

WANG SYSTEMS NEWSLETTER NO. 1

THINGS CHANGE

We now produce a more versatile and more powerful line of computer-products than ever before. Our software products are more comprehensive. More multinational companies buy our products. Wang is growing, changing, and adapting as our market and our technology develops. To support these changes, the Systems Support group is growing and changing. O.E.M. accounts now receive full-time attention from Richard Gilbert. Tom Crooks no longer confines his activities to the international scene. More than fifteen new field analysts have been added to the North American sales organization. Training programs have been conducted for all North American field Analysts and a majority of their international counterparts.

Finally the **Software Consultants Newsletter** has changed to this, the **Wang Systems Newsletter**. This bimonthly publication will address matters of interest to field Analysts, Systems Managers, and independent Software Consultants (vendors). Items discussed will include discussions of new hardware and software products, software products under development, technical matters having to do with systems design and programming, and news regarding interesting systems applications.

SOFTWARE RELEASED

Integrated Support System (ISS), Release 2

Release 1 of ISS, the Intergrated Support System (P/N 195-0004) was a major advance in capabilities and user convenience of our systems. The latest release of ISS adds several new features to augment that capability. Release 2 enhancements include:

- The addition of KFAM-3 and KFAM-4, which facilitates the use of work stations multiplexed to a single disk,
- SORT-3 in which sort parameters may be passed by user programs (rather than via keyboard) to the sorting routines.
- A decompression routine that generates a decompressed file and runs at about 7 sectors per minute.
- a program listing routine which runs much faster than in Release 1, but builds no cross-reference tables,
- smaller, quicker, programming-aids routines.

Most of the system has been revised not only to function faster and better, but to use less memory. A more detailed discussion of the new release can be found in Application Bulletin No. 20 or the Manual, P/N 700-3657A.

Further development of this package, underway at this time, will enhance the multi-CPU capabilities of the system. Consequently, the idea of "Annual Support" for this product becomes quite important.

The latest release of ISS is Release 2.1, which incorporates repair of all known bugs in the initial release. (Release 1 is no longer supported or available.)


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A final and very important note should be made regarding your use of ISS and other Wang software products. Compatibility with existing software plays a major role in the design process for new hardware products. Often these considerations are reduced to consideration of compatibility with ISS. Consequently, to insure that your software systems can make full use of new hardware products, it's wise to make full use of ISS, particularly, KFAM.

BISYNCH EMULATORS

Wang's entry into what some consider to be a "whole new marketplace" is based on a new telecommunications interface, the 2228, and a family of software products. The 2228 controller contains its own microprocessor and buffer memory so that it can operate asynchronously with the 2200 processor. Software emulation is now available for the IBM 2780, 3780, and 3741 remote batch terminals operating under the IBM binary synchronous communications protocols.

Supporting software includes a data entry module capable of editing and formatting records for use by the standard emulation packages. The Bisynch Emulation package has the part number 195-0022, the manual part number is 700-3757A. The T/C Utilities package is number 195-0026, and its manual is number 700-4086.

To date, some 150 systems have been installed including some 20 companies installing many systems for use both as local processors and remote batch terminals.

ASYNCH TELECOMMUNICATIONS

Customer demand exceeds our support capability for software supporting the 2227B Asynchronous Telecommunications Interface. Some 300 boards have been sold to about 100 customers - all running on a pre-release software system. Development is underway of a full-blown emulation package which should be quite attractive.

MANAGEMENT PLANNING SYSTEM (MPS)

Leading the software products of the Industry Marketing Group in terms of sales interest is the Management Planning System. This software product, due for formal release this month, has generated considerable interest among customers and the sales force.

The system, designed by Lou Brock of Industry Marketing to help businessmen make financial projections, permits users to introduce their own modeling techniques in order to judge the effectiveness of alternate business plans.

An aggressive marketing plan being implemented for MPS includes an attractive slide presentation and a number of glossy brochures. It is anticipated that the system can, in some cases be used as stand alone purchasing justification for customers; and, in other cases, provide an exceptionally strong alternate use of the Wang system. Literature available includes:

A users manual - , not yet released

a marketing guide - write Mindy Richards for a copy,

an ad reprint - P/N 700-4052,

a glossy brochure, the "What if" brochure - P/N 700-3917.

GENERAL BUSINESS SYSTEM (GBS)

At long last the first release of GBS, Module 1 for diskettes, has been released. Module 1 includes Invoicing, Accounts Receivable, and Sales Analysis. Future modules and tentative release dates are:

MODULE ITEMS	FLOPPY DISK	HARD DISK
1. Invoicing Accounts Receivable Sales Analysis Minimal Inventory Syst.	Sent	Jan. 77
2. Order Entry Inventory Control Back Orders, etc.	Feb. 77	Feb. 77
3. Accounts Payable General Leger	March 77	April 77
4. Payroll	Not Scheduled.	Not Scheduled

Distribution of GBS, handled by the Systems Support Group, will be through local analysts and software managers. It is intended for use by in-house staff or software vendors only. Upon installation of the system or parts of it, a one time license fee is to be collected and remitted to Wang in addition to charges levied by the installing organizations.

The General Business System is a tool to assist software vendors in the development of business application software for end-users of the WCS/30 and WCS/20. Consequently, major concern in the development of GBS was to design the application programs to include those functions judged most common to the largest population of users. The intention was to provide an easily modifiable package as well as a package which did not lock out any industry or business-type application.

Techniques used in the design of GBS to meet the above-mentioned criteria include:

- straightforward overall design,
- extensive use of utilities and subroutines for repetitive tasks,
- use of Wang's latest, most efficient versions of Key File Access Method (KFAM) and SORT utilities,
- modularizing file I/O routines so that one change to read and write statements and appropriate changes to the affected programs is all that is required to modify a file,
- inclusion of a Report Generator utility program to simplify programming of reports,
- establishment of and conformance to a set of standards regarding program line numbers, usage of variables, programming techniques, etcetera.

With its random access capabilities, GBS is a true disk-oriented system. As such, the need for presequencing or sorting of input data is eliminated. Also, since most of the files in GBS are KFAM files, updating is performed "on line." Therefore, it is not necessary to keep track of a large number of storage medium.

To ease vendor modification, GBS records, in general, are laid out such that only fields essential to program operation are included. These fields are placed at the front of the record; thus, room is provided in the record for vendors to add fields necessary to satisfy customer specifications. File size and allocation have been left up to the vendor, who is in the best position to determine these parameters.

Generalized use of GBS by our vendor network should add significantly to the transportability of applications software among vendors. Knowledge of the overall file structure and design, operating procedures and variable usage permits a rapid and cost-effective familiarization period by one vendor installing another's GBS-based applications.

COMPUTERIZED ACCOUNTING SYSTEM HELPER (CASH)

Another Industry Marketing's big seller is CASH. This system, sold by Wang under a marketing arrangement with a Florida software vendor, has a current installed base of about 25 users. This system, which runs on dual diskettes, is designed for CPA's and Public Accountants and handles all activities from journal entries through preparation of financial statements and special schedules. A complete description of the package is available in the "Marketing Guide for CASH," P/N 700-3784. Other literature available on CASH includes:

a brochure, "Wang Cash, the Better Way . . .", P/N AD9002,

a marketing guide, P/N 700-3484,

and an ad reprint, P/N 700-4054.

Further information on the package and associated marketing efforts can be obtained from Stan Ansin at the home office.

AUTOMATE III

Back-office accounting for auto dealers - a new horizon for our old standby customers - is now being penetrated by AUTOMATE III. A vendor in New Jersey wrote the package, which provides complete back-office accounting services including:

- journal entries and their summaries,
- daily operating controls,
- a customized chart of accounts with complete financial statement production,
- accounts receivable,
- off-cycle reports,
- payroll, and a
- sales follow up system.

Bruce Lustig, the System's Marketing Manager, reports that Wang has just completed the first Wang-supported installation, bringing the total user base to five. Accommodating dealerships having total (new and used) unit sales of 100 cars a month or more, the installed base should grow rapidly. Literature available includes:

a brochure, P/N 700-3918,

a user's manual, P/N 700-4040, and

a Sales and Marketing Guide available from Bruce Lustig.

SOFTWARE DEVELOPMENT

\$PARK

The \$PARK system for automobile parts wholesalers is getting some interesting enhancements; parts of GBS are being added. The additions include invoicing and accounts receivable. We'll have more information about \$PARK and its enhancements in a subsequent issue as the enhanced product nears its release date.

In the meantime, the fifth system has just been installed and appears to be functioning smoothly. The systems installed to date all operate in the multiplexed environment. The version of the system involving telecommunications is significantly more complicated; and Joe Glavin, marketing MANAGER for the project, expects this version to "catch on" as the installed base for its less complicated brother grows. Literature available includes:

a brochure, P/N 700-3911,

a mini-marketing guide, P/N 700-4010A,

and an ad reprint, P/N 700-4000A.

ISS RELEASE 3

Release 3 of ISS is headed toward quality control in a few weeks and should be released within a few months. Release 3 involves changes to the majority of the ISS modules to better facilitate the disk-multiplexed installation. Many of the routines will be smaller, excepting the KFAM routines, which have grown a bit to support multiplexing. This version of KFAM requires retrofitting an ECN (Engineering change Notice) in the multiplexor which facilitates use of a \$GIO statement to select and deselect disk hog mode.

PROFILE LARIMORE & ASSOCIATES

Borrowing on a name familiar to all Wang users, Joe Larimore is capitalizing on the relatively untapped market of police systems with a system called STAR-TRAK. After a stretch in the U.S. Marine Corp., Joe went to work in 1961 as a researcher for the St. Louis, MO, Police Department where he worked under only the second grant of funds for computer modeling of police deployment strategies. After six years at the St. Louis Police Department, Joe joined Systems Sciences Corporation where he gained still more experience in police-related computer applications.

Exercising a dream held by many of our readers, Joe founded Larimore & Associates in 1970. Using a police consulting business base, Joe began transferring his expertise into code for the 2200. The resulting STAR-TRAK System, designed for 100- to 200-man police departments, provides three kinds of functions:

1. Computer-Aided Dispatch. This system accepts entry of a "complaint," displays the status of all police units (usually vehicles), and records the dispatch of a unit in response to the complaint.
2. Police Report System. In this functional element, reports of all types of activities are entered and filed according to a variety of retrieval and matching codes. Sorting and matching of activities in this and related files includes sophisticated "soundex" methods for matching names even though spelling may differ due to operator uncertainty.
3. Management System. This loosely related group of modules round out the capabilities of the system in providing a full range of reporting, accounting, personnel and inventory functions to the police department.

Exemplifying the more recent trend in system's sales, the systems are fairly large, running on two or three hard disks, a couple of floppy disks, and several CPU's; and total between fifty and one-hundred thousand dollars of hardware and ten-to-thirty thousand dollars in software.

Joe's first police department installation was in North Las Vegas, Nevada in 1974. A similar system is just being completed in the Altoona-Johnstown area in Pennsylvania, and work is now started for the police department in Cranston, Rhode Island. Several other cities are "in the queue" at this time; and Joe now faces the more pleasant problem of how to service the growing business.

NEW PRODUCTS RELEASES

THE BIG NEWS - 2200VP

Enhanced BASIC, soft interrupts, and super speed mark the important features of the new 2200VP. COBOL/PL1 like IF-THEN-ELSE statements should save a few hours' programming and debugging. The logical operators can be concatenated and the THEN and ELSE arguments can be statements. For example: IF (A > B) AND C\$ = B\$ THEN T = T + T1 ELSE T = T + T2. Of course, line number transfer can still be used for these arguments.

Other handy language enhancements include:

- 128-byte strings,
- use of alpha arrays as strings,
- nearly unlimited array sizes,
- a concatenation operator,
- more versatile PRINT and PRINT USING statements,
- a new line input verb LINPUT which makes use of the keyboard edit keys,
- a more logical error code structure.

The COMMAND structure got a boost too with the addition of keyboard entry of many features formerly found in ISS, such as a decompressed listing function and several kinds of cross-reference verbs; e.g.:

LIST V	variable/line number cross-ref.
LIST #	line number/line number cross-ref.
LIST '	line number / DEFFN' cross-ref.

And finally - yes, Alice, it really works. We've spent a few hours in the cockpit, and all the claims seem to come to life. Compatibility with the software we've tried, except for going too fast and new error codes, has so far been 100%. It's a matter of load and run - honest!

In the next issue of this newsletter, we plan to have a large section devoted to the new box. In the meantime, peruse the data sheet and Product Bulletin enclosed. The timings in the data sheet, by the way, are a bit conservative. More on that later.

OTHER NEW PRODUCTS

A late summer-announcement package brought the year's number of new product announcements to something over 100. **Unbelievable!** Highlights of these included the:

PCS	Portable Computer System
WS	Work Station
2272	Drum Plotter
2231W-1	Printer, 112
2231W-2	Printer, 132-column
2260B-2	20-Meg. Disk Memory Unit
2251	40-Column Printer
2254	IEEE Data Bus Interface

Product bulletins and data sheets are available to describe these new products.

SHORT SUBJECTS

- A dutch insurance firm has 52-Meg. of "online" storage in the form of 200 diskettes. They prefer it over a hard disk-based system.
- Have you tried the MAT SEARCH statement. We had an analysis problem involving eight badge-reading terminals on a multi-drop line. It was no big problem to poll the terminals and acquire the data. The problem was to verify the badge number and send a yes/no answer back to the terminal during a single poll transaction. Given a one second maximum delay for the system, we had only 1/8 second (125 milliseconds) to service the terminal. Verification involved finding a match among 300-9-digit numbers. A binary search of the 300 number in BASIC was too slow. MAT SEARCH came to the rescue. The worst case, e.g., matching at the last element in the list, took only 60 milliseconds. Not bad!
- Our largest single T/C-based user has fifteen 2227B's and four 2228's at a single site. Think about the opportunities . . . How does that compare with a mainframe in throughput?
- V.P. error numbers- they're different - look out.
- From an interrupt viewpoint, CRT's and disk units are always "ready." This feature can be good or bad depending on how you look at it.
- News from the depths of R & D comes up garbled about the SMUX or smart multiplexer. It's due in a few months (6), but nobody knows what it will look like.
- The V.P. does X + Y, all thirteen digits' worth, in 0.11 milliseconds versus 0.8 for the T processor. String functions show even more improvement.

PRODUCT BULLETINS

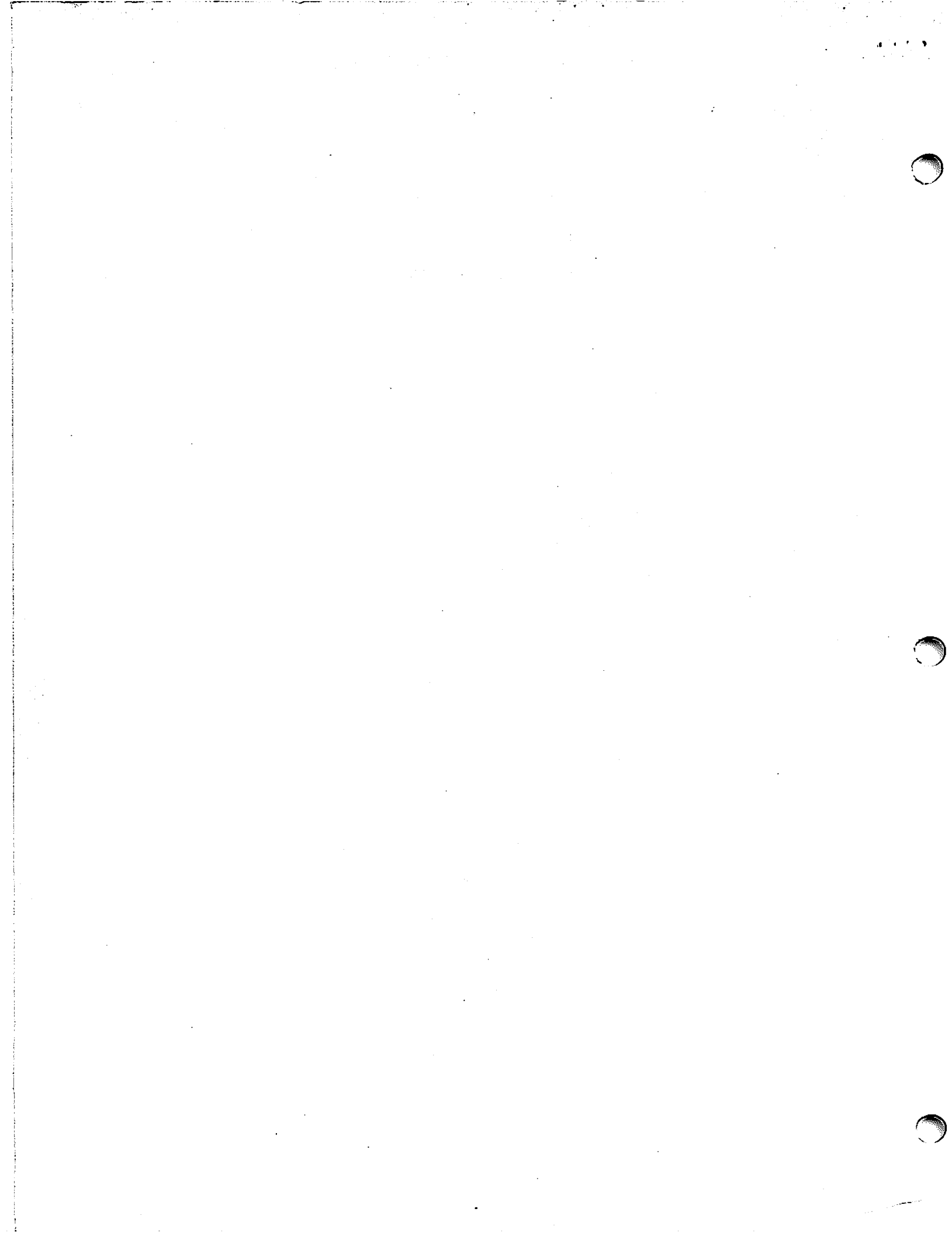
Herewith the best list we could find of "every" Product Bulletin ever published for the 2200 product line.

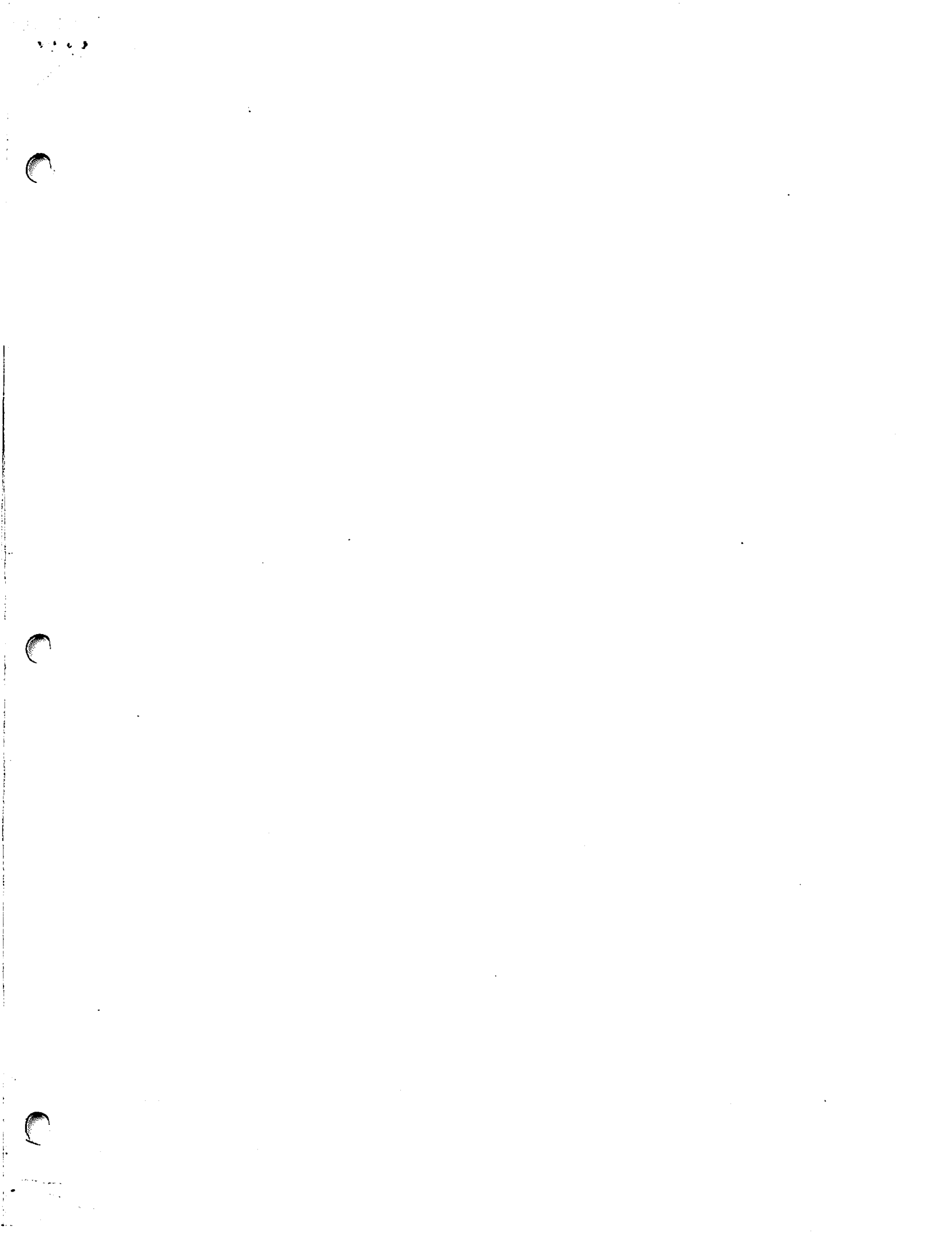
NUMBER	SUBJECT	NUMBER	SUBJECT
49	2230 1 2230 2 2230 3 Preliminary Specifications	88	621 721 2221 Field Retrofit (Non Slash Zero)
49A	30 Disk Additional	89	2243 Triple Removable Flexible Disk
49B	730 2230 Conversion	90	2244 Hopper Feed MS Punched Card Reader
50	Announcing the New 2231 High Speed Printer	90A	Updated Model 2244 Hopper Feed Mark Sense/Punched Card Reader Addendum
55	Peripheral Connection Capacity the 2219 I/O Extender	91	2242 Single Removable Disk
55A	Peripheral Connection Capacity the 2219 I/O Extender (Revised 4/23/73)	92	2224 Disk Multiplexer
55B	Peripheral Connection Capacity the 2219 I/O Extender (Revised 10/10/73)	92A	Addendum 2224
56	Model 2222 Alpha-Numeric Keyboard	92B	Model 2224 Disk Multiplexer Addendum
56A	Model 2222 Alpha-Numeric Keyboard (Revised 4/26/73)	94	2227 N Null Modem
57	"2202 Plotting Output Writer"	95	2216A CRT Upper/Lower Case
57A	"2202 Plotting Output Writer" (Revised 4/26/73)	98	2260 Ten-Megabyte Disk Drive
58	2217 Single Magnetic Tape Reader/Recorder	98A	2260 Ten Megabyte Disk Drive Not Compatible With 2230
58A	2217 Single Magnetic Tape Reader/Recorder (Revised 4/26/73)	99	730 to 2230 Disk Platter (s) Conversion Package
59	2207 Teletype Controller	100	2200 C
59A	2207 Teletype Controller (Revised 4/26/73)	101	2200S/2220
59B	2207 1 Teletype Interface Controller (Revised 9/73)	102	8K Block for All 2200 CPU's
59C	2207 A Addendum C	103	2234A Punched Card Reader
60	Telecommunications and Teletype Interface Options for the 2200	104	2244A Punched/Mark Sense Card Reader
60A	The 2227 and 2227A Telecommunications Interface Addendum 9/20/73	105	X-Y Digitizer
61	2202 2221 Retrofitted 601 701 621 721	106	2292 Auxiliary Display
61A	Retrofit Kit now available for 602/702 into 2202 Addendum 9/20/73	107	2223 Alphanumeric Basic Keyword Keyboard
64	Language Features of the 2200B	108	2252A 1-10 BCD Digit Parallel Scannable
64A	Language Features of the 2200B (Revised)	109	Sort ROM OP-5
64B	Additional System 2200B Language Features Addendum	110	2209
65	2200B Matrix Option	112	Options 22-23
65A	2200B Matrix Option (Addendum 7/20/73)	114	Opt 24, 20A, 32 for 2200S
65B	2200B Matrix Option (Addendum 9/73)	115	2221W Line Printer
67	2200 Wang Output Writer	116	2200T CPU
68	Packard/Wang On-line System	117	2226 CRT/Keyboard Console
69	Model 2232 Digital Flat Bed Plotter	119	2270 Diskette Drive
72	System 2200 Option 2 General I/O Peripheral Command ROM	120	2230 MXA/B Disk Multiplexer
73	Stack Feed Card Reader 2234	121	2228
74	Announcing the 2221 High Speed Printer	122	2200 Output Writers - new versions (Models 2201 & 2202)
74A	Announcing the 2221 High Speed Printer (Revised 8/24/73)	123	Green CRT
75	Model 2212 Analog Plotter Compatible with the System 2200B	124	2227B Buffered Asynchronous Communications Controller
76	Model 2203 High Speed Paper Tape Reader	125	2272 Drum Plotter
77	Model 2250 Parallel I/O Interface Specifications	126	2231W Line Printer
78	2214 Mark Sense Card Reader	127	Work Station WS-1
80	2240 Disk System	128	PCS Portable Computer System
82	2218 Dual Tape System	129	Model 2260 2 Dual Ten Megabyte Disk System
84	Option III Char Edit ROM	131	2254 IEEE-488 interface
84B	Addendum to Op III Char Edit ROM	132	2251 Line Printer
85	2252 Input Interface	133	2200VP Central Processor
86	2216 CRT Audio Signal	134	2231W 2 Line Printer
87	2261 HS Line Printer		

APPLICATION BULLETINS

Also, to our knowledge, the latest and longest list of Application Bulletins:

NUMBER	SUBJECT
1.	TDS-22/1 Total Design System Surveying 2200
2.	Release of Module III for BAS I
3.	The Wang Basic Accounting System BAS I Module I, II
4.	General Utilities II
5.	600 Clinical RIADS Package
6.	KFAM (old version)
7.	ANOVA (Analysis of Variance)
8.	KFAM-2 and KFAM-3
9.	Sequential Analysis Package
10.	Nonparametric Statistics Package
11.	WCS Integrated Support System (ISS)
12.	Regression Analysis
13.	Sequential Analysis (Diskette Version)
14.	2200 Integrated Support System (I.S.S.) Release I
15.	IBM 2780 Terminal Emulator Program
15A	IBM 3780 Emulation
16.	Report Program Language Utility (R.P.L.)
17.	Text Editing Utilities Package (2200/1200)
18.	Analysis of Variance (ANOVA) Diskette Version
19.	Regression Analysis Package (Diskette Version)
20.	ISS Release 2 (Integrated Support System)





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