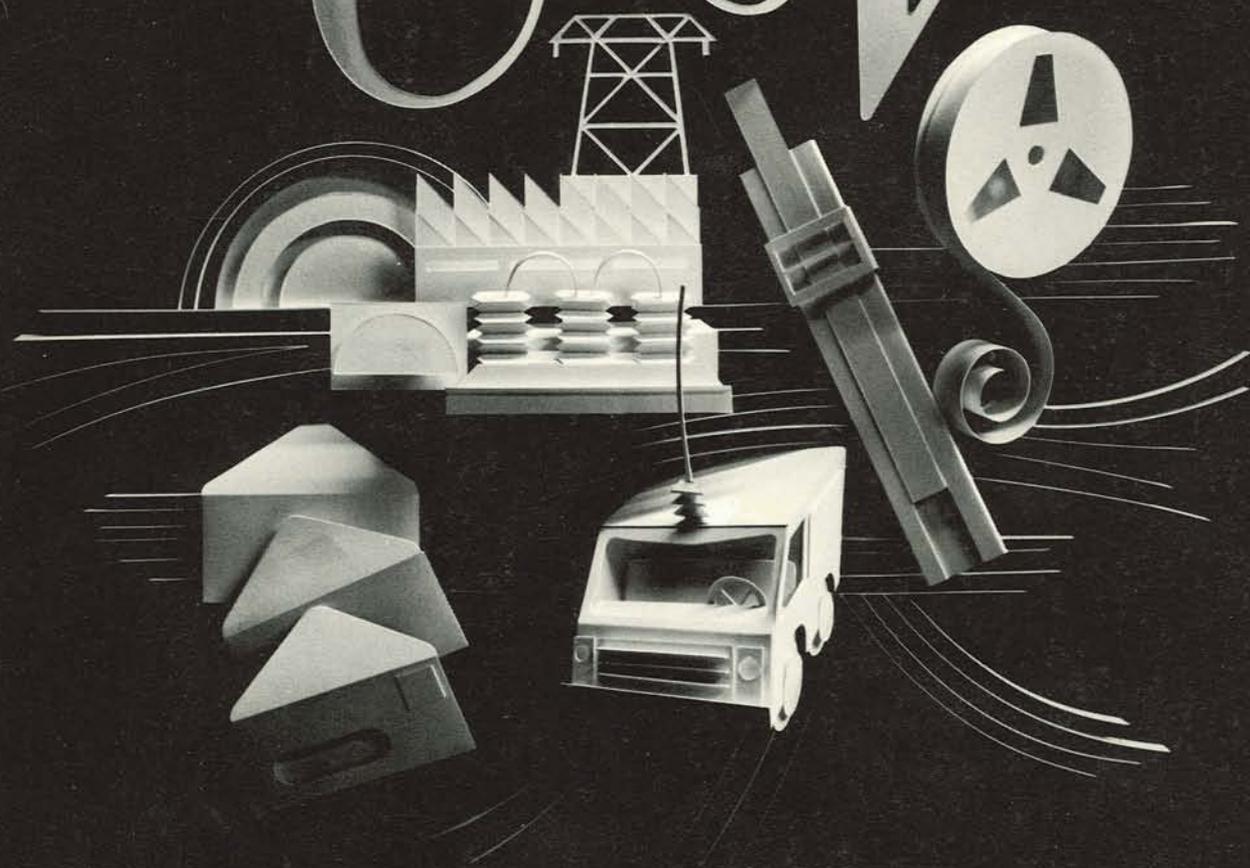


**XEROX CONTROL PROGRAM-FIVE:  
Comprehensive Tools for the Users**

*P-V*



XEROX

An increasing demand is being placed on computer systems to provide the power of the computer to all users, regardless of their requirements. These requirements are many: Different modes of access (time sharing, local and remote batch, transaction processing, real time); a wide variety of processors to meet each user's needs (compilers, assemblers, interpreters); and most importantly, the objective is to satisfy these requirements while remaining easy to use.

At Xerox we summarize these requirements as "multi-use computing." And Xerox provides the most efficient multi-use computer systems available. What makes this practical is a unique blend of hardware and software design, managed by the Xerox operating system, Control Program-Five (CP-V).

Consider a comment received from a CP-V installation:

"There is a considerable variation among our users in their level of computer sophistication, but there are few who would be considered computer professionals. As a consequence, we must have an easy-to-use, responsive system — one that delivers messages the user can understand. We simply couldn't tolerate a system, for example, that required a complex command to get into the compiler or to create a file. CP-V, in contrast, has simple and direct control commands which makes it most suitable for us."

A simple and straightforward user interface is only one of several reasons why CP-V is easy to use.

CP-V language processors are transparent to the access mode of the user. This means that the evolution of a program can be accomplished in the most timely and efficient manner

for the user. For example, an engineer can develop and debug his FORTRAN program from a terminal in his office; when debugging is completed, the program is entered into the batch queue for execution in one of the batch streams . . . from a simple terminal operation.

With CP-V, users can develop their programs in a manner most convenient to their application. It provides a variety of languages and service processors which include:

Processor	Function
FORTRAN IV	Compilation of Extended FORTRAN IV programs
COBOL	Compilation of ANS COBOL programs
Meta-Symbol	Assembly of high-level assembly language programs
BASIC	Compilation and execution of programs or direct statements written in an extended BASIC language
APL	Interpretation and execution of programs written in the APL language
FLAG	Compilation of fast "load-and-go" programs
Manage	File retrieval, updating and reporting

SL-1	Compilation of programs written in a language designed specifically for digital or hybrid simulation
CIRC	Analysis of electronic circuits
EDMS	Organization, storing, updating and deletion of information in a centralized data base
Sort/Merge	Sorting and/or merging of records in one or more files
GPDS	Experimentation with and evaluation of system methods, processes and designs
1400 Series Simulators	Simulation of 1400 series computers

And to augment these processors, CP-V provides a series of aids to assist in program development checkout and execution including:

<b>Processor</b>	<b>Function</b>
Edit	Composition and modification of programs and other bodies of text
FDP	Debugging of Extended FORTRAN IV programs
Delta	Debugging of programs at the assembly language level
COBOL On-Line Debugger	On-line debugging of ANS COBOL programs
Link	Linkage of programs for on-line execution
Load	Linkage of programs for batch execution
Batch	Submission of batch jobs via an on-line terminal or another batch job

A fundamental cornerstone of CP-V is a file management system common to all modes of operation. For example, a file created in the real-time mode may be read by a batch program and updated in the time-sharing mode — or any combination of accesses and modes of operation that would be appropriate to the application.

To assist the user in moving programs and data around within the system, CP-V provides a conversational tool called the Peripheral Conversion Language. Through a series of simple commands available to both batch and on-line users, PCL will transfer single or multiple files from one peripheral device to another; delete, list or copy files; and handle a large mix of data types.

But CP-V provides more than a comprehensive set of programming tools — it also provides a bridge to the new user beginning his familiarization of CP-V. With CP-V, installation management can define a Xerox- or installation-provided processor to be automatically associated with a user's account at log-on time. For example, a CP-V subsystem called EASY provides a terminal interface protocol and commands compatible with the G.E. Mark II time-sharing service. At log-on time, EASY can be automatically associated with the terminal such that a user familiar with the G.E. service has a convenient bridge into CP-V.

Why this comprehensive set of tools? Users must communicate with the system in their most efficient manner. User efficiency is the cornerstone of Xerox Control Program-Five . . . bringing the power of the computer to the users on their terms, for quick and easy performance of their most demanding tasks.

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