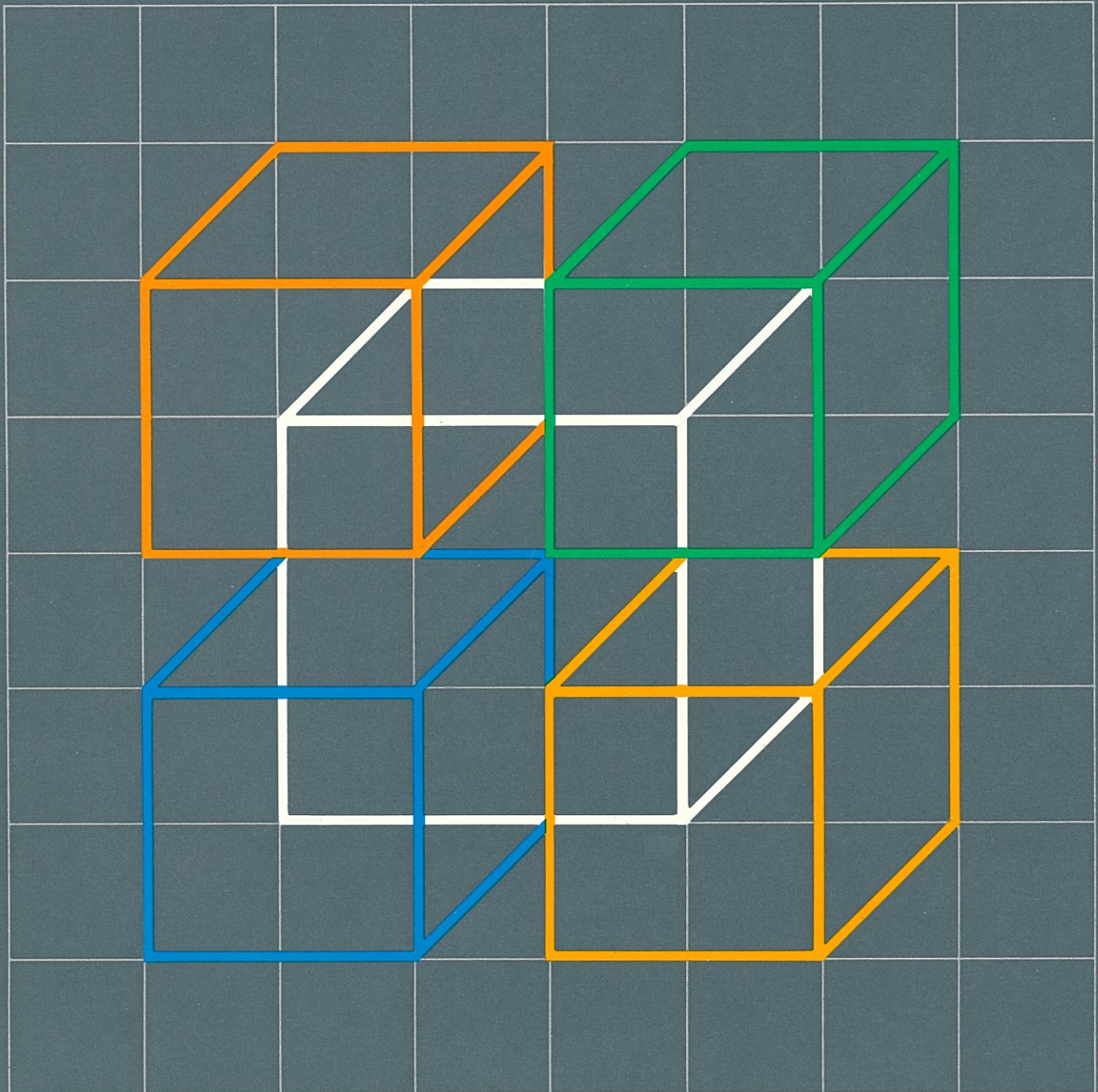# MRPS:
Manufacturing Resource Planning System

Controlling Your Dynamic Manufacturing Environment

Cincom Systems

Cincom's MRPS: A new generation of manufacturing control systems.

Cincom's Manufacturing Control System is a comprehensive production and inventory control software system that combines five powerful modules to optimize your manufacturing environment. They include: a Foundation module and four manufacturing planning modules.

The Foundation Module establishes the system framework and controls your data resource. Included in this module are System Control, Standards Control and Material Control.

Planning Modules:
MMPS—Manufacturing Material Planning System—balances priorities and inventories to meet production objectives.
MPSS—Master Production Scheduling System—your base to plan, coordinate and control the company's material and production activities.
PPCS—Production Planning and Control System—creates your detailed, shop floor work schedule and monitors performance.
VAPS—Vendor Analysis and Purchasing System streamlines purchasing paperwork and monitors vendor performance.

At Cincom Systems, we believe success in manufacturing control systems is a journey, not a destination. It requires sophisticated software tools that provide the planning logic for effective manufacturing control and optimizes the data processing environment where the plan is implemented. MRPS allows you to begin that journey immediately, to provide visible results in the short-term and continuing improvements in the long-term. MRPS will give your manufacturing control effort dimensions it has never had before.

Contents:

CINCOM'S MRPS—THE UNIQUE ADVANTAGES

Cincom's MRPS is the first manufacturing control system to be designed in the last decade. Combining the most recent manufacturing MRP principles with the most contemporary data processing methodologies, MRPS is:

- The first system to be designed for change—it is adaptable, extendable and modifiable and therefore flexible to your needs.
- The first system designed to be modular to provide a successful growth path.
- The first system integrated with a DBMS to ensure data independence and high performance.
- The first system to be hardware/software independent and portable from mainframes to minicomputers.
- The first system designed exclusively for the on-line environment.

With more than 4000 customers worldwide, 60% of which are manufacturing companies, Cincom Systems is uniquely qualified to take manufacturing control systems out of the dark ages and into the age of productivity.

The Dynamics of Manufacturing.

Optimizing the potential of your manufacturing environment.

Finding the delicate balance between inventories, production efficiency and customer service.

These are the objectives many companies find difficult to achieve.

Why? Because the manufacturing environment is so dynamic.

Overly optimistic forecasts often build excessive inventories. Materials arrive late. New products require tooling changes. Delayed orders upset production schedules. And so on. In this dynamic environment, productivity suffers. And so do profits.

In today's manufacturing environments, overly structured control systems will be destroyed by the dynamics of change. Systems designed over the last decade have proven that. Your delicate balance will never be achieved, and as a result profits will suffer.

From Cincom Systems, the leading developer of software solutions for business and industry, comes the first manufacturing control system to be designed, built and proven in use in the last decade.

MRPS—Cincom's Manufacturing Resource Planning System. It's new. It's sophisticated. It's powerful. And most important, it's designed to overcome the major weakness of all other systems available today. It adapts to change. It adapts to your dynamic environment and mirrors the way you do business. That's why we say that manufacturing control is a journey, not a destination. As you change, so must your system.

So let's start our journey and see how MRPS will create a balanced manufacturing environment for you.

MRPS: Cincom's unique manufacturing control system designed for your dynamic environment.

The design of Cincom's new Manufacturing Control System, MRPS, was based on one major criterion—we cannot conquer change. To architect and build an effective manufacturing control system, it must allow all functions of the system to be responsive to change. This permits you to manage your manufacturing environment, not vice-versa.

Simple in concept, this major breakthrough in manufacturing control methodology establishes a benchmark on which to evaluate any manufacturing software system today. We call this design methodology *The Generic Solution.* The Generic Solution concept combines functionality with flexibility, modularity with implementation requirements, success with progress. Once a module of MRPS is implemented, that module will live forever in your system. It will evolve as your needs evolve. It will change as your environment changes.

The Generic Solution Concept. It is the solution that mirrors your needs. It is the concept that makes MRPS so powerful.

Because you are in control, the system does not control you.

Working with leading manufacturing consultants, Cincom's team of software designers used the Generic Concept and established this five-point design philosophy for the next generation of MRP software.

- The system must be adaptable, extendable and modifiable to meet the changing conditions of your factory.
- The system must be functionally complete, yet flexible so you can fine-tune it to your changing environment.
- The system must be modular so you can implement components in a step-by-step fashion.
- The system must be on-line, interactive and user-friendly. This puts decision-making information at your fingertips immediately and allows you to see the results of your input instantly.
- In addition, all modules within MRPS must offer the most contemporary functional features accompanied by complete documentation.

Cincom's MRPS has been designed by professionals to meet the needs of professionals in both manufacturing and data processing. Working efficiently in both environments ensures the highest performance of the system, and the highest productivity for your company. Cincom's MRPS—a sound investment based on a sound design strategy.

MRPS: Modular, integrated, flexible from design to implementation.

Cincom's MRPS meets and exceeds the functional requirements established for today's Manufacturing Control Systems. As a full, closed-loop system, MRPS maps the manufacturing process from initiation of the Production Plan to the monitoring of orders and purchased items with your vendors. As a complete, closed-loop manufacturing control system, Cincom's MRPS consists of a Foundation module and four planning modules.

The Foundation Module provides basic record maintenance and establishes the system framework. Included in the Foundation Module are: System Control, Standards Control and Material Control. The planning modules use this information to perform analyses and either take action or recommend a course of action based on user specified criteria.

Implementing the Foundation Module is your first step in gaining control over your valuable manufacturing resource. The records you build and store here are necessary to operate the planning modules, whether you implement them all at once, or phase them in one at a time.

The Planning Modules include:
- MMPS—Manufacturing Material Planning System—supports Material Requirements Planning concepts and represents the heart of your manufacturing control system. MMPS balances priorities and inventories so production objectives can be met.
- MPSS—Master Production Scheduling System—provides a base to plan, coordinate and control the company's material and production activities.
- PPCS—Production Planning and Control System—creates a detailed sequential work schedule for the shop floor.

- VAPS—Vendor Analysis and Purchasing System—streamlines purchasing paperwork and monitors vendor performance.

These are the components that make Cincom's MRPS the most complete manufacturing software system available today. And because of the Generic Solution Design Concept, MRPS is adaptable, extendable and modifiable—the most important factors in today's manufacturing control environments.

Making it Work for Data Processing

The modular design of MRPS provides you with wide flexibility in implementing the system. And for data processing this same flexibility makes MRPS the only manufacturing control system designed to work as well in data processing as it does on the shop floor.

In today's computerized world, application software must be built for the on-line environment, based on data base management software technology and written in structured COBOL. The software must also be designed to operate on a mainframe computer, a stand-alone minicomputer, or in a distributed environment. These criteria ensure the useful life of the application software over an extended period of time.

Cincom's MRPS meets these standards for data processing performance. In fact, when it comes to data base performance, MRPS is integrated with the industry's most successful data base management system (DBMS) available today— Series 80 TOTAL®.

Because TOTAL is integrated with MRPS (not just interfaced with it as an afterthought), superior performance of your manufacturing control system is assured.

TOTAL assists your manufacturing control environment by providing the advantage of data independence. Data independence means you can:

- Add information to any record in the data base, e.g. additional costing information to accommodate your unique requirement.
- Expand the size of any existing data field, e.g. part description.

The ease of modification and flexibility sets MRPS apart from all other systems. And for the greatest operational flexibility, MRPS operates in one or any combination of the following modes:

- batch processing of transactions and reports
- on-line ad hoc query
- on-line data entry
- on-line interactive update and query

This variety of operating modes ensures the greatest flexibility in the initial implementation of your system and the success of your system over time.

"DURING AN EIGHT YEAR STUDY PERIOD, COMPANIES WITH COMPUTERIZED MANUFACTURING CONTROL SYSTEMS REGISTERED 29% HIGHER PROFITS AND DOUBLED THEIR INVENTORY TURNOVER, COMPARED WITH COMPANIES NOT USING THESE SOPHISTICATED TECHNIQUES."

BOOZ-ALLEN & HAMILTON

MRPS ON-LINE—providing timely information when manufacturing requirements demand it.
The on-line implementation of MRPS helps you ensure speed, accuracy, and usability. The growing trend towards use of the on-line environment for application software endorses its advantages.

The on-line MRPS environment is characterized by:

- Hardware and operating system independence— MRPS On-line is operational on both mainframes and mini-computers, permitting you to use Cincom's on-line control monitor Series 80 ENVIRON/1®, IBM's CICS or Digital Equipment's FMS. This gives you the flexibility you need to change hardware systems when price/performance variables change.

- End-User Ease of Operation— On-line MRPS has been designed with the manufacturing user in mind. No matter what the computer environment, MRPS will look the same in batch reports or on-line displays. This conistency of output, transaction formats, systems operation and internal operation methods provides unparalleled efficiency and ease-of-use. Your users only learn one system— and one system only.

- End-User Facilities—The power of On-line MRPS is also demonstrated by the availability of Cincom's on-line query facility, Series 80 T-ASK, and Cincom's on-line data entry and validation system, Series 80 ENV-DATA.

- Technical Superiority— Cincom's On-line MRPS represents the most current thinking in on-line systems. Written in high level COBOL and using the most advanced data base recovery capabilities, On-line MRPS is easy to maintain, reliable, consistent and technically sound.
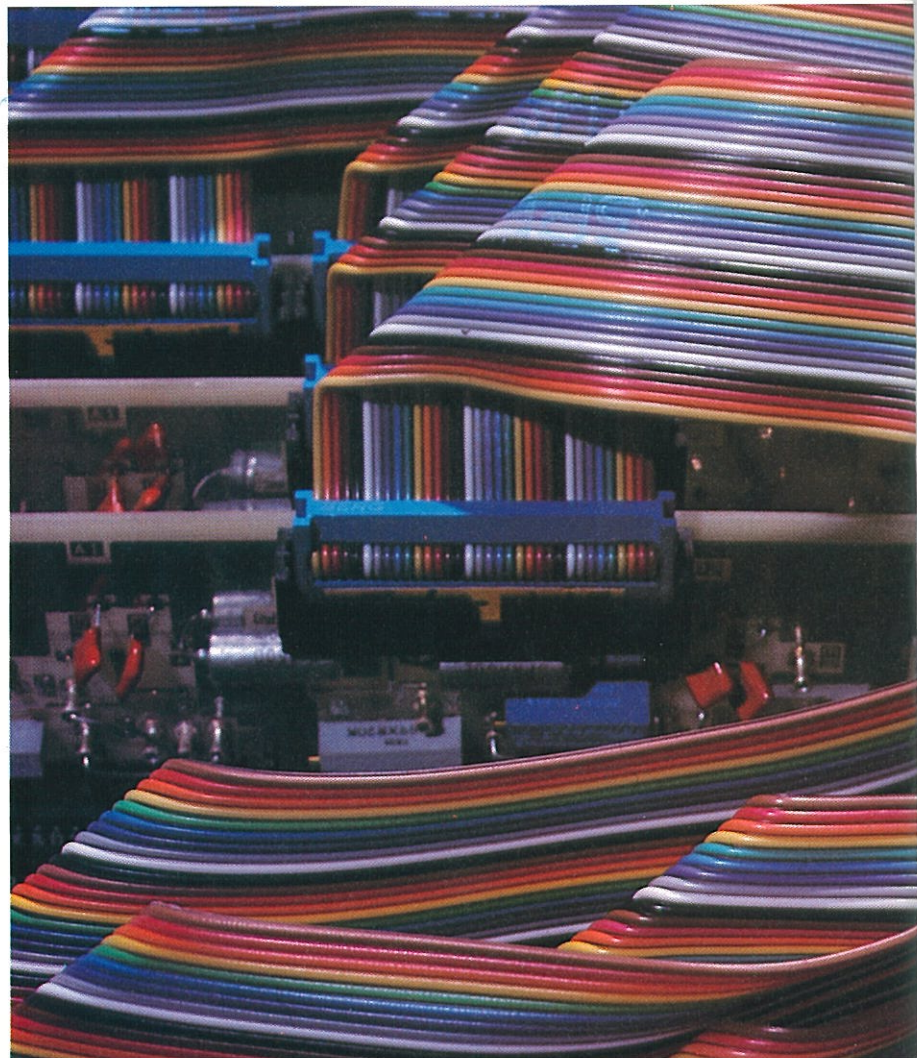
The Master Plan—the groundwork for successful implementation

To mirror the way you do business, your manufacturing control system must correspond to all levels of planning and implementation within your organization. By matching these factors in your Master Plan, you have paved the way for successful implementation of your manufacturing control system.

The first level of MRPS is Management Planning and Control. Your top executives create the Production Plan, the highest level of production objectives. This plan is then expanded into a Master Production Schedule (MPS). Next, Resource Capacity Planning must interpret the MPS to ensure that it can be supported by current and planned resources and capacities. This planning is a prerequisite to the more detailed levels of manufacturing resource planning.

The second level is Detailed Priority Planning, in which Material Requirements Planning defines material priorities supportive of the MPS. Here MRP converts MPS orders into detailed material plans—using bill of material and inventory control data to create plans for balanced material availabilities, for both purchased and manufactured materials.

At the third level, Plan Execution, specific actions are taken to execute the prioritized orders for both the manufactured and the purchased items recommended by MRP.

For manufactured items, orders are translated into detailed work plans. Work Center and routing data are combined to create detailed operational schedules. This data is formatted to accommodate detailed Capacity Requirements Planning. Shop Scheduling, as well as Input/Output Control, allow you to project and control the queue (backlog) in Work Centers. Work-in-process activity reporting provides information on material completions. Thus performance can be compared to scheduling activities.

For purchased items, orders are supported with data on vendor sourcing, pricing and delivery criteria. Actual-to-planned activities and performance indicators are monitored and compiled to provide adequate information to manage purchasing functions. This support improves buyer productivity and enhances purchasing support of the manufacturing function.

The modular design of MRPS facilitates its implementation throughout your company. And because it combines ease-of-use with flexibility, MRPS adapts to the way you do business— rather than forcing you to dramatically change your methods to fit the system.

Now, let's take a detailed look at the five modules of Cincom's MRPS closed-loop manufacturing system.

Master Plan: Mirrors the way your company operates.

Using Cincom's MRPS, all levels of your manufacturing Master Plan can be implemented: Management Planning and Control, Detailed Priority Planning and Plan Execution.
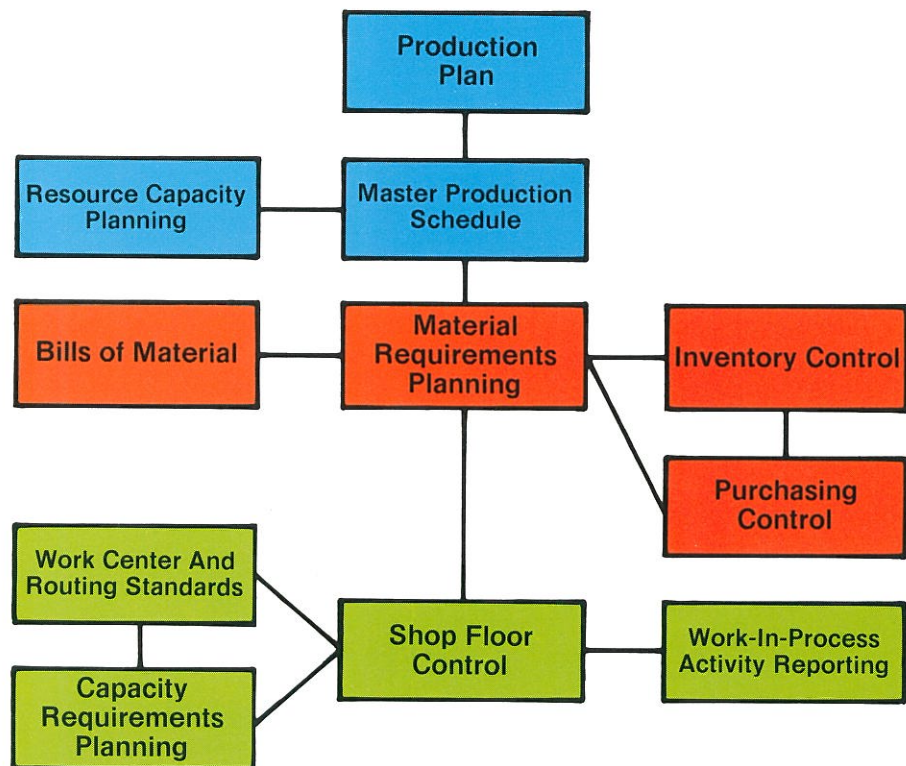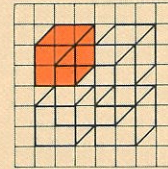
The Powerful Features of Cincom's MRPS

Compare the features of Cincom's MRPS against any other manufacturing control system. You'll see why it's the most advanced manufacturing control system available today.
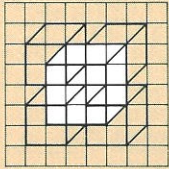
Foundation Module

- **Part master bill of material**
  - Engineering change control by effectivity date or run-out
  - Pending BOM change review
  - Shrinkage factors
  - Automatic material plan review due to bill/part maintenance
  - Sequence number control
  - Unlimited user text
  - Single/multilevel explosion/where used
  - Add/change/delete/copy function
  - Pseudo parts
  - Planning BOM
  - Field level maintenance
- **Work center routings**
  - Multiple resource definition
  - Time phased capacities
  - Effectivity date control
  - Standard move/queue times
  - Standard labor/burden rates
  - Unit of measure conversion
  - Alternate/Parallel operations
  - Production routings/representative routings
  - Unlimited user text
- **Material Control/Inventory Control**
  - Orders/requirements maintenance
  - Independent/dependent demand maintenance
  - Order aging
  - Order "performance to plan" analysis
  - Single level pegging
  - Multiple inventory location support
  - MRP inventory availability by location
  - Cycle counting
  - ABC analysis
  - Usage history, production and service parts
  - Moving average via exponential smoothing
  - Lot control
- **Costing**
  - Incremental, value-added cost
  - Accumulated cost
  - Costed BOM
  - Cost catalogue
  - Cost roll-up
  - "What-if" cost simulation
  - Labor/burden cost calculated via routings
- **System Control**
  - Single source transaction control
  - Complete audit trail
  - Easily incorporates existing transactions
  - Suspense of invalid transactions
  - Nervousness dampeners
  - On-line audit control
  - "Test" shop date
  - History retention control
  - Security control
- **Data base support**
  - Data independence
  - Readily accommodates user unique data requirements
  - Facilitates integration with existing systems
  - Easily expanded
  - Bucketless storage—detail data
  - High performance
  - Portable across hardware
  - Complete compatibility mainframes to mini
- **On-line support**
  - ENVIRON/1, CICS, FMS
  - Ad hoc query support
  - Data entry support
  - Full "point of failure" recovery
  - High level language
  - Direct screen to screen access
  - Sign-on security
  - One data base for batch and on-line

MMPS

Manufacturing Material Planning System

- **Master schedule maintenance—Planning BOM**
- **Net change MRP**
  - All detail data—bucketless storage
  - Part specific nervousness dampeners
  - Exception reporting, re-iterative or last run only
- **Order creation, release and control**
  - Automatic replanning of orders beyond the firm planned fence
  - Time phased allocation
  - "Paper staging" facilities
  - Order analysis and variance reporting
  - Planner keyed reporting
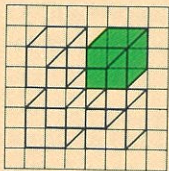
MPSS

Master Production Scheduling System

- **Master production scheduling**
  - Family level planning
  - Usage history of both production and service parts
  - Automatic forecast propogation/extension by time period and quantities
  - Forecast consumption from actual demand
  - Available and available-to-promise calculations by time period
  - Separation of MPS from MRP
  - Selective or comprehensive MPS commits to MRP
  - "What if" simulation
- **Resource/rough-cut capacity planning**
  - Unlimited resource definition (money, time, pieces, etc.)
  - Effectivity date control
  - Detail/summary load profiles by resource
  - Trial-fit analysis
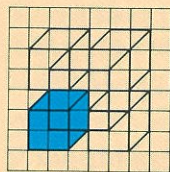
PPCS

Production Planning and Control System

- **Detailed capacity planning**
  - Detailed, time phased load profiles by work center
  - Detailed, time phased capacity by work center
  - Load/capacity analysis with variable time horizon
  - Input/output control by work center
- **Shop floor control**
  - Shop scheduling by operation
  - Operation substitution—creation
  - Overrides to scheduled operations
  - Critical ratio calculation
  - Analysis of current/future order status
- **Work-in-process activity reporting**
  - Quantity/time reporting
  - Updating of scheduled operations
  - Material movement reporting
  - Variance reporting
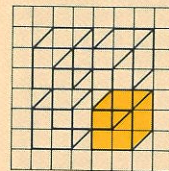
VAPS

Vendor Analysis and Purchasing System

- **Inventory control**
  - Delivery date variance
  - Lead time by vendor
  - Suggested lead time updates
  - Cash flow analysis
  - Performance to budget analysis
  - Reject analysis/history
- **Vendor control and analysis**
  - Vendor performance, delivery, pricing, quality
  - Primary and alternative sourcing
  - Unlimited buyer supplied text
  - Price break/volume discount schedules
  - Business volume by vendor
- **Buyer performance**
  - Price protection/price variance analysis
  - Delivery, quality analysis
  - Cash flow analysis

Cincom's MRPS—The First of the Second Generation of Manufacturing Control Software.
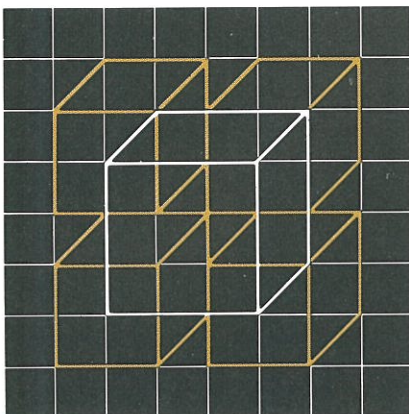
The Foundation Module—a powerful first step toward improved productivity.

MRPS presents a powerful array of manufacturing control capabilities, beginning with the Foundation Module.

The Foundation Module:
- Stores and maintains product definitions, bill of material, orders, requirements, and other basic manufacturing data such as routings, part numbers, and costs.
- Accommodates the establishment of manufacturing disciplines through transaction control.
- Functions as an extremely powerful stand-alone inventory control system.

The Foundation Module consists of System Control, Standards Control, and Material Control.

System Control
The System Control component provides centralized control of all transactions, parameters, and system input. As a result, the system administrator has powerful custom control of daily system operations.

Included in System Control are:
- The shop calendar.
- Transaction control, the central "clearing house" for all system input. It is designed to be used as is. Or it can be modified to accommodate existent user transaction codes and formats to minimize the impact of MRPS on current systems.
  A comprehensive audit trail is maintained along with the "suspending" of all invalid transactions.
- Parameter control gives users the ability to easily establish system-wide control. Examples of this include system tables, nervousness dampeners, on-line audit control, usage history, and history retention control.

System Control thus provides control of the frame-work within which the overall system will operate.

Standards Control
The Standards Control component supports the disciplines and data necessary to efficiently implement the MRPS planning modules. It includes the definition and maintenance of: bill of material (formulations, recipes), part numbers, costs, work centers, capacities, resources, and routings.

In bill of material, Standards Control provides:
- Integrity checks.
- Sequence number control.
- Effectivity date control.
- Single and multi-level explosion/where used.
- Add/change/delete/replace/copy functions.

The "copy" transaction provides the extremely powerful ability to create a new bill of material using an old bill of material. This "same as except" type logic is extremely useful in most manufacturing environments.

The Part Master stores status and control data for both real and pseudo parts. All maintenance to the Part Master is done at the field level instead of the record level. This relieves users of rigidity problems common to most other systems. Because the Part Master is one of the most important files in a manufacturing system, MRPS is designed to allow the user to easily add user-unique information to this file.

Cost Generation and Maintenance functions present data on material, labor, and burden, for both frozen and current costs. Costs are maintained at both incremental (value-added) and accumulated levels of detail. Costs may be "Rolled Up" through the bill of material to effect multi-level costing. Cost changes may also be simulated to answer "what if" re-costing questions. Normal labor and burden rate codes are stored in the work center file; overrides to these normal labor and burden rates can be established and stored in the Routing file. A cost catalog and a costed bill of material are standard reports.

Work Center data allows:
- Multiple resource definition.
- Time-phased capacities.
- Effectivity date control.
- Standard move/queue times.
- Standard labor/burden rates.

This information gives sources of capacities that support the production of an item.

Work Center Capacity and Where-Used Displays show both Production and "Representative" Work Centers. Shop Floor Control, Detail Capacity Requirements Planning, and Costing require Production Work Center Data. Resource Capacity Planning (provided by the MPSS module) uses Repre-

sentative Work Center Resources to interpret the resource capacity implications of a Master Production Schedule.

Routings features include:
- Effectivity date control.
- Multiple resource definition.
- Unit of measure conversion factors.
- Alternate and parallel operations.
- Overrides to standard labor rates.
- User-inserted text.

Routings define the shop floor manufacturing process, operation by operation. Representative Routings present the critical concerns relevant to MPS support, such as gross machinery hours, key vendors, and cash requirements.

Standards Control is the vehicle for establishing the data accuracy and the discipline needed to support the planning and control modules of the MRPS family.

Material Control

The Material Control component establishes and maintains requirements, orders, and inventory availability data. Effective inventory management depends on this component, both as a powerful stand-alone system and as the basis of a

MATERIALS
STANDARDS
SYSTEMS
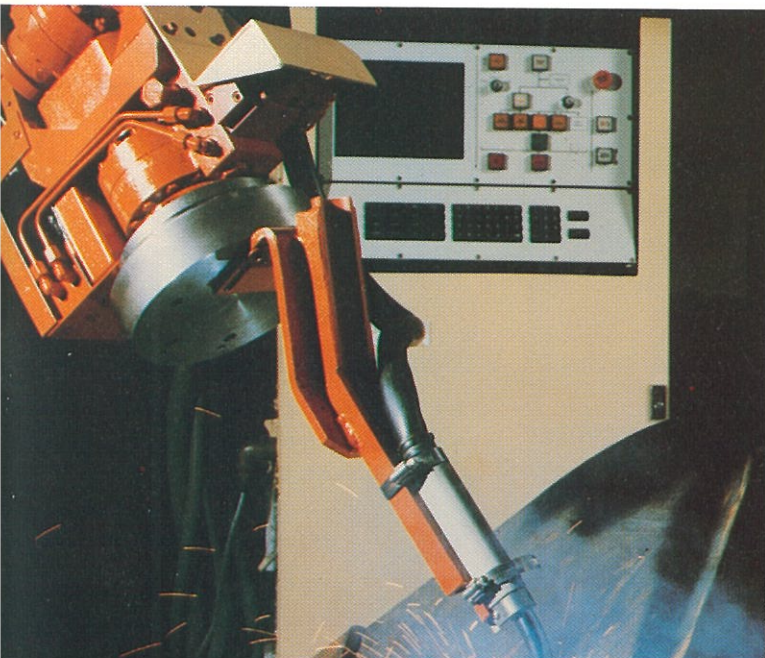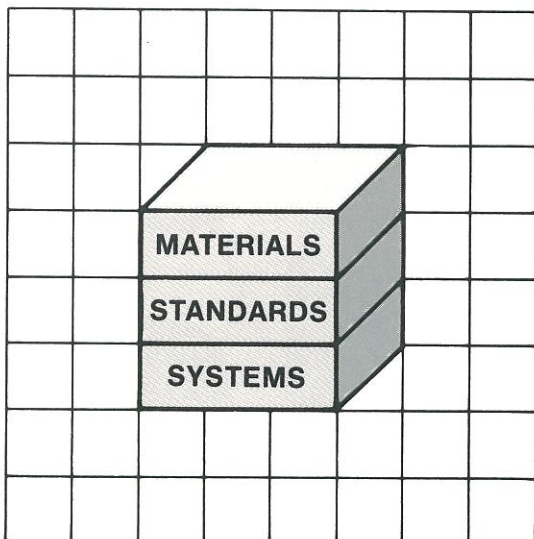
fully developed MRP. The Material Control component consists of Requirements Maintenance, Order Maintenance and Inventory Control.

Requirements Maintenance features user transactions to add, delete, or substitute both independent and dependent requirements, including the ability to change quantity, status or dates. Requirements status reporting is also provided.

Order Maintenance features explosion of orders for component requirements generation. The system creates orders and ages them through plan, firm plan, and ready-for-release status. User transactions are provided to open, close, add, or cancel orders, in addition to transactions which allow changes to quantity, dates, or status of orders. Order history review provides "performance to plan" comparison and history.

Inventory Control features on-hand availability by location, with full support of cycle counting and value analysis (ABC) for inventory categorization. Source Control (Lot Control) is provided for material tracing, homogeneity, and accountability. Usage history reporting provides analysis of planned and unplanned usage to accommodate better control. Multiple stocking locations provide for complete accountability of warehousing and distribution networks.

The Foundation Module provides flexible control of day-to-day operations and powerful customizing capabilities. It lends access to information for effective inventory management. And it allows the establishment of accurate records and disciplines to support the other MRPS planning modules.

The Foundation Module, as a separate entity, provides a comprehensive, economical approach to building your integrated manufacturing control system. Because personnel must sometimes build the skills and disciplines necessary to keep accurate records before implementing MRP, MPS, SFC, etc., the Foundation Module is a natural first step to Manufacturing Control. It is this practical, phased approach to building a comprehensive, integrated manufacturing control system that can provide the margin of success

The MRPS Data Base Schematic
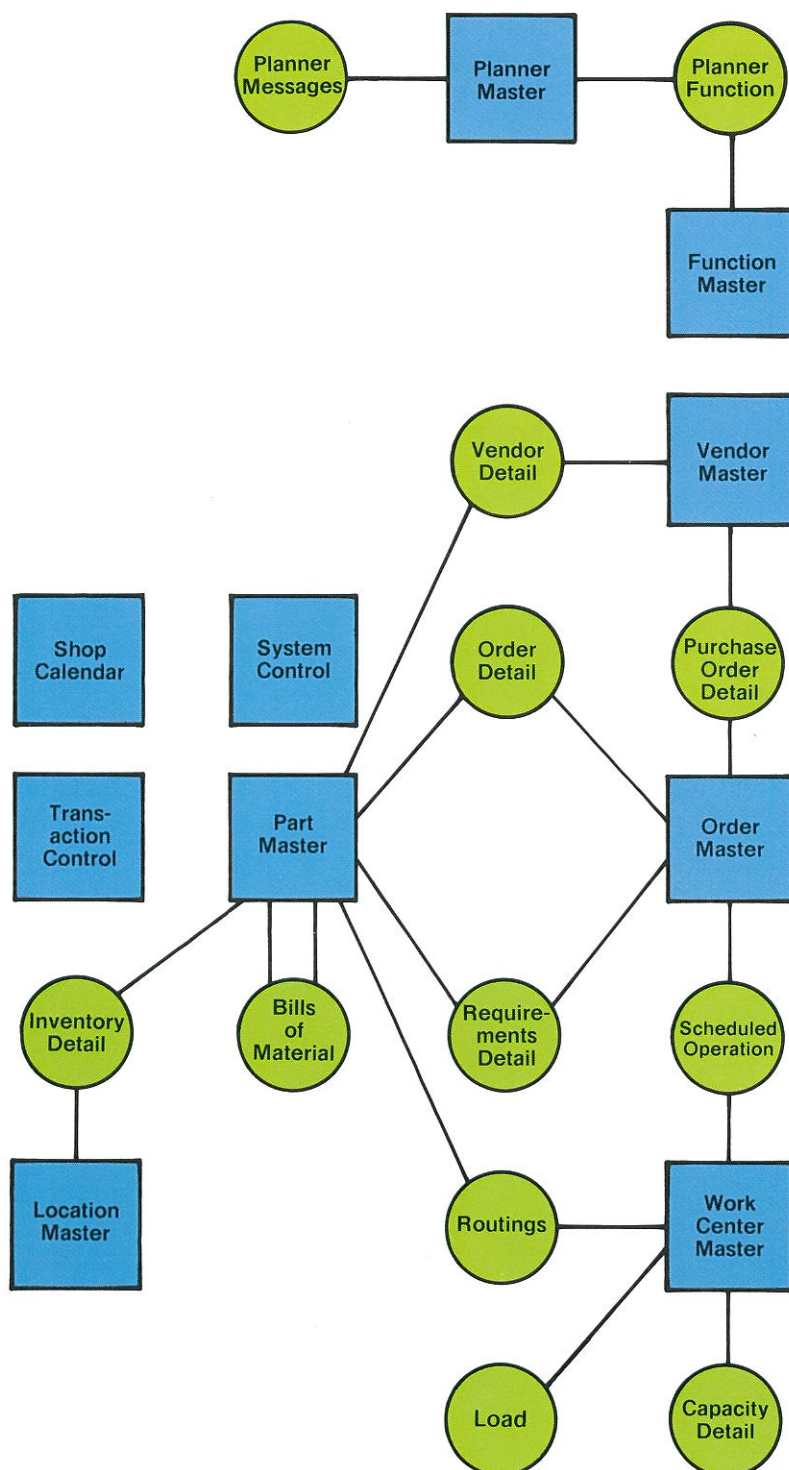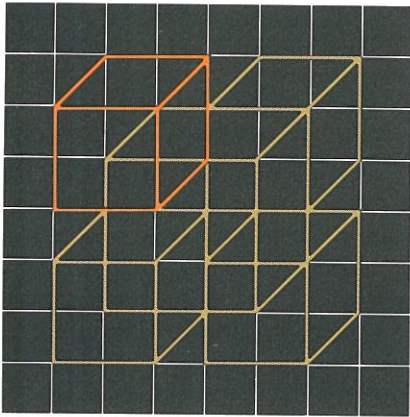
Planning priorities for effective inventory controls is made easy by MMPS—Manufacturing Material Planning System.

The MMPS planning module enables users to plan, schedule, dispatch, monitor and replan priorities to control inventories, so that production objectives can be met.

MMPS includes:
- Master Production Schedule Input.
- Material Requirements Planning.
- Order Release and Control.

The Master Production Schedule provides a basic driver for the MRP function. It defines and controls end items. Taking advantage of the bill of material and inventory information that users build into the Foundation Module, MMPS can plan, track, and replan availability of all end items.

Advantages of the MRP component:
- Storing detailed data in a bucketless fashion allows full forward visibility of specific requirements and dates.
- Net change mode (activity-driven) MRP review provides efficiency and responsiveness.
- Regenerative mode is useful early in implementation, when users have not normalized activities sufficiently to use the net change mode.

- Exception reporting, through the use of user defined dampeners, provides flexibility in selecting the degree of system responsiveness.

The Order Release and Control component of MMPS creates orders, ages them, and reports key status changes at pre-determined milestones. Time-phased component allocations and paper staging are features. Paper staging provides a review of all component materials to insure their availability prior to the release of the parent order.

Material Requirements Planning gives the user a powerful tool to create balanced inventories. It calculates component requirements and anticipates material shortages. It creates replenishment orders and recommends schedule changes. It also monitors and reports material plan imbalances.

Detailed data is maintained for independent demand, inventory availability, orders, and dependent demand. MMPS insures coverage in every level of the Material Plan.

In the net change mode, the system creates exception messages recommending specific user action concerning firm planned, ready-for-release orders and requirements. Planned orders are automatically replanned by the system based on inventory. In the regenerative mode, planned orders are disregarded and the complete Material Plan is regenerated. Imbalances in material plans are noted by exception messages as in the net change mode.

Through the facilities provided by MMPS, proper material priorities are created and controlled to insure that minimum inventory levels are maintained in order to meet the production objectives.
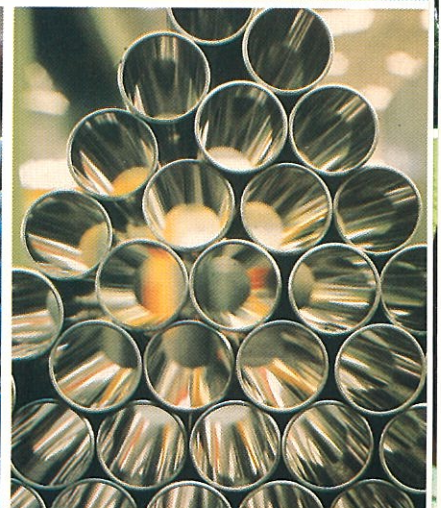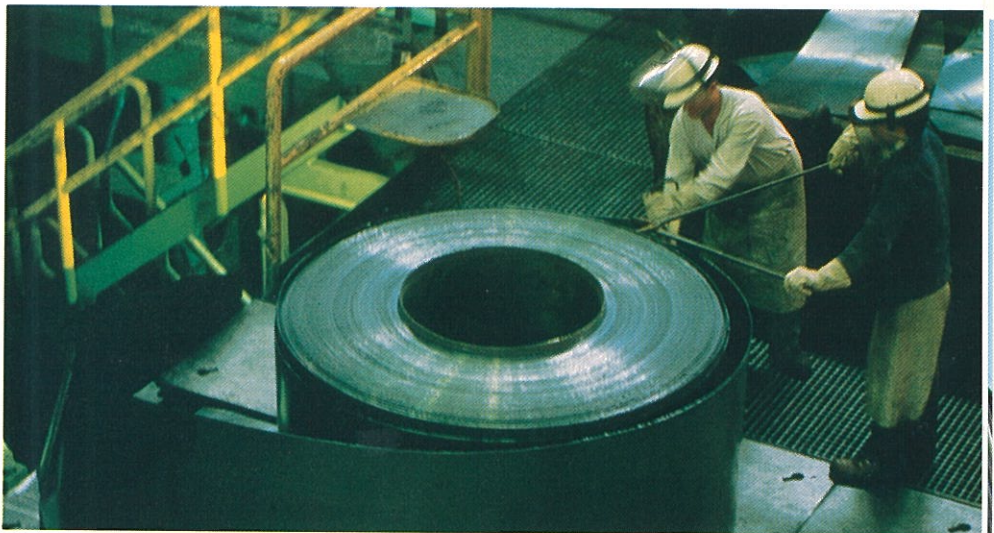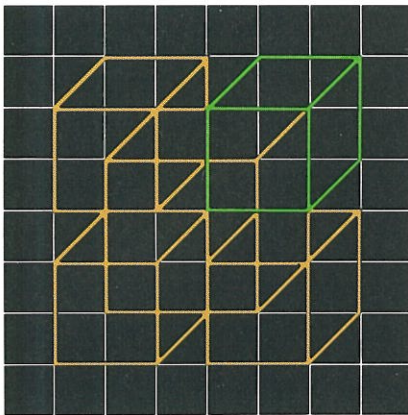
Formulate and control the company's game plan with MPSS—Master Production Scheduling Systems.

The MPSS planning module provides management with timely planning and control information to optimize use of resources in meeting production and profit objectives. Thus it provides the means for maintaining the viability of the Master Production Schedule which drives Material Requirements Planning.

This system consists of two pivotal components—Master Production Scheduling and Resource Capacity Planning, which provide the base from which to plan, coordinate, and control the company's production activities.

The Master Production Schedule provides facilities to formalize the relationship between the top level Production Planning activites and the supportive Master Production Schedule. MPSS links the MPS to the Production Plan to provide a single, company-wide game plan.

MPSS insures balanced input to MRP. Planning and control at family or other appropriate levels reduces the number of items necessary for management to review. Forecast propagation and maintenance facilities simplify the loading and updating of forecast data. Forecast consumption and automatic forecast extension capabilities provide flexible control of forecast data used to drive the MPS orders. Calculations are made of available-to-promise and available inventory. MPS functions can also be separated from MRP in order to create and interpret "trial fit" Master Production Schedules before performing the detailed planning required by MRP.

Resource Capacity Planning provides facilities to interpret MPS orders in terms of required resources, in order to review resource availability. It uses Representative Routings and Resources, which may be as detailed as necessary to support various levels of planning. MPSS provides the ability to pose "what if" planning questions through simulation at the MPS level.

This component provides for:
- Effectivity date controlled resources.
- Resource load profiles based upon MPS orders.
- Summary and detail resource planning data.
- Simulating the impact of planned changes to forecasts, orders, resources, or capacities.

As a result, resources required to support the MPS can be planned and controlled. In this manner, MPSS maintains a viable Master Production Schedule which drives Material Requirements Planning.
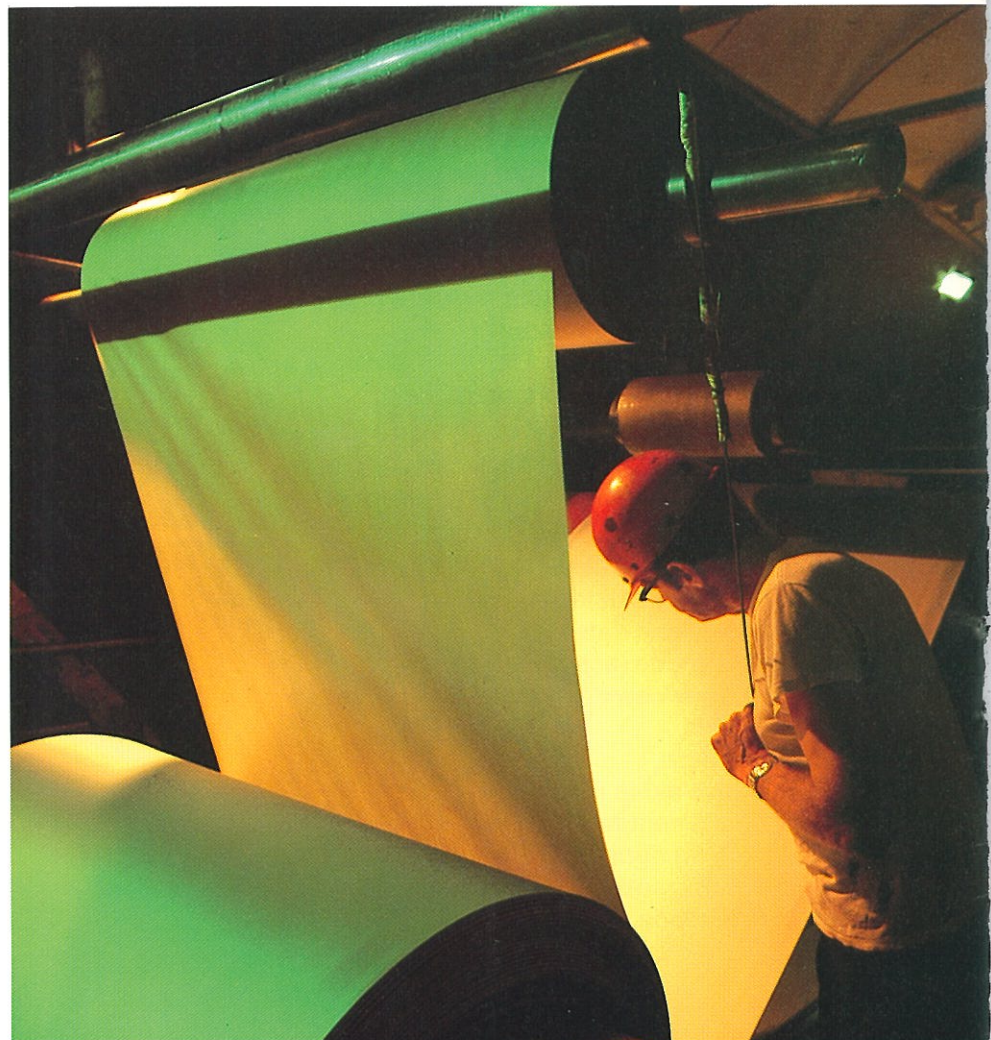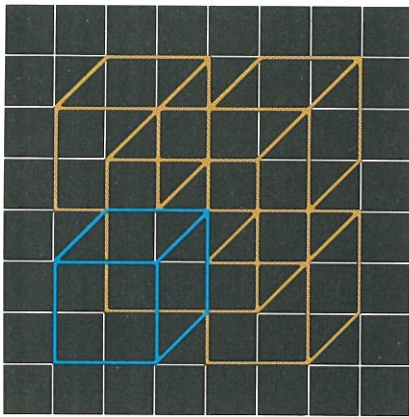
Manage shop floor activities more effectively with PPCS—Production Planning and Control System.

The PPCS planning module provides a highly efficient means of managing shop floor activities. The objectives are to control lead times and to reduce work-in-process inventories. With PPCS, the prioritized orders from MRP are transformed into operation-by-operation work schedules for the manufacturing facility.

The components of PPCS facilitate:
- Detailed Capacity Requirements Planning and Control.
- Control of Shop Floor Priorities and Dispatching.
- Work-in-Process Activity Reporting.

Detailed Capacity Requirements Planning utilizes both standard and custom manufacturing routings and work center data. It converts the prioritized orders from MRP into detailed capacity requirements plans. Plant capacity can be managed at peak efficiency through:
- Detailed load profiles by Work Center.
- Time-phased planned capacities for each Work Center.
- Overload/underload reporting by exception.
- Input/Output control.

In short, these tools provide the ability to control factory lead times through management of factory capacities.

Control of Shop Floor Priorities is accomplished through the management of factory priorities and work schedules. Prioritized orders from MRP are converted into detailed operational schedules for each work center. PPCS permits the effective management of scheduled order releases into work centers to provide a link between MRP and actual production processes. Effective shop management is accomplished through these functions, which include:

- Shop scheduling by operation.
- Overrides to scheduled operations.
- Critical ratio scheduling to further suggest priorities.
- Analysis of current and future order status.

With these functions, performance to schedule is greatly enhanced through improved schedule visibility.

Work-in-Process Activity Reporting provides the feedback needed to maintain updated information on all production schedules. Operations are tracked, actual pieces and hours are reported, variances are noted, and prior and upcoming Work Centers are identified.

PPCS allows the timely replanning of priorities and Work Center queue objectives based on actual performance. Thus, shop accountability is significantly improved, as lead times are controlled and work-in-process inventories reduced.
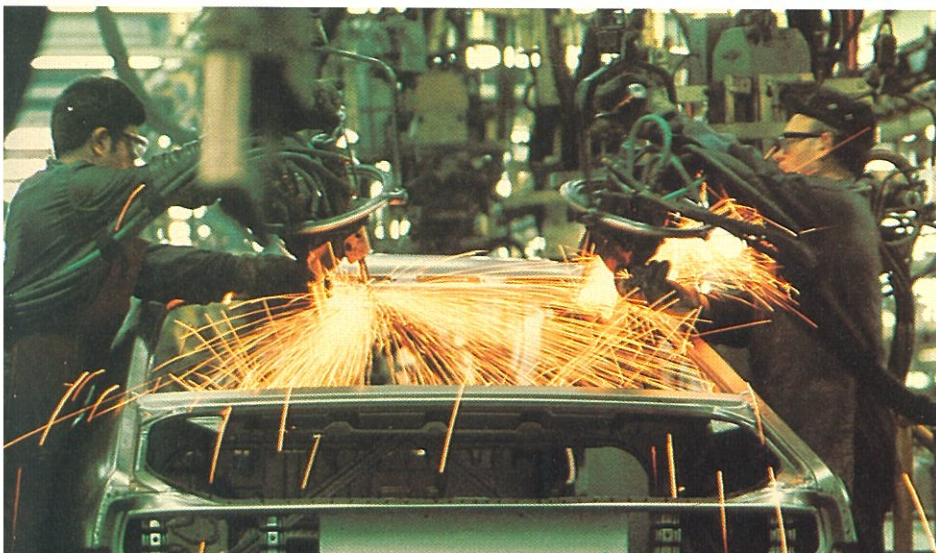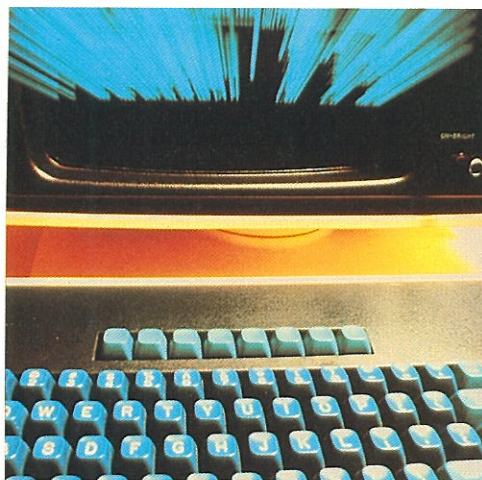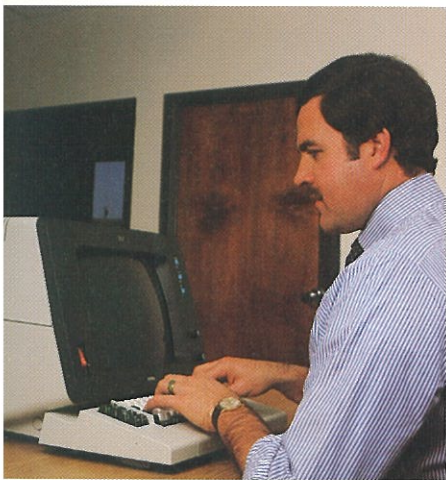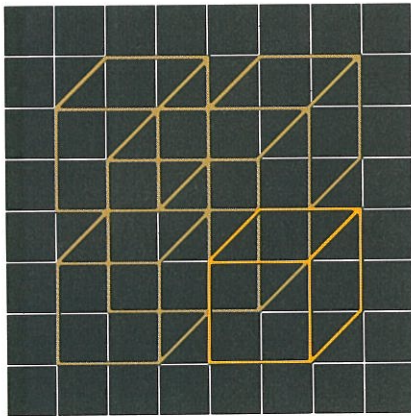
Improve purchasing's performance with VAPS— Vendor Analysis and Purchasing System.

According to one authority, 60% of the average buyer's time goes into "shuffling paper and last-minute expediting." The VAPS application module is designed to streamline purchasing performance by providing data for the control of vendors, delivery schedules, and price variances.

VAPS facilities control the execution of Purchased, Inventory Control, Vendor Control and Performance, and Buyer Performance.

Purchased Inventory Control provides more specific control of the schedules by identifying variance between requested and promised dates. It provides analysis of purchased material cash flow. Its data on material price variances facilitates performance to budget comparisons and corrective measures. And with its control of rejected vendor materials, manufacturing support is further improved. Thus, much more effective purchased inventories management means much better purchased cost control.

Vendor Control and Performance enables the buyer to develop dependable material sources by analyzing data on vendor performance. Primary and alternative sourcing information is provided. With price break/volume discount data, cost-effective suppliers can be recognized. Business volume by vendor reporting identifies leveraging opportunities. And vendor delivery performance can be improved through vendor capacity planning. As a result, the most viable and economical sources of materials can be put at the company's service.

Buyer Performance facilities markedly improve buyer productivity and reduce expediting efforts. Standard information is provided on:
- Occurrences of price protection and price variance
- Commodities and Families volumes
- Part and vendor quality

The results are improved purchase negotiation information and buyer performance measurements.

VAPS is designed to relieve the buyer of excessive clerical and expediting time. It allows a buyer to concentrate on negotiating dependable sources and effective pricing. By helping eliminate the need to operate in a crisis mode, VAPS can put Purchasing in step with Manufacturing.
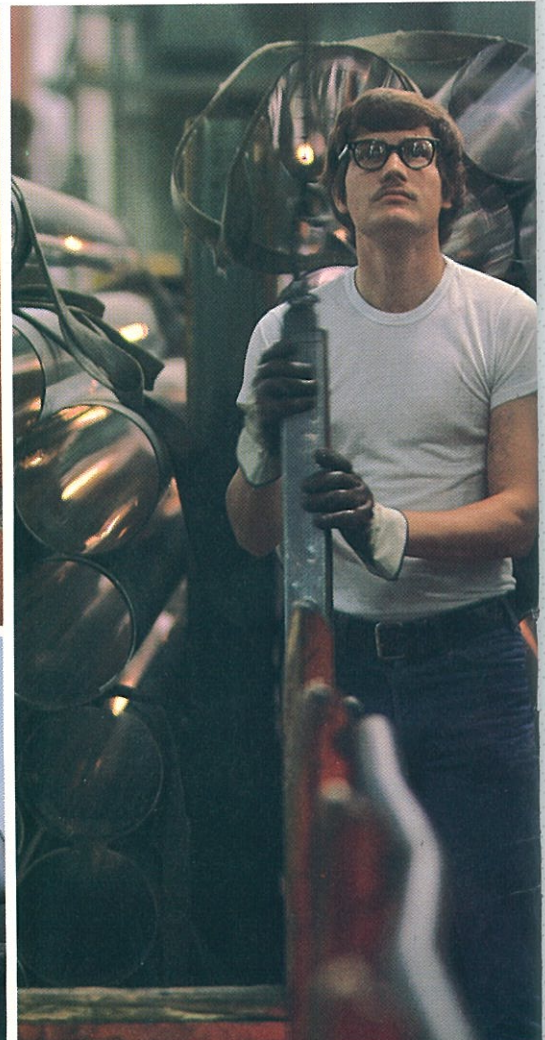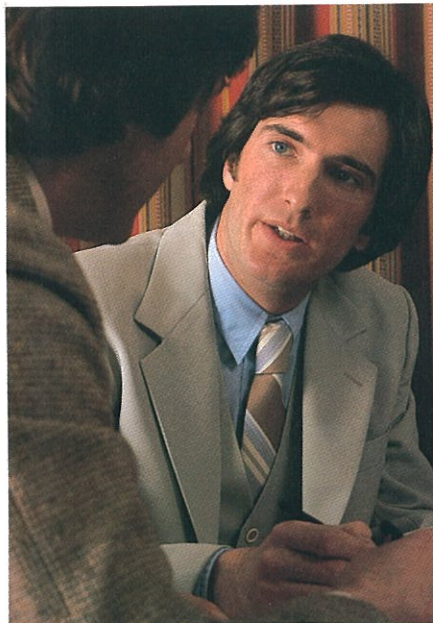
Cincom Systems—
We deliver solutions.
We deliver performance.

Performance in use is the true measurement of any manufacturing control system. And no system today can match the performance Cincom's MRPS has already achieved in important manufacturing applications, like yours.

Results such as these are common:
- Inventory levels reduced 30%
- Inventory accuracy increased to 95%
- On time delivery improved to 99%
- Overtime cut by 55%
- Inbound freight charges reduced 30%
- Overdue purchase orders reduced 44%
- Indirect labor productivity improved 30%

These are just some of the productivity gains that can help your organization find the proper balance between inventories, customer service and profits—the essence of a good manufacturing control system. And in a time frame that shows immediate results—results that will affect your bottom line.

Evolving from a crisis oriented atmosphere to a planned, controlled environment; freeing management from routine problems for increased focus on productivity and profit goals; and pinpointing direct, indirect and base costs for more accurate budgeting forecasting— these are the controls you can have at your fingertips by using Cincom's MRPS, the performance manufacturing control system. We'll help you measure your productivity in profits.

MRPS: Commitment, installation, training, results

As a company that designs, installs and provides total support for its manufacturing systems, Cincom Systems is committed to the successful implementation of MRPS at your company. Your selection of MRPS means you get:

- A functionally complete system
- The industry's most flexible DBMS
- An on-line interactive system
- On-site education
- Consulting and project management
- An implementation plan geared for your success.
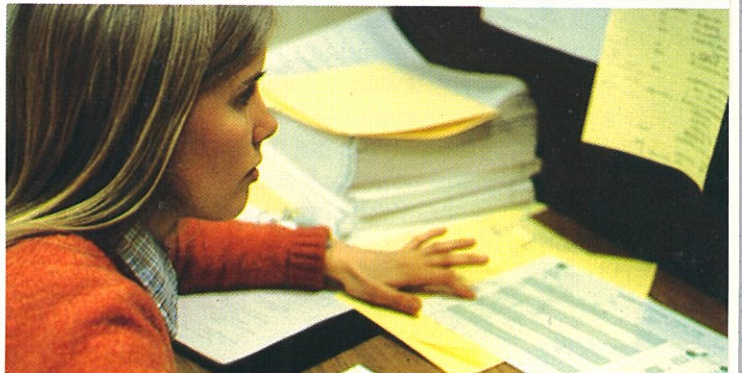
Your Plan of Action

The installation and implementation of MRPS is a joint effort between your personnel in manufacturing and data processing and Cincom's skilled professionals. Our step-by-step implementation helps ensure proper procedures are followed and that all parties involved in the use of the system are trained and, moreover, understand the concept behind the product.

The first step is the completion of an on-site Environment Analysis Questionnaire which provides a profile, or blueprint, of your manufacturing environment. Our manufacturing consultants will then conduct a technical review which matches the functional capabilities of MRPS with your particular needs. At this point, we have jointly identified the functional areas MRPS will address first and any modifications that need to be done to tailor such things as reports, screens and operating environment to your unique needs. Remember, the power of Cincom's MRPS is in its flexibility to be modified, extended and adapted to your environment.

The next step is the development of a comprehensive implementation plan. Our industry consultants work closely with you in the preparation of this plan, detailing time schedules, end-user involvement, data processing considerations and manufacturing considerations. This plan becomes the basic input to the joint development of a return on investment (ROI) analysis. The ROI provides the business justification for your manufacturing control system. It also provides a mechanism to evaluate financial progress against plan. It is a comprehensive approach made simple by Cincom's vast manufacturing experience.
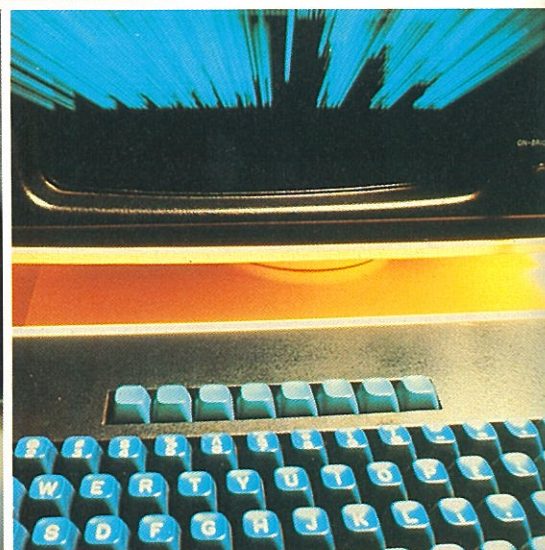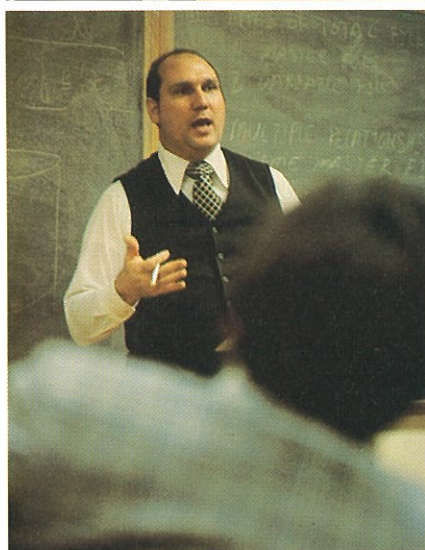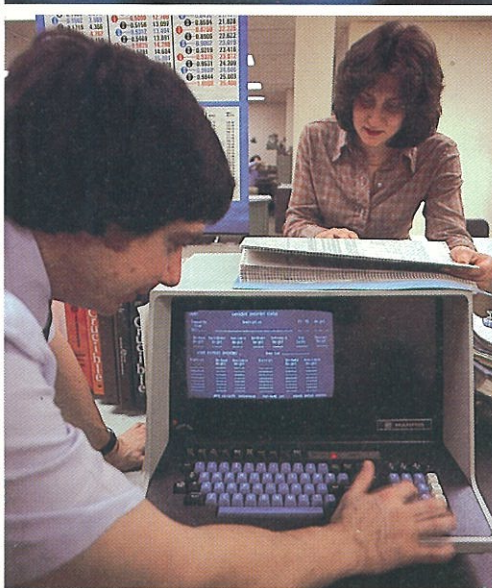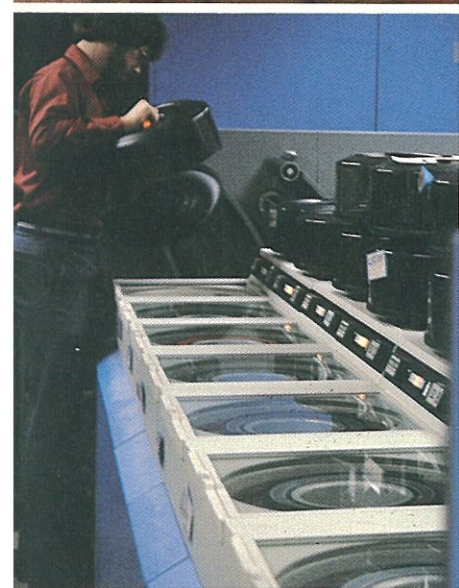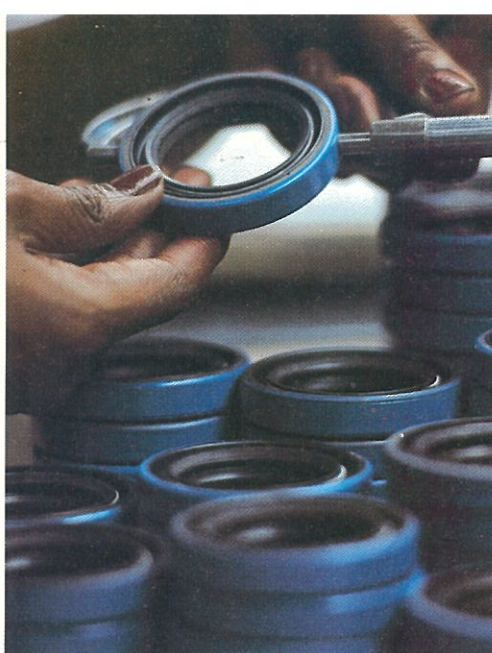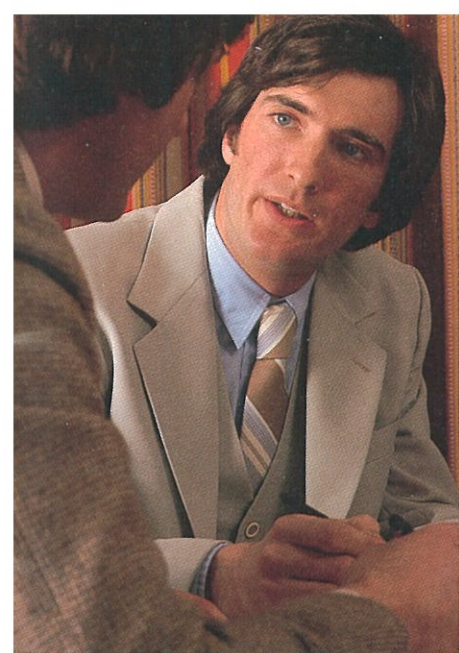
Once these two vital planning stages have taken place, Cincom's trained experts will conduct detailed education classes which range from the concepts of manufacturing control and features of MRPS, to the use of Series 80 TOTAL DBMS and T-ASK query facility in report preparation. Understanding the environment, the product and the results are all part of Cincom's commitment to your success. For it is the application and implementation of the product that provides the solution, not just the product alone.

Once MRPS is installed and your people are using it efficiently, Cincom service representatives monitor your progress and provide on-site tuning and consulting to ensure continued success.

When it comes to support, Cincom's manufacturing personnel set the standard. It's a standard we are proud of and plan to keep. Just ask our extensive list of satisfied customers. They've confirmed the quality of our products and support in use, where performance is the crucial test.

At Cincom, we believe success in manufacturing control is a journey, not a destination. To begin your journey toward higher productivity and a better bottom line, contact your Cincom representative. You'll see the power of MRPS first-hand and how you can profit with its use.

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