

KWIC INDEX TO GOVERNMENT PUBLICATIONS

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United States and United Nations publications were not efficiently processed nor readily available to the reader at Brandeis University Library. Data processing equipment was used to make a list of this material which could be referred to by a computer produced KWIC index. Currency and availability to the user, and time and cost efficiencies for the library were given precedence over detailed subject access. United States and United Nations classification schemes, and existing bibliographies and indexes were used extensively.

Collections of publications of the United States government and the United Nations are unwieldy and, often, unused. Orne (1), Kane (2), and Morehead (3) have acknowledged that much of the output of proliferating governmental agencies and government supported research centers is hardly accessible. Successful attempts to control the literature of a particular subject field, such as the indexes to the *Human Relations Area Files* and the *American Political Science Review*, have been compiled by Kenneth Janda (4). Others (5,6,7,8,) have described projects which apply the KWIC index method of control to industrial research reports. No similar attempt to control government publications has been reported, although at Northeastern University data processing equipment has been used to list United States material. The index developed at Brandeis University Library was designed to accommodate the varied government publications held by a library which served student, faculty and researcher alike.

MATERIALS AND METHOD

Brandeis became a selective United States document depository late in 1965. Two years later a Government Documents Department was created to handle all United States publications, as well as those of the United Nations. About 15,000 United States publications and a smaller number of United Nations publications had previously been acquired and processed as a regular part of the library collection. This material formed the nucleus of the documents collection, to which some 3,000 pieces were added yearly. The new Department ordered and received all publications issued by federal government agencies and the United Nations, but processed and serviced only about 80% of them. Materials that had been acquired for the Science Library or special collections, such as Reserve, were directed to regular library processing departments. The materials retained were classified and arranged according to the Superintendent of Documents classification and the United Nations scheme wherever such numbers were available. All previously cataloged items were removed from the regular collection and scheduled for reclassification. Only where Superintendent of Documents and United Nations numbers were not available was Library of Congress classification retained or assigned. The collection then consisted of material arranged in three sections according to the classifications of the Superintendent of Documents, the United Nations, and the Library of Congress.

The KWIC index included all United States and United Nations publications located in the Documents Department. The reader was reminded that additional material issued by those government publishers, housed elsewhere in the libraries, was included in the library catalog. Prefatory material included a list of symbols and abbreviations. A two-part index to issuing agencies, represented by six-letter mnemonic acronyms, was arranged alphabetically by acronym, and by bureau name. The reader was cautioned to consult the *United States Government Organization Manual* and a United Nations organization chart for identification of government agencies and for tracing frequent changes in their structure and nomenclature.

The Documents list consisted of two parts: one, an accession number listing; and two, a KWIC index to part one. Upon arrival at the Library, publications were numbered and IBM cards were punched according to format cards that described allocation of columns:

<i>Column</i>	<i>Information</i>
Card 1	
1-6	item number
7	card number
8-13	author agency
14-79	title field
80	blank

<i>Column</i>	<i>Information</i>
Card 3	
1-6	item number
7	card number
8-20	procedural data
21-54	holdings
55-79	classification number
80	blank

Cards one and three were punched for all documents; however, cards two and four were punched only where data exceeded the prescribed spaces on cards one or three. Columns one through six were reserved for the accession numbers. A special punch in column one was used to identify United Nations documents so that they were listed after the United States sequence. Column seven indicated the card number for a given document and was suppressed in the print-out. The title field included not only the title, but series and number, personal author and monographic date where this information was suitable. The flexible field was used for any information for which the librarian wished KWIC cards. A cross reference or explanatory note about the location of publications of a quasi-independent agency was incorporated in the title field. The procedural data included type of publication, binding and frequency information, accounting data and similar notations. A sample of part one has been reproduced in Figure 1.

Part two of the list, the KWIC index, was produced by an IBM 1620 computer, model one with 40K memory. An excerpt has been reproduced in Figure 2. Only cards one and two were put into the computer along with the program and dictionary of exceptions. Cards three and four were not used to produce the KWIC index. The program required production of cards for author acronyms and for all keywords found in the title field. Except in the cases of author acronyms and first words, a keyword was identified by the fact that it followed a blank space. Blanks were not necessary in these two cases because they were incorporated in the computer program. Single letters, integers, and exceptions were not considered keywords. The index was printed so that the accession number always appeared on the left, and the author agency was followed by an asterik and a space. The wraparound format usually associated with KWIC indexes was abandoned to improve visual clarity.

RESULTS

About eight months after its inception, 2600 items had been entered on a separate Documents Collection list. The list had been printed off-line on three-part print-out paper interleaved with carbon. After the papers were reassembled in looseleaf binders, they were made available in the Documents and Reference Departments and in the Science Library.

130	JNTPUB	TRANSLATIONS ON COMMUNIST CHINA.	
130	32 22	6 50.00NO.1, 1968-TO DATE	Y3.J66/13
131	RURAL	FEDERAL PROGRAMS AVAILABLE TO ASSIST RURAL AMERICA. 1968.	
131	42 22	6DEPOST 1968	A97.2/L52
132	FEDNAT	A DIRECTORY OF RESEARCH NATURAL AREAS ON FEDERAL LANDS OF THE	
132		U.S. 1968.	
132	42 22	6DEPOST 1968	Y3.F31/1979/968
133	JNTPUB	TRANSLATIONS ON EAST EUROPEAN AGRICULTURE, FORESTRY + FOOD,	
133		INDUSTRIES.	
133	32 22	6GIFT //NO.117, 1963-TO DATE	Y3.J66/13
134	JNTPUB	TRANSLATIONS ON EAST EUROPEAN FOREIGN TRADE.	
134	32 22	6 15.00//NO.80, 1963-TO DATE	Y3.J66/13
135	JNTPUB	TRANSLATIONS ON ECONOMIC ORGANIZATION AND MANAGEMENT IN EASTERN	
135		EUROPE.	
135	32 22	6 65.00NO.144, 1963-TO DATE	Y3.J66/13
136	JNTPUB	TRANSLATIONS ON MONGOLIA.	
136	32 22	6 13.00NO.19, 1963-TO DATE	Y3.J66/13
137	JNTPUB	TRANSLATIONS ON NORTH KOREA.	
137	32 22	6 20.00NO.1, 1966-TO DATE	Y3.J66/13
138	JNTPUB	TRANSLATIONS ON NORTH VIETNAM.	
138	32 22	6 70.00NO.1, 1966-TO DATE	Y3.J66/13
139	JNTPUB	TRANSLATIONS ON SOUTH + EAST ASIA.	
139	32 22	6GIFT 1963-TO DATE	Y3.J66/13
140	JNTPUB	TRANSLATIONS ON LATIN AMERICA.	
140	32 22	6150.001967-TO DATE	Y3.J66/13
141	JNTPUB	TRANSLATIONS ON THE NEAR EAST.	
141	32 22	6 50.001966-TO DATE	Y3.J66/13
143	JNTPUB	TRANSLATIONS ON U.S.S.R. AGRICULTURE.	
143	32 22	6 10.001967-TO DATE	Y3.J66/13
144	JNTPUB	U.S.S.R. ECONOMY AND INDUSTRY. GENERAL INFORMATION.	
144	32 22	6 40.001966-TO DATE	Y3.J66/13
145	LIBCON	ACCESSIONS LIST, CEYLON.	
145	32 22	6PL-480//1967-TO DATE	LC1.30/7/VOL./NO.
146	LIBCON	ACCESSIONS LIST, INDIA.	
146	32 22	5PL-480//1963-TO DATE	LC1.30/VOL./NO.
147	LIBCON	ACCESSIONS LIST, INDONESIA.	
147	32 22	6PL-4801964-TO DATE	LC1.30/5/VOL./NO.
148	LIBCON	ACCESSIONS LIST, MIDDLE EAST.	
148	32 22	5PL-480//1963-TO DATE	LC1.30/3/VOL./NO.
149	LIBCON	ACCESSIONS LIST, NEPAL.	

Fig. 1. *Accession Number List.*

166	CONGRESS, 1949-1951. DESPER * REPT. TO THE PRESIDENT AND THE
113	CONGRESSIONAL DIRECTORY, CONGRS * OFFICIAL
6	CONGRESSIONAL DISTRICT DATA BOOK, REDISTRICTED STATES, SUPP. CENSUS *
68	CONGRESSIONAL RECORD, CONGRS *
68	CONGRS * CONGRESSIONAL RECORD.
164	CONGRS * FACTUAL CAMPAIGN INFORMATION, 1968.
117	CONGRS * MESSAGE OF THE PRESIDENT OF THE U.S. AND ACCOMPANYING DOCUMENTS
113	CONGRS * OFFICIAL CONGRESSIONAL DIRECTORY.
64	CONREP * CALENDARS OF THE U.S. HOUSE-OF-REPRESENTATIVES.
56	CONREP * LAWS RELATING TO SOCIAL SECURITY + UNEMPLOYMENT COMPENSATION, 19
183	CONSEN * CALENDAR OF BUSINESS.
44	CONSEN * NOMINATION + ELECTION OF PRESIDENT + VICE-PRESIDENT OF THE U.S.
19	CONSERVATION, AGRSCS * SOIL
31	CONSTRUCTION REPTS., HOUSING AUTHORIZED BY BUILDING PERMITS, CENSUS *
32	CONSTRUCTION REPTS., HOUSING SALES, CENSUS *
3	CONSTRUCTION REPTS., HOUSING AUTHORIZED BY BUILDING PERMITS, CENSUS *
71	CONSUMER PRICE INDEXES, LSBLAB *
83	CONTEMPORARY ARTIST, PUB. 4730, 1968, SMITHS * THE ARMED FORCES OF THE U
108	CONTRIBUTIONS, OASI-NO, HEWSAA * SOCIAL SECURITY
195	COOPERATIVE WATER RESOURCES RESEARCH AND TRAINING, 1967, INTERJ *
176	CORONARY DRUG PROJECT, PHS PUB. 1965, REV. 1968, HEWPHS * THE
190	CORPS, 1967, OPPORT * JOB
78	COST OF CLEAN WATER, 1968, WTRPOL *
15	COUNTRIES FOR VISA OF U.S, PASSPORTS, STATED * FEES CHARGED BY FOREIGN
172	COUNTY BUSINESS PATTERNS, CENSUS *
160	COURT DECISIONS, SPCTJU * SUPREME
88	COURTS, 1966, 1967, CHILDB * LEGAL BIBLIOGRAPHY FOR JUVENILE AND FAMILY
123	CRIME + DELINQUENCY ABSTRACTS, HEWPHS *
	CRIME DELINQUENCY ABSTRACTS, BEFORE 1965 SEE INTERNATIONAL
	BIBLIOGRAPHY ON CRIME + DELINQUENCY.
11	CRISIS OF OUR CITIES, 1968, PRESDT * MEETING THE INSURANCE
74	CRISIS, FACTS, MYTH + SOCIAL CHANGE, 1967, HEWVEL * RURAL YOUTH IN
18	CROPS + MARKETS, FORAGR * FOREIGN AGRICULTURE INCLUDING
179	CT-1, 1967, CENSUS * DATA ACCESS DESCRIPTIONS, CENSUS TABULATIONS AVAILA
30	DEAF PEOPLE, 1968, VOCREH * VOCATIONAL REHABILITATION OF
62	DEF CIV * SAFETY REVIEW.
174	DEFWRO * NAVAL RESEARCH REVIEWS.
123	DELINQUENCY ABSTRACTS, HEWPHS * CRIME +
177	DEMONSTRATION FINDINGS, LABORD * MDTA, EXPERIMENTAL +
42	DEPARTMENT OF STATE BULL. STATED *
93	DEPARTMENT STORE SALES IN SELECTED AREAS, CENSUS * SPECIAL CURRENT BUSIN
118	DEPT., OR MISSOURI-MISCELLANEOUS, 1863, COMWAR * REPT. WESTERN
179	DESCRIPTIONS, CENSUS TABULATIONS AVAILABLE ON COMPUTER TAPE SERIES, CT-1
166	DESPER * REPT. TO THE PRESIDENT AND THE CONGRESS, 1949-1951.
155	DEVELOPMENTS 1834-1962, 1962, STATED * A HISTORICAL SUMMARY OF U.S.-KORE
9C00C2	DEVELOPMENTS, 1961-65, 1968, ECOSOC * CAPITAL PUNISHMENT, PT. 1 REPT, 1960, P
98	DRUG ABUSE CONTROL, HEWFDA * BDAC BULLETIN ISSUED BY THE BUREAU OF
176	DRUG PROJECT, PHS PUB. 1965, REV. 1968, HEWPHS * THE CORONARY
90UGJ3	DUTIES, GUARDIANSHIP, 1968, WOMENP * AARENTAL RIGHTS AND
139	EAST ASIA, JNTPUB * TRANSLATIONS ON SOUTH +
133	EAST EUROPEAN AGRICULTURE, FORESTRY + FOOD, INDUSTRIES, JNTPUB * TRANSLA
134	EAST EUROPEAN FOREIGN TRADE, JNTPUB * TRANSLATIONS ON
128	EASTERN EUROPE, JNTPUB * POLITICAL TRANSLATIONS ON
129	EASTERN EUROPE, JNTPUB * SOCIOLOGICAL TRANSLATIONS ON
135	EASTERN EUROPE, JNTPUB * TRANSLATIONS ON ECONOMIC ORGANIZATION AND MANAG
55	EASTERN EUROPE, STATED * EXCHANGES WITH THE SOVIET UNION +
141	EAST, JNTPUB * TRANSLATIONS ON THE NEAR
148	EAST, LIBCON * ACCESSIONS LIST, MIDDLE

Fig. 2. KWIC Index.

The copies were usable only on the temporary basis for which they were intended. Pages ripped easily in the binders. The printing on copies two and three, which were carbon copies, smudged readily. Production of more permanent copies of the list was deferred until the catalog should be more complete.

Because of the preliminary nature of this project, no specific time accounting was made. There was an attempt to increase student assistant duties in order to save regular staff time. The Librarian annotated Superintendent of Documents shipping lists to indicate which items required new punched cards. She omitted, for example, journals that were entered once with an open holdings statement. After annotation, punched cards for United States depository documents were made by student assistants who had been previously introduced to the allocation of columns and to punching procedures. For non-depository United States and United Nations publications, the Librarian mapped cards on 80-column format sheets. In the production of part two, the KWIC index, staff was involved only to make cross references. Since the KWIC program had been designed to make entries for all words in the title field other than the dictionary of exceptions, cross references had to be interfiled manually after the KWIC entries had been made and alphabetized.

The cost of materials for the addition of 100 entries to the list is tabulated below:

<i>Materials</i>	<i>Costs</i>
IBM cards (800)	\$.80 + freight
Print-out paper (8 sets)	.32 + freight
IBM 1620 computer rental (4 minutes)	1.68
	<hr style="width: 10%; margin: 0 auto;"/> \$ 2.80 + freight

There was no charge for the use of the keypunch (IBM 026), sorter (IBM 082), and Accounting Machine (IBM 407), nor was the Library charged by the computer center personnel who wrote the program. For the first 100 items, all cards were duplicated in production as insurance against destruction (thus the card expense itemized above was doubled). The duplicate deck was later eliminated because the time spent in duplicating and interpreting these cards was greater than that required to re-punch the deck from the list entries. Storage space was available without cost, and no new storage equipment was purchased.

The KWIC program was written so that keyword cards were made for all words in the title field except listed exceptions, single letters and integers. It seemed at the inception of the project that such a program, which allowed untrained assistants to punch cards with a minimum of difficulty, was preferable to one that involved tagged keywords. However, the necessary filing and removal of cross references subsequently proved an inconvenience when the list was updated and reprinted.

DISCUSSION

The productivity of government publishers has directed so much material into the library that ordinary procedures have been overtaxed. Card catalog entries, for example, have become tardy, cumbersome, and incomprehensible to the Library user and expensive for the Library. The KWIC list was designed as a substitute; however, it was useful only where the subject of a publication had been fairly reflected by its title. The possibility of incorporating descriptors in the title field of the list was considered, but rejected in the interests of speed and efficiency. The list depended upon standard reference sources for more complete subject and analytic cataloging. Most often used in the case of United States publications were the Superintendent of Documents *Monthly Catalog* (9) and its auxiliaries such as the Bureau of the Census *Catalog* (10). Other sources included: Wilson, *Popular Names* (11), the *Readers Guide*, the *Social Science and Humanities Index*, the *Business Periodicals Index*, the *Index to Legal Periodicals*, and the Commerce Clearing House *Index*. For the United Nations publications, greater use was made of the trade publications such as the *Periodic Check List* (formerly the *Monthly Sales Bulletin*), the *International Reporter*, the *UNESCO Catalogue*, and the *Publishers Trade List Annual* section for "UNESCO."

The KWIC index also was limited in that it covered only documents in the Library's collection. While the user was inconvenienced by the ready availability of all items listed, he was obliged to consult reference sources for other existing documents.

The new tool had advantages similar to book catalogs in terms of space saving and ease of duplicating. Although originally only three copies were made, the possibility of duplication and distribution of this list to interested academic departments had been considered. It was also intended that new punched cards would be used to produce lists of new accessions, which would be duplicated and circulated. The problem of updating involved reprinting of part two, the KWIC index, after previous inter-alphabetizing of entries. Part one, however, was not reprinted as new entries were added successively. Corrections were made by duplicating parts of cards and punching where necessary. The availability and currentness of such a list would presumably have encouraged the faculty and students to make greater use of these materials, and eliminated duplication of purchase orders.

A major drawback to the list was that its arrangement, by accession numbers, bore no particular logic. A classification number arrangement would have been more meaningful to the reader; it would also have served as a shelf list and provided material for subject holdings lists. However, the IBM cards were not so arranged because neither the mechanical nor manual sorting of multi-digit and letter numbers was practical. Arrangement by Superintendent of Documents numbers was employed at North-

eastern University, Boston, Massachusetts, and proved so inadequate that the Librarian added subject headings to documents punched cards. This extra time-consuming step, plus the need to manually file punched cards, influenced the author to abandon shelf list order.

A second difficulty involved in the KWIC project was the dependence of the Library upon use of equipment owned by another agency. It was conceivable that alterations in the equipment, policies or personnel of the University Computer Center could enforce changes on the Library's listing procedure.

This evaluation of the KWIC index excluded considerations of the separation of the Documents and Reference Departments. This matter has been thoroughly discussed elsewhere (12). Two other subjective considerations appeared during the first year of operation. Most serious was the estrangement between Documents and Reference Personnel. Since both Departments served the public, and their material was distinguished only by publisher, each staff relied extensively upon the other. Cooperation and acquaintance with library material was difficult to maintain in two separate Departments. Because Documents staff were primarily public service personnel, their extensive involvement in technical processes was not an efficient use of staff expertise. On the other hand, complete responsibility for this portion of library holdings insured that the staff became thoroughly acquainted with the collection and were better able to serve the public.

CONCLUSION

The KWIC index to government publications at Brandeis is difficult to evaluate before the tests of time and use have been made. The system was suitable for the University Library in that it was frequently consulted by the same, relatively sophisticated, users who were eager to familiarize themselves with library material. The KWIC list itself emphasized currentness and flexibility at the expense of detailed subject access. This system attempted to utilize a potential goldmine of material without major investment or upheaval in the Library. It has been sufficiently resilient to withstand a complete change of Department personnel and was successful enough so that the possibility of expansion is being considered.

NOTE

This report described the Documents Department as it functioned at its inception in September, 1967. The author left Brandeis University in June of 1968. The scope of the Documents list was changed in September 1968 to include all United States and United Nations publications acquired by the library. Any inquiries about the present system should be directed to the current Documents Librarian: Mr. Michael Abaray, Goldfarb Library, Brandeis University, Waltham, Massachusetts 02154.

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