress on the Joint Resolution to Establish a National Policy on Permanent Papers" to acquaint them directly with the law's agenda and encourage their participation (Appendix 6). Recently, the Archivist sent *NARA Bulletin No. 95–7* and information on accessing this and other Federal records guidance via Internet to each State Governor, archivist, and records officer as a model for State and local action.

Efforts of the monitoring agencies have been strengthened by other Federal components in addition to the Joint Committee on Printing (JCP) and GSA mentioned throughout this report. The National Library of Medicine (NLM) sponsored a Permanent Paper Task Force from 1987 to 1991 to advance the use of alkaline-based paper for biomedical literature. When the task force began, only 4 percent of 3,000 journals indexed by NLM were on alkaline paper. This figure rose to 91 percent by April 1995.[1] The Environmental Protection Agency, Department of Agriculture, Department of Defense, Smithsonian Institution, and other Government agencies have participated in meetings concerned with the quality of paper for Federal records, including the September 28, 1994, meeting of the NARA Advisory Committee on Preservation. Also the National Endowment for the Humanities and National Historical Publications and Records Commission, which fund public and private projects in support of our Nation's documentary heritage, mandate the use of permanent and alkaline papers for documentary materials and additionally maximize their longevity by prescribing appropriate storage materials and conditions.

State and local. As noted in the 1993 report to Congress, immediately following the passage of Pub. L. 101–423 several States established legislation and administrative provisions for State and local government use of permanent paper for public records. Following this initial breakthrough, the National Commission on Libraries and Information Science (NCLIS) distributed mailings about Pub. L. 101–423 to each State Governor in 1991, 1992, and 1995. These mailings inquired about States' progress. Results from the first inquiry were published in the *Congressional Record* (July 22, 1991, p. S10550) and have since been reported in both the library and archives professional literature.

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[1] National Library of Medicine, National Library of Medicine Board of Regents, May 23–24, 1995, Tab VIII, NLM Preservation Program: Current Activities and Future Directions [p. 1]. April 1995, Bethesda, MD.

The 1995 survey is continuing and participation has been encouraged by the Archivist of the United States with his letter (previously mentioned). In addition, the Council of State Historical Records Coordinators' upcoming 1996 report on conditions and concerns in State archives and records programs will focus attention on State permanent paper initiatives using information provided by the National Association for Government Archives and Records Administrators (NAGARA).

States that have developed legislation or administrative policy on permanent paper include: Arizona, Colorado, Connecticut, Florida, Illinois, Indiana, Kansas, Kentucky, Massachusetts, Missouri, Montana, Nebraska, New Mexico, North Carolina, Rhode Island, South Dakota, Tennessee, Virginia, Washington, West Virginia, and Wisconsin. Some States are working to establish or strengthen provisions in response to opportunities afforded by a decrease in comparative cost and an increase in the availability of permanent papers. This progress is significant and laudable. However, it remains that over half of the States have yet to establish a permanent paper policy.

Private. The private sector role was pivotal in establishing Pub. L. 101–423 and has continued to be instrumental in its implementation as a partner to the Federal Government. This important relationship was underscored when Senator Claiborne Pell (D–RI) and Congressman Sidney Yates (D–IL) were awarded the American Institute for Conservation of Historic and Artistic Works highest honor, the Forbes Medal, for their many years of distinguished service to the conservation of cultural property, including Senator Pell's sponsorship of Pub. L. 101–423, a sponsorship shared by 48 Congressional legislators.

National and international organizations associated with the information, history, science, and cultural resource community, including the American Library Association (ALA), Association of American Publishers (AAP), Society of American Archivists (SAA), National Association of Government Archives and Records Administrators (NAGARA), International Federation of Library Associations and Institutions (IFLA), and the International Council on Archives (ICA) have issued statements to support Pub. L. 101–423 as well as taking steps to promote it. For example, the American Library Association (ALA) distributes a poster and bookmark fostering permanent paper awareness.

International. Information, be it paper or electronic, is an international enterprise. As discussed elsewhere in this report, many nations have long been active participants in paper quality concerns. Moreover, concurrent with the issuance of Pub. L. 101–423, some have monitored their own progress on permanent paper use for public records and have developed facilitating mandates. In 1990, the Australian Archives, citing Section 5(2) of the 1983 "Archives Act" to ensure preservation of Commonwealth records, issued guidance and a specification for "Permanent Bond Paper for Use in Records." [2]

[2] Australian Archives. "Paper Specification 1990/2: Permanent Bond Paper for Use in Records." May 1, 1990.

In 1992, the Communications Minister of Canada announced that government publications "to be retained for information or historical purposes" should be produced on "alkaline-based permanent paper, rather than continuing to use acid paper."[3] Since then, the National Archives of Canada issued Bulletin 94–02, "Policy on the Use of Permanent Paper." Currently, there is a bill pending before the French National Assembly requiring all government documents to be produced on permanent paper. The introduction to this "Proposition de Loi"[4] begins with the statement that "A nation that loses its cultural heritage loses it soul." Other nations are also making progress. Japan and Hungary, for example, are among countries in which most paper mills have been converted to an alkaline process.

Likewise, the paper manufacturing and printing industry have promoted awareness and utility of permanent paper products and services. For example, the Technical Association of the Pulp and Paper Industry 1994 Papermakers Conference featured more sessions on alkaline paper than ever before. Also, there is a paper mill that now has an "alkaline hotline" to answer questions about their new permanent and alkaline papers. Most callers, who are printers and convertors, receive a free pH testing pen and brochure with tips on using alkaline papers.

Within the last 5 years, well over 100 articles on permanent and alkaline papers have appeared in national publications. The New York Times, Scientific American and many other well-known periodicals have educated the public at large while professional publications such as the Commission on Preservation and Access Newsletter, Alkaline Paper Advocate, and Instant & Small Commercial Printer have been a conduit among specialists. Grassroots interest has been vigorous as well. Local newspapers, community libraries, and historical societies have not only written about permanent paper as a global issue, but have also helped citizens learn how to purchase such papers for their own family documents.

Government Printing Office statistics

In recent years the demand by Government publishers and librarians for a more "permanent" paper has increased. As has been noted previously, long-lasting paper is associated with the alkaline papermaking process.

Procured printing. For fiscal years 1994 and 1995, the alkalinity of the paper stocks used in approximately 2,500 commercially procured printing jobs was monitored by GPO. These papers were tested for pH value and alkaline reserve content. Samples of these commercially procured printing jobs were selected by GPO's Quality Assurance Section and represented all work at quality levels 1 and 2, and 10 percent at quality levels 3 and 4 (level 1 being the highest reproduction quality and level 4 the lowest). The inspection samples represent a fraction of the more than 200,000 jobs purchased by the GPO annually. This testing will continue.

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[3] Communications Canada. "Government to print publications on permanent paper," January 15, 1992.

[4] National Assembly of France. Proposed law concerning the protection of government documents. No. 1607. October 4, 1994. (Distributed November 7, 1994.)

TABLE 2A.—UNCOATED PAPER IN PROCURED PRINTING, FY 1994

Papers	Acidic		Alkaline		Totals	
	Number	Percent	Number	Percent	Number	Percent
Miscellaneous	26	34	51	66	77	100
A60	52	23	173	77	225	100
A61	0	0	9	100	9	100
A80	9	25	27	75	36	100
D10	4	17	20	83	24	100
H10	16	62	10	38	26	100
H20	5	71	2	29	7	100
K10	20	77	6	23	26	100
L20	8	47	9	53	17	100
Subtotal	140	31	307	69	447	100

Tables 2A through 3B illustrate the findings for FY 1994 and 1995 with high usage text and cover grades separated out. Of interest, over 90 percent of all coated papers monitored were alkaline. Tables 2B and 3B show more data for coated paper grades because quality level 1 and 2 jobs are typically produced on coated papers. A high percentage of these were alkaline papers. The majority of government publications are actually produced on uncoated JCP A60 offset book text paper that usually has JCP K10 (index) or L20 (vellum-finish) cover paper.

TABLE 2B.—COATED PAPER IN PROCURED PRINTING, FY 1994

Papers	Acidic		Alkaline		Totals	
	Number	Percent	Number	Percent	Number	Percent
Miscellaneous	22	32	46	68	68	100
A170	9	31	20	69	29	100
A180	8	6	118	94	126	100
A181	0	0	25	100	25	100
A182	1	1	84	99	85	100
A240	1	1	91	99	92	100
A260	1	2	41	98	42	100
A261	0	0	17	100	17	100
A262	0	0	42	100	42	100
L10	3	5	62	95	65	100
L11	1	2	44	98	45	100
L12	3	7	39	93	42	100
Subtotal	49	7	629	93	678	100
Total (Tables 2A and 2B)	.....	.....	.....	.....	1,125	.....

TABLE 3A.—UNCOATED PAPER IN PROCURED PRINTING, FY 1995

Papers	Acidic		Alkaline		Totals	
	Number	Percent	Number	Percent	Number	Percent
Miscellaneous	41	36	74	64	115	98
A60	32	11	258	89	290	100
A61	0	0	3	100	3	100
A80	2	5	38	95	40	100
D10	8	42	11	58	19	100
H10	5	33	10	67	15	100
H20	4	22	14	78	18	100
K10	19	73	7	27	26	100
L20	5	33	10	67	15	100
Subtotal	116	21	425	79	541	100

TABLE 3B.—COATED PAPER IN PROCURED PRINTING, FY 1995

Papers	Acidic		Alkaline		Totals	
	Number	Percent	Number	Percent	Number	Percent
Miscellaneous	20	22	69	78	89	100
A170	4	12	29	88	33	100
A180	3	2	130	98	133	100
A181	0	0	38	100	38	100
A182	2	3	68	97	70	100
A240	0	0	102	100	102	100
A260	1	1	95	99	96	100
A261	0	0	60	100	60	100
A262	0	0	45	100	45	100
L10	3	4	77	96	80	100
L11	1	3	35	97	36	100
L12	0	0	35	100	35	100
Subtotal	34	4	783	96	817	100
Total (Tables 3A and 3B)	.....	.....	.....	.....	1,358	.....

TABLE 4.—COMPARISON OF ALKALINE PAPER PURCHASED [1] IN FY 1994 AND FY 1995

Papers	Percent		Percentage points difference
	1994	1995	
Uncoated, overall	69	79	10
A60 offset book	77	89	12
A80 opacified offset book	75	95	20
D10 writing	84	58	[2] −26
K10 index	23	27	4
L20 vellum-finish cover	53	67	14
Coated, overall	93	96	3
A170 publication-grade, gloss coated text	69	88	19
A180 gloss coated text	94	98	4
L10 litho coated cover	95	96	1

[1] For stocking in GPO, direct shipments, open market purchases, etc.
[2] This figure is affected by the amount of colored paper purchased per year because many colors can only be produced in an acidic papermaking process.

Over 75 percent of the uncoated text paper represented by A60, A61, A80 in tables 2A and 3A and over 90 percent of the coated paper in tables 2B and 3B (except the miscellaneous and A170) were alkaline. Both uncoated and coated papers showed an increase in the percentage of alkaline stocks used from FY 1994 to 1995. Selected grades are listed in Table 4.

Bulk purchases. In GPO's bulk purchases, the amount of alkaline paper received was unaffected by EPA requirements that the paper contain recycled fibers (50 percent wastepaper with 20 percent postconsumer (PC) fiber content in FY 1994, or simply 20 percent postconsumer fiber in FY 1995). In all JCP specifications requiring a PC fiber content or that has a minimum of 25 percent cotton fiber content, the specification requires a minimum pH of 6.5. This requirement has not proven to be a problem thus far for any of the suppliers whose paper is being procured in the quarterly bulk purchases. For the GPO's quarterly procurement of book papers for stocking in GPO (measured in tons), 87 percent were alkaline in FY 1994 and almost all (99.9 percent) were alkaline in FY 1995. Even though GPO did not specify that the paper must be alkaline, nearly all of the book papers received (JCP A25, A55, A60, and A80) were alkaline.

Of the bulk purchase of office papers, all of the 25 percent and 50 percent cotton cut-size bond/writing papers (JCP G-series papers) purchased were alkaline in the current year. All the bulk purchased recycled (20 percent PC) copier paper (JCP O–65 paper) were alkaline. Colored JCP O–60 copier paper was about 50 percent alkaline and 50 percent acidic.

There were only a few grades of acidic paper. One was a map paper grade (JCP E40, GPO Lot 94) which was specified to be acidic for the purpose of improving the sheet's ink drying characteristics. Often, colored index (JCP K10) and vellum-finish cover (JCP L20) stocks are also acidic so some of the colors desired by the customer can be attained. Alkaline papers are available for index and cover stock, but in fewer colors.

OBSERVATIONS/RELEVANT FINDINGS

Environmental issues

During the 5-year period covered by Pub. L. 101–423, a number of pertinent events have occurred. First, the trend has continued in the paper industry to convert mills from acid to alkaline papermaking. This conversion can be attributed primarily to EPA regulations 40 CFR 430—"Pulp, Paper, and Paperboard Point Source Category" that govern the amount and kinds of effluent that paper mills can discharge.[5] Once conversion was underway, the lower cost of raw materials for alkaline papermaking made the change a profitable one.

A second development within the monitoring period was the issuance of Executive Order 12873, "Federal Acquisition, Recycling, and Waste Prevention." This order followed a number of earlier EPA regulations, the most significant of which was the "Guideline for Federal Procurement of Paper and Paper Products Containing Recovered Materials" that was published in the *Federal Register* (Vol. 53, No. 120) on June 22, 1988. EO 12873 addresses recycling in general and places some very specific requirements on Government purchasers of paper. Section 504 sets minimum content

[5] Proposed improvements to these regulations appear in the Federal Register, V. 58, No. 241 (December 17, 1993), under authority of sections 301, 304, 306–308, and 501 of the Clean Water Act and 33 U.S.C. sections 1311, 1314, 1316, 1317, and 1361. The proposal identifies and describes previous studies and guidance that helped to propel mill conversion.

standards for postconsumer recovered materials in printing and writing papers, with a 20 percent requirement as of December 31, 1994, and 30 percent as of December 31, 1998 (for most of these papers), which have been incorporated as a basic requirement in *Government Paper Specification Standards (No. 10).*

Section 505 directs agencies to revise or eliminate sections of standards or specifications that contain brightness or other specific pulp requirements if these requirements are not needed for a particular grade of paper to be functional. These two requirements appear to conflict with the policy set out in Pub. L. 101–423. However, the Federal Environmental Executive in a July 19, 1994, letter to the Director of the New York Public Library (Appendix 7) stated that all agency environmental executives would be notified that "the requirements for use of recycled paper are not to conflict in any way with the concurrent requirement for permanent paper use." Thus, provided that the requirements for permanent paper are met, any amount of postconsumer recovered material can be incorporated.

The purpose of section 505 is to eliminate unnecessary requirements for paper that result in the production of harmful byproducts such as dioxins. Dioxin is of particular concern because it has been shown to be a byproduct of papermaking when pulp is bleached with elemental chlorine (chlorine gas). For those not versed in industry technology or recent research, section 505 might appear to eliminate the purchase of bleached paper. This interpretation is erroneous for two reasons.

First, in the absence of research that provides other options, fully bleached pulp is a necessary component of permanent paper at this time. Bleaching removes the lignin from the pulp, which is necessary for permanence because lignin-containing papers have been shown to darken with age and light exposure. Librarians, archivists, and records managers are concerned that such discoloration could impede future reformatting procedures. Thus, the requirement that permanent paper be fully bleached cannot be eliminated because it is directly related to its long-term performance.

Second, the paper industry is gradually using more elemental chlorine-free (ECF) bleaching, with the result that the dioxin levels in fish near pulp and paper mills have been dropping.[6] Data show that by the end of 1994 ECF and TCF (totally chlorine-free) bleached pulps comprised about 54 percent of the bleached pulp produced. Of that 54 percent, 85 percent (about 20 million tons) was ECF pulp. However, when pulp is ECF bleached, the process is not totally free of chlorine. Most manufacturers are using chlorine dioxide instead of elemental chlorine. Despite this continued presence of chlorine, the dioxin levels decline. This leads many U.S. producers to question the need to go "totally chorine-free." Another factor in their reluctance is the cost. Currently, virtually all TCF production is in Europe. The one U.S. producer, Louisiana Pacific at Samoa, California, has met with weak demand for its pulp. For

[6] McDonough, T.J., "Proceedings of the Fourth China Paper Technical Conference," TAPPI PRESS, Atlanta. 1995.

this reason, North American producers believe that the market is unwilling to pay more for TCF pulps.[7]

The effect of recycling on paper performance and longevity was the topic of the September 28, 1994, meeting of the NARA Advisory Committee on Preservation. The meeting included representatives from several Federal agencies as well as standards and testing professional organizations, librarians, paper manufacturers and associations, and other interested organizations. Most representatives agreed that it is possible to produce paper that contains postconsumer waste while satisfying permanent paper specifications; however, it will not be easy or inexpensive. The postconsumer wastepaper supply eventually will contain paper that has been previously recycled perhaps for the third or fourth time. Several participants predicted that after a period of time recycled paper containing postconsumer waste will fail the strength requirements for permanent paper.

Three manufacturing practices contribute to the weakness of recycled paper containing postconsumer waste: (1) repulping paper fibers reduces the length of fibers and thus decreases the strength of paper; (2) drying and rewetting pulp for re-shipment between recyclers and manufacturers reduces bonding strength among fibers; and (3) removing groundwood and lignin exacerbates the reduction of fiber and bonding strength even further. A change of these practices may help manufacturers produce more long lasting paper containing a high proportion of recycled fiber content, but the consumer must tolerate a less bright sheet of paper and a degree of eventual yellowing. As discussed elsewhere in this report, the American Society for Testing and Materials and the paper research institutions of Canada are researching these concerns.

During 1994, a paper made by an alkaline process, but containing a high percentage of groundwood, entered the Federal marketplace. This grayish paper, natural shade recycled plain copier xerographic paper (JCP O–70), was being used widely in copiers and laser printers, and, as a result, it was used to create some permanent records. Concern was first expressed about the paper in a "Meeting on Groundwood Paper in Federal Offices," sponsored by the Office of the Federal Environmental Executive on October 11, 1994.

The meeting discussed primarily how JCP O–70 would recycle when entering the waste stream (a topic outside the scope of this report), but concerns regarding the longevity of this paper were raised. In direct answer to these concerns, the USDA Forest Products Laboratory presented results of research done on this paper. They studied the optical and physical properties of three different paper mixes which they recycled.

The control mix was a fully-bleached paper which contained 50 percent recycled content, of which 10 percent was postconsumer fiber. The second paper was the grayish paper under discussion at the meeting, which had 100 percent recycled content, of which 50 percent was postconsumer fiber. The third was a 50/50 mixture of these two papers. The 50/50 mixture was studied to demonstrate

[7] McDonough, T.J., "Tappi Journal." 78(3), 55(1995).

what would happen when the higher percentage postconsumer fiber content became mixed with the white office paper and recycled.

This study showed, as might be expected, that the strength properties of the 50/50 mix paper were midway between those of the two papers from which it was made. However, the optical properties of the mixed paper were much closer to, not midway between, the properties of the 50 percent postconsumer fiber paper. Thus, they concluded that the introduction of a higher percentage postconsumer fiber paper into a recycling mix would "degrade both the physical strength and brightness of the final product."[8] This could be overcome, of course, by adding stronger fiber, and additional bleaching steps, both of which appear counter to the intended purposes of the Executive Order.

Continuing changes in technology

Although the trend towards elemental chlorine-free (ECF) bleaching poses no problems to the production of permanent paper, other new technologies may. Driven by the rising cost of pulp, manufacturers are looking towards thermomechanical and chemithermomechanical pulping processes to increase yield and lower costs. At least for the short term, these new pulping processes pose a threat to the legibility of books and documents because much of the original lignin remains in the pulp, even after bleaching. The lignin causes the resulting papers to darken upon artificial aging by light or heat. Such discoloration is unacceptable in a paper used for printing or writing that is to be retained indefinitely.

With this knowledge, manufacturers of these pulps are researching additives that will prevent the pulps from darkening. This work is still in the research stage, but no doubt in the next few years chemicals will be found which, when added to these pulps, retard the color change. Some of the compounds currently under investigation are sulfur-containing, which could pose a problem to photographic records. The presence of increased amounts of reducible sulfur are excluded by some box and board specifications, but are not currently addressed in the existing specifications for permanent paper.

Cost issues

For the 10-month period October 1994 to July 1995, the monthly producer price indices issued by the Bureau of Labor Statistics (BLS) recorded a rapid rise in the cost of all printing and fine writing paper grades. In the aggregate, costs of these paper grades increased an average of 27 percent (from a 17 percent increase for vellum-finish cover paper to a 35 percent increase for offset book paper). These price increases, coupled with the elimination of discounts from retail suppliers, created actual price increases of up to 80 percent for many Government printers. These have been reflected in bids received by the GPO in response to its solicitations for printing and binding. Financial forecasts predict that paper prices will continue their upward spiral for the immediate future.

[8] "A Comparison of Upcycled and Recycled Paper," S. Abubaker and K. Cropsey presented at USDA Forest Products Laboratory, Madison, WI, "Meeting on Groundwood Paper in Federal Offices."

Both prior to and since enactment of Pub. L. 101–423 in October 1990, a challenge to its full implementation has been encountered because of the high cost of paper that meets the specifications of JCP A270 (uncoated permanent book)—the only permanent paper available through GPO prior to *Government Paper Specification Standards (No. 10).* Federal consumers argued that it could not be used as the prime paper for documents of enduring value because its high cost made it economically unfeasible, particularly if multiple copies were required. During consideration of the legislation, the cost of JCP A270 was estimated to be 30 percent above that of offset book paper (JCP A60), the predominant paper used in Government printing, regardless of whether JCP A60 was manufactured by an acidic or an alkaline process. In fact, investigation of GPO paper catalog prices of the time reveals that, for the quarter February through April 1989, A270 was 187 percent more expensive than A60. Also, in 1989, 100% Antique book was used as A270 is today and was furnished to the Supreme Court only. Despite the general rise in paper prices during 1994 and 1995, the price differential between A270 and A60 had narrowed somewhat. The prices that GPO charged agencies during the first three quarters of 1995 are shown in Table 5.

TABLE 5.—PRICES CHARGED FOR A270 AND A60

1995	Price/lb		Percent difference
	A270	A60	
January–March	$0.591	$0.627	–5.74
April–June	.749	.684	9.5
July–September	.749	.607	23.39

Many factors have contributed to the rapid rise in paper prices since October 1994. The primary cause of uneven price escalation across the entire spectrum of paper grades is attributable to the marketplace dynamic of supply and demand. The fluctuation in price differential evidenced above suggests that the use of A270 for documents of enduring value in other than small quantities would still be prohibitive. However, the same cannot be suggested for the other JCP permanent papers since no historical data are available. Experience suggests that a large increase in demand for A270 and other permanent papers would ensure that the price differential would widen. Initially this might be the case because the papermaking industry would be building its manufacturing capacity to satisfy the demand, and thereafter because total manufacturing capability of the industry is at near capacity. Based on these economic factors, the monitoring agencies reaffirm their recommendation that, as stated in NARA Bulletin 95–7:

> Federal agencies are advised to procure either permanent or alkaline paper grades when creating all Federal records. Permanent paper is recommended for routine use in offices that create and file a high proportion of long-term and permanent records, whereas alkaline paper is recommended for routine use throughout agencies for all other documents.

This is in keeping with the intent of Executive Order 12873 ("Federal Acquisition, Recycling, and Waste Prevention," October 20, 1993) and Environmental Protection Agency (EPA) guidance. The bulletin also states that any paper is suitable for mass production as long as a record copy is produced on permanent or alkaline paper, microform, or electronic medium.

Availability and use

Procurement of blank paper. Unless otherwise authorized by the Joint Committee on Printing, Federal agencies in the Washington metropolitan area are required to procure blank papers from the U.S. Government Printing Office (44 U.S.C. 1121). Federal offices outside Washington should procure papers through the Federal Supply Service of GSA or may also purchase them from GPO. *NARA Bulletin 95–7* lists papers available from these sources.

However, not all papers used for Government records are obtained through printing and procurement officials who would, as a normal policy, procure paper from GPO or GSA. Now, with the increasing availability of Government credit cards, purchase at local retail office supply stores for paper and other office products is becoming more and more common.

Most paper suppliers do not, as a common practice, label their paper products. Thus, the consumer cannot identify them as alkaline, permanent, or acidic. Therefore, when Federal employees procure paper from sources other than GPO or GSA, in most cases they do not know the degree of permanence of the paper they are procuring. The monitoring agencies propose to continue working with JCP, GSA, and paper suppliers to develop common labeling practices, and to encourage GSA to continue their marketing efforts to promote procurement of paper through GSA's Federal Supply Service.

SF–1 and decentralized printing. Sections 501 and 502, title 44, U.S.C., state that:

> All printing, binding, and blank-book work for Congress, the Executive Office, the Judiciary, other than the Supreme Court of the United States, and every executive department, independent office and establishment of the Government, shall be done at the Government Printing Office * * * unless approved by the Joint Committee on Printing.

Since a large amount of printing service is obtained through GPO, Standard Form 1, GPO Requisition for Printing and Binding, will include blocks indicating alkaline or permanent paper requirements when next revised. Once an agency indicates permanent or alkaline paper on the printing requisition, GPO or their contractors must comply with the request. These proposed changes to the form are relatively straightforward and will be easy to implement now that agency officials are making informed choices regarding permanent and alkaline papers. However, future monitoring of Pub. L. 101–423 will be difficult, if not impossible, if agencies are permitted to determine for themselves where they will procure their printing services and their blank paper.

Use of appropriate paper in agencies. According to 44 U.S.C. 2904, 3102, and 3301 and 36 CFR 1228.12, Federal agencies shall have approved records disposition schedules covering all records. These schedules identify permanent and temporary records created by the agency. NARA statistics indicate that 3 percent to 5 percent of the records created by an agency are permanent. The majority of permanent records are created within a few distinct agency offices, usually policy-making offices. Because it is sometimes difficult at the time of creation to determine whether a document is permanent or temporary, the *NARA Bulletin 95–7* recommends that permanent paper should be used routinely in offices that create a large majority of permanent records. Other offices should use alkaline papers as a normal practice. Permanent papers will last for several hundred years under normal conditions of storage and use and alkaline paper will last at least 100 years. These time frames are much longer than those associated with the longevity of acidic papers.

This recommendation may appear contrary to that made in the second report to Congress. In 1993, when the second report was written, the extreme cost differences between alkaline and permanent papers, and the limited availability of permanent papers, led the monitoring agencies to endorse the use of alkaline paper for all records as an interim step to the Government's permanent paper policy. Two years later, the situation has changed. Although the price of all papers has risen dramatically, currently the difference in price between permanent and alkaline papers has narrowed. However, this trend is not likely to continue.

This is the principal reason why the Federal community is encouraged to use alkaline papers except for those offices that create a large proportion of permanent or long-term records. NARA's Office of Records Administration will continue to work with agency records officers to assist them in identifying offices that should stock permanent papers on a routine basis.

CONCLUSION

With this report, the Librarian of Congress, Archivist of the United States, and the Public Printer have completed their mandate to monitor the progress of the Federal Government in implementing Pub. L. 101–423 and to report such progress to the Congress. As this report shows, the establishment by the Congress of a policy on the use of permanent paper for Federal records of long-term value has had an important and far-reaching impact.

When Senator Claiborne Pell (D–RI) brought S.J. Res. 57—A National Policy on Permanent Paper—to a vote in 1990, he stated, "* * * this resolution reflects a growing concern about the impending loss of an enormous volume of our historical, cultural, and scientific records because of the self-destruction of the acidic papers in which books and other publications have been printed since the mid-nineteenth century." He emphasized the fundamental importance of a public policy on permanent paper and said, "Every book produced on acid free paper today reduces the total number of volumes requiring deacidification, and frees up preservation resources which can be used to attack the crumbling backlog of publications dating back to 1850."

Even as we enter the electronic age on our way into the 21st century, the legacy of acidic paper from the 19th Century still threatens the survival of our cultural heritage, and efforts to preserve existing collections still exceed the $100 million dollar cost Senator Pell cited. The production and use of alkaline and permanent papers on a worldwide basis is the only sure way of stemming the tide of brittle paper records flooding government offices, libraries, and archives of this Nation.

Although much has been accomplished since Pub. L. 101–423 was signed in October 1990, important work remains to be done. For example, GPO's Standard Form 1, Printing and Binding Requisition, should be revised to enable designation of an alkaline option on agency printing requests. Also, appropriate labeling by paper suppliers of alkaline and permanent papers should be assured; continuing education programs about the use of permanent paper should be developed; and information about the procurement of alkaline and permanent papers should be distributed. Further, LC and NARA will continue to contribute to the important research being conducted by ASTM and will ensure that it is observed closely and reported widely.

Thus, although this report marks the end of our responsibilities as set forth in Pub. L. 101–423, the Librarian of Congress, Archivist of the United States, and the Public Printer agree to continue, on an ad hoc basis, monitoring the progress of the Government's permanent paper policy.

Appendix 1
Public Law 101-423

S.J.Res. 57

One Hundred First Congress of the United States of America

AT THE SECOND SESSION

Begun and held at the City of Washington on Tuesday, the twenty-third day of January, one thousand nine hundred and ninety

Joint Resolution

To establish a national policy on permanent papers.

Whereas it is now widely recognized and scientifically demonstrated that the acidic papers commonly used for more than a century in documents, books, and other publications are self-destructing and will continue to self destruct;

Whereas Americans are facing the prospect of continuing to lose national, historical, scientific, and scholarly records, including government records, faster than salvage efforts can be mounted despite the dedicated efforts of many libraries, archives, and agencies, such as the Library of Congress and the National Archives and Records Administration;

Whereas nationwide hundreds of millions of dollars will have to be spent by the Federal, State, and local governments and private institutions to salvage the most essential books and other materials in the libraries and archives of government, academic, and private institutions;

Whereas paper manufacturers can produce a sufficient supply of acid free permanent papers with a life of several hundred years, at prices competitive with acid papers, if publishers would specify the use of such papers, and some publishers and many university presses are already publishing on acid free permanent papers;

Whereas most Government agencies do not require the use of acid free permanent papers for appropriate Federal records and publications;

Whereas librarians, publishers, and other professional groups have urged the use of acid free permanent papers;

Whereas even when books are printed on acid free permanent paper this fact is often not made known to libraries by notations in the book or by notations in standard bibliographic listings; and

Whereas there is an urgent need to prevent the continuance of the acid paper problem in the future: Now, therefore, be it

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. It is the policy of the United States that Federal records, books, and publications of enduring value be produced on acid free permanent papers.

SEC. 2. The Congress of the United States urgently recommends that—

(1) Federal agencies require the use of acid free permanent papers for publications of enduring value produced by the Government Printing Office or produced by Federal grant or contract, using the specifications for such paper established by the Joint Committee on Printing;

(2) Federal agencies require the use of archival quality acid free papers for permanently valuable Federal records and confer with the National Archives and Records Administration on the requirements for paper quality;

S. J. Res. 57—2

(3) American publishers and State and local governments use acid free permanent papers for publications of enduring value, in voluntary compliance with the American National Standard;

(4) all publishers, private and governmental, prominently note the use of acid free permanent paper in books, advertisements, catalogs, and standard bibliographic listings; and

(5) the Secretary of State, Librarian of Congress, Archivist of the United States, and other Federal officials make known the national policy regarding acid free permanent papers to foreign governments and appropriate international agencies since the acid paper problem is worldwide and essential foreign materials being imported by our libraries are printed on acid papers.

SEC. 3. The Librarian of Congress, the Archivist of the United States, and the Public Printer shall jointly monitor the Federal Government's progress in implementing the national policy declared in section 1 regarding acid free permanent papers and shall report to the Congress regarding such progress on December 31, 1991, December 31, 1993, and December 31, 1995. In carrying out the monitoring and reporting functions under this section, the Librarian of Congress, the Archivist of the United States, and the Public Printer may consult with the National Endowment for the Humanities, National Agricultural Library, National Library of Medicine, other Federal and State agencies, international organizations, private publishers, paper manufacturers, and other organizations with an interest in preservation of books and historical papers.

Speaker of the House of Representatives.

~~Vice President of the United States and~~ *Acting President of the Senate pro tempore*

APPROVED
OCT 12 1990

APPENDIX 2

JCP "OPTION A" PAPER GRADES

JCP A60 Offset Book (w/postconsumer recovered material content) [1]
JCP A61 No. 1 Offset Book, Smooth-finish
JCP A75 Light Weight Offset Book (Bible Paper)
JCP A80 Opacified Offset Book
JCP A90 Vellum-finish Book, White and Colored
JCP A180 Litho (Gloss) Coated Book
JCP A240 Matte Coated Offset Book
JCP A260 Dull Coated Offset Book
JCP F10 Manifold, White and Colored
JCP J10 Ledger, White and Colored
JCP K10 Index, White and Colored
JCP L10 Litho (Gloss) Coated Cover, White and India Tint
JCP L20 Vellum-finish Cover, White and Colored
JCP L23 Offset Cover
JCP L50 Matte Coated Paper
JCP L60 Dull Coated Cover

[1] After 12/31/94, minimum content standard will be 20% postconsumer (PC) recovered material and after 12/31/98, 30% PC.

APPENDIX 3

COMPARISON OF PERMANENT PAPER STANDARDS

Property	NISO–ANSI Z39.48–1992	ISO	
		ISO 9706 "permanent"	ISO/DIS 11108 "archival permanent"
pH	7.5–10 (u) 7.0–10 core (c).	7.5–10	7.5–10
Alkaline reserve	2% minimum	20 g/kg $CaCO_3$	20 g/kg $CaCO_3$
Kappa number (maximum)	7	5	5
Tear measure	5.25 mNm ^{2}/g (u) 3.50 mNm ^{2}/g (c)	70 g/m ^{2}:350 mN 25–70 g/m ^{2}:r=6w–70 r=tear resistance w=weight	70 g/m ^{2}:350 mN 25–70 g/m ^{2}:r=6w-–70 r=tear resistance w=weight
Other physical properties	none	none	MIT folding endurance 2.18
Other chemical properties	paper stock—no more than 1% lignin.	none	paper stock—if other, than cotton, linen, or ramie must state content and percent.

(u) signifies an uncoated paper.
(c) a coated sheet.

The pH and alkaline reserve requirements ensure that the paper is not acidic and will not become acidic over time. The kappa number requirement ensures that the paper is well-bleached, and therefore less likely to deteriorate due to oxidizable functional groups. And the tear index or tear resistance (as well as the folding endurance) is a measurement of strength which seems to predict fairly well an alkaline paper's durability under accelerated aging conditions.

APPENDIX 4

NATIONAL ARCHIVES AND
RECORDS ADMINISTRATION,
Washington, DC 20408.

NRA BULLETIN NO. 95–7—SEPTEMBER 8, 1995

To: Heads of Federal agencies.
Subject: Procurement of writing, copying, and printing papers for Federal records.

1. *Purpose.* This bulletin advises agencies to procure permanent and alkaline paper grades routinely to create all Federal records. This recommendation complies with Public Law (Pub. L.) 101–423, Executive Order (E.O.) 12873, and Environmental Protection Agency (EPA) guidance. Information on cost and availability of paper grades is also provided.

2. *Expiration.* This bulletin expires September 30, 1997.

3. *Background.*

a. Papers used for most documents and publications since the mid-nineteenth century were highly acidic. The acid in these papers greatly accelerates their deterioration and is a principal threat to our documentary heritage. In the past, the cost of acid-free papers was generally prohibitive. In recent years, the pursuit of inexpensive papermaking techniques has resulted in an increasing replacement of acidic pulps with more economical alkaline pulps. Fortunately, the alkaline process also extends paper life by many decades.

b. Public Law 101–423, A Joint Resolution to Establish a National Policy on Permanent Papers, establishes as the policy of the United States that Federal records, books, and publications of enduring value of produced on acid-free permanent papers. The Joint Resolution further recommends that Federal agencies require the use of acid-free permanent paper for publications of enduring value produced by the Government Printing Office or by Federal grant or contract, using the specifications for such paper established by the Joint Committee on Printing; and the agencies require the use of archival quality acid-free paper for permanently valuable Federal records and confer with NARA on the requirements for paper quality.

c. Executive Order 12873, "Federal Recycling, Acquisition, and Use of Environmentally Preferable Products and Services," section 504, and EPA's Recovered Materials Advisory Notice (60FR21386) establishes minimum percentages for recovered waste and post-consumer waste for printing and writing papers. Although many permanent and alkaline papers contain a significant percentage of recycled material, most do not meet

the percentages specified by the E.O. and EPA's guidance. However, sections 502(2) and 504(1) of the E.O. authorize agencies to select papers that do not meet content percentages when available items fail to meet reasonable performance standards.

4. *Definitions.*

a. *Alkaline paper.* Paper that will last for at least one-hundred years under normal use and storage conditions. Alkaline paper grades are groundwood-free with a minimum pH of 7 and an alkaline reserve of 2% or more.

b. *Generic paper.* Paper without a specified pH or alkaline reserve. Longevity of generic paper varies and is uncertain. Many last for 50 to 100 years.

c. *Permanent paper.* Paper that will last for several hundred years without significant deterioration under normal use and storage conditions. Permanent paper grades ate groundwood-free with a pH of 7.5 or above, an alkaline reserve of 2% or more, and other strength or performance properties that guarantee the use and retention of records generated on this paper for a maximum period of time.

5. *Agency action.*

a. Agency heads should direct records officers and officials who administer procurement, printing, and supply distribution to jointly develop policy and procedures to procure and use permanent and alkaline papers for both permanent and temporary Federal records. Copies of this bulletin are being distributed to agency records, printing, and procurement officials.

b. Because it is difficult to distinguish between permanent, alkaline, and generic papers, or to determine at the moment of creation how long a document will be maintained, agencies may choose to stock only one type of paper grade in individual office units (or agency-wide) for routine use in photocopiers, laser printers, telefacsimile equipment, etc.

(1) Permanent paper is recommended for routine use in office units that create and file a high proportion of long-term and permanent records.

(2) Alkaline paper is recommended for routine use throughout agencies for all documents.

c. Publications intended for long-term use in a paper format by many recipients, such as those that are placed in multiple Federal, State, and local government depositories' core collections in libraries and offices, should be created on permanent or alkaline paper. Generic paper is suitable for mass publications such as press releases and telephone directories; however, if the record set of a publication has long-term value, a file copy should be created by (1) photocopying onto alkaline or permanent paper, (2) maintaining an electronic version, or (3) creating a microform version from the paper or from Computer Output Microform (COM).

d. NARA also suggests the following techniques to reduce paper consumption and/or waste:

(1) Employ electronic systems to create, distribute, and maintain documents in accordance with 36 CFR part 1234.

(2) When paper is the selected format for Federal records:

Make two-sided copies.

Use letter-size instead of legal-size paper.

Use envelopes without plastic windows and self-adhesive glue. Adhesives and plastics cannot readily be recycled with paper.

6. *Cost and availability of paper for Federal records.*

a. In recent years, the cost of permanent paper was two to four times more than generic paper and the cost of alkaline paper was one-third more than generic paper. However, a recent survey showed only a 5% difference between comparable permanent, alkaline, and generic xerographic paper grades with the permanent paper grade costing the least. Agencies should, on a continuing basis, check and compare prices. If, at a given time, there is a significant cost difference between permanent, alkaline, and generic paper grades, NARA will work with agencies to identify specific series of permanently valuable records that can be created on permanent paper without excessive cost.

b. Unless authorized by the Joint Committee on Printing (JCP), Federal departments, establishments and services in the District of Columbia must procure blank paper, including writing, copying, and printing papers through GPO in accordance with 44 U.S.C. 1121. Locations outside of the Washington metropolitan area should procure paper through normal supply channels such as the Government Printing Office (GPO) and the Federal Supply Service of the General Services Administration (GSA) in accordance with the Federal Information Resources Management Regulation (FIRMR) bulletin B–4.

c. Attached is a complete list of all JCP specified alkaline and permanent paper grades, including GSA National Stock Numbers (NSN) when available. The JCP standard specifications are available in the "Government Paper Specification Standards, No. 10" on a subscription basis through the Superintendent of Documents. For purchases and further information, customers may contact GPO's Chief, Paper and Materials Control Section at 202–512–0208, FAX 202–512–1569 and GSA's Procurement and Contracting Office at 212–264–3252, FAX 212–264–4920.

7. *NARA assistance.* Records officers are encouraged to contact their designated NARA appraisal archivists for assistance in selecting the appropriate paper for agency records series. Questions may also be directed to the NARA Office of Records Administration, Agency Services Division at 301–713–6677, FAX 301–713–6850, TDD 301–713–6760.

JOHN W. CARLIN,
Archivist of the United States.

Attachment.

LIST OF PAPERS FOR FEDERAL RECORDS

Following is the complete list of all permanent and alkaline paper grades specified by the Joint Committee on Printing (JCP)

which are available from the Government Printing Office (GPO). Compatible General Services Administration (GSA) National Stock Numbers (NSN) are also listed.

The list begins with permanent and alkaline papers especially well-suited for routine use in laser printers and high speed xerographic copiers since most Federal records result from these processes. Annotations helpful to the average user are offered.

For prices and further information, customers may contact: GPO's Chief, Paper and Materials Control Section at 202–512–0208, FAX 202–512–1569 and GSA's Procurement and Contracting Office at 212–264–3252, FAX 212–264–4920.

LASER AND XEROGRAPHIC PAPERS

Permanent

1.[1] GSA NSN 7530–01–398–2656 25% Bond, White, 20 lb., 8½″×11″ (meets JCP G40).

2. GSA NSN 7530–01–398–2654 Plain Copier, Xerographic, White, 20 lb., 8½″×11″ (meets JCP O60).

3. GSA NSN 7530–01–398–2655 Plain Copier, Xerographic, White, 20 lb., 8½″×14″ (meets JCP O60).

4. JCP G40—Option A, 25% Bond, White and Colored. For stationery, forms, legal documents, ledgers, etc. which are used in high speed photocopiers, laser printers, plain paper telefacsimile machines, and impact-type computer printers and with pen or pencil. Above average performance for two-sided copying and erasing quality. Watermarked with U.S. seal, year, and recycled symbol.

5. JCP G60—Option A, Opacified Bond, White and Buff. Greater opacity than G40. Uses and watermark same as G40.

6. JCP O60—Option A, Plain Copier, Xerographic, White, Natural, and Colored. For high speed photocopiers, laser printers, and plain paper telefacsimile machines.

Alkaline

7.[1] GSA NSN 7530–01–398–2652 Recycled Plain Copier, Xerographic, White, 20 lb., 8½″×11″ (meets JCP 065).

8.[1] GSA NSN 7530–01–398–2653 Recycled Plain Copier, Xerographic, White, 20 lb., 8½″×14″ (meets JCP 065).

9. JCP 065, Recycled Plain copier, Xerographic (when ordering from GPO, request special alkaline modification). For high speed photocopiers, laser printers, and plain paper telefacsimile machines.

ADDITIONAL PAPERS COMMONLY USED IN OFFICES

Permanent papers

10. JCP A270 Uncoated Permanent Book, White and Cream White. For two-sided offset printing of books, pamphlets, maps, etc.

11. JCP H30–Option A, Imitation Parchment, Laser-Finish, White and Colored. For high-quality offset printing of certificates, etc. Suitable for line illustrations and embossing. The 24 pound weight can be used in photocopiers and laser printers.

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[1] Meets recovered and postconsumer materials percentages cited in Executive Order 12873, Federal Recycling, Acquisition, and Use of Environmentally Preferable Products and Services.

Alkaline papers

12. JCP A60—Option A, Offset Book (w/postconsumer material content). For two-sided printing of books, catalogs, folders, etc. The 80 pound weight is suitable for posters. Contains a minimum of 20% postconsumer material.
13. JCP A61—Option A, No. 1 Offset Book, Smooth-Finish. For highest quality two-sided offset printing.
14. JCP A75—Option A, Light Weight Offset Book (Bible Paper).
15. JCP A80—Option A, Opacified Offset Book.
16. JCP A90—Option A, Vellum-Finish Book.
17. JCP A180—Option A, Litho (Gloss) Coated Book. For high quality offset printing of books, periodicals, maps, etc.
18. JCP A240—Option A, Matte Coated Offset Book.
19. JCP A260—Option A, Dull Coated Offset Book. For high quality reproduction of satellite and high-altitude imagery as well as offset printing of books, maps, etc.
20. JCP F10—Option A, Manifold, White and Colored. For one-sided offset printing of multicopy forms and correspondence that are used in typewriters and with pen or pencil.
21. JCP J10—Option A, Ledger, White and Colored. For two-sided offset printing of forms, ledgers, notices, posters, etc.
22. JCP K10—Option A, Index, White and Colored. For two-sided printing of cards, forms, notices, posters, covers, etc. that are used in typewriters and with pen or pencil.
23. JCP L10—Option A, Litho (Gloss) Coated Cover, White and India Tint. Uses same as A180, but as a cover paper.
24. JCP L20—Option A, Vellum-Finish Cover, White and Colored.
25. JCP L23—Option A, Offset Cover.
26. JCP L50—Option A, Matte Coated Cover.
27. JCP L60—Option A, Dull Coated Cover.

APPENDIX 5

ACCOMPLISHMENTS AND PRESENTATIONS PERTAINING TO PUB. L. 101–423

Event	Date
Presentation on permanent paper, Publisher's Committee, Federal Depository Library Group (GPO).	April 1994.
First and second reports to Congress on Pub. L. 101–423 Mounted on NARA CLIO and LC MARVEL.	July 1994.
Government Paper Specification Standards (No. 10) published	September 1994.
Meeting on permanent paper, Advisory Committee on Preservation (NARA)	September 1994.
Environmental Protection Agency (EPA), meeting on Groundwood Paper in Federal Offices (impact on preservation).	October 1994.
Presentations on permanent paper, semi-annual classes on paper procurement, Institute for Federal Printing and Publishing (GPO).	November 1994–April 1995.
Presentation on permanent paper, Interagency Council on Printing and Publishing Services (GPO).	January 1995.
Presentations on permanent paper, Bi-Monthly Records and Information Officers Discussion Group (NARA).	February 1995.
Joint letter from Agency Heads to State Governors urging their support of Pub. L. 101–423 (LC, NARA, GPO).	March 1995.
Letter to American Society for Testing and Materials (ASTM) supporting research in paper aging (NARA).	April 1995.
Publication of *NARA Bulletin 95–7*—"Procurement of Writing, Copying, and Printing Papers for Federal Records".	September 1995.
NARA Bulletin 95–7 mounted on NARA CLIO	September 1995.
Distribution of *NARA Bulletin 95–7* to Federal Agency heads, Records officers, Procurement Officials, and Printing Officers; and State Governors, Archivists, and Records Officers.	November–December 1995.
Presentation on permanent paper, Records Officers, Small Agency Council (NARA)	December 1995.

Appendix 6
Letter to Governors

March 1995

Dear Governor:

With this letter, we draw your attention to the enclosed *Second Report to Congress on the Joint Resolution to Establish a National Policy on Permanent Records*. As you may know, in January 1990 the Congress passed a Joint Resolution to establish a national policy for permanent papers. The resolution became Public Law 101-423 when signed by President Bush in October 1990.

Public Law 101-423 recommends that Federal agencies require the use of acid-free permanent papers for publications of enduring value produced by the Government Printing Office (GPO) or its contractors (Section 1), and for permanently valuable Federal records (Section 2). To assist Government compliance with the law, the Joint Committee on Printing revised several GPO paper specifications to facilitate agency efforts to procure alkaline paper. In addition, the National Archives and Records Administration (NARA) will shortly release a NARA Bulletin on "Procurement of Writing, Copying, and Printing Papers for Federal Records."

We strongly support the implementation of the permanent paper law. Not only will it ensure the long-term retention of important publications and documents, it will also save the Government the future expense of costly deacidification or preservation reformatting. We are also confident that use of permanent paper can be achieved without sacrificing environmental benefits that will be brought about by compliance with current recycling regulations.

We invite you also to make a commitment to this effort; and, like the Congress, we strongly recommend that your state and local governments use acid-free permanent papers for publications of enduring value, in voluntary compliance with the American National Standard (Z39.48-1992), "Permanence of Paper for Publications and Documents in Libraries and Archives" (Section 3).

If you would like further information about this important matter, please contact Merrily Smith (Assistant National Preservation Program Officer, Preservation Directorate, Library of Congress LM-G21, First and Independence Ave. S.E., Washington, D.C. 20540; FAX 202-707-3434; Internet nppo@loc.gov), or Lewis J. Bellardo (Division Director, Preservation Policy and Services (NNP), National Archives at College Park, 8601 Adelphi Road, College Park, Maryland 20740-6001; FAX 301-713-6919; Internet Lewis.Bellardo @arch2.nara.gov).

Sincerely,

JAMES H. BILLINGTON
The Librarian of Congress

TRUDY HUSKAMP PETERSON
Acting Archivist of the United States

MICHAEL F. DIMARIO
Public Printer

APPENDIX 7

USE OF PERMANENT PAPER FOR HISTORICAL DOCUMENTS

(Senate—October 7, 1994.) [Page: S14759]

Mr. MOYNIHAN. Mr. President, I was recently contacted by the New York Public Library regarding the Federal Government's policy on the use of recycled paper and a possible conflict between the President's Executive Order on recycling, Executive Order 12873, and the requirement of Public Law 101–423 that permanent paper be used for historical documents. Happily, this matter seems to have been resolved to the satisfaction of all parties concerned. Fran McPoland, Federal environmental executive at the Environmental Protection Agency, has written the New York Public Library that the requirement for the use of recycled paper does not conflict in any way with the requirement for the use of permanent paper for historical documents. The administration fully intends to use permanent paper for documents of enduring historic value.

The Federal environmental executive was appointed by the authority of Executive Order 12873. One of the roles of the Federal environmental executive will be to assist individual agencies in the development of specifications to fulfill the requirements of both the Executive order on recycling and the joint resolution on permanent paper. Executive Order 12873 also called for the appointment of agency environmental executives in each executive department and major procuring agency.

Mr. President, for the information of all Senators, I ask unanimous consent that a letter from Federal Environmental Executive Fran McPoland to Paul LeClerc, president of the New York Public Library, be printed in the RECORD.

There being no objection, the letter was ordered to be printed in the RECORD, as follows:

OFFICE OF THE FEDERAL ENVIRONMMENTAL EXECUTIVE,
Washington, DC, July 19, 1994.

Mr. PAUL LECLERC,
President, The New York Public Library, New York, NY.

DEAR MR. LECLERC: As the Federal Environmental Executive appointed by the authority of the President's Executive Order on Recycling, I am in the receipt of your communication regarding the necessity to ensure that the federal government's use of recycled paper not be perceived to be in conflict with P.L. 101–423's requirement to use permanent paper for documents of enduring historical value. I am writing to assure you that there is no such conflict, and to tell you of the steps this Administration is taking to ensure that

the recycled paper requirements are not implemented in such a way as to result in the inappropriate use of acidic paper.

The Administration is completely aware of and strongly supports the Joint Resolution on permanent paper and its goal. Paper which contains recycled material and is either permanent or alkaline is available for purchase, and it is our intention to continue to use these papers for documents of enduring value.

I will be working with the individual agencies to develop specifications to fulfill the goals of the Executive Order and the Joint Resolution. Executive Order 12873 called for the appointment of Agency Environmental Executives for each Executive department and major procuring agency, in addition to a Federal Environmental Executive within EPA, the position to which I have recently been appointed. I intend to transmit a copy of this letter to all Agency Environmental Executives in order to restate our position that the requirements for use of recycled paper are not to conflict in any way with the concurrent requirement for permanent paper use. Furthermore, I am meeting this week with the Agency Environmental Executives, and I intend to discuss and reaffirm our commitment to the use of permanent or alkaline paper during this meeting. I will be continuing to work closely with these executives to ensure on-going sensitivity to this issue as we implement Executive Order 12873.

I very much appreciate your interest and concern for the permanence of historical documents, and applaud your efforts to reduce the use of acid papers by the federal government. We fully share your concern, and I look forward to continuing to work with you on issues of recycling and paper permanence.

Sincerely,

FRAN MCPOLAND,
Federal Environmental Executive.

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