

## INDEX

- Acquisitions systems, 9, 29, 64, 131, 187-188
- Administrative responsibility, 94-97, 98, 102, 233-235
- Administrative Terminal System (ATS), 137
- Advantages of library automation, 101
- Airlie House Conference on Networks (1970), 120
- ALGOL, 87
- Algorithmic languages, 205
- American National Standards Institute (ANSI), 133
- Assembly language, 7, 88
- Association of Research Languages (ARL), 151, 152
- Authority files, 134
- BALLOTS project (Stanford University), 42-51
  - background and relation to SPIRES, 42-44 (*see also* SPIRES/BALLOTS project)
  - major system design features, 46-48
  - phasing and scheduling, 48-51
  - use of MARC files, 44-47
- BALLOTS I (prototype system), 44, 45, 212-213
- BALLOTS II (production system), 45, 46, 48
- Basic problems, 119, 120
- BATAB system (Baker & Taylor Co.), 115
- Batch processing, 194, 195
- BCN. *See* Biomedical Communications Network
- Bibliographic Automation of Large Library Operations Using a Time-Sharing System. *See* BALLOTS project
- Bibliographic data
  - in library automation, 183
  - permanent files, 16, 17, 125, 126 (*see also* Data encoding; MARC)
- Bibliographic data processing system (University of Chicago), 5-10, 122, 123. *See also* Book Processing System
- developmental tasks, 5
- National Science Foundation support, 5, 6
- phasing and scheduling, 8-10
- systems design features, 7, 8
- University Computation Center support, 6
- Bindery control, 188
- Biomedical Communications Network, 171-182
  - contributory institutions, 174
  - Library Services Component, 173-176 *passim*
  - major components, 173
  - network engineering plan, 180
  - objectives, 172, 173, 182
  - regional access centers, 175
  - requirements, 179, 180
  - system design elements, 177
  - technical development plan, 180, 181
- Book card and label production, 8, 9
- Book catalogs, 134
- Book Processing System, (University of Chicago), 183-192
  - basic Phase I design, 189
  - bindery shipment control, 188
  - card production, 187
  - data input, 186
  - MARC II data, 188
  - multiprogram phasing, 191, 192
  - operational computer programs, 189
  - print train, 189
  - programming phases, 189-191
  - purchase orders, 187
  - software system, 189
  - tele-processing software, 186
- Budgeting, 5, 14, 23-24, 43, 99, 149-151. *See also* Economic and financial aspects
- Business oriented languages, 205
- Catalog card production, 8, 184, 186-187
- Cataloging in Publication (CIP), 142
- Cataloging proof file, 16
- Cataloging systems, 8, 30, 64, 135, 183

- Chicago, The University of, Libraries, 3, 5-10. *See also* Bibliographic data processing system; Book Processing System
- CIP. *See* Calaloging in Publication
- CLSD. *See* Collaborative Library Systems Development project
- COBOL, 87, 88
- Collaborative Library Systems Development project (CLSD), 162, 169, 187, 226-236
- Columbia University Libraries, 11-30  
 budgeting, 14, 15, 23, 24  
 current projects, 15, 25-28  
 file design, 15-17  
 hardware, 17, 18  
 organization and staffing, 13, 14  
 phasing and scheduling, 20  
 products and services, 19, 20  
 program modules, 16, 29, 30  
 Commercial services, 110-117
- Commitment to automation programs, 98  
 dollars, 99  
 manpower, 98, 99  
 space, 99, 100
- Compatibility of hardware systems, 232
- Computer costs, 199. *See also* Cost
- Computer file organization. *See* File organization
- Computer hardware, 72, 194, 231-232
- Computer programs, 29-30, 189-192
- Computer service, centralization, 200
- Computer software, 72, 128-129, 194-197, 203-211
- Consortium approach, 106-109
- Consultant services, 110-112
- Content designators, 133
- Cooperation, inter- and intrainstitutional, 119, 120. *See also* Consortium approach; Cooperative ventures; NELINET project
- Cooperative ventures, 149, 226. *See also* Consortium approach; FAUL; NELINET project
- Copyright office, 138
- Cost, 23-24, 146, 149, 155, 193, 197-198, 213, 217-218. *See also* Economic and financial aspects
- Criteria for operating systems, 206, 207
- Cross-referenced files, 76
- CRT terminals, 67, 223
- CUMARC data file, 8
- Data banks, 147-148
- Data encoding, 74-83, 186, 222-223
- Data management system, 123-125  
 design parameters, 127, 128  
 generalization of, 126, 127  
 levels of utilization, 129
- Digest of Public Bills*, 137
- Disadvantages of library automation, 100, 101
- Display terminals. *See* CRT terminals
- Dissemination of information, 227  
 by written documentation, 228, 231
- Documentation, 228, 231
- Dollar commitment, 99
- Dura paper tape typewriters. *See* Paper tape typewriters
- Economic and financial aspects, 14, 15, 23, 122, 129, 149-151, 155, 197-199, 208, 217, 218, 222, 223. *See also* Cost
- ENCODE Module, 29
- Experimental background, 226, 227
- FAUL. *See* Five Associated University Libraries
- Fees for interlibrary services, 150
- File management system, 123-129, 221
- File organization, 123, 140, 219-221
- Financial constraints. *See* Cost; Economic and financial aspects
- Fiscal File, 16
- Fiscal module, 29
- Five Associated University Libraries (FAUL), 106. *See also* Consortium approach
- Flexowriter. *See* Paper tape typewriters
- Format recognition, 132, 133
- FORTRAN, 87-89
- Funding, 129, 154-155
- Hardware and software in library applications, 72-74
- Higher-level programming languages, 88, 205. *See also* FORTRAN; PL/1 language

- IEBGENER computer program, 84-86
- Inefficient machine file processing, 122
- In-house development, 98-101
- In-process file, 16, 46
- IN-PROCESS program (Columbia University), 29
- INQUIRE (commercial service), 115
- Integrated technical service systems, 3-68
  - Chicago, 5-10
  - Columbia, 11-41
  - Stanford, 42-68
- Interinstitutional cooperation. *See* Consortium approach; Cooperative ventures; NELINET project
- International Nuclear Information System (INIS), 133
- Interrupt system for machine scheduling, 204
- Job control language (JCL), 203, 204
- Key Logic machine, 75, 81
- Keypunching input, 74
- Language and jargon, 230, 231
- LC. *See* Library of Congress
- Liaison with national agencies, 228
- Library commitment to major automation programs, 94-97
  - commercial service approach, 112-114
  - consortium approach, 106-109
  - independent development, 98-101
  - interinstitutional approach, 102-105
- Library of Congress, automation program, 130-143
  - Administration Terminal System, 137
  - cataloging-in-publication (CIP) pilot project, 135
  - in collaboration of national libraries, 160, 167, 168, 170
  - Computer Service Center, 139
  - consolidation of indexes, 135
  - Copyright office, 138
  - file organization study, 140
  - format recognition, 132
  - MARC project (*see* MARC)
  - objectives, 130
  - Order Division, 131
  - photocomposition devices, 134
  - Process Information File, 135, 136
  - production of book catalogs, 134
  - Library Systems Design, 7, 15-17, 46-48, 55-57
- LIBRICON (commercial service), 115
- List processing languages, 205
- Lister Hill National Center for Biomedical Communication, 171, 174-176. *See also* Biomedical Communications Network
- Logistical problems, 229
- Low-level language, 88
- Machine-based national data bank, 166
- Macroinstructions, 205
- Magnetic tapes, 114
- Management Information System, 138
- Management problems, 233-235
- Manpower commitment, 98, 99
- MARC, 4-6, 15, 16, 19, 21, 27, 142-143
  - BALLOTS project, 44-47
  - Distribution Service, 131
  - Library of Congress program, 134-136
  - National Libraries, 164, 166, 167, 169
  - University of Chicago project, 8-10, 188
- MARC SEARCH/MARC PROC module, 30
- MASFILE, 106
- Mass storage, 197, 198
- NAL. *See* National Agricultural Library
- National Agricultural Library, 162, 163, 167, 168, 170
- National Commission on Libraries and Information Science, 157
- National coordination, 151-153, 156, 160
- National libraries, 160-163. *See also* National Libraries Task Force on Automation
- National Libraries Task Force on Automation, 136, 160-170
  - Advisory Committee, 162
  - compatibility problems, 164
  - control over technical report literature, 165
  - Descriptive Catalog Group, 164, 165

- National Libraries Task Force on Automation (*continued*)  
 elimination of duplication of effort, 168, 169  
 immediate targets, 168, 169  
 long-range planning, 168  
 machine-readable cataloging, 164  
 National Serials Data Program, 166  
 problem areas and working groups, 161, 162  
 serials, 166  
 services provided, 163  
 short-range planning, 167, 168  
 standardization, 163-167  
 Systems Working Group, 167  
 National Library of Medicine, 160  
 Biomedical Communications Network, 174, 175  
 in collaboration with National Libraries, 163, 164, 167, 168, 170  
 National network, 120  
 National Serials Data Program, 166  
 National Union Catalog of Manuscript Collections, 133  
 NELINET project, 102-105  
 background, 102, 103  
 effects of cooperative approach, 103  
 internal relationships, 104  
 Networks, 148, 150, 171-182  
 New England Library Information Network. *See* NELINET  
 New York State Union List of Serials, 120, 121  
 NLM. *See* National Library of Medicine  
 NYSILL, 120
- OCR input, 75  
 On-line debugging, 89  
 On-line versus off-line systems, 98  
 Operating system, 203  
 Operations problems in university computing centers, 207, 208  
 Optical character recognition. *See* OCR  
 ORBIT II, 114, 115
- Packaged programs, 114-116, 124  
 Paper tape typewriters, 74, 75, 81  
 Personnel, 199, 200, 202  
 PL/1 language, 205, 206  
 Planning Council (CLSD), structure and composition, 229
- Political problems, 120  
 Program library, 204  
 Programming languages, 83-90, 204-206  
 Project scheduling and management, 20-21, 48-51, 100, 196, 200-201, 232
- Query language, 221, 222
- RECON pilot project, 132  
 Record and file design, 76-83  
 Regional Medical Library, 120
- Scheduling, automatic versus priority, 207, 208  
 Selective Dissemination of Information (SDI), 208  
 Serials control, 108, 136, 162  
 Service bureau, 106-107  
 Single-key access methods, 123  
 SKED, 134, 136, 139  
 SNAP, 87, 88  
 SNOBOL, 205  
 Software systems. *See* Computer software
- Sort-key building program. *See* SKED  
 Space commitment, 99, 100  
 SPIRES. *See* Stanford Public Information Retrieval System  
 SPIRES/BALLOTS project (Stanford University), 52-63  
 BALLOTS I and SPIRES I, 54, 55  
 BALLOTS II and SPIRES II, goals, 57-59  
 shared facilities, 59  
 system development, 55-57  
 Spooling systems, 204, 208  
 Staffing, 6, 13-14, 42-43, 98  
 Standard calendar date code, 165  
 Standard character set for magnetic tape, 165  
 Standards, 89, 120, 163  
 Standard serial number (SSN), 121  
 Standard utility computer program, 83  
 Stanford Public Information Retrieval System, 52, 58, 212-225. *See also* SPIRES/BALLOTS project  
 cost effectiveness study, 222, 223  
 file organization, 219-221  
 implementation, 218, 219

- Stanford Public Information Retrieval System (*continued*)
  - major goals, 212-214
  - operating costs, 217, 218
  - query language, 221, 222
  - scope, 215
- Stanford University Libraries, 3, 42-63.
  - See also* BALLOTS project;
  - SPIRES/BALLOTS project
- Structure of collaborative effort, 228, 229
- SUNY Biomedical Communication, 120
- Systems Design, 31-42, 55-57, 177, 231
- Technical meetings, 229, 230
- Technical problems, 230, 231
- Technical services, 3-4
- Technology, 148-150
- Terminals, 140, 223
- Three R's program, 120
- Time sharing, 47, 214-215
- Transferability, 70-71, 101, 232, 236
- Typewriter terminals versus display terminals, 223
- Underestimation of complexity, 119
- User Services, 146, 154, 212-214