SPECIAL EDITION

OUT-THINK™

The Datapoint Marketing Newsletter

"Out-thinking our competition to help your customers out-think theirs"

No. 16

November 1, 1979

Emulation Packages Extend DDP Capabilities

ARCCOM

EM3270

During the month of November, Datapoint will be announcing two IBM 3270 emulation packages. These will add another important and saleable feature to Datapoint's growing list of "value added" products.

Our number one product continues to be dispersed data processing. But to dispersed processing, Datapoint adds supportive features such as 3270, MULTILINK™, a vast array of communications emulators, the channel adaptor, and the ARC™ concept. These features are the keys to unlock the doors that are closed to many of the dispersed data processing vendors, allowing Datapoint to stay one step ahead of our competition.

The Marketplace

Datapoint's 3270 products offer an attractive solution for users wishing to expand from 3270 networks to dispersed data processing. The key to the success of these products is the ability to perform existing 3270 applications while offering expansion into local processing and enhanced 3270 applications. We now have the products to penetrate large user 3270 networks. Datapoint systems are **not** viable in the 3270 plug replacement market due to price; therefore, the prospect must have a clear requirement for local processing capabilities.

Both of Datapoint's 3270 emulation products provide local processing power, 3270 compatibility, 3270-style keyboard for easy operator transition, and the potential for enhanced 3270 applications. However, each of the two approaches being announced serves a distinct market segment. There are substantial differences between the two approaches regarding user workstation flexibility and cost.

EM3270

EM3270 is primarily intended to add 3270 communications to DATASHARE® systems. User workstation requirements for EM3270 fit well with the capabilities of DATASHARE, and adding EM3270 to existing DATASHARE systems is very easy. DATASHARE does not perform the communications functions, and therefore current systems performance is not affected by EM3270. In addition, only those terminals requiring 3270 communications need to be upgraded to 3670s.

ARCCOM™

ARCCOM is designed for users who require total flexibility at the user workstation. This product, together with future products like word processing and electronic message switching, is targeted for the electronic office. These features greatly enhance the marketability of ARC and the 3800 user workstation.

ARCCOM introduces the concept of the shared communications resource -- the ARC communications processor. While EM3270 allows enhanced 3270 applications in DATABUS®, ARCCOM extends this capability to all Datapoint-supported high-level languages, with the availability of interactive COBOL being especially attractive.

The 3270 emulation packages, coupled with Datapoint's processing capabilities, make our system one of the most powerful, effective and marketable systems available today.

You can't tell the players without a program!

This is your handy reference guide to help keep straight all the numbers found in 3270 emulation.....

Visiting Team

3270 This is the generic name given to a series of IBM interactive terminal systems used for real-time communications with an IBM 360, 370, 303X, or compatible system.

3271 This is the terminal cluster controller which communicates with the host in a 3270 system. Datapoint's EM3270 enables a 1500 processor to emulate a 3271 controller. AC3271B enables a 6000 processor in an ARC environment.

3272 This is a locally attached IBM terminal cluster controller (emulation not supported).

3274 This is a locally or remotely attached IBM terminal cluster controller (emulation not supported).

3275 The IBM 3275 display station/control unit is a single user terminal used in 3270 communications. Datapoint's EM3270 enables a 1500 processor to emulate the 3275 terminal.

3276 This is a remotely attached IBM control unit/display station (emulation not supported).

3277 The IBM 3277 Model 2 Information Display Station is used in a 3270 system. Datapoint's EM3270 enables a 3670 Datastation to emulate the 3277 terminal. AP3277 enables a 3800 in an ARC system to emulate the 3277 terminal.

3278 IBM 3278 Information Display Station (new model, replaces 3277).

328X These IBM printers supported under IBM 3270 communications are emulated by a variety of Datapoint printers. Emulated 3275 terminals support emulated 3284 printers. AP3277 emulates 328X printers.

Shaded items not emulated by Datapoint

Home Team

3670 This Datastation is used in the emulation of a 3277 terminal, as well as in a DATASHARE system.

1571 The 1500 cluster controller is used in 3271 communications emulation. It handles all communications with the remote mainframe, and maintains proper protocol on the communications line.

9470 This is a 4-port EIA hub. It allows the 1500 controller to communicate with the attached 3670s.

9471 This is an 8-port EIA hub.

EM3270 1.1 Version 1.1 of 3270 emulation will support communications from a DATASHARE system and from a stand-alone system with DATASHARE support.

EM3270 1.2 Version 1.2 will add 3275 emulation capability, and will cancel existing EM3275 1.1 software.

AC3271B This software enables a 6000 processor in an ARC system to emulate an IBM 3271 cluster controller.

AP3277 This software enables a 3800 to emulate the functions of an IBM 3277 display station and 328X printer.

EM3275 EM3275 enables a 1500 processor to emulate the IBM 3275 display station in an IBM 3270 communications system.

DS5 DATASHARE V version 3 is required for 3270 emulation.

DLL3670 This is a utility program which emulates the 3670 down-line loading logic to enable a 1500 to function as an active terminal in a cluster.

Datapoint's Roster of 3270 Emulation Products

IBM's 3270 Information Display System is an interactive terminal system which can be used for a wide variety of on-line inquiry applications. The system offers communications between the IBM 3270 family of terminals and an IBM 360, 370, 303X, or other compatible computer system. 3270 communications enables remote locations to access the centralized mainframe to take advantage of features which include:

- powerful interactive data processing
- extensive data storage
- sophisticated data access methods
- large network support

Datapoint is now offering two software products -- EM3270 and ARCCOM -- which enable a user to emulate 3270 communications with a host mainframe in a variety of configurations.

- Stand-alone configuration
- Stand-alone configuration with DATASHARE support
- Terminal cluster configuration with DATASHARE support
- ARC configuration

EM3270 Adds 3270 Communications to DATASHARE

EM3270 is a flexible system which offers your customers and prospects an easy transition to dispersed processing without sacrificing their present investment in either mainframe hardware or software. It requires no modification to existing 3270 applications software, and provides a means of performing both on-line 3270 and dispersed processing functions from the same user workstation.

EM3270 allows Datapoint processors to emulate 3270 in a variety of configurations:

- Cluster configuration (3271/3277 emulation)
- Stand-alone configuration (3275 emulation) with DATASHARE support
- Stand-alone configuration (3275 emulation) with printer support (3284 emulation)

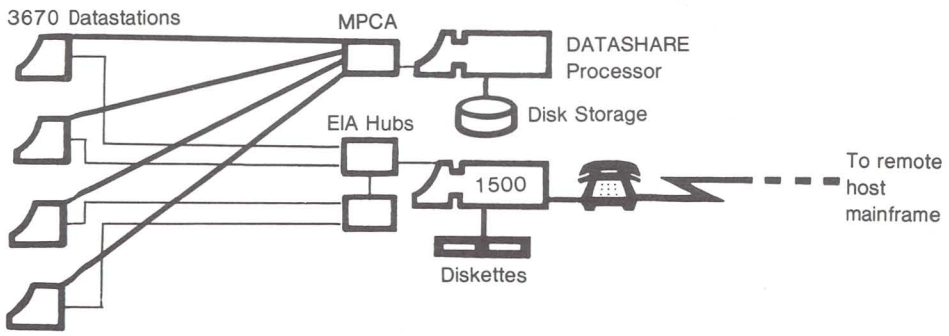
In configurations involving a DATASHARE system, the 3670 Datastations can be configured to concurrently emulate Datapoint 3601 terminals connected to the DATASHARE system.

Cluster Configuration

When configured as a cluster, the EM3270 software allows a Datapoint 1500 processor to act as a cluster controller for locally attached Datapoint 3670 display devices. This configuration emulates an IBM 3271 cluster controller with attached IBM 3277 display terminals. The 1500 processor emulates the IBM 3271 controller and is connected to a remote mainframe over a leased line. From one to sixteen 3670s may be attached to the 1500 controller via one or more EIA hubs.

The 3670 Datastations attached to a particular controller may be attached to different DATASHARE processors. Conversely, 3670s attached to a single DATASHARE processor may be attached to different controllers. The 3670s connect to DATASHARE via the multiport communications adapter just as a 3601 workstation does. Remote connections to a 3670 terminal are not supported.

The 1500 controller and attached 3670s can function independently from the DATASHARE system for pure 3271/3277 emulation. This feature is useful when DATASHARE is "rolled out" or down for preventive maintenance.



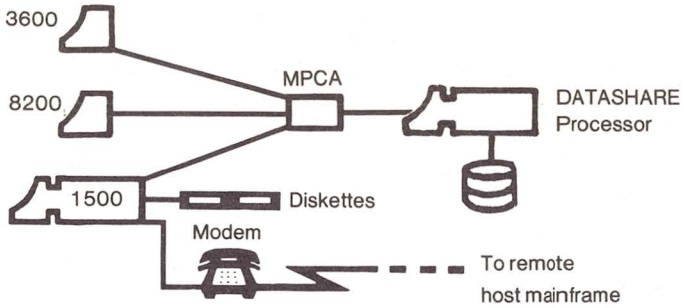
Cluster Configuration

Stand-alone Configuration with DATASHARE Support

This configuration is the most economical one for sites requiring only one workstation for 3270 communications. It offers enhanced DATASHARE terminal functions while eliminating the need for a control unit. The EM3270 software in this configuration operates on a 1500 processor to act as a functional replacement for the IBM 3275 display unit. The 1500 processor can be connected to a remote mainframe over either a leased (maximum 9600 bps) or dial-up line (maximum 4800 bps). The 1500 appears to the DATASHARE system as a 3670, and as such performs the functions of a DATASHARE terminal. IBM

Continued.....

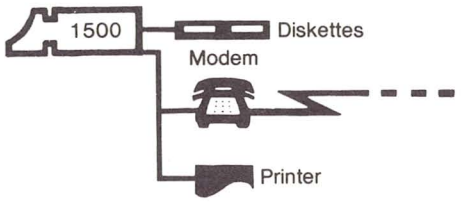
printer emulation is not supported in this configuration.



Stand-alone Configuration with DATASHARE Support

Stand-alone Configuration with Printer Support

In this configuration, EM3270 offers no intelligence, and is the functional replacement for the existing EM3275 software. (This configuration will be supported in EM3270 version 1.2, which will cancel EM3275 version 1.1.) The 1500 processor functions as a pure replacement for the IBM 3275 display unit with an attached IBM 3284 Model 3 printer, and operates up to 9600 bps. The Datapoint printers supported are models 9231, 9235, 9297 and 9621. A "local print" key sequence enables the operator to get a hard copy of the display screen at any time. The screen image is printed on the attached printer and the keyboard/display is locked while printing occurs. In this configuration the 1500 cannot be used as a substitute for a 3601 terminal.



3670 = 3601 and 3270!!!

An EM3270 cluster system consists of a 1500 processor with diskettes, up to sixteen 3670 Datastations, a DATASHARE system capable of supporting DS5 Version 3 (1800, 3800, 5500, 6600), and the necessary EIA hub communications interface devices. The 1500 is connected to the host data line through an RS-232C or CCITT V.24 compatible modem and operates at speeds from 1200 to 9600 bps. All connections to the 3670 terminal are local connections.

The cluster and stand-alone DATASHARE configurations can maintain connection simultaneously with a remote mainframe and a DATASHARE system. In this way, both configurations in effect create two independent terminals -- an IBM 3270 display device and a Datapoint 3601 display terminal -- **operating simultaneously** within one physical device.

The 3670 terminal maintains separate screen buffers for DATASHARE and 3270 modes. In the 3270 terminal mode, a user can run 3270 remote mainframe applications programs without modifications to either IBM hardware or software. In 3601 terminal mode, the user can interact with DATASHARE programs run on a DATASHARE processor. The operator selects the screen buffer/keyboard to be used via a mode key sequence.

In all configurations supporting a DATASHARE connection, a user's DATABUS program has full access to the 3670's screen buffer for 3270. This capability can be used to relieve the mainframe of certain time-consuming chores (such as editing and validating) to allow it to perform the tasks it does best -- data base management, large storage applications, and large on-line networking. These applications are said to use "composite mode" or "composite operation." Composite operation can be used to enhance 3270 applications with local edits, local data storage, local format storage, etc. In addition, the installation gains the benefits of dispersed processing:

- Remote processing and storage resources
- Mainframe independence
- Shorter development and implementation cycles
- System changes with minimum disruption
- Potential for easy, economical system expansion

The 3670 Datastation

The following are some of the standard features of the 3670 Datastation's 9033-style multipurpose keyboard:

Repeat-action keys
Support of 12 function keys
Support of 3 attention keys
Light pen simulation
Cursor positioning
Protected fields
Field highlighting
Numeric pad
Removable keyboard
Audible alarm

The 3670 Datastation has a display area of 24 lines of 80 characters, with two separate screen buffer areas kept in memory. Two local connections are required for installation of the 3670. One cable attaches to the DATASHARE processor via the 9462 Multiport Communications Interface. The other cable connects to an EIA hub interface, which leads to the 1500 control unit. The 3670 requires either 115 or 230 VAC, and 50 or 60 Hz. The 3670 Datastation communicates at 9600 bps, at up to 500 feet from the communications interfaces (the 9462 Multiport or the EIA hub), depending on the type of cable used.

The 3670 Datastation has down-line load logic -- the actual function performed by the 3670 depends on the program which is down-line loaded. Thus new releases of EM3270 or diagnostics, or even

future software products, can be used without hardware modification of the 3670.

The 1500 Controller

The 3670 Datastations must be loaded with the EM3270 software before they can emulate the 3277 and 3601 terminals. The 1500 controller performs this duty by retrieving the configured emulation program from its diskettes and down-line loading all of the 3670 Datastations.

Once the loading is accomplished, the 1500 functions as an IBM 3271 communications controller between the mainframe and the 3670s. Signals between the mainframe and the 1500 controller are bisynchronous, in EBCDIC, in accordance with requirements for IBM-compatible devices. It is the responsibility of the controller to maintain proper protocol on the communications line. The controller also notifies the mainframe that a terminal has data to send, encodes that data for use by the mainframe, and decodes data from the host into a form useable by the designated terminal.

The 1500 controller handles all communications with the mainframe; consequently the communications load is not placed on the DATASHARE system. Current DATASHARE users can add 3270 capability without losing system efficiency.

In addition to acting as an IBM 3271 communications controller, the 1500 is used to maintain an up-to-date display of general system status including cluster status and individual terminal information. This is constantly displayed on the processor screen. Normally the 1500 controller will be positioned near the DATASHARE processor so the status of communications and processing activity can be readily observed.

The EIA Hub

The EIA hub is a communications device which allows the 1500 controller to communicate with the connected 3670 Datastations. The EIA hub has either four or eight ports. If the system includes more than one hub, one of the ports must be committed to chain the first hub to the second. Below is a description of the number and type of hub adaptors necessary to connect multiple 3670 terminals to the 1500 controller. The maximum load for one 1500 controller is three eight-port EIA hubs supporting sixteen 3670 terminals.

3670 Terminals	*9470 Hub Adaptors (4-Port)*		*9471 Hub Adaptors (8-Port)*
1 to 3	1	+	0
4 to 7	0	+	1
8 to 13	0	+	2
14 to 15	1	+	2
16	0	+	3

The DATASHARE System

The number and type of terminals, processors and peripherals in the DATASHARE system is determined according to the needs of the user. However, only the 3670 Datastations in the system can switch to 3270 mode and communicate with the mainframe. Addition of EM3270 does not affect existing DATASHARE communications capabilities such as MULTILINK™ or DSNET.™

When 3270 capabilities are added to a DATASHARE system, several additional things need to be considered:

- DATASHARE V Version 3 is required
- CTS control by DATASHARE is required by the 3670 (this requires all existing cables to be modified)
- 3670s must be locally connected to DATASHARE and the EIA hub, and these ports must not be configured for a fixed baud rate. Remote connection of the 3670s is not allowed.
- Cables:

Model	*Description*	*Max. distance*
3449	Cable, 3-pair shielded	250'*
0509	Cable, low capacitance	500'

* Current DATASHARE specification with 3601/8200 terminals

Additional EM3270 Considerations

Customers who currently have 1500 processors (with multipurpose keyboard for 3270 functions) can utilize them in a cluster configuration to emulate a 3670. The 1500 executes a utility program (DLL3670/CMD) which emulates the 3670 down-line loading logic. It is then able to accept the emulator program from the 1500 controller just as a 3670 does. The 1500 becomes an active terminal in the cluster and may then communicate with the remote host or the local DATASHARE system, or both. Remember that a user can still run other applications on the 1500 processor when it is not part of the cluster.

EM3270 Availability

EM3270 version 1.1 is scheduled to be released in early November. This version will include the cluster configuration and stand-alone with DATASHARE support.

EM3270 version 1.2 and DLL3670 1.1 will add 3275 emulation and 1500 emulation of a 3670. Also in this version, 3275 emulation will run up to 9600 bps. These programs should be released in January 1980. EM3270 1.2 will cancel support of EM3275 1.1 and adds two features to current EM3275 capabilities -- speed of 9600 bps and the local print key.

DATASHARE V version 3 will be released in November.

EM3270 Pricing

HARDWARE

Model	*Description*	*Purch*	*1yr*	*2yr*	*3yr*	*Rent*	*Maint*	*Instal*
1571	1500 Cluster Controller	6550	280	225	195	N/A	48	250
3670	Enhanced DATASHARE Terminal	3395	110	98	88	N/A	28	40
9470	EIA Hub--4 port	1100	38	34	31	N/A	15	60
9471	EIA Hub--8 port	1600	55	49	45	N/A	15	80
0511	1571 to EIA Hub Cable--12'	45						
0510	EIA Hub to EIA Hub Cable--4'	41						
0509	Low Capacitance Cable--Hub to 3670	.50/ft						
9461	Connector Kit for 9462/9470/3670	22						
	SOFTWARE							
9812	DATASHARE V version 3	500*						
9815	EM3270	500**						
	DOCUMENTATION							
50480	EM3270 Users Guide	4.00						
60818	EM3270 6 Page Brochure	1.50						
60870	3670 Product Spec	1.00						
60863	3670 Flysheet	.75						
60807	EIA Hub Product Spec	.50						
60859	EIA Hub Flysheet	.75						

* Fees are the same as DATASHARE V Version 2. No charge with processor order; $500 without processor. Current users may upgrade through January 1980 without having to pay the $500 license fee. Monthly maintenance $10. Media charges are not included.

ARCCOM Extends ARC System Resource Concept

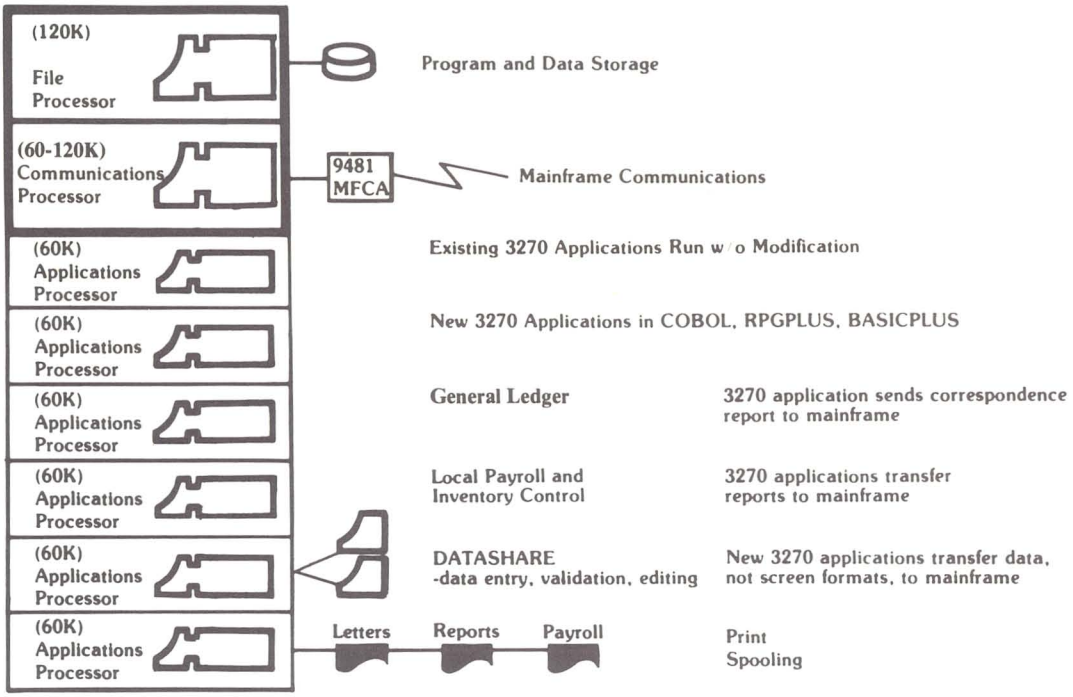
A new family of communications emulators -- ARCCOM -- extends the concept of resource sharing in an ARC system. Just as a file processor (FP) allows many applications processors (APs) to share disk resources, ARCCOM emulators allow many APs to share a communications facility through a communications processor (CP). Part of the ARCCOM family, AC3271B will emulate the IBM 3271 control unit with up to 32 IBM 3277 display stations and/or IBM 328X printers attached. A companion software product, AP3277, allows a 3800 applications processor to emulate 3277 and 328X concurrently (for execution of user's existing 3270 applications). These packages dramatically enhance the multi-function capabilities of the 3800 workstation.

Now a user can communicate with a remote mainframe using the 3270 mode and have access to all the dispersed processing capabilities of the ARC system! Like EM3270, the ARC communications package provides for execution of existing IBM 3270 applications without modification to either the mainframe hardware or software. It also allows development of enhanced 3270 applications in high-level languages. The principal difference is the total flexibility provided by the 3800 user workstation.

This ARC communications package permits great flexibility by allowing many applications processors to share a common communications resource. Each 3800 workstation is capable of true multi-purpose use, offering execution of:

- existing 3270 applications
- enhanced 3270 applications via high-level languages (interactive COBOL, DATABUS, etc.)
- non-3270 communications
- local processing
- print spooling
- numerous utilities

ARCCOM 3270 Support



ARCCOM -- Multi-User ARC Environment

Communications Processor -- AC3271B

The AC3271B software transforms an applications processor into a communications processor (CP). It executes on a Datapoint 6000 processor connected to an ARC system and equipped with a 9481 communications adapter. It emulates an IBM 3271 terminal cluster controller with a number of IBM 3277 display terminals and/or IBM 328X printers attached.

A model 6020 processor will support up to 32 terminals or printers, while a model 6010 will support up to 8. AC3271B allows an arbitrary combination of emulated 3277 display terminals and 328X printers. A local parallel interface printer can be optionally attached to the processor for emulating one of the 328X printers.

AC3271B emulating the cluster controller provides the communications resources for the applications processors. The communications processor maintains a status display of block counts, error statistics, and modem activity. This processor also provides for a communications line trace to be displayed on the screen to facilitate diagnostic work. The CP operates--

- multipoint or point-to-point configurations
- 2 or 4 wire leased line
- binary synchronous operation, EBCDIC code
- up to 9600 bps

The CP appears to be a file processor by simulating a disk volume in processor memory. This "pseudo-volume" is mounted like any other volume, and contains a text-format screen buffer file for each emulated terminal or printer. Thus high-level languages can access 3270 communications by simply opening and reading/writing a text file. AP3277 should be used to execute existing 3270 applications.

Applications Processor -- AP3277

The AP3277 is designed for operation on a 3800 applications processor (with a multi-purpose keyboard with 3270 functions) connected to an ARC system. It enables the 3800 to emulate the functions of the IBM 3277 display terminal and 328X printer, allowing interactive operator communication from anywhere on the ARC system to the remote host. AP3277 provides emulation of many features of the IBM 3277 keyboard and display. These include:

- upper and lower case
- field highlighting
- cursor control keys
- program function keys
- program attention keys
- partial typamatic
- status indication
- audible alarm

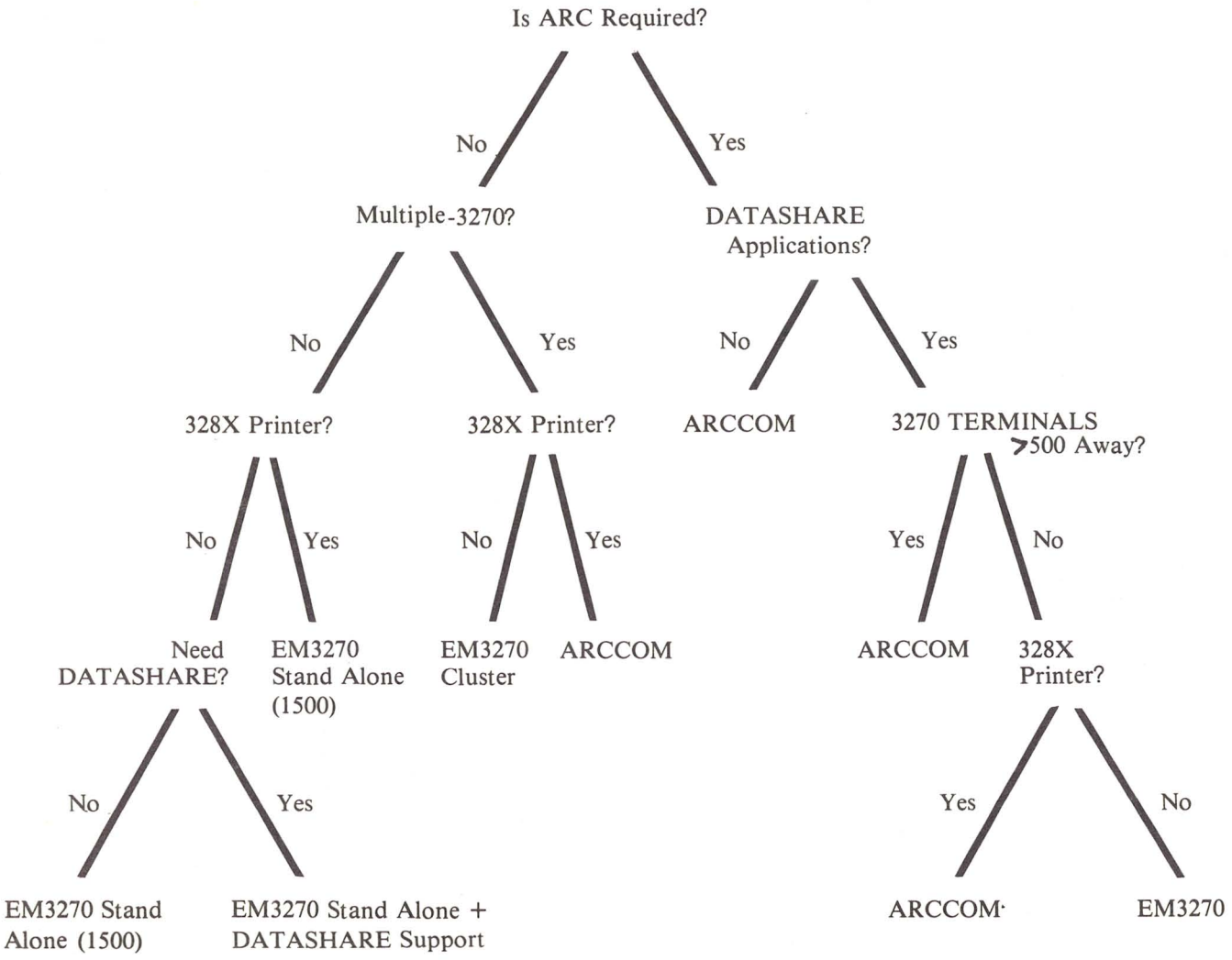
AP3277 also provides for emulation of the optional 328X printer on an attached local parallel printer. The emulation allows local screen copy and formatted print.

AC3271B/AP3277 are scheduled to begin beta testing in December, with anticipated distribution release in February 1980. Look for software model codes and pricing in coming issues of OUTTHINK.

The decision tree shown on this page is designed to help you identify the product needed to satisfy your customers' requirements. The first decision is "to ARC or not to ARC"? This decision is based on the need for a multi-function system (such as word processing), multi-language system (such as COBOL), or a large number of terminals with a shared data base.

However, selection of EM3270 can be justified in an ARC environment if the DATASHARE workstation function is adequate, the required cable lengths are under 500', and no IBM 328X printer support is required. On the other hand, ARCCOM selection may be indicated when IBM 328X emulation or multistation use is necessary, even though ARC is not dictated by other requirements.

Printer output falls into two categories -- hard copy of the 3270 screen and direct printing of reports. EM3270 can perform the first function using a simple DATABUS program, while the second requires emulation of 328X with ARCCOM.



Which 3270 Product Does Your Customer Need?

DATAPOINT