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Subj: 2436DE/DW And 2426DW Preliminary Business Plan

Date: December 3, 1985

This document outlines the proposed business plan for the 2436DE, 2436DW and 2426DW 2200 workstations. These new workstations replace the existing 2336DE, 2336DW and 2326DW workstations.

The objectives of the attached plan are:

- . To provide a cost-reduced workstation to improve the cost/performance of the MicroVP
- . To offer a Wang workstation competitively priced with the Wang look-a-likes
- . To provide a new, modern looking workstation consistent with the MicroVP image

Consistent with our cost reduction and modernization program for the MicroVP and related peripherals and to be competitive in the async terminal marketplace, Wang needs to offer new low cost and modern looking 2200 workstations. Our Value Added Resellers (VARs) are pleased with the MicroVP as a product and it's selling price. However, Wang look-a-likes selling in the \$900 to \$1,300 price range are beginning to look attractive to both the VARs and our users. In addition, the 2336 line of workstations are associated with the older, non-VLSI MVPs and do not have a modern looking appearance.

### Product Description

#### Hardware

The 2436 workstation will consist of a modified 4230 series electronics package, a PM004 monochrome monitor and a repainted 2336DE/DW or 2326DW keyboard. A new printed circuit board for the 4200 workstation series electronics package. The final product will be plug-compatible with all existing 2200 products that utilize the current 2236, 2226, 2336 and 2326 DE and DW series.

There will be 17 language options for the 2436DE and 24 language options for the 2436DW, 8 of which will have 2426DW model numbers to indicate an expanded keyboard.

#### Software

As the final product will be plug-compatible with existing 2200 workstations, no software will have to be modified to utilize the new 2436/26 series.

#### Market Analysis

There are estimated to be 64,000 2200 users worldwide and current MicroVP sales are averaging 150 to 200 new systems per month. The majority of the new systems being sold are P packages which include a minimum of 2 workstations per package. Previous analysis has determined that a typical installed system has an average of 4 workstations.

With an anticipated selling price below the current \$1,695 and the appeal of a modern looking workstation, we will be able to leverage the installed base through the corporate installed base marketing program.

There is also the potential to increase the average number of workstations per new system due to the lower selling price.

#### Market Requirements

Current 2300 series prices and recommended 2400 replacement prices are as follows:

<u>MODEL</u>	<u>PRICE</u>	<u>REPLACEMENT MODEL</u>	<u>RECOMMENDED PRICE</u>	<u>GPM 2300</u>	<u>GPM 2400</u>
2336DE	\$1,695	2436DE	\$1,295	N/A	N/A
2336DW	1,695	2436DW	1,295	N/A	N/A
2326DW	1,695	2426DW	1,295	N/A	N/A

For international use, the specified foreign language character set will be supplied at no additional cost to the purchaser.

Forecasts.

FY'85 workstation bookings and the first 3 months of FY'86 were as follows:

<u>MODEL</u>	<u>FY'85</u>	<u>JULY</u>	<u>AUGUST</u>	<u>SEPTEMBER</u>	<u>TOT Q1</u>
<u>Domestic</u>					
2336DE	4,696	374	645	581	1,600
2336DW	1,731	98	156	166	420
2326DW	<u>21</u>	<u>2</u>	<u>(2)</u>	<u>2</u>	<u>2</u>
Total	6,448	474	799	749	2,022

International

2336DE	3,307	185	179	206	570
2336DW	1,427	220	64	48	332
2326DW	<u>254</u>	<u>73</u>	<u>5</u>	<u>26</u>	<u>104</u>
Total	4,988	478	248	288	1,006

Worldwide

2336DE	8,003	559	824	787	2,170
2336DW	3,158	318	220	214	752
2326DW	<u>275</u>	<u>75</u>	<u>3</u>	<u>28</u>	<u>106</u>
Total	11,436	952	1,047	1,029	3,028

U.S. Forecast

<u>MODEL</u>	<u>Q4 FY'86</u>	<u>Q1 FY'87</u>	<u>Q2 FY'87</u>	<u>Q3 FY'87</u>	<u>TOTAL</u>
2436DE	1,600	1,600	1,600	1,600	6,400
2436DW	425	425	425	425	1,700
2426DW	5	5	5	5	20
Total	2,030	2,030	2,030	2,030	8,120

International Forecast

2436DE	600	600	600	600	2,400
2436DW	350	350	350	350	1,400
2426DW	100	100	100	100	400
Total	1,050	1,050	1,050	1,050	4,200

Worldwide

2436DE	2,200	2,200	2,200	2,200	8,800
2436DW	750	750	750	750	3,000
2426DW	105	105	105	105	420
Total	3,055	3,055	3,055	3,055	12,220

Announcements

	<u>U.S.</u>	<u>INT.</u>
Announcement Date	4/25/86	4/25/86
FCS	4/25/86	4/25/86
Volume	5/16/86	5/16/86

- . The 2436DW is designed to support DP, graphics, and word processing. The 2436DW includes special keys to support WP, such as the cursor control keys, and the editing keys INSERT, DELETE, PREV SCRNL, and NEXT SCRNL. Other WP specific keys as INDENT, PAGE, CENTER, DEC TAB, FORMAT, MERGE, NOTE, STOP SRCH, REPLACE, COPY, MOVE, COMMAND, SUPERSCRIP, and GO TO PAGE are included.
- . The 2426DW is the same as the 2436DW except it has an expanded foreign-language keyboard.

All keyboards support both uppercase and lowercase characters for DP and WP applications or uppercase characters only for DP applications. All 2436 workstations, including U.S. models, must be ordered with a country kit (refer to the Ordering Information section of this article).

#### Graphics

All models use both an alternate character set and unused portions of each character position to create a variety of graphics. Box graphics allow line segments to be drawn at any character position. Character graphics, which display geometric designs rather than the normal characters, are an alternate character set.

#### Terminal/CPU Interface

When configured with a 2200 or MicroVP system, each 2436 is connected to either a 22C32 Triple Controller, 2236MXD Terminal Processor, or a 2236MXE Terminal Processor. Each 2236MXD or 2236MXE can support up to four workstations. Any 2200 or MicroVP CPU with the 2.7 Operating System (OS) can support up to 16 workstations. All other OSs can support 13 with the exception of the SVP which supports a maximum of three workstations. The workstation can be located up to 2,000 feet (606.1 meters) away from the CPU. Communication between the workstation and the CPU is asynchronous, full-duplex, with selectable line speeds from 300 to 19,200 bits per second (bps). Remote workstations are supported via modems and telephone lines.

#### Other Features

- . Each workstation can support its own 36-pin, RS-232C compatible printer
- . Self-testing diagnostics when powered on
- . A full 128-character set
- . Bright, normal intensity, blinking or non-blinking, underlined or reverse video for characters. More than one attribute can be assigned to a character.
- . Detachable keyboard
- . The 2436 user has the ability to use two options available for the VS 4200 workstation series:

- The 4200-AC001 monitor arm, which allows a user to mount the monitor portion of the workstation above the desk area
- The 4200-AC002 desk clamp, which allows a user to mount the electronics box vertically on a wall or a flat wooden desk surface

NEW MICROVP SYSTEMS CONFIGURATIONS

As a result of announcing the new 2436 series of workstations, the current MicroVP-P1, -P2, -P3, and -P4 packages are replaced with four new cost-reduced P packages incorporating the new workstations. These are designated as the MicroVP-P5, -P6, -P7, and -P8 packages. In addition, three new P packages are announced that include two additional workstations. These are designated as the MicroVP-P6+2, -P7+2, and the -P8+2. We are also announcing a fourth new P package, designated as the MicroVP-P0, that does not include any workstations. These packaged configurations provide a substantial discount against the sum of the individual components if purchased separately.

<u>PACKAGE</u>	<u>DESCRIPTION</u>
MICROVP-P0	128KB MicroVP proc. with 7 available I/O slots
MICROVP-P5*	128KB MicroVP proc. with 8 available I/O slots
MICROVP-P6*	128KB MicroVP proc. with 7 available I/O slots
MICROVP-P6+2*	128KB MicroVP proc. with 7 available I/O slots
MICROVP-P7*	128KB MicroVP proc. with 7 available I/O slots
MICROVP-P7+2*	128KB MicroVP proc. with 7 available I/O slots
MICROVP-P8*	512KB MicroVP proc. with 6 available I/O slots
MICROVP-P8+2*	512KB MicroVP proc. with 6 available I/O slots

The following table indicates the configuration of each package.

<u>PACKAGE</u>	<u>2436DE</u>	<u>22C32</u>	<u>22C11</u>	<u>2236MXE</u>	<u>2275-10</u>	<u>2275-30</u>	<u>2229</u>
	<u>WS</u>	<u>TRIPLE</u>	<u>DUAL</u>	<u>TERM.</u>	<u>DISK</u>	<u>DISK</u>	<u>TAPE</u>
		<u>CONTRL.</u>	<u>CONTRL.</u>	<u>PROC.</u>	<u>DRIVE</u>	<u>DRIVE</u>	<u>CART.</u>
MICROVP-P5	1	1	0	0	1	0	0
MICROVP-P6+2	4	0	1	1	1	0	0
MICROVP-P7	2	0	1	1	0	1	0
MICROVP-P7+2	4	0	1	1	0	1	0
MICROVP-P8	2	0	1	1	0	1	1
MICROVP-P8+2	4	0	1	1	0	1	1

\*Use MICROVP-P5A, -P6A, -P6+2A, -P7A, -P7+2A, -P8A, -P8+2A for 2436DW workstations and MICROVP-P5B, -P6B, -P6+2B, -P7B, -P7+2B, -P8B, -P8+2B for 2426DW workstations. Substitutions of other components are not allowed.

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### PRODUCT STRATEGY

The new 2436 workstation is the first of a series of new peripherals and cost reductions to complement the MicroVP. In addition to a selling price reduction of \$400 versus the previous 2336 series price, monthly maintenance prices have been decreased from \$23 per month to \$15 per month, a reduction of 35%. The new replacement P packages, utilizing the new workstations, have been reduced in price by \$400 to \$800 per package, depending on the number of workstations.

The three new +2, four-workstation packages, have been created because:

- . Through April of this fiscal year, 77% of the new systems sold were P packages. The largest of the two-workstation P packages, the MicroVP-P4, accounted for 40% of the total P package sales. Hence, we are enriching our P package offerings and offering more larger size packages, e.g., the +2 versions.
- . Offering four-workstation packages further reduces the cost per workstation for a user and further increases the price/performance ratio of the MicroVP, especially important when a VAR is competing against micros. For example, the previous MicroVP-P2 with two workstations sold for \$10,300. The replacement package is the MicroVP-P6 which now sells for \$9,500. The new MicroVP-P6+2 package with two additional workstations sells for \$11,600 versus the previous price of \$10,300 for the MicroVP-P2 plus \$3,390 for two more workstations, a savings of \$2,090. This same savings applies when comparing the MicroVP-P7+2 and MicroVP-P8+2 to previous MicroVP-P3 and MicroVP-P4 two-workstation P packages.

A P package without any workstation (MicroVP-P0) is being offered at the request of our VARs and users who wish to update SVPs and small LVPs to MicroVPs and utilize all their existing 2200 peripherals. The MicroVP-P0 package provides an economical growth path for existing small 2200 system users who only need a new CPU and additional controllers.

2200 VARs have depended almost entirely on the MicroVP for their product in a price-sensitive market. With the new cost-reduced workstations and packaged systems, 2200 VARs and software vendors can continue their successes with highly competitive selling and maintenance prices.

### DISCONTINUED PRODUCTS

The following models are being discontinued, effective August 31, 1986. The following lists the discontinued models and their replacements:

<u>MODEL NUMBER</u>	<u>DESCRIPTION</u>	<u>REPLACEMENT</u>
2336DE	DP Workstation	2436DE
2336DW	DP/WP Workstation	2436DW
2326DW	DP/WP Expanded Keyboard	2426DW
MICROVP-P1	128KB P Package	MICROVP-P5
MICROVP-P1A	128KB P Package	MICROVP-P5A
MICROVP-P1B	128KB P Package	MICROVP-P5B
MICROVP-P2	128KB P Package	MICROVP-P6
MICROVP-P2A	128KB P Package	MICROVP-P6A
MICROVP-P2B	128KB P Package	MICROVP-P6B
MICROVP-P3	128KB P Package	MICROVP-P7
MICROVP-P3A	128KB P Package	MICROVP-P7A
MICROVP-P3B	128KB P Package	MICROVP-P7B
MICROVP-P4	512KB P Package	MICROVP-P8
MICROVP-P4A	512KB P Package	MICROVP-P8A
MICROVP-P4B	512KB P Package	MICROVP-P8B

#### SUPPORT SERVICES

Current Wang Software Services (WSS) 2200 support policies and services will apply. Refer to the Support Services section of the current Pricing Manual.

#### DOCUMENTATION

The 2436 Series Interactive Terminal Users Manual (715-0739) has been developed for the 2436 workstation and will be auto-enclosed when shipped. The users guide contains a complete overview of the capabilities of the 2436 workstation.

#### Sales Aids

A 2436 Series Interactive Terminal Data Sheet (715-0816) and the new MicroVP brochure, "The MicroVP Starts Small And Grows With Your Business" (700-5845F), will be available in Q3 CY'86 from WangDirect.

#### WANGCARE SERVICES

##### Customer Warranty

The 2436 workstation is warranted to be free from defects in materials or workmanship for a period of 90 days from date of installation. Warranty is in accord with terms and conditions in effect as of the time of sale.

##### On-Site Maintenance Agreement

On-Site (Plan A), Wang's standard on-site maintenance agreement, provides for 12 months of on-site service.

##### Per-Call On-Site Service

Per-Call On-Site Service is available on a time-and-material basis. Customers who wish to use this service should call the nearest Area Call Control Center toll-free number to arrange for a service appointment.



### AVAILABILITY

Orders for the 2336DE, 2336DW and 2326DW workstations, and the MicroVP-P1 (A/B), -P2 (A/B), -P3 (A/B) and -P4 (A/B) packages will be accepted up to August 31, 1986. Orders submitted after that date must be for the corresponding workstation or P package. Subject to the availability of 2336 workstations, the company reserves the right to commence shipping the new series of 2436 workstations or P packages that include 2436 workstations in lieu of 2336 workstations, for orders received prior to August 31, 1986.

<u>MODEL NUMBER</u>	<u>FCS</u>	<u>VOLUME SHIP</u>	<u>REQUIREMENTS</u>
2436DE	7/31/86	8/31/86	Any 2200 OS
2436DW	7/31/86	8/31/86	Any 2200 OS
2426DW	7/31/86	8/31/86	Any 2200 OS
MICROVP-P0 (A/B)	7/31/86	8/31/86	OS 2.6 or greater
MICROVP-P5 (A/B)	7/31/86	8/31/86	OS 2.6 or greater
MICROVP-P6 (A/B)	7/31/86	8/31/86	OS 2.6 or greater
MICROVP-P6+2 (A/B)	7/31/86	8/31/86	OS 2.6 or greater
MICROVP-P7 (A/B)	7/31/86	8/31/86	OS 2.6 or greater
MICROVP-P7+2 (A/B)	7/31/86	8/31/86	OS 2.6 or greater
MICROVP-P8 (A/B)	7/31/86	8/31/86	OS 2.6 or greater
MICROVP-P8+2 (A/B)	7/31/86	8/31/86	OS 2.6 or greater

### ORDERING INFORMATION

When ordering a 2436DE/DW or 2426DW workstation, or a MicroVP-P5 through MicroVP-P8+2 package, a country kit must also be ordered for each workstation. A country kit is a box which is ordered with a unit, free of charge, and includes the following: country-specific power cord, software and/or documentation (translated if available) and a country-specific keyboard.

This procedure introduces a slightly different ordering procedure than some are used to. If no country kit is ordered, none will be shipped thus rendering the product unusable and causing many problems. This includes orders for standard Domestic (U.S.) workstations and P packages.

To order a 2436DE/DW or 2426DW workstation, the following examples can be used:

Example:

To order a Domestic (U.S.) 2436DE, order:

<u>MODEL NUMBER</u>	<u>DESCRIPTION</u>
2436DE	2436DE Workstation
2436DE-CK-US	2436DE Country Kit U.S.

Example:

To order a French 2436DW, order:

<u>MODEL NUMBER</u>	<u>DESCRIPTION</u>
2436DW	2436DW Workstation
2436DW-CK-AZ	2436DW Country Kit Azerty French

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The following country kits are available:

2436DE COUNTRY KITS

<u>MODEL NUMBER</u>	<u>DESCRIPTION</u>
2436DE-CK-AZ	AZERTY (France and Belgium)
2436DE-CK-CA	CANADIAN (Canada)
2436DE-CK-DA	DANISH (Denmark)
2436DE-CK-GE	GERMAN (Germany and Austria)
2436DE-CK-GL	GREEK/LATIN (Greece)
2436DE-CK-IC	ICELANDIC (Iceland)
2436DE-CK-KA	KATAKANA (Japan)
2436DE-CK-ME	ARABIC (Middle East)
2436DE-CK-NL	DUTCH (The Netherlands)
2436DE-CK-NO	NORWEGIAN (Norway)
2436DE-CK-SE	SOUTH AFRICAN (South Africa)
2436DE-CK-SF	SWISS FRENCH (Switzerland)
2436DE-CK-SG	SWISS GERMAN (Switzerland)
2436DE-CK-SP	SPANISH (EUROPEAN) (Spain)
2436DE-CK-SW	SWEDISH (Sweden)
2436DE-CK-UK	UNITED KINGDOM (U.K.)
2436DE-CK-US	UNITED STATES (U.S.)

2436DW COUNTRY KITS

<u>MODEL NUMBER</u>	<u>DESCRIPTION</u>
2436DW-CK-AZ	AZERTY (France and Belgium)
2436DW-CK-CA	CANADIAN (ENGLISH) (Canada)
2436DW-CK-DA	DANISH (Denmark)
2436DW-CK-FI	FINNISH (Finland)
2436DW-CK-FL	FLEMISH (Belgium)
2436DW-CK-GE	GERMAN (Germany and Austria)
2436DW-CK-IC	ICELANDIC (Iceland)
2436DW-CK-NL	DUTCH (The Netherlands)
2436DW-CK-NO	NORWEGIAN (Norway)
2436DW-CK-SE	SOUTH AFRICAN (South Africa)
2436DW-CK-SF	SWISS FRENCH (Switzerland)
2436DW-CK-SG	SWISS GERMAN (Switzerland)
2436DW-CK-SL	SPANISH LATIN AMERICAN (Latin America)
2436DW-CK-SP	SPANISH (EUROPEAN) (Spain)
2436DW-CK-SW	SWEDISH (Sweden)
2436DW-CK-UK	UNITED KINGDOM (U.K.)
2436DW-CK-US	UNITED STATES (U.S.)

2426DW COUNTRY KITS

<u>MODEL NUMBER</u>	<u>DESCRIPTION</u>
2426DW-CK-DA	EXPANDED DANISH (Denmark)
2426DW-CK-FI	EXPANDED FINNISH (Finland)
2426DW-CK-GE	EXPANDED GERMAN (Germany and Austria)
2426DW-CK-NL	EXPANDED DUTCH (The Netherlands)
2426DW-CK-NO	EXPANDED NORWEGIAN (Norway)
2426DW-CK-SF	EXPANDED SWISS FRENCH (Switzerland)
2426DW-CK-SG	EXPANDED SWISS GERMAN (Switzerland)
2426DW-CK-SW	EXPANDED SWEDISH (Sweden)

Refer to the Pricing Update article in this issue for U.S. prices of the following products:

<u>MODEL NUMBER</u>	<u>DESCRIPTION</u>
2436DE	DP Workstation
2436DW	DP/WP Workstation
2426DW	DP/WP Expanded Keyboard
MICROVP-P0	128KB P Package
MICROVP-P5	128KB P Package
MICROVP-P5A	128KB P Package
MICROVP-P5B	128KB P Package
MICROVP-P6	128KB P Package
MICROVP-P6A	128KB P Package
MICROVP-P6B	128KB P Package
MICROVP-P6+2	128KB P Package
MICROVP-P6+2A	128KB P Package
MICROVP-P6+2B	128KB P Package
MICROVP-P7	128KB P Package
MICROVP-P7A	128KB P Package
MICROVP-P7B	128KB P Package
MICROVP-P7+2	128KB P Package
MICROVP-P7+2A	128KB P Package
MICROVP-P7+2B	128KB P Package
MICROVP-P8	512KB P Package
MICROVP-P8A	512KB P Package
MICROVP-P8B	512KB P Package
MICROVP-P8+2	512KB P Package
MICROVP-P8+2A	512KB P Package
MICROVP-P8+2B	512KB P Package

To order the 4200-AC001 4200 Series Monochrome Monitor Arm and/or the 4200-AC002 Desk Clamp, refer to the VS section of the current Pricing Manual under Workstation Accessories.

#### QUESTIONS AND ANSWERS

- Q1. Will the new 2436 series work with any 2200 or just the MicroVP?
- A1. The 2436 series of workstations will work with any 2200 CPU that can utilize the 2236 or 2336 series of workstations.
- Q2. Can a monitor clamp arm available on the VS 4230 workstation be used with the monitor on the 2436 workstation?
- A2. Yes, the 4200-AC001. To order the 4200-AC001 4200 Series Monochrome Monitor Arm, refer to the VS section of the current Pricing Manual under Workstation Accessories.
- Q3. Can an electronics box mounting bracket as available on the VS 4230 workstation be utilized for the electronics package of the 2436 workstation?
- A3. Yes, the 4200-AC002. To order the 4200-AC002 Desk Clamp, refer to the VS section of the current Pricing Manual under Workstation Accessories.

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- Q4. Can a U.S. user order a 2436 workstation that supports foreign languages?
- A4. Yes. Because the new workstation has a universal power supply, we no longer have special 50 cycle versions for international use. A user can now order the 2436 model of their choice with the appropriate foreign language country kit. However, a U.S. power cord would have to be ordered as a supply item and the power supply set to 60 cycle at time of installation.
- Q5. Must a country kit be ordered with all workstations including U.S. models?
- A5. Yes. Every order must designate a no-charge country kit.
- Q6. Why are we offering a P package without any workstations?
- A6. A number of our small SVP and LVP users have requested an economical growth path to the MicroVP. The user can use all their existing peripherals (except the fixed disk and built-in diskette drive), so they won't need new workstations. However, the SVP user will need controllers, and both the SVP and LVP user will need an external disk drive. Hence, the new package is structured to include an MXE, dual controller and a external disk drive.

#### ADDITIONAL INFORMATION

This article was prepared by 2200 Product Planning and Management. For additional information, contact SMART.

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#### COMMUNICATIONS AND VOICE: WANG TELEMODEM 1200 AND 2400

Wang Laboratories announces the Telemodem 1200 and Telemodem 2400 which combine the functions of an electronic telephone, high quality speakerphone, and intelligent modem in a single compact package. The Telemodem 1200 includes an intelligent modem that operates at up to 1200 (bps) bits per second, and the Telemodem 2400 includes an intelligent modem that operates up to 2400 bps. Both products incorporate widely accepted industry standards for communication products. These standards include a modular connector for interfacing to a communications network or PBX, RS-232C for connecting to a desktop system or host computer, and compatibility with the Hayes AT command set.

#### HIGHLIGHTS

- . Unique compact package which includes single line electronic telephone, speakerphone, and intelligent modem
- . Compatible with Hayes "AT" command set which allows the user to dial a telephone number, set the modem to auto answer, set the data transfer rate, or hang up the call
- . Provides both asynchronous and synchronous data communications

BRIAN

Exhibit A

WANG 2436WP TERMINAL SOFTWARE

Functional Specifications

Version 1.0

14-AUG-86

by

Dan Enger



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## 1.0 Introduction

This document details the functional specifications for the Wang 2436WP Terminal Software. This software, when run on a Wang Office Assistant, creates a Wang 2436WP Multi-tasking Terminal Workstation which emulates a Wang 2236DW/DE terminal for connection to a Wang 2200 minicomputer system.

The 2436WP terminal has two RS232 serial interfaces. One port (port 'A') is used for the communications link between the terminal and the 2200 system. The other port (port 'B') is used with a local printer. The printer may be used from either the local terminal or from the 2200 system.

The 2436WP Terminal Software is provided on a separate diskette. The software is installed using the normal Software Install functions provided on the Maintenance menu. The user is given the option of adding the software to the Main System MENU. The Terminal Software can then be invoked from the Main System MENU in the normal fashion.

The software development is separated into two parts called Phase I and Phase II. Phase I provides the same basic functionality as a Wang 2236DW/DE terminal. Phase II adds file transfer to/from the 2200 system.

## 2.0 Phase I Functional Capabilities

Phase I of the Wang 2436WP Terminal Software provides the same basic functionality as a Wang 2236DW/DE terminal on a Wang 2200 minicomputer system. These capabilities can be broken down into several areas:

1. Screen display and character attributes.
2. Graphics and character set.
3. Keyboard layout and function keys.
4. Printing.
5. Miscellaneous features/requirements.

### Screen display and character attributes

The 2436WP terminal has a system status area plus a user character display area. The 1 row status area is a system reserved area used to display the various tasks loaded into the terminal, the system date and time, and system messages to the user. This area is NOT available for the user to display messages of his choice. The user character display area is 24 rows by 80 columns. Characters in this region are not from the Wang Office Assistant character set (WISCII), but instead display the 2200 normal and alternate character sets (see Appendix A). Characters from either of the 2200 character sets may be displayed normally or with one or more display attributes such as bold, underscore, reverse video, or blink.

2.0 Phase I Functional Capabilities (cont'd)

Screen display and character attributes (cont'd)

The screen display also has a cursor (looks like a bolded double underscore) that can be set to either off, on, or blinking.

Graphics and character set

Both the normal and alternate character sets of the 2200 are displayable on the screen with any combination of attributes. Limited graphics capability is provided by using characters from the alternate character set; boxes may be drawn using the box draw commands.

Keyboard layout and function keys

Some keys on the 2436WP terminal are not labeled in the same way as a real 2236DW/DE terminal. This list should help:

2236DW/DE keystroke

RESET  
CONTINUE  
HALT  
RUN  
LOAD  
RECALL  
DECTAB  
EDIT  
CANCEL  
CLEAR

2436WP keystroke

SHIFT-HELP  
HOME  
SHIFT-HOME  
EXEC  
SHIFT-EXEC  
BACKTAB  
SHIFT-BACKTAB  
CANCEL  
SHIFT-CANCEL  
ALIGN (on the keypad)

local screen dump to printer

2nd-ALIGN (on the keypad)

toggle between A/A and A/a

CONTROL-HELP

NOTE: The function keys on a 2236DW/DE terminal are numbered 0 through 31; on the 2436WP terminal they are numbered 1 through 32.

Printing

Local printers used on the 2436WP terminal require that a custom printer driver be installed on the terminal. Drivers are already available for several Wang and non-Wang printers and typewriters (see Appendix B).

The 2200 operating system release 2.6 and above allow the use of a table-driven Generalized Printer Driver (GPD). This is not required, but is desirable. Release 2.7 and above will contain the appropriate tables needed for the GPD. If no printer driver



2.0 Phase I Functional Capabilities (cont'd)

Printing (cont'd)

is used on the 2200, the printer will perform like a generic /004 printer with only the control codes carriage return (CR), line feed (LF), and form feed (FF). Use of the GPD will allow changes in pitch and character attributes (bolding and underscore).

The characters that may be printed are only those characters common between the WISCII character set and the 2200 character sets. No box graphics or blob graphics from the alternate character set will be printed. Screen dumps to the printer ignore any box graphics, but print a # for any blob graphics.

The local screen dump feature allows the user to obtain a copy of the CRT screen on the printer attached to the terminal. If a screen dump is activated while a 2200 program is using the printer, the screen dump output will be printed on its own separate page, then printing will resume without missing any characters. The screen dump may be terminated by pressing CONTROL-HELP.

The printer on the 2436WP terminal is a shared device; multiple tasks may want to use the printer at the same time. Tasks need to reserve exclusive use of the printer, use it, then return it so other tasks may use it. The printer must be explicitly OPENED (from the SETUP menu) before sending any data to the printer or requesting screen dumps; any print data received before the printer is OPENED is discarded. The printer must be explicitly CLOSED (also from the SETUP menu); this forces a page eject and makes the printer available for other tasks on the 2436WP workstation.

Miscellaneous features/requirements

There are several keystrokes new to the 2436WP terminal:

<u>Character/Function</u>	<u>Keystroke</u>
degree sign (°)	2nd-SHIFT-2
pound sterling (£)	2nd-SHIFT-4
cent sign (¢)	2nd-SHIFT-6
section symbol (§)	2nd-s or 2nd-SHIFT-S
backslash (\)	2nd-/
toggle smooth scroll on/off	CONTROL-S
enter SETUP menu	HELP

2.0 Phase I Functional Capabilities (cont'd)

Miscellaneous features/requirements (cont'd)

Smooth scroll allows the screen to smoothly scroll up (as opposed to jump scroll) whenever the screen would normally scroll.

Pressing the HELP key presents the SETUP menu. The SETUP menu provides a method for the user to make small changes in the way the 2436WP Terminal Software operates. The user may change the state of the keyboard upshift function, OPEN or CLOSE the printer, or modify the communication baud rate and parity. No screen or printer information should be lost while in SETUP mode.

The first item on the SETUP menu allows the user to set the state of the keyboard upshift function. The default setting is A/A. Selecting A/A shifts all lowercase characters (a-z only) to uppercase (A-Z); no other keyboard characters or functions are affected. Selecting A/a does not affect any characters. The user may also press the CONTROL-HELP keys to toggle the state of the keyboard upshift function without using the SETUP menu.

The next SETUP menu item selects whether the local terminal printer is OPEN or CLOSED. The default setting is CLOSED. The user must explicitly OPEN the printer before sending any data to the printer or requesting local screen dumps; any print data received before the printer is OPENED is discarded. If another task on the 2436WP terminal is already using the printer, the message 'PRINTER NOT AVAILABLE' is presented. The user may later wish to CLOSE the printer to force a page eject, or to make the printer available for other tasks on the workstation.

The communications baud rate may be set to 300, 600, 1200, 2400, 4800, or 9600 baud. The parity can also be changed between none, odd, or even. The default is 9600 baud, odd parity. These changes are not 'sticky', that is, the user must make these changes every time he invokes the 2436WP Terminal Software. This is not a common problem; few users will need to change the baud rate or the parity from the defaults, but this feature is provided for those users with special applications that require it.

When the 2436WP Terminal Software is communicating with a 2200 system, the local terminal must be able to execute other tasks at the same time (i.e., Wang Word Processing EDITOR, FILE, PRINT, SPELL, etc.).

To completely remove the 2436WP Terminal Software from memory, press SHIFT-HELP to display the SETUP menu, then press SHIFT-CANCEL. The software will be removed from memory and the system will return to the Main System MENU. If the user should exit the software with the printer still OPEN, it will be automatically CLOSED.

### 3.0 Phase II Functional Capabilities

Phase II capabilities include all of the capabilities specified in Phase I, plus the following:

- 1) A 2200 utility program to convert either Wang 2200WP or DATA3500 documents into 2436WP workstation documents and store them directly into a 2200 archive file.
- 2) A 2200 utility program to send or receive documents to/from the 2436WP workstation directly to/from a 2200 archive file.
- 3) A menu driven 2200 utility program to create archive files, list the contents of archives, and delete documents from the archives.

The 2200 archive files are large 2200 files containing multiple documents. The archives will have their own internal indexing and dynamic allocation system which will allow documents to be added and deleted at will.

File transfers will use the same communication line as the terminal. Terminal emulation and file transfer will be mutually exclusive, i.e., when transferring files, you will not be able to use the terminal to run other 2200 software.

To transfer files, the user must first invoke the special file transfer program on the 2200. The user must choose to either SEND or RECEIVE a file, and also must specify the 2200 Disk Address, the 2200 Archive File Name, and the name of the file to be transferred. File transfers are then invoked on the terminal workstation through the SETUP menu. The user must choose to either SEND or RECEIVE a file, and specify the Local Document Name to be transferred. When the user presses EXEC, the data input fields are validated and the transfer begins. The user is given a measure of the file transfer activity. The transfer may be aborted at any time by pressing the CANCEL key. Only one file may be transferred at a time. Files are transferred directly from 2436WP workstation disk to/from the 2200 archive file.

The characters allowed for Local Document Name and 2200 File Name is restricted to those characters in common between the WISCII character set, the 2200 normal character set, and the limited character set of 2436WP document names. In general, this means the user is allowed to choose from characters in the range A-Z a-z and 0-9. Some special characters may be allowed.

### 4.0 Software Installation Procedure

The 2436WP Terminal Software is provided on a separate diskette. The software is installed using the normal Software Install functions provided on the Maintenance menu. The user is given the option of adding the software to the Main System MENU. The Terminal Software can then be invoked from the Main System MENU in the normal fashion.

Appendix A -- Character Sets and Control Codes

High-order HEX Digit

	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1	!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/	
2	:	;	<	=	>	?	@	[	\	]	^	_	`	{		
3	~															
4																
5																
6																
7																
8																
9																
A																
B																
C																
D																
E																
F																

Low-order HEX Digit

Figure A-1  
2200  
Normal  
Character  
Set

High-order HEX Digit

	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1	!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/	
2	:	;	<	=	>	?	@	[	\	]	^	_	`	{		
3	~															
4																
5																
6																
7																
8																
9																
A																
B																
C																
D																
E																
F																

Low-order HEX Digit

Figure A-2  
2200  
Alternate  
Character  
Set

Appendix A -- Character Sets and Control Codes (cont'd)

Hex Code		Binary															
		0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0000	0			0	@	P	·	p	·	À	Á	Ê	Ë	Ì	Í	Î	Ï
0001	1			1	A	Q	a	q	·	Ä	Å	U	Û	Ü	Ý	ÿ	/
0010	2			-	2	B	R	b	r	▶	À	á	í	ï	ÿ	ÿ	ÿ
0011	3			#	3	C	S	c	s	◀	À	á	í	ï	§	¶	¼
0100	4			\$	4	D	T	d	t	-	À	á	í	ï	·	·	½
0101	5			%	5	E	U	e	u	-	-	-	í	ï	Û	ü	%
0110	6			&	6	F	V	f	v		À	á	í	ï	Û	ü	·
0111	7			·	7	G	W	g	w	■	í	†	L	L	U	ü	·
1000	8			()	8	H	X	h	x		Æ	Æ	Ñ	ñ	Û	ü	·
1001	9			)	9	I	Y	i	y		Ç	ç	Ó	ó	·	·	·
1010	A			·	:	J	Z	j	z		◻	◻	◻	◻	◻	◻	·
1011	B			+	:	K	I	k	l	·	◻	◻	◻	◻	R	-	·
1100	C			.	<	L		l		-	É	é	Ó	ó	·	·	·
1101	D			-	=	M		m		±	É	é	Ó	ó	·	·	·
1110	E			.	>	N		n	-	í	É	é	É	æ	§	§	·
1111	F			/	?	O	-	o	e	¿	E	é	Ø	ø	·	·	·

Figure A-3 WISCII Character Set

Appendix A -- Character Sets and Control Codes (cont'd)Table A-1 CRT Control Codes

<u>HEX</u>	<u>Action</u>
00	Null
01	Moves cursor to the home position (top left corner of the CRT)
02	Start of multi-byte control sequence
03	Clears the screen and homes the cursor
04	Reserved
05	Cursor on and non-blinking
06	Cursor off
07	Beep
08	Moves cursor 1 space left (non-destructive)
09	Moves cursor 1 space right (non-destructive)
0A	Moves cursor 1 line down (line feed)
0B	Reserved
0C	Moves cursor 1 line up (reverse line feed)
0D	Carriage return
0E	Activates character attributes
0F	Clears character attributes

Table A-2 Multi-byte Control Codes

<u>HEX Sequence</u>	<u>Action</u>
0202000E/0F	Select normal character set
0202020E/0F	Select alternate character set
0204xxyy0E	Select attributes and turns them on
0204xxyy0F	Select attributes and turns them off
02050F	Cursor on and blinking
0208090F	Request self-identification message
020D0C030F	Reinitializes terminal to power-on state

xx yy      The HEX codes specifying the display attributes to be selected where:

xx = 00 no bold, no blink  
 02 bold, no blink  
 04 no bold, blinking  
 0B bold, blinking

yy = 00 normal video, no underline  
 02 reverse video, no underline  
 04 normal video, underline  
 0B reverse video, underline

Appendix B -- Available Printer Drivers

This is a list of the currently available printer drivers for the Wang Office Assistant and the Wang 2436WP Terminal:

PRINTERS

Brother HR35  
C.Itoh/TEC A10-30  
Epson MX80  
HP LaserJet  
\* IBM Wheelwriter (model 5216)  
\* IBM Quietwriter (model 5201)  
NEC 3510 Spinwriter  
Qume Sprint 11/40, 11/55, Letterpro 20  
Wang PM012  
Wang PM015

TYPEWRITERS

Canon AP550  
Diablo 630 KSR  
\* IBM Wheelwriter 3 & 5  
\* IBM Quietwriter 7  
Panasonic KX-E708  
\* Swintec 1186CMP

NOTE: Printer drivers normally require a printer with a serial interface. Those drivers marked with an asterisk (\*) require the Wang Serial-to-Parallel converter. Drivers come packaged with a diskette, documentation, and appropriate cabling.

CONTRACT APPROVAL ROUTING SHEET

Enclosed is a contract for the acquisition of Third Party Software.

CONTRACT: 2236DW/DE workstation emulation software for the 2436WP  
Multi-tasking workstation on the 2200 system.

CONTRACTOR: The MCS Group

ADDRESS: P.O. Box 1856  
Rapid City, South Dakota 57709

	<u>APPROVAL LIST</u>	<u>SIGNATURE</u>	<u>DATE</u>
1.	Legal Department Dave Hoiriis/Sharon Turley	<u>INITIALED CONTRACT</u>	<u>                    </u>
2.	Purchasing Ken Miles/Frank Hillery	<u>                    </u>	<u>                    </u>
3.	Director, Intl. Program Mgmt. Miguel Brazao	<u>Miguel Brazao</u>	<u>10/15/86</u>
4.	R & D Financial Control Cindy Crowley	<u>Cindy Crowley</u>	<u>10/16/86</u>
5.	Chief Development Officer Horace Tsiang	<u>Horace Tsiang</u>	<u>10/23/86</u>
6.	Dr. Wang's Office Bob Sauinier	<u>Bob Sauinier</u>	<u>10/24/86</u>

CONTRACT SIGN OFF AUTHORITY  
Miguel Brazao  
International Program Management



**LEGAL DEPARTMENT FILE COPY**

09/19/86

**RETURN TO M/S 14B7B**

AGREEMENT FOR SOFTWARE ACQUISITION



THIS AGREEMENT, effective as of the 1st day of October, 1986  
by and between WANG LABORATORIES, INC., a Massachusetts corporation,  
with offices at One Industrial Avenue, Lowell, MA 01851 (hereinafter  
"WANG") and MCS Group, a South Dakota corporation, with offices at 2465  
West Chicago, Rapid City, SD 57702 (hereinafter "VENDOR") sets forth the  
terms and conditions under which VENDOR will furnish certain computer  
programs and related materials to WANG.

1. Program Description. As used in this Agreement, "Licensed  
Program" means the computer program described in Exhibit A, including  
all of the associated documentation and data files and all of the  
updates, corrections, modifications, extensions and improvements, if  
any, furnished to WANG hereunder.

2. Scope of License. VENDOR hereby grants to WANG and its  
subsidiaries the perpetual, non-exclusive, royalty-free, worldwide right  
and license: (a) to use the Licensed Program on any number of computer  
systems operated by or for WANG and/or any of its subsidiaries and  
affiliates wherever located; (b) to reproduce the Licensed Program in  
whole or in part as necessary to exercise fully any of the rights  
granted to WANG under this Agreement; (c) to translate and modify the

Licensed Program, merge the Licensed Program with other programs and generally to prepare derivative works based upon the Licensed Program; and (d) to distribute the Licensed Program or any part thereof to third party customers for use on computer systems operated by or for such customers under such terms, conditions and prices as WANG may decide in its sole discretion.

### 3. Delivery

3.1 Delivery. VENDOR agrees to deliver the Licensed Program, including any deliverables specifically listed on Exhibit A to WANG at the address of WANG shown above upon execution.

3.2 Acceptance. The Licensed Program will be accepted by WANG in writing upon delivery of all deliverables, installation of the Licensed Program on a computer system designed by WANG and demonstration of satisfactory operation of the Licensed Program in accordance with the applicable reference manual and such other performance requirements as may be set out in Exhibit A.

### 4. Price and Payment.

4.1 Pre-Payment of Royalties. In consideration of the rights granted by this Agreement, the deliverables and services to be performed by VENDOR, WANG agrees to pay VENDOR \$48,858 within thirty (30) days after acceptance of the Licensed Program by WANG as a pre-payment against royalties due, if any, under section 4.2 below.

4.2 Royalties. WANG agrees to pay VENDOR a royalty of \$50.00 for each sublicense of the Licensed Program sold, or otherwise transferred in conjunction with a WANG 2436WP Terminal to a customer of WANG or one of its subsidiaries. Royalties will be deemed earned on the date the Licensed Program is shipped. Royalties will be paid to VENDOR within 60 days after the close of the calendar quarter during which the royalty was earned by VENDOR. No royalty or other payment shall be due to VENDOR for: (a) replacement copies of the Licensed Program furnished to existing sublicensees; (b) distribution of updates, enhancements or fixes to existing licensees; or (c) copies of the Licensed Program returned to WANG within the applicable warranty period.

5. Warranty. VENDOR warrants that for as long as WANG is making royalty payments to VENDOR under this Agreement the Licensed Program will conform to the description set forth in Exhibit A, including any special performance requirements set forth therein and that VENDOR will correct promptly and at no charge to WANG any non-conformity reported to VENDOR by WANG.

6. Indemnity. VENDOR warrants that it has the right to enter into this Agreement and that none of the software or other deliverables to be furnished to WANG hereunder have been developed or will be delivered in violation of any copyright, patent, trade secret or other right of any third party. VENDOR agrees to defend and hold WANG, its officers, directors, agents and employees harmless and indemnified from and against any liability, damages, costs and expenses, including reasonable attorney's fees, arising out of any claim that the possession or use of any software or related materials delivered hereunder infringes such

party's rights; provided that, this indemnity shall not apply to software that has been modified by WANG or used in conjunction with software not provided by VENDOR where such infringement would not have occurred with the use of unmodified software alone.

7. Rights in Licensed Program. WANG acknowledges that this Agreement conveys only the rights specified herein and that VENDOR retains all other rights, title and interest in the Licensed Program. No title to or interest in any translations, modifications or revisions to the Licensed Program made by WANG are transferred hereby to VENDOR.

8. Term and Termination. This Agreement and the rights granted hereby shall become effective on the date first set forth above and shall continue until terminated by either party as provided herein. Either party may terminate this Agreement and the rights granted hereby by written notice in the event that the other party fails to observe or fulfill any of its obligations hereunder and such failure continues more than thirty (30) days after written notice thereof.

9. Obligations Upon Termination. Upon rightful termination of this Agreement by VENDOR, WANG will discontinue its use of the Licensed Program and will return or destroy all copies of the Licensed Program in its possession or under its control except for a single copy which WANG may retain for archive purposes and to support users of the Licensed Program who acquired the right to use the Licensed Program from WANG prior to the effective date of termination. The termination of this Agreement shall not affect the rights of such users to continue to use and enjoy the Licensed Program.

Upon rightful termination of this Agreement by WANG, the rights granted to WANG under this Agreement by VENDOR shall become irrevocable and WANG shall, in addition to any other rights it may have in law or equity, be relieved of any obligation to make any further payments to VENDOR in respect of the Licensed Program.

10. Notices. All notices required or contemplated by this Agreement shall be deemed effective if written and delivered in person or if sent by registered mail, return receipt requested, to WANG at the address shown above, Attention: Miguel Brazao with a copy to the Office of the General Counsel; or the VENDOR at the address shown above, Attention: Brian McKiernan; or such other persons or addresses as may hereafter be designated by the respective parties.

11. Public Announcements. VENDOR agrees not to make any public announcements regarding this Agreement or to disclose any of the terms and conditions hereof to any third party without the prior written consent of WANG.

12. Assignment. This Agreement is made in reliance upon VENDOR's reputation, skill and expertise and may not be assigned by VENDOR without the prior written consent of WANG.

13. Miscellaneous. This Agreement and Exhibit set forth the entire understanding of the parties with respect to the Licensed Program and merges all prior written and oral communications relating thereto. It can be modified or amended only in a writing signed by a duly authorized

representative of each party. Section headings are for the convenience of reference only and shall not be construed otherwise. This Agreement is not intended for the benefit of and shall not create any rights in any person other than the parties hereto.

No failure to exercise, or delay in exercising, on the part of either party, any right, power or privilege hereunder shall operate as a waiver thereof, or will any single or partial exercise of any right, power or privilege hereunder preclude the further exercise of the same right or the exercise of any other right hereunder.

If any part of this Agreement is adjudged by a court of competent jurisdiction to be invalid, such judgment shall not affect or nullify the remainder of this Agreement which shall remain in full force and effect. This Agreement shall be deemed to have been made in and shall be construed pursuant to the laws of the Commonwealth of Massachusetts and any cause of action brought by VENDOR, whether under this Agreement or otherwise, shall be brought only in a court having jurisdiction and venue at the home office of WANG.

IN WITNESS WHEREOF, the parties hereto have executed and sealed this Agreement on the dates set forth below.

VENDOR

WANG LABORATORIES, INC.

By Brian McKeenan  
Title President  
Date October 1, 1986

By W. B. [Signature]  
Title Director - Int'l P&M  
Date 10/15/86

**How to use the  
WANG 2436WP WORKSTATION  
as a terminal on a  
Wang 2200 minicomputer system**



MCS Group, Inc.  
2465 West Chicago  
Rapid City, SD 57702  
(605) 341-6755

How to use the  
WANG 2436WP WORKSTATION  
as a terminal on a  
Wang 2200 minicomputer system



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Documentation rev B - November 1986  
Software rev 1.0 - November 1986

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## CHAPTER 1 INTRODUCTION

These instructions describe the capabilities provided when a Wang 2436WP Terminal Workstation is used as a terminal on the Wang 2200 minicomputer system. General information is provided in this section and Appendix A. Other sections include information on installing the software, connecting the hardware, descriptions of the various terminal features with programming information (examples are in Wang BASIC-2), and a list of additional software that can be purchased. Several Appendixes summarize the terminal's characteristics, show examples of the character sets, and hardware information needed to set up the 2236MXD or 2236MXE terminal controllers in the Wang 2200 system.

The 2436WP Terminal is a single-user, multi-tasking workstation that has its own Wang proprietary operating system. It provides local word processing, printing, forms, and merge print capability. When connected to a Wang 2200 minicomputer system, it becomes a remote terminal with the same basic functionality as a Wang 2236DE/DW terminal.

Hardware features include an 8Mhz 80186 microprocessor with 512Kb of RAM memory for multiple tasks, and a built-in 360Kb floppy diskette drive for data storage. There are two RS232 serial interfaces. One port (port 'A') is used for the communications link between the terminal and the Wang 2200 system. The other port (port 'B') is used with a local printer. The local printer can be used from either the local terminal or from the Wang 2200 system. Hardware options include a second 360Kb floppy diskette drive, a 10Mb winchester disk, and various printers.

## CHAPTER 2 INSTALLING THE SOFTWARE

To use the 2436WP Workstation as a terminal on a 2200 system, you must first install the 2436WP Terminal Software. This procedure adds a new menu selection onto the Applications menu to allow you to run the 2436WP Terminal Software. The following procedure only needs to be done once:

Make sure that both the SYSTEM disk and the 2436WP Terminal Software installation disk DO NOT have a write-protect tab covering the write-protect slot.

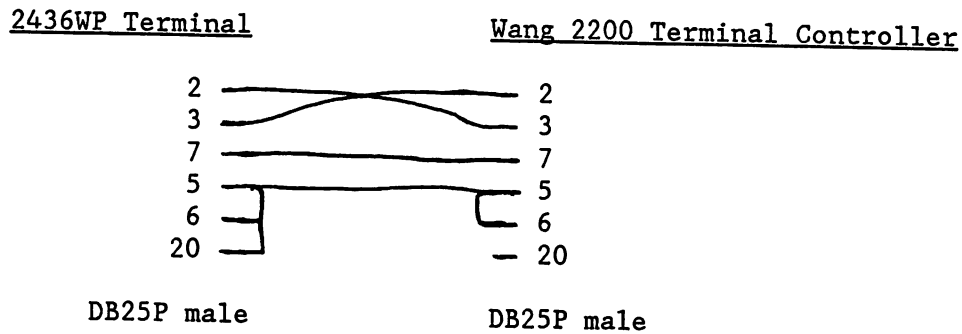
- 1) Insert the 2436WP SYSTEM disk into the base unit disk drive. Turn on the terminal and fill in the Date and Time screen as described in Chapter 2 of the Wang 2436WP Terminal User's Guide.
- 2) Press the space bar until 'APPLICATION' is selected from the main menu. Press EXEC.
- 3) Press the space bar until 'MAINTENANCE' is selected from the main menu. Press EXEC.
- 4) The system will then prompt to insert the MAINTENANCE disk. Remove the SYSTEM disk from the base unit drive and insert the MAINTENANCE disk. Press EXEC.
- 5) Select 'Install Software' from the MAINTENANCE menu. Press EXEC.
- 6) The system will prompt to insert the SYSTEM disk in the base unit. Remove the MAINTENANCE disk and insert the SYSTEM disk in the base unit drive. Press EXEC.
- 7) The system will prompt to insert the NEW software disk in the base unit. Insert the 2436WP Terminal Software installation disk in the base unit and press EXEC.
- 8) The system will prompt with "You are about to install 2436WP Terminal", and also, "Do you want to add the software to a menu?". Press the space bar until "Add to Applications Menu" is highlighted. Press EXEC.
- 9) The system will then prompt for the NEXT new software disk, press CANCEL.
- 10) The system will prompt to insert the SYSTEM disk in the base unit. Do so and press EXEC.
- 11) The system will return to the MAINTENANCE menu.
- 12) You must now reboot your terminal. Remove the diskette from the disk drive, turn the terminal OFF, and wait at least 5 seconds. Insert the 2436WP SYSTEM disk in the base unit drive. Turn the terminal ON again and fill in the Date and Time screen. The new selection "2436WP Terminal" will be on the Applications Menu.

CHAPTER 3  
CONNECTING THE HARDWARE

Connecting the hardware involves proper setup of the Wang 2200 terminal controller as well as connecting a cable between the 2436WP Terminal Workstation and the Wang 2200 terminal controller. There are no hardware setups needed for the 2436WP Terminal.

The 2436WP Terminal will work with either the Wang 2236MXD or the Wang 2236MXE terminal controller. Proper setup for the 2236MXD is detailed in Appendix C; the 2236MXE is detailed in Appendix D. Both the terminal controller and the 2436WP Terminal must be set to the same data transmission rate. Baud rates may be 9600, 4800, 2400, 1200, 600, or 300 baud. The 2436WP Terminal Software defaults to 9600 baud, but may be explicitly changed through the SETUP menu (see Chapter 4).

The cables used by the 2436WP Terminal are the same as those for the Wang 2236DE/DW terminal. Wang part number 220-0447, or its equivalent, will work. If your cable should become damaged and need repair, here is a list of the required wiring:



Connect one end of the cable (possibly labeled 'MUX') to one of the four ports on the Wang 2200 terminal controller (2236MXD or 2236MXE). Make sure this port has the correct baud rate setting.

There are two RS232 ports on the back of the 2436WP Terminal base unit. The one closest to the fan (port 'B') is used for the local printer; it is marked with a printer icon. The other one (port 'A') is used for communications; it is marked with a communication icon. Connect the other end of the cable (possibly labeled 'TERMINAL') to the communications port (port 'A').

## CHAPTER 4 TERMINAL FEATURES AND PROGRAMMING

When the 2436WP Terminal is connected to a Wang 2200 minicomputer system, it becomes a remote terminal with the same basic functionality as a Wang 2236DE/DW terminal. This section describes the various features and gives programming examples using Wang BASIC-2 on the Wang 2200; a summary of the control codes is also given in Appendix B. These features and capabilities can be broken down into several areas:

- 4.1 Screen display and character attributes.
- 4.2 Graphics and character set.
- 4.3 Keyboard layout and function keys.
- 4.4 Printing.
- 4.5 SETUP mode.
- 4.6 Other features.

### 4.1 Screen display and character attributes

The 2436WP Terminal has a system status area plus a user character display area. The 1 row status area at the top of the screen is a system reserved area used to display the various tasks loaded into the terminal, the system date and time, and system messages to the user. This area is NOT available for the user to display messages of his choice. The user character display area is 24 rows by 80 columns. Characters in this region are displayed using either the Wang 2200 normal or alternate character sets (see Appendix B). Characters from either of the character sets may be displayed normally or with one or more display attributes such as bold, underscore, reverse video, or blink.

#### Examples of character set selection:

select normal character set	PRINT HEX(0202000E);
select alternate character set	PRINT HEX(0202020E);

#### Examples of character attributes:

select normal	PRINT HEX(020400000E);
select bold	PRINT HEX(020402000E);
select blink	PRINT HEX(020404000E);
select bold and blinking	PRINT HEX(02040B000E);
select reverse video	PRINT HEX(020400020E);
select underline	PRINT HEX(020400040E);
select reverse video and underline	PRINT HEX(0204000B0E);
select blinking and reverse video	PRINT HEX(020404020E);
select bold and underline	PRINT HEX(020402040E);

NOTE: A stand-alone HEX(0F) will turn off all attributes; a succeeding stand-alone HEX(0E) will turn them back on again. If the above hex sequences ended in HEX(0F) instead of HEX(0E), the character attributes would be cleared, and a succeeding HEX(0E) or HEX(0F) could be used to turn them on, or off again, respectively.

## TERMINAL FEATURES AND PROGRAMMING

### 4.1 Screen display and character attributes (cont'd)

The screen display can also be cleared, with a cursor (looks like a bolded double underscore) that can be set to either off, on, or blinking, and also can be moved up, down, left, right, or home.

#### Examples of cursor functions:

set cursor off	PRINT HEX(06);
set cursor on and non-blinking	PRINT HEX(05);
set cursor on and blinking	PRINT HEX(02050F);
move cursor to left margin	PRINT HEX(0D);
move cursor down	PRINT HEX(0A);
move cursor up	PRINT HEX(0C);
move cursor left (non-destructive)	PRINT HEX(08);
move cursor right (non-destructive)	PRINT HEX(09);
home cursor (top left corner of screen)	PRINT HEX(01);
clear screen and home cursor	PRINT HEX(03);
position cursor to row 3 column 50 and print an 'A'	PRINT AT(3,50);"A";

### 4.2 Graphics and character set

Both the normal and alternate character sets of the Wang 2200 are displayable on the screen with any combination of attributes. Limited graphics capability is provided by using various combinations of the 'blob' graphics characters from the upper half of the alternate character set (see Appendix B); boxes may be drawn (or erased) around (or through) characters using the box draw commands of BASIC-2, or explicit HEX sequences.

Before giving the general form of the box draw HEX sequences, it is necessary to explain what is meant by upper and lower box graphic "pens". The upper pen appears to overline characters in the present cursor row; the lower pen appears to underline characters in the present cursor row. Actually, the lower pen is controlling the box graphic lines one row of characters below the cursor. The lower pen is necessary in order to draw a box around the entire page, while fooling the terminal into not scrolling the screen.

The general form of a box graphic sequence is:

```
PRINT HEX(020Bssmm...0F);
```

where:

ss - Starting pen position and draw/erase status

- 00 - Lower pen, draw lines
- 02 - Upper pen, draw lines
- 04 - Lower pen, erase lines
- 0B - Upper pen, erase lines

mm ... - zero or more 00, 08, 09, 0A, 0B, 0C 's

- 00 - No movement
- 08 - Move left
- 09 - Move right
- 0A - Move down
- 0C - Move up
- 0B - Swap pens and draw/erase vertical line while doing so

## TERMINAL FEATURES AND PROGRAMMING

### 4.2 Graphics and character set (cont'd)

#### Examples of drawing boxes (using BOX command in BASIC-2):

draw a box 5 wide and 10 tall                   PRINT BOX(10,5);  
enclose "abc" in a box                         PRINT BOX(1,4);" abc ";

#### Examples of drawing boxes (using HEX sequences):

enclose "abc" in a box (same as previous example)  
PRINT HEX(020B02090909090B080808080B0F);" abc ";

### 4.3 Keyboard layout and function keys

Some keys on the 2436WP Terminal are not labeled in the same way as a real Wang 2236DE/DW terminal. This list should help:

<u>2236DE/DW keystroke</u>	<u>2436WP keystroke</u>
RESET	SHIFT-HELP
CONTINUE	HOME
HALT	SHIFT-HOME
RUN	EXEC
LOAD	SHIFT-EXEC
RECALL	BACKTAB
DECTAB	SHIFT-BACKTAB
EDIT	CANCEL
CANCEL	SHIFT-CANCEL
CLEAR	ALIGN (on the keypad)
local screen dump to printer	2nd-ALIGN (on the keypad)
toggle between A/A and A/a	CONTROL-HELP

NOTE: The function keys on a 2236DE/DW terminal are numbered 0 through 31; on the 2436WP Terminal they are numbered 1 through 32.

### 4.4 Printing

Local printers used on the 2436WP Terminal require that a custom printer driver be installed on the terminal. Your 2436WP Terminal Software comes pre-configured for the Wang PM015 daisy wheel printer. Printer drivers are already available for several Wang and non-Wang printers and typewriters (see the next section on ADDITIONAL SOFTWARE).

## TERMINAL FEATURES AND PROGRAMMING

### 4.4 Printing (cont'd)

The Wang 2200 operating system release 2.6 and above allow the use of a table-driven Generalized Printer Driver (GPD). This is not required, but is desirable. Future releases of the Wang 2200 operating system will contain tables to support printers on the 2436WP Terminal. If no printer driver is used on the Wang 2200, the printer will perform like a generic /004 printer with only the control codes carriage return (CR), line feed (LF), and form feed (FF). Use of the GPD will allow changes in printer pitch and character attributes (bolding and underscore, etc.).

The characters that may be printed are only those characters common between the WISCII character set and the Wang 2200 character sets. No box graphics or blob graphics from the alternate character set will be printed. Screen dumps to the printer ignore any box graphics, but print a # for any blob graphics.

The printer on the 2436WP Terminal is a shared device; multiple tasks may want to use the printer at the same time. Tasks need to reserve exclusive use of the printer, use it, then return it so other tasks may use it. The printer must be explicitly OPENED (from the SETUP menu, described in the next section) before sending any print data to the printer or requesting screen dumps; any print data received before the printer is OPENED is discarded. The printer must be explicitly CLOSED (also from the SETUP menu); this forces a page eject and makes the printer available for other tasks on the 2436WP Workstation.

The local screen dump feature allows the user to obtain a copy of the CRT screen on the printer attached to the terminal. If a screen dump is activated while a Wang 2200 program is using the printer, the screen dump output will be printed on its own separate page, then printing will resume without missing any characters. The screen dump is invoked by pressing 2nd-ALIGN (on the keypad). The screen dump may be terminated by pressing CONTROL-HELP.

#### Examples of using printer:

OPEN printer	press HELP key to enter SETUP mode, then select OPEN printer
CLOSE the printer	press HELP key to enter SETUP mode, then select CLOSE printer
dump screen to printer	first OPEN the printer, then press 2nd-ALIGN (on the keypad)
abort a screen dump in progress	press CONTROL-HELP

to list a portion of a Wang 2200 BASIC-2 program:

```
first OPEN the printer, then type the following commands into the
Wang 2200 BASIC-2:
    SELECT LIST 004
    LIST 100,200
    SELECT LIST 005
then CLOSE the printer
```



## TERMINAL FEATURES AND PROGRAMMING

### 4.5 SETUP mode

Pressing the HELP key presents the SETUP menu. The SETUP menu provides a method for the user to make small changes in the way the 2436WP Terminal Software operates. The user may change the state of the keyboard upshift function, OPEN or CLOSE the printer, or modify the communication baud rate and parity. No screen or printer information should be lost while in SETUP mode.

The first item on the SETUP menu allows the user to set the state of the keyboard upshift function. The default setting is A/A. Selecting A/A shifts all lowercase characters (a-z only) to uppercase (A-Z); no other keyboard characters or functions are affected. Selecting A/a does not affect any characters. The user may toggle the state of the keyboard upshift function without using the SETUP menu by pressing CONTROL-HELP.

The next SETUP menu item selects whether the local terminal printer is OPEN or CLOSED. The default setting is CLOSED. The user must explicitly OPEN the printer before sending any data to the printer or requesting local screen dumps; any print data received before the printer is OPENED is discarded. If another task on the 2436WP Terminal is already using the printer, the message 'Printer is NOT AVAILABLE' is presented. The user may later wish to CLOSE the printer to force a page eject, or to make the printer available for other tasks on the workstation. The printer must be turned on and ONLINE to be OPENED. When the printer is being opened, the message 'Attempting to OPEN the printer' is presented. This message should disappear within about 5 seconds.

The communications baud rate may be set to 9600, 4800, 2400, 1200, 600, or 300 baud. The parity can also be changed between none, odd, or even. The default is 9600 baud, odd parity. These changes are not 'sticky', that is, the user must make these changes every time he invokes the 2436WP Terminal Software. This is not a common problem; few users will need to change the baud rate or the parity from the defaults, but this feature is provided for those users with special applications that require it. When the baud rate or the parity is changed, the message 'Closing and re-opening ASYNC driver' is presented.

## TERMINAL FEATURES AND PROGRAMMING

### 4.6 Other features

Miscellaneous features include smooth scrolling the screen, how to remove the 2436WP Terminal Software from memory, various new keystrokes, and other HEX sequences.

Smooth scroll allows the screen to smoothly scroll up (as opposed to jump scroll) whenever the screen would normally scroll. This is enabled/disabled by pressing CONTROL-S on the keyboard.

To completely remove the 2436WP Terminal Software from memory, press SHIFT-HELP to display the SETUP menu, then press SHIFT-CANCEL. The software will be removed from memory and the system will return to the Main System MENU. If the user should exit the software with the printer still OPEN, it will be automatically CLOSED.

There are several keystrokes new to the 2436WP Terminal:

<u>Character/Function</u>	<u>Keystroke</u>
degree sign (°)	2nd-SHIFT-2
pound sterling (£)	2nd-SHIFT-4
cent sign (¢)	2nd-SHIFT-6
section symbol (§)	2nd-s or 2nd-SHIFT-S
backslash (\)	2nd- /
toggle smooth scroll ON/OFF	CONTROL-S
enter SETUP mode	HELP

The terminal will beep when you PRINT HEX(07).

Reinitialize the terminal to the power-up state with PRINT HEX(020D0C030F).

The sequence HEX(0208090F) causes the terminal to transmit the terminal self-identification message. The message is sent from the terminal to the Wang 2200 in a form similar to:

```
*2436WP R10 9600BPS 8+0 (USA)
```

where:

```
*2436WP   = the model number, preceded by an asterisk  
R10      = the revision number of the 2436WP Terminal Software  
9600BPS  = the data rate, followed by BPS  
8+0     = data bits (7 or 8) and parity (E=even, O=odd, or N=none)  
(USA)   = version of keyboard and character set, in parentheses
```

The recommended procedure for obtaining the self-identification message from a terminal is to use the INPUT statement:

```
10 PRINT "WHAT KIND OF TERMINAL DO YOU HAVE (Default = 2236D)?"  
20 M$ = "2236D" : INPUT HEX(0208090F), M$
```

To enter an underscored character, press the underscore key (nothing will display), then press the character. The underscored character will be displayed and sent to the Wang 2200 system.

CHAPTER 5  
ADDITIONAL SOFTWARE

Additional software packages are available to run on the 2436WP Terminal. These include: Spelling Checker for word processing documents; Multiplan for electronic spreadsheets; and PFS:FILE & REPORT for databases. Consult with your Wang representative concerning the availability, pricing, ordering, or additional information on these products.

A local printer may be attached to the 2436WP Terminal. The appropriate printer driver is required for proper operation of the printer. Your 2436WP Terminal Software comes pre-configured for the Wang PM015 daisy wheel printer. Printer Drivers for non-Wang printers are available at additional cost through the Wang Supplies Catalog or from the MCS Group. This is a list of the currently available printer drivers for the Wang 2436WP Terminal:

PRINTERS

Brother HR35  
C.Itoh/TEC A10-30  
Epson MX80  
HP LaserJet / HP LaserJet+  
\* IBM Wheelprinter (model 5216)  
\* IBM Quietwriter (model 5201)  
NEC 3510 Spinwriter  
Qume Sprint 11/40, 11/55, Letterpro 20  
Wang PM012  
Wang PM015

TYPEWRITERS

Canon AP550  
Diablo 630 KSR  
\* IBM Wheelwriter 3 & 5  
\* IBM Quietwriter 7  
Panasonic KX-E708  
\* Swintec 1186CMP

NOTE: Printer drivers normally require a printer with a *serial* interface. Those drivers marked with an asterisk (\*) require the Wang Serial-to-Parallel converter. Drivers come packaged with a diskette, documentation, and appropriate cabling.

Additional printer drivers are made available from time-to-time. For the latest information on availability, pricing, or ordering of printer driver products, contact the MCS Group (605-341-6755).

APPENDIX A  
2436WP TERMINAL SPECIFICATIONS (WHEN USED AS A 2200 TERMINAL)

CRT

24 lines, 80 characters per line.

Character Attributes

normal, bold, underscore, blink, reverse video, and box graphics, using the standard and/or alternate character set (as listed in Appendix B).

Transmission Baud Rate Options

Manually selected at each terminal:  
9600, 4800, 2400, 1200, 600, or 300 baud.

Character Format

When communicating with a 2200 system:

8 data bits, 1 stop bit, odd parity (11 bits/char).

Other selectable formats:

8 data bits, 1 stop bit, no parity (10 bits/char).

8 data bits, 1 stop bit, even parity (11 bits/char).

Cabling Requirements

The communications port uses asynchronous serial RS-232 data through a female DB25S connector with the following pin assignments:

<u>Terminal Pin</u>	<u>Description</u>
1 FG	Frame Ground.
2 TD	Transmit Data. Output from terminal. Data from 2436WP terminal to 2200 computer.
3 RD	Receive Data. Input to terminal. Data from 2200 computer to 2436WP terminal.
4 RTS	Request To Send. Output from terminal. Active whenever terminal software is loaded.
5 CTS	Clear To Send. Input to terminal. Unused.
6 DSR	Data Set Ready. Input to terminal. Unused.
7 SG	Signal Ground.
8 DCD	Data Carrier Detect. Input to terminal. Unused.
20 DTR	Data Terminal Ready. Output of terminal. Active whenever terminal software is loaded.

NOTE: When the transmission baud rate or parity is changed from the SETUP menu, the handshake lines RTS and DTR temporarily go to the inactive state, then return to their active state.

APPENDIX B  
CHARACTER SETS AND CONTROL CODES

High-order HEX Digit

Low-order  
HEX Digit

	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	à	Space	0	@	P	°	p	Space	à	_	0	@	P	°	p
1	é		1	A	Q	a	q	♦	é		1	A	Q	a	q
2	î	"	2	B	R	b	r	►	î	"	2	B	R	b	r
3	ó	#	3	C	S	c	s	◄	ó	#	3	C	S	c	s
4	ù	\$	4	D	T	d	t	—	ù	\$	4	D	T	d	t
5	â	%	5	E	U	e	u	┌	â	%	5	E	U	e	u
6	ë	&	6	F	V	f	v		ë	&	6	F	V	f	v
7	ï	'	7	G	W	g	w	••	ï	'	7	G	W	g	w
8	ö	(	8	H	X	h	x	'	ö	(	8	H	X	h	x
9	ü	)	9	I	Y	i	y	'	ü	)	9	I	Y	i	y
A	â	°	:	J	Z	j	z	^	â	°	:	J	Z	j	z
B	é	+	:	K		k	§	■	é	+	:	K		k	§
C	ù	.	<	L	\	l	£		ù	.	<	L	\	l	£
D	Ä	-	=	M		m	é		Ä	-	=	M		m	é
E	Ö	.	>	N		n	ç	ß	Ö	.	>	N		n	ç
F	Ü	/	?	O	—	o	€	¶	Ü	/	?	O	—	o	€

Figure B-1  
2200  
Normal  
Character  
Set

High-order HEX Digit

Low-order  
HEX Digit

	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	à	Space	0	@	P	°	p	.					□	□	□
1	é		1	A	Q	a	q	♦	◊				□	□	□
2	î	"	2	B	R	b	r	►	▲				□	□	□
3	ó	#	3	C	S	c	s	◄	▼				□	□	□
4	ù	\$	4	D	T	d	t	—					□	□	□
5	â	%	5	E	U	e	u	┌	┐				□	□	□
6	ë	&	6	F	V	f	v		√				□	□	□
7	ï	'	7	G	W	g	w	••	°				□	□	□
8	ö	(	8	H	X	h	x	'					□	□	□
9	ü	)	9	I	Y	i	y	'					□	□	□
A	â	°	:	J	Z	j	z	^	Δ				□	□	□
B	é	+	:	K		k	§	■	□				□	□	□
C	ù	.	<	L	\	l	£						□	□	□
D	Ä	-	=	M		m	é						□	□	□
E	Ö	.	>	N		n	ç	ß					□	□	□
F	Ü	/	?	O	—	o	€	¶					□	□	□

Figure B-2  
2200  
Alternate  
Character  
Set

APPENDIX B - CHARACTER SETS AND CONTROL CODES

High order 4 bits Hex digit	Low order 4 bits Hex digit	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0000	0			SPACE	0	@	P	·	p	°	À	á	Ĝ	ğ	þ	þ	£
0001	1			!	1	A	Q	a	q	♦	Â	à	U	ij	D	ð	/
0010	2			"	2	B	R	b	r	►	Á	á	l	i	Ý	ý	¥
0011	3			#	3	C	S	c	s	◄	Ă	ă	î	î	Ş	ş	¼
0100	4			\$	4	D	T	d	t	—	Ã	ã	ï	ï	·	·	½
0101	5			%	5	E	U	e	u	—	—	—	í	í	Û	û	¾
0110	6			&	6	F	V	f	v		À	á	Ī	ī	Ù	ú	·
0111	7			'	7	G	W	g	w	■	ı	ı	L·L	ı·ı	Ú	ú	·
1000	8			(	8	H	X	h	x		Æ	æ	Ñ	ñ	Û	ü	·
1001	9			)	9	I	Y	i	y	ı	Ç	ç	Ô	ô	°	™	™
1010	A			·	:	J	Z	j	z	ı	‡	□	Ó	ó	°	□	-
1011	B			+	:	K	ı	k	ı	ı	•	NO SPACE	Ó	ó	ı	ı	.
1100	C			.	<	L	\	ı	ı	ı	—	É	é	Ö	ö	°	°
1101	D			-	=	M	ı	m	ı	ı	±	É	é	Ö	ö	«	»
1110	E			.	>	N	ı	n	~	ı	ı	Æ	æ	Ş	ş	ß	ß
1111	F			/	?	O	-	o	e	ı	ı	É	é	Ø	ø	ı	ı

Figure B-3  
WISCII  
Character  
Set

TABLE B-1 CRT Control Codes

<u>HEX</u>	<u>Action</u>
00	Null
01	Moves cursor to the home position (top left corner of the CRT)
02	Start of multi-byte sequence
03	Clears the screen and homes the cursor
04	Reserved
05	Cursor on and non-blinking
06	Cursor off
07	Beep
08	Moves cursor 1 space left (non-destructive)
09	Moves cursor 1 space right (non-destructive)
0A	Moves cursor 1 line down (line feed)
0B	Reserved
0C	Moves cursor 1 line up (reverse line feed)
0D	Moves cursor to left margin (carriage return)
0E	Activates character attributes
0F	Clears character attributes

APPENDIX B - CHARACTER SETS AND CONTROL CODES

TABLE B-2 Multi-byte Control Codes

<u>HEX</u> <u>Sequence</u>	<u>Action</u>
0202000E	Select normal character set
0202020E	Select alternate character set
02050F	Cursor on and blinking
0208090F	Request terminal self-identification message
020D0C030F	Reinitializes terminal to power on state
0204xxyy0E	Select attributes and turn them on
0204xxyy0F	Select attributes and turn them off
where xx yy	are the HEX codes for the display attributes:
xx = 00	- no bold, no blink
02	- bold, no blink
04	- no bold, blinking
0B	- bold, blinking
yy = 00	- normal video, no underline
02	- reverse video, no underline
04	- normal video, underline
0B	- reverse video, underline

The general form of a box graphic sequence is:

PRINT HEX(020Bssmm...0F);

where:

- ss - Starting pen position and draw/erase status
  - 00 - Lower pen, draw lines
  - 02 - Upper pen, draw lines
  - 04 - Lower pen, erase lines
  - 0B - Upper pen, erase lines
  
- mm ... - zero or more 00, 08, 09, 0A, 0B, 0C 's
  - 00 - No movement
  - 08 - Move left
  - 09 - Move right
  - 0A - Move down
  - 0C - Move up
  - 0B - Swap pens and draw/erase vertical line while doing so

APPENDIX C  
THE WANG 2236MXD TERMINAL PROCESSOR FOR THE WANG 2200

C.1 Setting the transmission rate on the 2236MXD Terminal Processor

To change the transmission speed of the Model 2236MXD Terminal Processor in the Wang 2200 system, perform the following procedure:

1. Power the 2200 system down by turning off all terminals and printers, followed by all disk drives, the Disk Processing Unit (DPU), and finally, the Central Processing Unit (CPU).
2. Loosen the retaining screws that attach the terminal processor to the CPU. Using the two handles on top of the processor, pull the processor board straight up and out of the CPU I/O port.
3. Locate the three 8-position DIP switches on the processor board used to set the transmission baud rate. (Refer to Figure C-1).
4. The switch position labeled "4800 baud" actually specifies 19.2K bps in normal operation. If 4800 bps operation is required, then the board must be physically modified because the 19.2K bps and 4800 bps rates are mutually exclusive. Contact Wang Customer Service for further details.
5. For each terminal, set the corresponding processor switch to the same data transmission rate used on the terminal. The 24 switches are divided into four sets (one set for each terminal). Each set is divided into six switches (one switch for each data rate of each terminal). (Refer to Figure C-1).
6. After setting the switches, replace the terminal processor into the CPU I/O port and tighten the retaining screws.
7. The 2200 system may now be powered on. Begin by turning on the CPU, followed by the DPU, all disk drives, and finally, all printers and terminals.



## APPENDIX C - THE WANG 2236MXD TERMINAL PROCESSOR FOR THE WANG 2200

### C.2 Setting the device address on the 2236MXD Terminal Processor

When one to four terminals are configured, one 2236MXD or 2236MXE Terminal Processor is used. The address of the primary processor is always set at address /00 (the processor also reserves addresses 01--07). When five to eight terminals are configured, two terminal processors are required. The address of the second processor is always set at address /40 (the processor also reserves addresses 41--47). When 9 to 12 terminals are configured, three terminal processors are required. The address of the third processor is always set at address /80 (the processor also reserves addresses 81--87).

Note that, unlike other peripheral processors, the physical device address set on the 2236MXD or 2236MXE Terminal Processor is not the address specified in a program for access to the terminal CRT, keyboard, and local printers. The programmable device address for all terminals are: CRT /005, keyboard /001, and local printers /004. The operating system translates these programmable addresses into the appropriate physical processor addresses.

To set the 2236MXD Terminal Processor's physical device address, perform the following procedure:

1. Power the 2200 system down by turning off all terminals and printers, followed by all disk drives, the Disk Processing Unit (DPU), and finally, the Central Processing Unit (CPU).
2. Loosen the retaining screws that attach the terminal processor to the CPU. Using the two handles on top of the processor, pull the processor board straight up and out of the CPU I/O port.
3. Locate the 5-position DIP switch on the 2236MXD Terminal Processor used to set the device address. (Refer to Figure C-1).
4. For each processor, set the device address as required:
  - a. To set the address at /00 -- Place all switches in the OFF position. Refer to Figure C-2. An address of /00 indicates the primary terminal processor, which controls Terminals 1-4.
  - b. To set the address at /40 -- Place the 40 switch in the ON position; place all other switches in the OFF position. Refer to Figure C-3. An address of /40 indicates that there are two terminal processors. The second processor, which must be set at /40, control Terminals 5-8.
  - c. To set the address at /80 -- Place the 80 switch in the ON position; place all other switches in the OFF position. Refer to Figure C-4. An address of /80 indicates that there are three terminal processors. The third processor, which must be set at /80, controls Terminals 9-12.
5. After setting the switches, replace the terminal processor into the CPU I/O port and tighten the retaining screws.
6. The 2200 system may now be powered on. Begin by turning on the CPU, followed by the DPU, all disk drives, and finally, all printers and terminals.

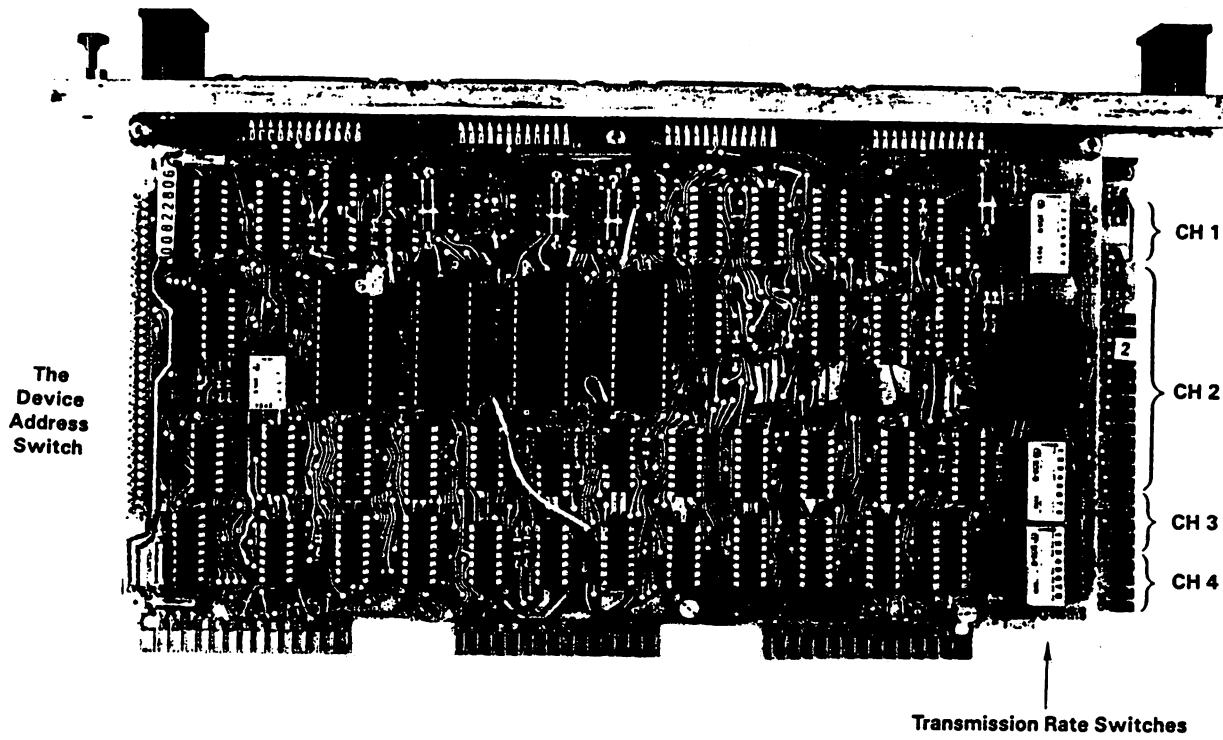


Figure C-1 Transmission Rate and Device Address Switches on the 2236MXD Terminal Processor

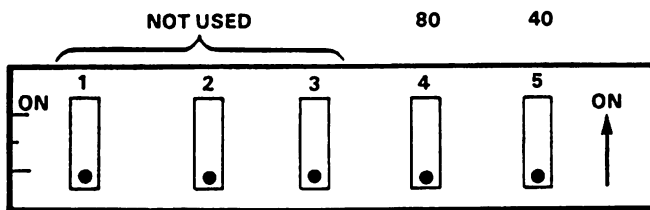


Figure C-2 Device Address /00

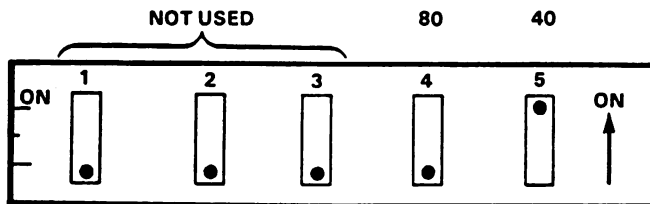


Figure C-3 Device Address /40

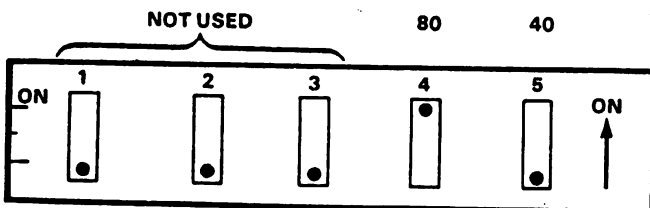


Figure C-4 Device Address /80

APPENDIX D  
THE WANG 2236MXE TERMINAL PROCESSOR FOR THE WANG 2200

D.1 Setting the transmission rate on the 2236MXE Terminal Processor

To change the transmission speed of the Model 2236MXE Terminal Processor in the Wang 2200 system, perform the following procedure:

1. Power the 2200 system down by turning off all terminals and printers, followed by all disk drives, the Disk Processing Unit (DPU), and finally, the Central Processing Unit (CPU).
2. Loosen the retaining screws that attach the terminal processor to the CPU. Using the two handles on top of the processor, pull the processor board straight up and out of the CPU I/O port.
3. Locate the two 8-position DIP switches on the processor board used to set the transmission rate. (Refer to Figure D-1).
4. The transmission rate of each port is set using the following:
 

Port 1	switches 1-4 on Switch 3
Port 2	switches 5-8 on Switch 3
Port 3	switches 1-4 on Switch 2
Port 4	switches 5-8 on Switch 2
5. For each terminal, set the corresponding processor switch to the same data transmission rate used on the terminal. Table D-1 shows the switch settings for each transmission baud rate.
6. After setting the switches, replace the terminal processor into the CPU I/O port and tighten the retaining screws.
7. The 2200 system may now be powered on. Begin by turning on the CPU, followed by the DPU, all disk drives, and finally, all printers and terminals.

Table D-1. Transmission Baud Rate Switch Settings for the Model 2236MXE Terminal Processor

<u>Switch Numbers</u>	<u>Transmission Baud Rate (bps)</u>									
	<u>110</u>	<u>134</u>	<u>150</u>	<u>300</u>	<u>600</u>	<u>1200</u>	<u>2400</u>	<u>4800</u>	<u>9600</u>	<u>19200</u>
1 5	off	on	off	off	on	off	off	off	off	on
2 6	off	off	on	off	off	on	off	on	off	off
3 7	off	off	off	on	on	on	off	off	on	on
4 8	off	off	off	off	off	off	on	on	on	on

## APPENDIX D - THE WANG 2236MXE TERMINAL PROCESSOR FOR THE WANG 2200

### D.2 Setting the device address on the 2236MXE Terminal Processor

When one to four terminals are configured, one 2236MXD or 2236MXE Terminal Processor is used. The address of the primary processor is always set at address /00 (the processor also reserves addresses 01--07). When five to eight terminals are configured, two terminal processors are required. The address of the second processor is always set at address /40 (the processor also reserves addresses 41--47). When 9 to 12 terminals are configured, three terminal processors are required. The address of the third processor is always set at address /80 (the processor also reserves addresses 81--87).

Note that, unlike other peripheral processors, the physical device address set on the 2236MXD or 2236MXE Terminal Processor is not the address specified in a program for access to the terminal CRT, keyboard, and local printers. The programmable device address for all terminals are: CRT /005, keyboard /001, and local printers /004. The operating system translates these programmable addresses into the appropriate physical processor addresses.

To set the 2236MXE Terminal Processor's physical device address, perform the following procedure:

1. Power the 2200 system down by turning off all terminals and printers, followed by all disk drives, the Disk Processing Unit (DPU), and finally, the Central Processing Unit (CPU).
2. Loosen the retaining screws that attach the terminal processor to the CPU. Using the two handles on top of the processor, pull the processor board straight up and out of the CPU I/O port.
3. Locate the 4-position DIP switch on the 2236MXE Terminal Processor used to set the device address. (Refer to Figure D-2).
4. For each processor, set the device address as required:
  - a. To set the address at /00 -- Place all switches in the OFF position. Refer to Figure D-3. An address of /00 indicates the primary terminal processor, which controls Terminals 1-4.
  - b. To set the address at /40 -- Place the Switch 1 in the ON position; place all other switches in the OFF position. Refer to Figure D-4. An address of /40 indicates that there are two terminal processors. The second processor, which must be set at /40, control Terminals 5-8.
  - c. To set the address at /80 -- Place the Switch 2 in the ON position; place all other switches in the OFF position. Refer to Figure D-5. An address of /80 indicates that there are three terminal processors. The third processor, which must be set at /80, controls Terminals 9-12.
5. After setting the switches, replace the terminal processor into the CPU I/O port and tighten the retaining screws.
6. The 2200 system may now be powered on. Begin by turning on the CPU, followed by the DPU, all disk drives, and finally, all printers and terminals.

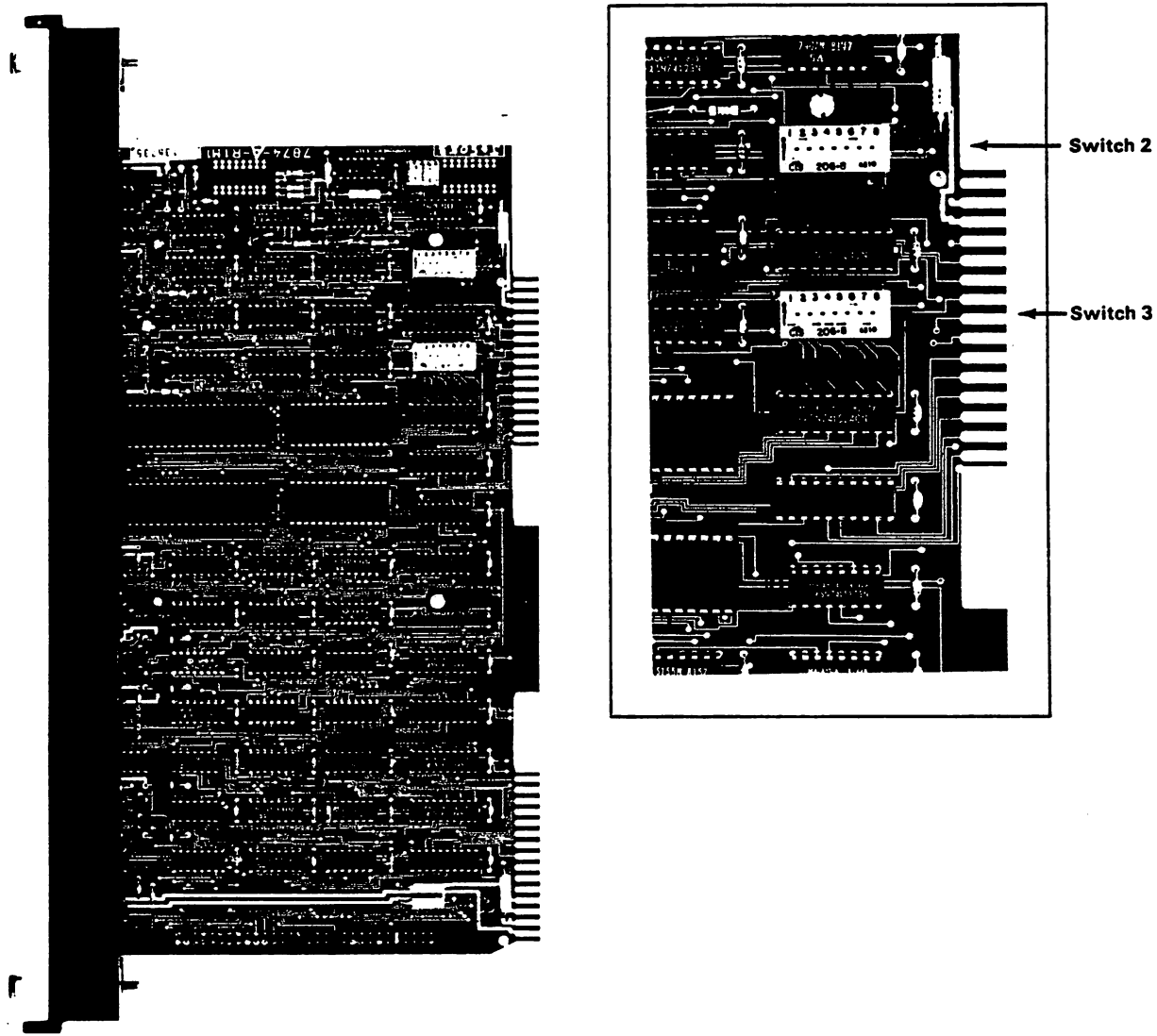


Figure D-1 Transmission Rate Switches  
on the 2236MXE Terminal Processor

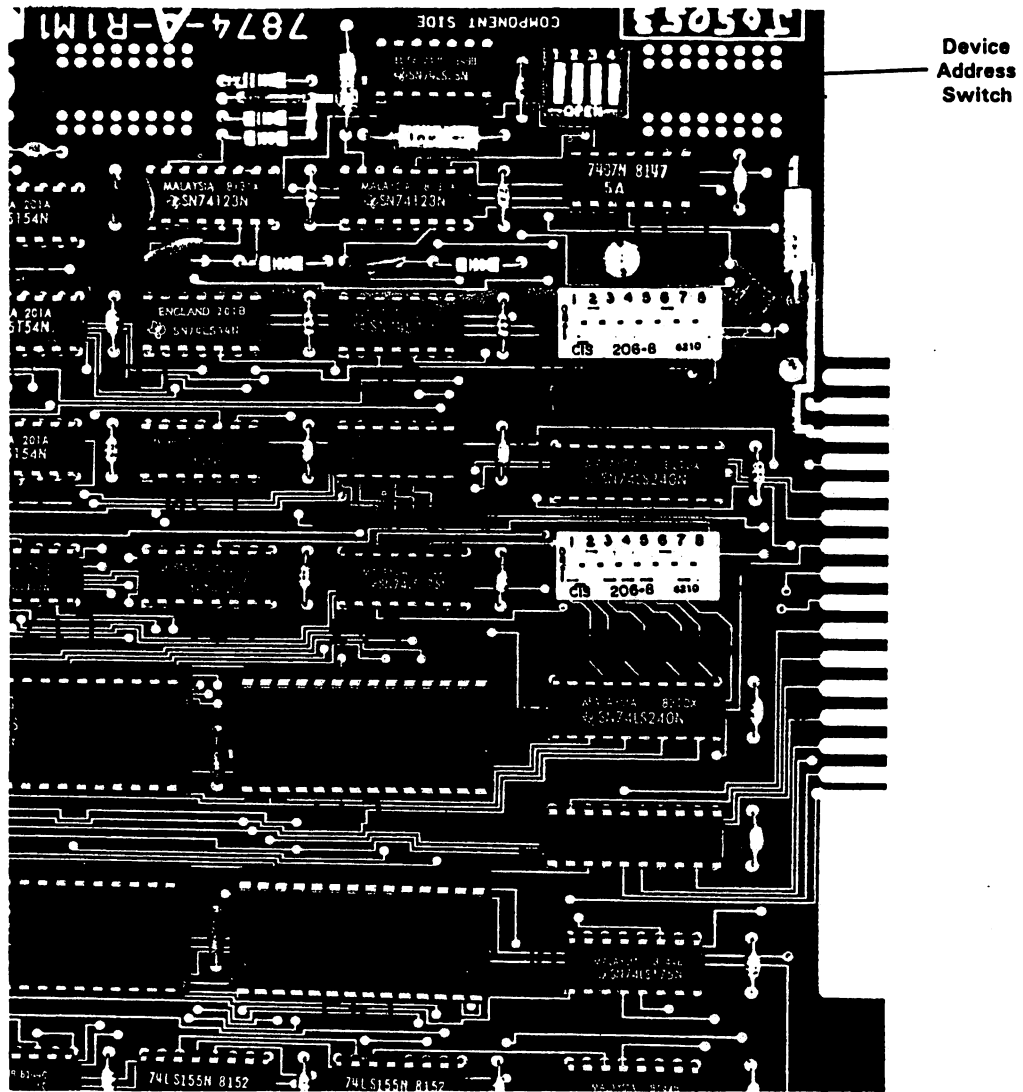


Figure D-2 Device Address Switches  
on the 2236MXE Terminal Processor

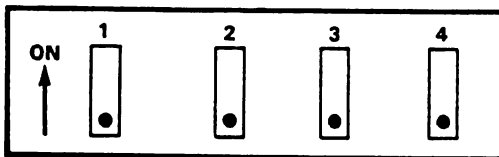


Figure D-3 Device Address /00

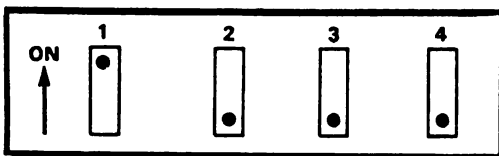


Figure D-4 Device Address /40

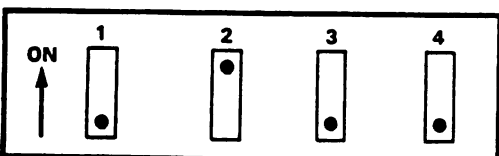


Figure D-5 Device Address /80

If your customer is upgrading a VS 6 to a VS 65 and the VS 6 was purchased with the optional controller board(s) listed above, then these controller board(s) can be transferred to the VS 65. It is necessary to purchase an upgrade kit(s) to transfer these boards. The upgrade kit includes the cables and the hardware necessary for board connection. This offering has been designated UJ-3455, UJ-3456, UJ-3457, and UJ-3466. The customer engineer (CE) relocates the option boards from the VS 6 to the VS 65 and installs the appropriate upgrade kits.

#### ORDERING CONSIDERATIONS

A VS 6 being upgraded to a VS 65 must have the necessary controller boards. Note that the controller boards are not included in the upgrade kits.

#### PRICING AND ORDERING INFORMATION

VS 6 to VS 65 upgrade kits may be ordered through normal order processing channels by specifying the following model numbers. Consult the Pricing Update article in this issue for prices on the models listed below.

**NOTE:** The external disk cables used on the VS 6 will connect directly to the 25V50 controller board in the VS 65. However, a UJ kit is necessary to provide rear panel access to the disk controller board.

<u>Model Number</u>	<u>Description</u>
UJ-3455	25V36B to 25V36A
UJ-3456	25V76-1B to 25V76-1A
UJ-3457	25V76-2B to 25V76-2A
UJ-3466	25V50-2B to 25V50-2A

#### AVAILABILITY

All upgrade kits listed are immediately available worldwide.

#### ADDITIONAL INFORMATION

This article was prepared by Systems Product, Planning, Marketing and Management. For additional sales information, call SMART.

#### 2200 SYSTEMS: NEW 2436WP SERIES OF 2200/MICROVP MULTI-TASKING WORKSTATIONS

Wang Laboratories, emphasizing our continuing commitment to the 2200 and MICROVP product line, to our 2200 Value Added Resellers (VARs), and to our 2200 users, announces a new multi-tasking workstation. Designated the 2436WP, this workstation provides the same functionality as a Wang 2436DW workstation plus the additional capability to perform word processing at the workstation level. Documents can be edited and stored locally on diskettes or disks, then stored, uploaded from or downloaded to 2200/MICROVP disks. By providing local word processing at the workstation level, the 2200 or MICROVP CPU can devote 100% of its resources to data processing applications.

#### HIGHLIGHTS

##### Workstation

The new 2436WP workstation provides the following benefits:

- 
- . Ergonomically designed for maximum comfort in the office environment.
  - . Provides a modern appearance consistent with the image of the MICROVP and a PC type keyboard for those users who prefer this type of keyboard over the conventional 2200 keyboard.
  - . Full 2436DW emulation including the 2200 character set, alternate character set and box graphics.
  - . WP can now be performed at the workstation level, freeing up the main CPU for DP tasks.
  - . Documents can be stored locally on diskettes or disk, or downloaded/uploaded to or from 2200/MICROVP disks.
  - . Local printing of WP documents on low cost letter quality Wang RS-232-C daisywheel printers such as the WOA-PM-015, or non-Wang printers using Wang supplied printer drivers.
  - . Multi-tasking allows editing and printing documents, and running 2200 applications at the same time.

#### Word Processing

- . Standard Wang WP editor based on WP Plus.
- . Headers, footers and multiple columns.
- . Style attributes viewed on the screen (single/double underscore, bold, strikethrough, italics, superscript and subscript).
- . Multiple printwheels/fonts on the same page.
- . Full justification of text in either 10, 12, 15 pitch or proportional spacing.
- . Hotprint, Merge Print and Forms capability
- . Optional spelling checker

#### Optional Software

- . PFS File and Report
- . Microsoft Multiplan
- . GCI Graphwriter
- . Spelling Verifier



---

### DETAILED PRODUCT DESCRIPTION

The 2436WP multi-tasking workstation consists of a 12 inch diagonal monitor with a 25 X 80 character display, ergonomic, movable, low profile keyboard and a 512KB RAM base unit which houses a single half-height 360KB diskette drive and two RS-232-C ports. One port is used to communicate with the 2200 as a terminal, the second for a local printer. Printer drivers must be installed at the terminal for local printers. The 2436WP does not support 36-pin Centronics parallel printers. Optional features include a second diskette drive or a 10MB Winchester disk drive. The 2436WP is available in three different bundled configurations:

- . The 2436WP with a single 360KB diskette drive
- . The 2436WP-1 with a second 360KB diskette drive and the WOA-PM015 40 cps daisy printer
- . The 2436WP-2 with one diskette, a 10MB Winchester and the WOA-PM015 40 cps daisy printer

The 2436WP is unique as its multi-tasking operating system (independent from the 2200), provides access to more than one program at one time. When used as a word processor, you do not have to begin a new procedure for each job. For example, you can begin editing a WP document, switch to printing a document and go to being a 2200 workstation, without having to terminate any of the tasks. You even can use the 2436WP as a typewriter.

### Workstation/CPU Interface

When configured with a 2200 or MICROVP system, each 2436WP is connected to either a 2236MXD Terminal Processor or a 2236MXE Terminal Processor. Each 2236MXD or 2236MXE can support up to four workstations. Any 2200 or MICROVP CPU with the 2.7 Operating System (OS) can support up to 16 workstations. All other OSs can support 13 with the exception of the SVP which supports a maximum of three workstations. The workstation can be located up to 2,000 feet (606.1 meters) away from the CPU. Communication between the workstation and the CPU is asynchronous, full-duplex, with line speeds of 9600 bits-per-second. Remote workstations are supported via modems and telephone lines. Local printing of 2200 information in terminal emulation mode, requires OS Release 2.7. Screen dumps will work with any OS.

### PERFORMANCE

The initial release of the 2436WP workstation will support line speeds of up to 9600 bps when in 2200 terminal emulation mode. Parity can also be changed between none, odd or even. The default is 9600 bps, odd parity. Available in the first quarter, CY'87, will be an external adapter board, connected in-line between the 2436WP and the main CPU in order to provide line speeds of up to 19,200 bps. This board will be a chargeable option.

The initial 2436WP terminal WP software will not support the uploading or downloading of WP files to and from 2200 disks. WP filing will only be supported at the workstation level on 2436WP diskettes or disk. Software allowing document transfers between the 2200 and 2436WP will be available 60 days after first customer ship (FCS). This new software (no-charge update) will provide:

- . A 2200 utility program to convert either Wang 2200WP or DATA3500 documents into 2436WP compatible documents (2436WP format) and store them directly into a 2200 archive file.
- . A 2200 utility program to send or receive documents to/from the 2436WP workstation directly to/from a 2200 archive file.
- . A menu-driven 2200 utility program to create archive files (large 2200 files containing multiple documents), list the contents of those archives, and delete documents from the archives.

#### PRODUCT STRATEGY

Dr. Wang established a 2200 Task Force with the charter to continue our commitment to the product line. This commitment includes product cost reductions, modernization, new hardware and software development projects, coupled with the ability to integrate, migrate and coexist with the rest of the Wang product line. Recognizing these different user needs, the 2200 product line has received new emphasis within Wang with the key introduction of the MICROVP CPU. The MICROVP has integrated 2200 architecture with VLSI chip technology and at the same time reduced CPU monthly maintenance prices by 59% to 70%. Wang has also announced further enhancements to 2200/PC integration with the ability to run 2200 BASIC-2 applications on the Wang PC, in addition to using the PC as a 2200 workstation or as a stand-alone PC, running MS-DOS/PC-DOS applications and Wang WP.

On July 31, 1986, the new cost-reduced 2436DE/DW series of workstations and associated cost-reduced P packages were announced. On August 29, 1986, Wang announced the ability to data-link a 2200 to a VS through a high-speed 928 link using the new 2258 Controller.

As part of that continuing commitment, the announcement of the 2436WP workstation provides the current and prospective 2200/MICROVP user additional systems capabilities and enhancements. In WP mode, the 2436WP is an independent processor that frees up the 2200 or MICROVP CPU so all system resources are dedicated to DP applications. For an installation with a large number of partitions and users logged on at the same time performing both DP and WP functions, an increase in throughput will be incurred by moving WP to the workstation level.

Because of the multi-tasking capabilities of the 2436WP, the 2436WP will function as a normal 2436DW workstation when not being used for WP. In the event that a document is needed while the 2436WP is being used as a DP terminal, multi-tasking allows the user to suspend the DP function, perform the WP task and go back to DP without any loss of previous input or initiated tasks.

With a selling price of \$1,795 the 2436WP is positioned between the 2436DE/DW series at \$1,295 and a PC in the \$2,000+ price range. Even though the PC can be used as a 2200 workstation and a freestanding MS-DOS/IBM compatible/Wang WP PC, only the 2436WP offers interactivity with the 2200 disks in WP mode. At a price differential of only \$500 versus the 2436DE/DW series, the 2436WP offers substantial value added.

Current 2200/MICROVP users who run several WP tasks concurrently with several DP tasks are excellent prospects for 2436WP terminals. Current users who are not using WP now but would like to add WP should be encouraged to add 2436WP terminals. If the user does not have any available I/O slots, substitution of multi-tasking 2436WP workstations for existing workstations will provide the needed flexibility in that a 2436WP workstation can be either DP or WP and the WP doesn't require a partition in the main CPU.

#### SUPPORT SERVICES

Current WSS 2200 support policies and services will apply. Refer to the Support Services Section of the current Pricing Manual

#### DOCUMENTATION

The 2436WP Workstation WP Users Manual and The Introductory Guide have been developed for the 2436WP workstation. They will be auto enclosed as part of the 2436WP Country Kit (2436WP-CK-US) which must be ordered for each workstation. The users guide contains a complete overview of the capabilities of the 2436WP workstation.

#### Sales Aids

A 2436WP Workstation Data Sheet (715-1017) will be available in Q4 CY'86 from WangDirect.

#### WANG CARE SERVICES

##### Customer Warranty

The 2436WP workstation is warranted to be free from defects in materials or workmanship for a period of 90 days from date of installation. Warranty is in accordance with terms and conditions in effect as of the time of sales.

##### On-Site Maintenance Agreement

On-Site (Plan A), Wang's standard on-site maintenance agreement, provides for 12 months of on-site service.

### Per-Call On-Site Service

Per-Call On-Site service is available on a time and material basis. Customers who wish to use this service should call the nearest Call Control Center toll-free number to arrange for a service appointment.

### U.S. AVAILABILITY

<u>Model Number</u>	<u>FCS</u>	<u>Volume Ship</u>	<u>Requirements</u>
2436WP	12/15/86	12/15/86	OS 2.7 or greater
2636WP-1	12/15/86	12/15/86	OS 2.7 or greater
2436WP-2	12/15/86	12/15/86	OS 2.7 or greater
2436WP-360K	12/15/86	12/15/86	OS 2.7 or greater
2436WP-10MB	12/15/86	12/15/86	OS 2.7 or greater
195-4071-9	12/15/86	12/15/86	OS 2.7 or greater
195-4007-9	12/15/86	12/15/86	OS 2.7 or greater
195-4047-9	12/15/86	12/15/86	OS 2.7 or greater
195-4048-9	12/15/86	12/15/86	OS 2.7 or greater
195-4050-9	12/15/86	12/15/86	OS 2.7 or greater
195-4097-9	12/15/86	12/15/86	OS 2.7 or greater

The initial release will be a U.S. version only. Consult your country controller for future availability in your country.

### ORDERING INFORMATION

Refer to the Pricing Update article in this issue for U.S. prices of the following products:

<u>MODEL NUMBER</u>	<u>DESCRIPTION</u>
2436WP	512KB CPU, One Floppy, Terminal Emulation and WP Software
2436WP-1	512KB CPU, Two Floppies, WOA-PM015, Terminal Emulation and WP Software
2436WP-2	512KB CPU, One Floppy, 10MB Disk, WOA-PM015, Terminal Emulation and WP Software
2436WP-360K	Optional Second Floppy
2436WP-10MB	Optional 10MB Winchester
195-4071-9	PFS FILE AND REPORT
195-4007-9	MICROSOFT: MULTIPLAN
195-4047-9	GCI: GRAPHWRITER BASIC
195-4048-9	GCI: GRAPHWRITER EXT.
195-4050-9	GCI: GRAPHWRITER COMB.
195-4097-9	SPELLING VERIFIER

When ordering a 2436WP workstation, a U.S. country kit (2436WP-CK-US) must be ordered for each workstation. The 2436WP country kit is a box which is ordered with a unit, free of charge and includes the following: country specific power cord, 2200/MICROVP workstation cable, software, documentation and keyboard.

This procedure (the same procedure to order a U.S. 2436DE, 2436DW and 2426DW workstation) is a slightly different ordering procedure than some are used to. If no country kit is ordered, none will be shipped thus rendering the product unusable and causing many problems.

To order a U.S. 2436WP workstation, the following example can be used:

Example:

To order a U.S. Domestic 2436WP, order:

<u>Model</u>	<u>Description</u>
2436WP	2436WP Workstation
2436WP-CK-US	2436WP Country Kit United States

For U.S. 2200 VARs, the 2436WP discount schedule is the same as any 2200 workstation.

Refer to the Wang Office Assistant section of the current U.S. Pricing Manual, Printer Accessories section, for a listing of the printer drivers that can be utilized for the 2436WP.

#### QUESTIONS AND ANSWERS

Q1. Why would a 2200 user want to move WP to the workstation level?

A1. The 2200/MICROVP was primarily designed as a DP box. When you have both WP and DP applications running concurrently, WP tends to slow down overall throughput. By moving WP to the workstation level, DP throughput will increase.

Q2. Isn't the same functionality available today by using a Wang PC as a workstation?

A2. Yes but not as efficiently. A PC can either be a freestanding PC doing WP or emulate a 2200 workstation. The 2436WP can be both at the same time. Plus, a PC doing Wang WP can not interact with 2200 WP files. A 2436WP also costs less than a PC.

Q3. I understand that the keyboard on the 2436WP is the same as the Wang Office Assistant (WOA). Do we lose the 2200 specific keys or the functionality of these keys as found on a 2236DW, 2336DW or 2436DW workstation keyboard?

A3. The following is the list of keys or combinations of keys that are utilized to duplicate the 2436DW keyboard:

. 2436WP	2436DW
. SHIFT/HELP	RESET
. CANCEL	EDIT/CANCEL
. FUNCTION KEYS 1 - 16	FUNCTION KEYS 0 - 15
. EXEC	RUN
. SHIFT/EXEC	LOAD
. ALIGN	CLEAR (DE only)
. HOME	CONT
. SHIFT/HOME	HALT
. BACKTAB	D TAB/RECALL
. CONTROL/HELP	Toggle Switch A/A, A/a
. 2nd-ALIGN	EDIT/CANCEL (Screen Dump)

There are also several keys available on the 2436WP that are not found on the U.S. version of the 2436DW. These are the degree sign, pound sterling, cent sign, section symbol and the backslash.

- Q4. What discount schedule should a 2200 VAR use in ordering a 2436WP for resale?
- A4. A 2436WP is subject to the normal 2200 workstation discount schedule.
- Q5. If a 2436WP is ordered now with 9600 bps line speed, can it be field upgraded to 19,200?
- A5. Yes when the interface board is available.
- Q6. If a 2436WP is ordered today, will there be a charge for the updated software that provides document compatibility with Wang WP and DATA3500?
- A6. No. This new software (no-charge update) will provide:
- . A 2200 utility program to convert either Wang 2200WP or DATA3500 documents into 2436WP compatible documents (2436WP format) and store them directly into a 2200 archive file.
  - . A 2200 utility program to send or receive documents to/from the 2436WP workstation directly to/from a 2200 archive file.
  - . A menu-driven 2200 utility program to create archive files (large 2200 files containing multiple documents), list the contents of those archives, and delete documents from the archives.
- Q7. Will the 2436WP support the same foreign languages as the 2436DE/DW/26DW series?
- A7. The initial release will be a U.S. version only. Consult your country controller for future availability in your country.

#### ADDITIONAL INFORMATION

This article was prepared by 2200 Product Planning and Management. For additional information, contact SMART.

#### DATABASE & APPLICATION SOFTWARE: WP PLUS DUTCH AND SPANISH AUTHOR APPLICATIONS

Wang Laboratories announces three additions to the Author Applications product line. The three new products continue Wang's commitment to working with leading reference publishers. These relationships bring Wang system users innovative reference software products based on leading reference books. The following Author Applications databases are now available:

Van Dale Dutch Wordlist  
Van Dale Dutch Thesaurus  
Espasa Spanish Wordlist

DRAFT

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DEC 29 1986

MARY M ROWKER

2200

2436WP WORKSTATION  
CUSTOMER SOFTWARE  
RELEASE NOTICE

Release 2.30.01

1st Edition - December 1986  
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714-0276

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## PREFACE

Each section in this release notice is designed to provide you with specific information on version 2.30 of the 2436WP workstation system and version 1.0 of the 2436WP workstation 2200 terminal software.

- Section 1 provides an overview of the 2436WP workstation capability and performance features.
- Section 2 describes the required hardware and software packages you need to install this release on your system.
- Section 3 describes the restrictions and special considerations that you must observe to run this release effectively.
- Section 4 describes known anomalies and, in some cases, recommends certain procedures that you need to know to use the 2436WP workstation effectively.
- Section 5 describes the library contents of the media you install on your 2436WP workstation system as part of this software release.
- Section 6 provides reference documentation titles and numbers.

## SECTION 1 OVERVIEW

This workstation provides the same functionality as a Wang 2436DW workstation plus the additional capability to perform word processing at the workstation level. Documents can be edited and stored locally on diskettes or disks, then stored on, uploaded to or downloaded from 2200/MICROVP disks. By providing local word processing at the workstation level, the 2200 or MICROVP CPU can devote 100% of its resources to data processing applications.

**SECTION 2**  
**SYSTEM REQUIREMENTS AND INSTALLATION INSTRUCTIONS**

**REQUIRED HARDWARE**

- 2436WP Workstation with 512K memory.
- 2236 MXD Terminal Processor or 2236 MXE Terminal Processor.
- 25 foot 2200 workstation cable, Wang part number 220-0447.

**REQUIRED SOFTWARE**

- 2436WP Workstation System Disk, Version 2.30.01 (5/13/86)
- 2436WP Workstation Forms/Typewriter Disk, Version 2.30 (3/24/86)
- 2436WP Workstation WP Utilities Disk, Version 2.30 (3/24/86)
- 2436WP Workstation Maintenance Disk, Version 2.30 (3/24/86)
- 2436WP Workstation 2200 Terminal Disk, version 1.0 (11/20/86)

**OPTIONAL HARDWARE**

- Optional (floppy and/or Winchester) disk drive.

**INSTALLATION INSTRUCTIONS**

Refer to the 2436WP Workstation Installation Instructions Guide  
(715-0976) for installation instructions.

### SECTION 3 RESTRICTIONS & SPECIAL CONSIDERATIONS

#### Editor

The 'Printer not available' message appears immediately if the printer is busy.

Hyphenation cannot be used effectively with proportional space printing, since the hyphens may be removed during word wrap.

User may delete documents from the Editor delete section, as well as through the Filing "Erase" function.

#### Forms

Once 'Define Master Form' is selected from the forms menu the user has no choice but to complete the entry into 'Define Master Form', by pressing EXEC at the 'Change Printer Defaults' screen. Once into the new master form, the user may cancel out. If the user IPLs the system before cancelling out of the new form, it will be damaged.

#### Maintenance

The Maintenance menu will indicate the version number 2.30

#### Operating System

The PM015 printer driver is the default driver.

The Main Menu Screen will display the version number 2.30.01.

## PM015 Printer

The printer driver software on the WOA PM015 driver disk is installed on the 2436WP Workstation System disk Version 2.30.01.

When using the SSF-40 Single Sheet Feeder, you should use Manual Mode to Hotprint, because using Hotprint in regular mode will cause you to lose Top of Forms.

The SSF-40 Single Sheet Feeder will accommodate three (3) less lines per page than when you are using manual or tractor feed. This means that if you are printing 66 lines per page (6 lines per inch x 11 inches), you will now get 63 lines when using the SSF-40 feeder. Your page length is determined by how far down from the top edge of the paper you start printing and how many lines per inch you are printing (6 or 8).

Because the PM015 printer has a large buffer, it will keep printing for a few lines after the job has been canceled. You can speed up the CANCEL process by pressing the printer controls Deselect and then Select immediately after pressing CANCEL and EXEC.

Because the PM015 has a large buffer, you will be prompted for any font changes specified in the document a few lines before the change is to take place. Wait until the printer stops printing then press Deselect, change the print wheel, and press Select. Then press EXEC.

## WP Utilities

Text File Conversion Utility - This utility will only convert valid ASCII data files. It uses a character set from hex 20 to hex 80 and from hex 8D to hex 9F (the latter being part of the international character set). Characters encountered that fall outside these ranges are noted by the application internally. After 10 non-printable characters the application notifies the user that the file identified is not a valid one for conversion. The utility then returns to await further user input.

Also, the user must not modify the prototype document that accompanies the application (that is, CVS.MENU.prototype).

SECTION 4  
KNOWN ANOMALIES

Filing

If a disk is assigned a volume name that includes an illegal character (eg. a hyphen) during the prepare disk process (using 2.1 maintenance software), the system will hang when the user attempts to display the contents of the volume in the filing function. A disk prepared with 2.1 software will still cause the hang.

Forms

Copy Master Form allows you to copy a damaged form even though the message "Copy not successful" is displayed.

In Name mode of the Define Forms task the TAB key should wrap to the next line upon reaching the end of the current line.

Operating System

Using the soft reboot with no system disk in the central drive on a 512K system will erroneously display the message that the system size is 256K on the document screen. If the "click" was turned off on your system and you reboot, the "click" is toggled (off to on) rather than turned off.

PM015 Printer Driver v2.00.07

When Printing or Merge Printing, the printer automatically generates one extra line feed after it has printed eleven inches on a long sheet of paper (where the user is printing a page beyond eleven inches).

The Forms application also does not handle the RETURN Key and CURSOR Keys correctly only when: defining a form, in create mode, the very first time it is created. In these conditions, hitting the RETURN or the Down Arrow Key, the carriage returns an inch down the paper, rather than one quarter of a space.

The standard 10/12 translation table is bad.

While manually printing the system gives you an early reporting (prompt) of the completion of a printed page.

The printer loses alignment while printing horizontally during merge print when the standard and variable documents have different fonts.

### Typewriter

The cent sign, '¢', can only be produced by striking the 2nd key + 6 key simultaneously with the SHIFT key each time. If the user keeps the 2nd key + SHIFT depressed and strikes the number 6, the up arrow is produced.

Style — Style automode may go off if you press PAGE or FORMAT.

SECTION 5  
MEDIA CONTENTS

The media contents are as follows (291-0560-US):

2436WP Workstation System Diskette 2.30.01 - Included on the System Diskette are the Operating System, PM015 Printer Driver, WP Printer tasks, and WP Editing tasks (733-3173).

2436WP Workstation Forms/Typewriter Diskette 2.30 - Included on the Application Diskette are the Forms package and Typewriter functions (733-3176).

2436WP Workstation WP Utilities Diskette 2.30 - The WP Utilities diskette holds all WP related files. The files include Super Copy, Repagination, Document Recovery and Merge Print utilities and convert files (733-3175).

2436WP Workstation Maintenance Diskette 2.30 - This diskette includes the Filing application along with all current system utilities, Maintenance utility, Change System Standard Utility, Prepare Diskette Utility, Install Software, Winchester Back-up, Winchester Restore, and Prepare Winchester Utilities (733-3174).

2436WP Workstation 2200 Terminal Diskette 1.0 - This diskette contains the files necessary for the 2436WP Workstation to become a remote terminal when connected to a 2200 minicomputer system (733-3177).

The main menu screen of the 2436WP Workstation Core Package has a Wang copyright notice in the format:

Copyright, Wang Laboratories Inc., 1984

The format of this copyright notice is incorrect, the copyright notice should read as follows:

(c) Copyright, Wang Laboratories Inc., 1984

NOTE: PSSD Release Engineering is unable to check the individual files for Wang copyright notices since we have no utility available to check 2436WP workstation files at this time.



SECTION 6  
REFERENCES

- 2436WP Workstation Installation Instructions Guide (715-0976)
- 2436WP Workstation Optional Hardware Installation Guide (715-0975)
- 2436WP Workstation Introductory Guide (715-0978)
- 2436WP Workstation WP User's Guide (715-0977)
- 2436WP Workstation Forms/Typewriter User's Guide (715-0974)
- 2436WP Workstation Trouble Shooting Guide (715-0973)
- 2436WP Workstation 2200 Terminal Guide (715-1128)
- PM015 Daisy Printer User's Manual (715-0430)

4/15 01:14:22  
FV  
JBP

TESTING/EVALUATION

Software Product: 2200 2436WP Workstation  
Version: 2.30.01  
Testing Organization: Quality Assurance

Paul  
FYI

Results:

Recommendation

Quality Assurance recommends that the 2436WP Workstation software package, release 2.30.01, be general released.

Test Performed

2200 Workstation Diagnostic

Hardware Configuration Used

2200 CPUs: MicroVP, MVP & LVP  
Disk Unit: 2275  
Terminal: 2436WP (1107)  
Printer: PM015

Observations on Performance of Software

The 2436WP has the same performance as the 1107 (WOA) except for the 2200 workstation emulation. The emulation software was produced by the MSC Group of Rapid City, S.D. The maximum baud rate for the emulation is 9600.

Significant Functional Limitations

The limitations of the 2436WP is listed in the CSRN (2436WP Workstation Customer Software Release Notice 714-0276).

Product Release History

The functionality of the 2436WP has been tested under the WOA Release 2.30.01 except for the 2200 workstation emulation which is controlled by the MCS Group.

COMPANY CONFIDENTIAL

Software Release Notice # 1019



SRN Type <input type="checkbox"/> Multi-package <input checked="" type="checkbox"/> Individual		ECO No. 43030	Effective Date 12/30/86
Description 2436WP Workstation		Version 2.30.01	
Product Line 2200	Release Category Manufacturing	Package Number 291-0560	
Testing Organization Product Quality Assurance		PEP	
Wang Software Service Category Initial		Installability Level Wang Installable	

SOFTWARE PRODUCT RELEASE RECOMMENDATIONS

This recommends the release of the above described product from the Development Center. By the signatures below, the groups involved in the development of this product indicate that all requirements pertaining to the release of the product have been met (accept), and the product is recommended for release; or that the product is not recommended for release at this time (reject). Lack of a signature and release recommendation indicates that the named group has had insufficient involvement in the development effort to make a release recommendation at this time.

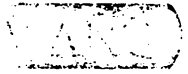
- Accept     Reject    Software R&D: Sidney Klein    Date: 12/30/86
- Accept     Reject    Quality Assurance: Michael Kelly    Date: 12/30/86
- Accept     Reject    Product Line  
Software Support: Gene P. Quenneville    Date: 12/30/86
- Accept     Reject    Product Planning  
and Management: Jordan Shuman    Date: 12/30/86
- Accept     Reject    Corporate ECO: John Roy    Date: 12/30/86

This software package contains all components required to manufacture and distribute to customers.

Software Distribution and Control: Paul T. Quenneville    12/30/86

COMPANY CONFIDENTIAL

Software Release Notice # 0989



SRN Type	<input checked="" type="checkbox"/> Multi-package <input type="checkbox"/> Individual	ECO No. 42679	Effective Date 12/16/86
Description	SRV		Version 1.0
Product Line	2200	Release Category Unrestricted	Package Number 291-0456
Testing Organization	Quality Assurance		PEP H0104A
Wang Software Service Category	Initial	Installability Level	Wang Assisted

SOFTWARE PRODUCT RELEASE RECOMMENDATIONS

This recommends the release of the above described product from the Development Center. By the signatures below, the groups involved in the development of this product indicate that all requirements pertaining to the release of the product have been met (accept), and the product is recommended for release; or that the product is not recommended for release at this time (reject). Lack of a signature and release recommendation indicates that the named group has had insufficient involvement in the development effort to make a release recommendation at this time.

Accept     Reject    Software R&D: *J. Brown*    Date: 12/30/86

Accept     Reject    Quality Assurance: *Michael Kelly*    Date: 12/30/86

Accept     Reject    Product Line  
Software Support: *Patricia P. Plummer*    Date: 12/30/86

Accept     Reject    Product Planning  
and Management: *S. Kelly*    Date: 12/30/86

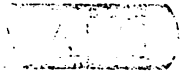
Accept     Reject    Corporate ECO: *J. Roy*    Date: 12/30/86

This software package contains all components required to manufacture and distribute to customers.

Software Distribution  
and Control: *Michael S. S. 12-30-86*

COMPANY CONFIDENTIAL

Software Release Notice # 0989



SRN Type		<input checked="" type="checkbox"/> Multi-package <input type="checkbox"/> Individual	ECO No. 42679	Effective Date 12/16/86
Description		SRV	Version 1.0	
Product Line	2200	Release Category	Unrestricted	Package Number 291-0441
Testing Organization			Quality Assurance	PEP H0104A
Wang Software Service Category		Initial	Installability Level	Wang Assisted

SOFTWARE PRODUCT RELEASE RECOMMENDATIONS

This recommends the release of the above described product from the Development Center. By the signatures below, the groups involved in the development of this product indicate that all requirements pertaining to the release of the product have been met (accept), and the product is recommended for release; or that the product is not recommended for release at this time (reject). Lack of a signature and release recommendation indicates that the named group has had insufficient involvement in the development effort to make a release recommendation at this time.

Accept     Reject    Software R&D: *Shirley Rubin*    Date: 12/30/86  
 Accept     Reject    Quality Assurance: *Michael Kelly*    Date: 12/31/86  
 Accept     Reject    Product Line  
    Software Support: *Genes Plummer*    Date: 12/29/86  
 Accept     Reject    Product Planning  
    and Management: *E. Kelly*    Date: 12/30/86  
 Accept     Reject    Corporate ECO: *Juanita Roy*    Date: 12/30/86

This software package contains all components required to manufacture and distribute to customers.

Software Distribution and Control: *Michael Schmitt 12-30-86*

COMPANY CONFIDENTIAL

Software Release Notice # 0989

12/30/86

SRN Type		<input checked="" type="checkbox"/> Multi-package <input type="checkbox"/> Individual	ECO No. 42679	Effective Date 12/16/86
Description SRV			Version 1.0	
Product Line 2200	Release Category Unrestricted		Package Number 291-0457	
Testing Organization Quality Assurance			PEP H0104A	
Wang Software Service Category Initial		Installability Level Wang Assisted		

SOFTWARE PRODUCT RELEASE RECOMMENDATIONS

This recommends the release of the above described product from the Development Center. By the signatures below, the groups involved in the development of this product indicate that all requirements pertaining to the release of the product have been met (accept), and the product is recommended for release; or that the product is not recommended for release at this time (reject). Lack of a signature and release recommendation indicates that the named group has had insufficient involvement in the development effort to make a release recommendation at this time.

<input type="checkbox"/> Accept	<input type="checkbox"/> Reject	Software R&D:	<u>Jedny Pabis</u>	Date: <u>12/30/86</u>
<input type="checkbox"/> Accept	<input type="checkbox"/> Reject	Quality Assurance:	<u>Michael Kelly</u>	Date: <u>12/30/86</u>
<input checked="" type="checkbox"/> Accept	<input type="checkbox"/> Reject	Product Line Software Support:	<u>Gene P. Purman</u>	Date: <u>12/30/86</u>
<input type="checkbox"/> Accept	<input type="checkbox"/> Reject	Product Planning and Management:	<u>Chick</u>	Date: <u>12/30/86</u>
<input checked="" type="checkbox"/> Accept	<input type="checkbox"/> Reject	Corporate ECO:	<u>Jeanne Roy</u>	Date: <u>12/30/86</u>

This software package contains all components required to manufacture and distribute to customers.

Software Distribution and Control: Michael Lihers 12-30-86

2436WP WORKSTATION CORE PACKAGE - RELEASE 2.30.01

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## 1.0 RELEASE ABSTRACT

This workstation provides the same functionality as a Wang 2436DW workstation plus the additional capability to perform word processing at the workstation level. Documents can be edited and stored locally on diskettes or disks, then stored, uploaded from or downloaded to 2200/MICROVP disks. By providing local word processing at the workstation level, the 2200 or MICROVP CPU can devote 100% of its resources to data processing applications.

## 2.0 PRE-REQUISITES

### A. Hardware

- o 2436WP Workstation with 512K memory.  
Optional (floppy and/or Winchester) disk drive.
- o 2236 MXD Terminal Processor or 2236 MXE Terminal Processor.
- o 25' 2200 workstation cable, number 220-0447.

### B. Software

- o 2436WP Workstation System Disk, Version 2.30.01 (5/13/86)
- o 2436WP Workstation Forms/Typewriter Disk, Version 2.30 (3/24/86)
- o 2436WP Workstation WP Utilities Disk, Version 2.30 (3/24/86)
- o 2436WP Workstation Maintenance Disk, Version 2.30 (3/24/86)
- o 2436WP Workstation 2200 Terminal Disk, version 1.0 (11/20/86)

## 3.0 RESTRICTIONS & SPECIAL CONSIDERATIONS

### Editor

The 'Printer not available' message appears immediately if the printer is busy.

Hyphenation cannot be used effectively with proportional space printing, since the hyphens may be removed during word wrap.

User may delete documents from the Editor delete section, as well as through the Filing "Erase" function.

### Forms

Once 'Define Master Form' is selected from the forms menu the user has no choice but to complete entry into 'Define Master Form', by pressing EXEC at the 'Change Printer Defaults' screen. Once into the new master form, the user may cancel out. If the user IPLs the system before cancelling out of the new form, it will be damaged.

## 3.0 RESTRICTIONS & SPECIAL CONSIDERATIONS (Cont'd)

### Maintenance

The Maintenance menu will indicate the version number 2.30

The Filing application was also replaced on this version of the Maintenance diskette to correct several anomalies and to provide a wider library field.

### Merge Print

None.

## SPECIAL CONSIDERATION cont'd

### Operating System

The PM015 printer driver is the default printer.

The Main Menu Screen will display the version number 2.30.01.

### PM015 Printer

The printer driver software on the WOA PM015 driver disk is installed on the 2436WP Workstation System disk Version 2.30.01. Installation procedures are available in the 4.1 section of PM015 Printer Driver Functional Specification if needed.

When using the SSF-40 Single Sheet Feeder, you should use Manual Mode (see the SSF-40 Installation and Operation Instructions) to Hotprint, because using Hotprint in regular mode will cause you to lose Top of Forms.

The SSF-40 Single Sheet Feeder will accommodate three (3) less lines per page than when you are using manual or tractor feed. This means that if you are printing 66 lines per page (6 lines per inch x 11 inches), you will now get 63 lines when using the SSF-40 feeder. Your page length is determined by how far down from the top edge of the paper you start printing and how many lines per inch you are printing (6 or 8).

Because the PM015 printer has a large buffer, it will keep printing for a few lines after the job has been canceled. You can speed up the CANCEL process by pressing Deselect and then Select immediately after hitting CANCEL + EXEC.

Because the PM015 has a large buffer, you will be prompted for any font changes specified in the document a few lines before the change is to take place. Wait until the printer stops printing to Deselect, change the wheel, and Select. Then hit EXEC.

### Prepare Disk

None.

### 3.0 RESTRICTIONS & SPECIAL CONSIDERATIONS (Cont'd)

#### Print

None.

#### Typewriter

None.

#### WP Utilities

**Text File Conversion Utility** - This utility will only convert valid ASCII data files. It uses a character set from hex 20 to hex 80 and from hex 8D to hex 9F (the latter being part the international character set). Characters encountered that fall outside these ranges are noted by the application internally. At some point (10 non-printable characters) the application notifies the user that the file identified is not a valid one for conversion. The utility then returns to await further user input.

Also, the user must not modify the prototype document that accompanies the application (that is, CVS.MENU.prototype).

### 4.0 ENHANCEMENTS

#### Editor

1. Hyphenation
2. Delete from Edit/Create menu (document delete only).
3. Indication on screen that cursor is in Header, Footer, or Footnote.
4. 'Stop merge' function is invoked by using SHIFT MARK.
5. The prototype document has left margin at position 1 and right margin at position 70.
6. SHIFT EAST and WEST to scroll the screen horizontally 1 position. SHIFT NEXT and PREV, and GO TO SHIFT NORTH and SOUTH will operate the same as their unshifted counterparts.
7. GO TO followed by a cursor key while in the Format Line for quick cursor movements.
8. NEXT and PREV while highlighting in text mode. The cursor will stop at the end of the area.
9. SRCH enabled during 'To where?' states.
10. Translatable EDITOR icon.
11. Formatter makes all format line routines public.

## 4.0 ENHANCEMENTS (Cont'd)

### Forms

The user can cancel printing jobs at any time and print will immediately stop.

#### Change Printer Defaults Forms Utility:

The user can set their own offset length in either inches or centimeters in the same manner as they select the form length. This version will be delivered with the default set to 0.0 it will be up to the user to set the proper offset (if desired) for the particular printer they are using.

These changes also apply to the "Define Master Form Default Screen" and once the offset length is selected for the particular form that is being defined it cannot be changed.

### Maintenance

The Winchester is supported with this release.

### Merge/Print

Printer Device Name - When the user first presses the EXEC key, the 17 alphanumeric character printer device name will be displayed on the 24th line of the user menu screen in the right corner.

example: PM015 2.00.07

Cancel Key - When the user first presses the CANCEL key after pressing the EXEC key, the message Cancel in Progress will be displayed on the 24th line of the user menu screen.

Print In Use - If the printer is being used by another task, the user will be prompted with a Printer not available, press EXEC to retry message on the 24 line of the user menu screen.

New Screen Parameters - There are three new fields on the print menu screen; units, left margin, and paper height.

Units: Inches and centimeters--default value is inches

Left Margin: 5 character alpha field--default 1.0

The minimum value allowed for this field is 0 in. or 0 cm. and the maximum value is 12" or 30.48 cm. An error condition will result if range is violated and the message Invalid Left Margin to be displayed on the 24th line of the user menu screen.

Paper Height: 5 character alpha field--default 11.0

The minimum value allowed for this field is 1 " or 2.54 cm and the maximum value is 20" or 50.80 cm. An error condition will result if range is violated and message Invalid Paper Height to be displayed on

## 4.0 ENHANCEMENTS (Cont'd)

### Merge/Print cont'd

Note, Printer precision is to 100 this inch. The 20" max on paper height is a result of the printer driver constant.

Save and Recall Keys - The user can depress the SAVE and SHIFT and SAVE (RECALL) keys.

Save: This key will cause the units, left margin, paper height, and paper feed fields to be saved onto a secondary menu page. If the fields are saved correctly, the message Menu Fields Saved will be displayed on the 24th line of the user menu screen. An error condition will result in the message Can not Open Menu File to be displayed on the 24th line of the user menu screen. If the diskette is write protected, a message Remove Write Protect Tab, press EXEC to save will be displayed on the 24th line of the user menu screen.

Recall: This key will cause the previously stored files units, left margin, paper height, and paper feed to be updated on the current menu screen. The values in the Document name, From page, To page, Copies, and Header/footer start page fields will not be altered. If an error condition occurs the message Can Not Open Menu File will be displayed on the 24th line of the user menu screen.

Note, an error condition will not alter program processing.

Rel. 3.0 Icon - The icon that appears when the user selects the application will not be hard coded into the program. For rel. 2.29.05 the icon that appears will be taken from the next to last line of the application's error file. This will satisfy the international requirement.

Print Wheels - The user will not be prompted to change the print wheel until actual print time.

Error Page Number - Merge will detect "which document" (standard/variable) and the "page number" that the error occurred in. On errors 1 through 14, the error page number will be displayed on the 24th line of the user menu screen.

Stop Merge Mark Key - The stop merge mark key has been changed from "SHIFT + 6 to SHIFT + NAME" (MARK) key.

New Prompts from the DPA - The user will receive an error message "Print Page truncated" if the page height specified by the user is shorter than the actual page size. If no errors were detected at the completion of a merge print request, the message "Merge Print Completed" will be displayed on the 24th line of the user menu screen.

New Prompt for Merge - The user will now receive a prompt "Merge In Progress" when the EXEC key is depressed. This will notify the user that the merge is actually being performed, an error message will be displayed if any error is encountered during processing.

## 4.0 ENHANCEMENTS (Cont'd)

### Operating System

Copyright facilities for this release - The Prepare New Disk and the Prepare Winchester Utilities have been modified to place a copyright notice at offset 96-127 of the volume label. A new tool (cright) is include in the 1107 software release procedure to place the copyright notice at offset 96-127 of all 1107 release software disks. In addition to this the 1107 application builder has been modified to include a copyright notice at offset 96-127 of 1107 executable files.

The Operating System has re-entrant code support and time slicing support for applications.

The document manager truncates space from documents which have become smaller. The document manager also attempts to insure that enough space exists on your disk to move your current page. The document manager will also provide a deadman timer capability to breakout of endless loops caused by damaged documents.

The Menu Peon was changed to make " " (vertical bar) illegal as a character in a file name.

New message based load mechanism - The original dual function system task which handled all error processing as well as handling all message based load request had a deadlock problem due to its dual purposes. To solve this problem a test was implanted in the SEND logic to intercept message based load requests and to perform the load request while running distributed under the issuing task. This solved the deadlock problem.

### PM015 Printer

There have been a few print wheels that have been replaced. Please take note of the new list of default character sets that now exist for the PM015 printer driver:

<u>Font</u>	<u>Type Style</u>	<u>Wang part Number</u>
1	COURIER 10	719-6076-3
2	COURIER 12	719-6077-3
3	DELEGATE 10	719-6093-3
4	COURIER ITALIC 12	719-6079-3
5	ARTISAN 10	719-6002-3
6	DETAIL 15	719-6080-3
7	ELITE 12	719-6045-3
8	LETTER GOTHIC 12	719-6051-3
9	NARRATOR 10	719-6123-3
10	STANDARD 1012	719-6125-3
11	OCR A	719-6049-3
12	PRESTIGE PICA 10	719-6072-3
13	PRESTIGE ELITE 12	719-6020-3

4.0 ENHANCEMENTS (Cont'd)

<u>Font</u>	<u>Type Style</u>	<u>Wang part Number</u>
14	DETAIL PS	719-6081-3
15	SCRIPT PS	719-6010-3
16	THEME 10 PT PS	719-6085-3

Rel. 2.30.01 Icon - The icon that appears when the user selects the application will not be hard coded into the program. For rel. 2.30.01 the icon that appears will be taken from the next to last line of the application's error file. This will satisfy the international requirement.

Print Wheels - The user will not be prompted to change the print wheel until actual print time.

New prompts from the DPA - The user will receive an error message Print Page truncated if the page height specified by the user is shorter than the actual page size. If no errors were detected at the completion of a print request, the message "Print Completed" will be displayed on the 24th line of the user menu screen.

Typewriter

None.

WP Utilities

Text File Conversion Utility Menu has been changed to reflect:

new release nomenclature, 2.30.01  
new Help screen

5.0 PROBLEMS CORRECTED

PROBE F2233285 - This release of the system disk fixes a problem that accrued when running the system disk with 256k memory only.

Probes Fixed

PRI 1	F214206	F214209	F215609	F215998	F216001	F216004
	F219302	F219394	F219746	F219786	F219890	F220133
	F220329	F220416	F220485			

5.0 PROBLEMS CORRECTED (Cont'd)

## PRI 2

F008451	F008595	F008847	F100058	F210985	F211004
F212035	F212118	F212610	F213778	F214153	F214274
F214330	F214939	F215461	F215621	F215634	F216051
F216079	F216767	F215772	F219335	F219384	F219464
F219468	F219491	F219493	F219559	F219582	F219672
F219761	F219779	F219780	F220137	F220337	F220427
F500332	F600082				

## PRI 3

F210986	F213882	F214519	F214738	F214896	F214936
F215403	F215404	F215479	F219316	F219334	F219674
F220329	F220333				

## PRI 4

F215466	F215535	F215643	F215682		
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Probes Fixed In The 2.00.07 PM015 Printer Driver

F100045	F213057	F216261	F216262	F216263	F216264
F216265	F216266	F216383	F216387	F219468	F219469
F219493	F219667	F219780	F219786		

Probes That Could Not Be Duplicated

F214768

Probes That Function As Designed

F008574	F010230	F215113	F215168	F216166	F216243
F216244	F219302	F219315	F219554	F219564	F219564
F219890	F220022	F220322	F220325	F220356	F220359
F220361					

Functions as designed - VTOC can become full - problem should not happen as often because the several obsolete files were removed from the disk.

F220137    F220282

6.0 KNOWN ANOMALIESEditor

None.



## 6.0 KNOWN ANOMALIES (Cont'd)

### Filing

If a disk is assigned a volume name that includes an illegal character (eg. a hyphen) during the prepare disk process (using 2.1 maintenance software), the system will hang when the user attempts to display the contents of the volume in the filing function. A disk prepared with 2.1 software will still cause the hang.

### Forms

Copy Master Form allows you to copy a damaged form even though the message "Copy not successful" is displayed.

In Name mode of the Define Forms task the TAB key should wrap to the next line upon reaching the end of the current line.

### Maintenance

None.

### Merge-Print

None.

### Operating System

Using the software reboot with no system disk in the central drive on a 512K system will erroneously display the message that the system size is 256K on the document screen; additionally, if the "click" was turned off on your system and you reboot, the "click" is toggled (off to on) rather than turned off.

### PM015 Printer Driver v2.00.07

When Printing or Merge Printing, the printer automatically does one extra line feed after it has printed eleven inches on a long sheet of paper (where the user is printing a page beyond eleven inches).

The Forms application also does not handle the RETURN Key and CURSOR Keys correctly only when: defining a form, in create mode, the very first time it is created. In these conditions, hitting the RETURN or the Down Arrow Key, the carriage returns an inch down the paper, rather than one quarter of a space.

The standard 10/12 translation table is bad.

While manually printing the system gives you an early reporting (prompt) of the completion of a printed page.

The printer loses alignment while printing horizontally during merge print when the standard and variable documents have different fonts.

6.0 KNOWN ANOMALIES (Cont'd)Prepared Disk

None.

Print

None.

Typewriter

The cent sign, '¢', can only be produced by striking the 2nd key + 6 key simultaneously with the SHIFT key each time. If the user keeps the 2nd key + SHIFT depressed and strikes the number 6, the up arrow is produced.

Style -- Style automode may go off if you press PAGE or FORMAT.

WP Utilities

None.

Documentation Changes Only

Installing the printer disk -- The user's Guide states on page 7-7 and E-13 that you must install the PM012 printer disk. It is not necessary to install any printer unless it is a non-wang printer.

Probes Not Addressed In This Release

PRI 3

F007930	F007152	F211003	F211993	F213259	F213261
F213262	F214198	F214200	F214201	F214202	F214203
F214204	F214205	F214208	F214361	F214414	F214517
F214598	F215133	F215196	F215199	F215340	F215402
F215470	F215623	F215639	F215645	F215649	F215662
F215941	F215952	F215999	F216002	F216003	F216022
F216145	F216146	F216166	F216364	F216387	F216395
F216448	F216515	F216560	F219303	F219304	F219315
F219316	F219334	F219385	F219453	F219454	F219469
F219476	F219477	F219478	F219554	F219555	F219556
F219557	F219561	F219563	F219667	F219674	F219789
F219959	F219960	F220022	F220100	F220362	F600000
F600005					

PRI 4

F215645	F215649	F215763	F215660	F216667	F214661
F215564					

## 6.0 KNOWN ANOMALIES (Cont'd)

### Other

The following probes will be fixed in next release of PM015 Printer Driver.

F219786

## 7.0 INSTALLATION INSTRUCTIONS

In an attempt to unify the deliverable software for old and new 1107 customers with and without winchester disk drives, the prepare winchester utility has been slightly modified and will be included on the 2.30 maintenance disk. In order to prepare the winchester the customer will be instructed to select "other" on the system main menu, hit execute, mount the maintenance disk, enter the name "WIN.Prepare Winch" and press execute.

After completing the formatting phase, if any, the Winchester Preparation Utility will go directly to the menu requesting the insertion of the "system" disk. In effect, bypassing the copying of data from the first and second Winchester Preparation disk.

This allows the user to prepare his winchester without removing the protect tabs from his delivered software and significantly simplifies the documentation of the procedure.

The following instructions assume the system is IPL'd and the user Main Menu is displayed.

## 7.0 INSTALLATION INSTRUCTIONS (Cont'd)

### Word Processing

1. With System Disk mounted, select Word Processing
2. Mount a document diskette
3. Select desired function (Edit, Create, or delete.)
4. Enter required data for selected function (e.g. document name)
5. When function complete, press cancel to return to main menu

### Forms

1. Select 'Forms' from the main menu
2. Insert Forms/Typewriter Disk and press Execute
3. When Forms menu appears, select desired function and press Execute
4. When complete, press Cancel from the Forms menu to return to System Menu

### Typewriter

1. Select Typewriter from the menu and press Execute
2. Insert Forms/Typewriter Diskette
3. Select desired mode (shadow or direct) and press Execute
4. Specify all menu entries as needed. Page width is from 1 to 15 inches (e.g., 8.5 is valid). Typeface is a number from 1 to 16 inclusive
5. Press Execute and you may begin typing

### Merge Print

1. Select Merge Print from Main menu
2. Insert WP Utilities Disk, press Execute
3. Enter required fields for Merge Print, default values are displayed
4. Enter document diskette
5. Press Execute to print a merge document
6. Shift Cancel takes user out of Merge Print Menu

### WP Utilities

1. Load the WP Utilities diskette
2. Select application desired (Super Copy, Repagination, etc.) and press Execute
3. When done executing press Shift-Cancel to exit

### System Utilities

1. Select Maintenance
2. Load the Maintenance diskette and press Execute
3. Follow instructions from prompts and press Execute
4. When done executing hit Shift-Cancel to exit

## 7.0 INSTALLATION INSTRUCTIONS (Cont'd)

### 2200 Terminal

1. Select Maintenance from the Applications Menu, Press Execute.
2. Load the Maintenance diskette and press Execute.
3. Select Install Software from Maintenance Menu.
4. Follow instructions from prompts and press Execute.
5. When system prompts for next new software disk press cancel and follow prompts to insert system disk and press Execute.
6. SSystem must then be rebooted to reflect 2436WP Terminal pick.

## 8.0 MEDIA CONTENTS

The media contents are as follows (291-0560-US):

System Diskette 2.30.01 - Included on the System Diskette are the Operating System, PM015 Printer Driver, WP Printer tasks, and WP Editing tasks (733-3173).

Forms/Typewriter Diskette 2.30 - Included on the Application Diskette are the Forms package and Typewriter functions (733-3176).

WP Utilities Diskette 2.30 - The WP Utilities diskette holds all WP related files. The files include Super Copy, Repagination, Document Recovery and Merge Print utilities and convert files (733-3175).

Maintenance Diskette 2.30 - This diskette includes the Filing application along with all current system utilities, Maintenance utility, Change System Standard Utility, Prepare Diskette Utility, Install Software, Winchester Back-up, Winchester Restore, and Prepare Winchester Utilities (733-3174).

2200 Terminal Diskette 1.0 - This diskette contains the files necessary for the 2436WP Workstation to become a remote terminal when connected to a 2200 minicomputer system (733-?#).

The main menu screen of the 2436WP Workstation Core Package has a Wang copyright notice in the format:

Copyright, Wang Laboratories Inc., 1984

The format of this copyright notice is incorrect, the copyright notice should read as follows:

(c) Copyright, Wang Laboratories Inc., 1984

NOTE: PSSD Release Engineering is unable to check the individual files for Wang copyright notices since we have no utility available to check 2436WP workstation files at this time.

## 9.0 REFERENCES

2436WP Workstation Installation Instructions Guide (715-0967)

2436WP Workstation Optional Hardware Installation Guide (715-1016)

2436WP Workstation Introductory Guide (715-0978)

2436WP Workstation WP User's Guide (715-0977)

2436WP Workstation Forms/Typewriter User's Guide (715-0974)

2436WP Workstation Trouble Shooting Guide (715-0973)

2436WP Workstation 2200 Terminal Guide (715-1128)

PM015 Daisy Printer User Manual (715-0430)

This manual contains instructions on operating the 40 cps Daisy Wheel Printer on the Wang Office Assistant. The manual includes sections on printer capabilities, printer controls and indicators and printer operation.

## 7.0 INSTALLATION INSTRUCTIONS (Cont'd)

### 2200 Terminal

1. Select Maintenance from the Applications Menu, Press Execute.
2. Load the Maintenance diskette and press Execute.
3. Select Install Software from Maintenance Menu.
4. Follow instructions from prompts and press Execute.
5. When system prompts for next new software disk press cancel and follow prompts to insert system disk and press Execute.
6. System must then be rebooted to reflect 2436WP Terminal pick.

## 8.0 MEDIA CONTENTS

The media contents are as follows (291-0560-US):

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Forms/Typewriter Diskette 2.30 - Included on the Application Diskette are the Forms package and Typewriter functions (733-3176).

WP Utilities Diskette 2.30 - The WP Utilities diskette holds all WP related files. The files include Super Copy, Repagination, Document Recovery and Merge Print utilities and convert files (733-3175).

Maintenance Diskette 2.30 - This diskette includes the Filing application along with all current system utilities, Maintenance utility, Change System Standard Utility, Prepare Diskette Utility, Install Software, Winchester Back-up, Winchester Restore, and Prepare Winchester Utilities (733-3174).

2436WP Workstation Software Diskette 1.0 - This diskette contains the files necessary for the 2436WP Workstation to become a remote terminal when connected to a 2200 minicomputer system (733-3177).

The main menu screen of the 2436WP Workstation Core Package has a Wang copyright notice in the format:

Copyright, Wang Laboratories Inc., 1984

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(c) Copyright, Wang Laboratories Inc., 1984

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2436WP Workstation Introductory Guide (715-0978)

2436WP Workstation WP User's Guide (715-0977)

2436WP Workstation Forms/Typewriter User's Guide (715-0974)

2436WP Workstation Trouble Shooting Guide (715-0973)

2436WP Workstation 2200 Terminal Guide (715-1128)

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