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Product Description
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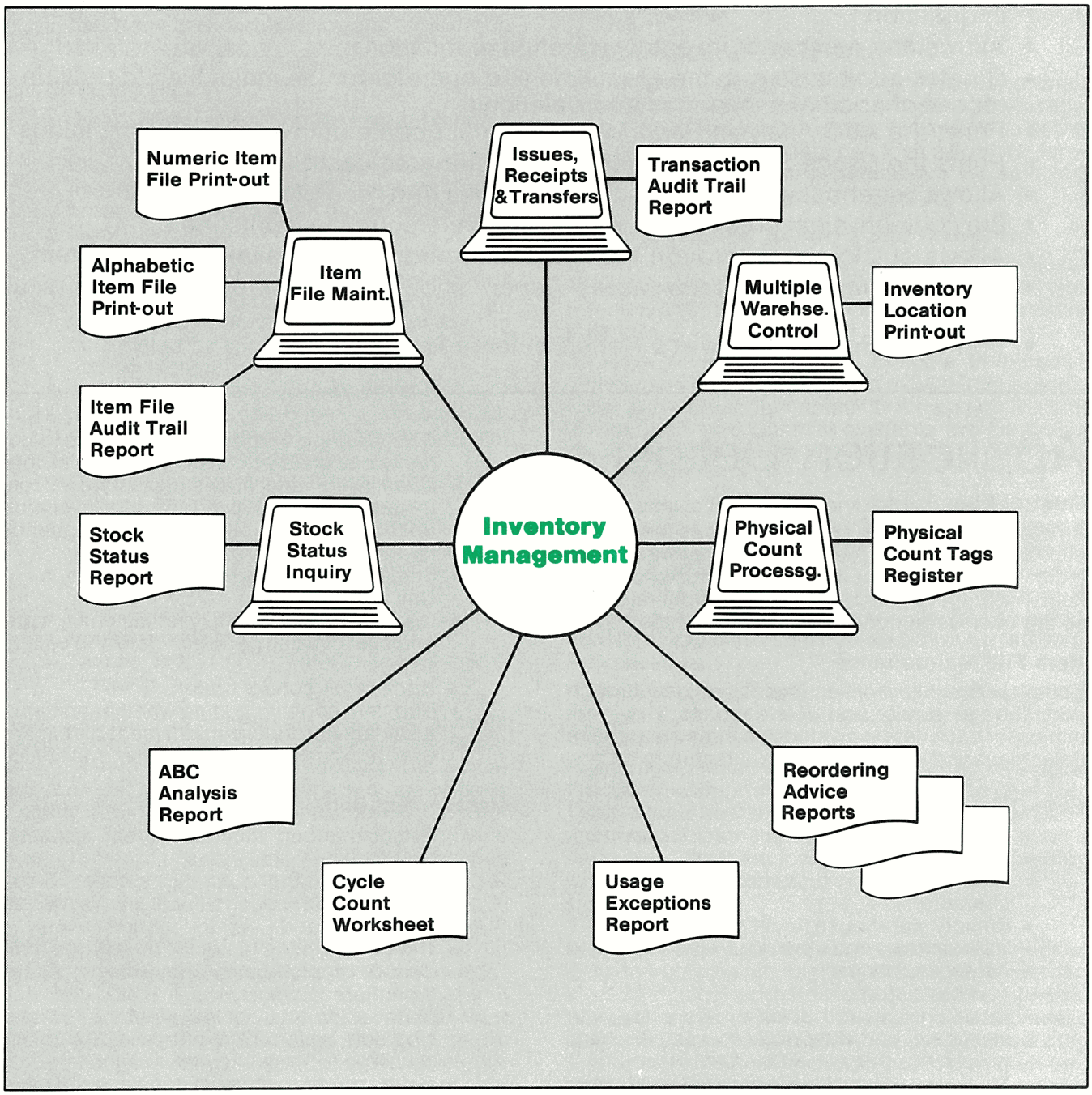
INVENTORY MANAGEMENT
in Texas Instruments COBOL (ANSI '74)



Display Stock Status

A simple screen inquiry gives instant access to vital information for any item at one warehouse location or all. No complicated codes need to be learned since the program can prompt the user through all locations where a particular item is stocked.

Stock Status Report

Providing all relevant data on quantities and costs, the *Stock Status Report* can be printed at any time with low stock conditions highlighted. To isolate the desired data, the report can be selected to include any range of items, warehouse locations and product categories.

ABC Analysis

It is generally found that the majority of dollar volume usage is achieved by a small number of items. These are classed "A". A large part of the inventory, even when summed together, accounts for a minority of the dollar volume usage. These are class "C" items. Those items whose dollar volume usage falls between these two extremes are known as "B" items.

Classifying items by dollar volume to achieve more efficient inventory management, an *ABC Analysis Report* can be generated. The parameters defining the relative classes A, B and C are entered each time the report is run to fine tune the ranking. Optionally the item file can be updated to reflect the newly calculated classes.

Low Stock Alert

The *Reordering Advice Report* showing items that are at or below their reorder levels, can be selected by item, by location or by vendor. For added flexibility, a percentage or an amount can be entered for each report to print items whose availability is within that percentage or amount from the reorder level.

The user has the option to exclude the quantity on-order and to select items that are manufactured, purchased or both. When the report is printed by warehouse location, it can optionally prioritize items showing those with lowest availability first. If the MCBA P/O system is used, alternative vendors can be shown.

Cycle Counting

This report is a turnaround document to help the user perform a cycle count (a mini physical inventory count). It is done to verify inventory count accuracy and locate sources of error quickly. Each item is assigned a user defined cycle count code in the item file. The codes represent a variety of frequencies and counting categories; e.g. 1 = first week of the month, 2 = second week of the month, E = Engines, etc.

Cycle Count Worksheets can be printed for any cycle count code excluding items counted since a cut-off date. Each warehouse location can be printed separately with or without showing the quantity on-hand. For verifying special conditions, the worksheet can optionally show only those items where the computer has calculated a zero or negative quantity on-hand.

Physical Inventory Count Processing

The user may do an actual physical count of inventory by placing a pre-numbered blank tag in each bin to be counted. People who serve as counters then write the item number and the actual count on the tag for each bin. The counts from all the tags are then entered into the computer.

A *Count Tags Edit List* flags missing tags and a *Physical Count Update Edit List* prints warnings where the data may be in error. When all tags are reconciled, the user can post the transactions to adjust the on-hand quantities in the item file.

Special Functions

Additional features include the following:

- As this is a multi-company system, the name of the company being processed appears in the upper right-hand corner of the screen.
- A special report management subsystem allows reports to be printed immediately or to be spooled on disk for later display or printing of one or more copies.
- A module is provided to set the period-to-date or year-to-date accumulation fields to zero. The period length is entirely at the user's discretion.
- A simple module exists to specify a special code for each warehouse.

Coding Standards and Documentation

Complete source code is provided. It is written using Warnier-Orr structured coding techniques. Extensive use is made of copy library modules to make modification easy. The paragraph and data names are very descriptive, taking maximum advantage of COBOL's self-documenting feature. It is written to make changes and maintenance easy.

The *Software Reference Manual* provides complete technical documentation. Installation Instructions give a step-by-step guide to getting the package up and running. Technical Notes, Program Specifications, File Definitions and Screen and Report Formats contain the necessary information for the programmer.

The easy to understand *User's Manual* contains an Overview, Glossary and User Notes covering the main features. The user is guided through the operation of each function by the Application Overviews, concise Run Instructions and Sample Screens and Reports. File Load Sheets are included to expedite data entry.

Each manual is provided in a neat three ring binder with convenient thumb tabs.

Interfaces to Other MCBA Packages

MCBA's Customer Order Processing (COP) and Bill of Material Processor (BOMP) both use the item file extensively. Receipt of new inventory may be entered through the Purchase Order and Receiving (P/O) package.

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on the customer service level entered by the user for each item
- Usage forecast limiter - used to avoid incorrect forecasts based on unusual usage
- Statistical numbers automatically calculated during forecasting include the average deviation between forecast and actual usage and the sum of these deviations
- Purchasing (or manufacturing) unit of measure with a conversion factor between the purchasing and stocking units of measure
- Latest cost per unit
- Primary vendor number from whom this item is purchased and the minimum quantity that can be purchased
- Order multiple indicating number of units per purchased case or container
- Target profit margin
- Lead time between ordering and receiving in days (three digits)

Manufacturing Data

- Status code - indicating the item is planned, current or obsolete
- Stocked - yes/no code indicating whether the item is usually "on the shelf" or assembled to order according to a bill stored in MCBA's BOMP package
- Controlled - yes/no code indicating whether or not quantities of this item should be allocated (or committed) when orders are entered through MCBA's COP package. A "phantom item" is designated by specifying non-stocked and non-controlled
- Purchased or manufactured code
- Inventory class - A, B or C; can be automatically set to indicate comparative volume of income for each item
- Cycle count code and date last counted at the primary warehouse
- Buyer/analyst/planner and commodity code (user defined - four alphanumeric characters)
- Engineering release number and revision number
- Drawing release number and revision number
- Routing number
- Various data to aid in Material Requirements Planning

A *Numeric Item File Print-out* for any range of items and product categories may be printed at any time in seven different formats. For convenience, an *Alphabetic Item List* may be printed for any range of items in alphabetical order by item description. An *Item File Audit Trail Report* can be printed at any time showing all additions, deletions and manual changes to the item file together with the time and the user identification with which the entry was made.

Multiple Warehouse Control

A primary warehouse is specified by the user for each item. Each item may also be stocked at any number of secondary or branch locations, thus providing great flexibility. Statistical inventory management and forecasting is done for the distribution system as a whole. Branch warehouses are managed on a min-max basis. This way, excessive inventory levels are avoided in branch warehouses.

The item data stored for each secondary warehouse includes:

- Quantity on-hand, quantity allocated and quantity on-order
- Reorder level and order up to level
- Bin number (picking sequence)
- Cycle count code and date last counted
- Date and quantity sold on latest order

Although full inquiry can be done through the terminal, the *Inventory Location File Print-out* can report any range of item numbers in any range of warehouses. An audit trail is kept and the *Inventory Location File Audit Trail Report* shows each addition, change and deletion with the user identification and time the entry was made.

Reporting Exceptional Usage

The inventory *Usage Exceptions Report* shows all items within a selected class whose actual usage varies from forecasted usage by a user-selected percentage. Management can then adjust the forecasting and/or ordering parameters for selected items.

Inventory Issues, Receipts and Transfers

An easy-to-use transaction application allows material to be issued from inventory, items to be received into inventory and transfers to be done between warehouse locations.

An issue would be used, for example, in the case where raw materials were being moved from a storeroom to a manufacturing facility for assembly. Only the old and new quantity available are shown to discourage the usage of items already allocated elsewhere.

Items received into inventory, either purchased from vendors or manufactured internally, are recorded with a receipt transaction. The new and old quantity on hand and average cost are displayed while entering the quantity received and order number. If an order is not complete, that can be indicated here.Receipts can also be entered through MCBA's P/O package.

Inventory transfers are easily done by simply entering the two warehouse locations concerned and the quantity being moved.

Providing up-to-the-minute information on inventory, this application immediately updates the item file. Transactions are recorded and printed on an *Inventory Transaction Audit Trail Report* which shows each entry, the time it was made and the operator who entered the data.

Forecasting

At the end of each period, a series of recalculations is done to update each item's average usage, reorder level, safety stock and minimum recommended order. Based on the actual usage for the period, the forecast uses the usage weighting factor, customer service level, usage forecast limiter and past deviation between forecast and actual usage.

Application Overview

The Inventory Management (I/M) package is a comprehensive multiple company and multiple warehouse tool that is applicable to both Manufacturing and Distribution inventories. It has the following capabilities:

- All features accessible through convenient menus.
- Comes with a complete User's Manual for operator to use.
- Nearly all reports, though initiated interactively, are run in background so the terminal is free for other tasks.
- Information displayed on the screen can be printed at the touch of a button.
- All reports can be displayed on the terminal for immediate inquiry.
- Improves control of inventory to improve customer service yet keep costs down.
- Accepts user specified parameters on most reports to pinpoint the exact desired information.
- Allows any number of inventory warehouse locations.
- Creates audit trails with the exact time and operator for the major files to provide a record of additions, changes and deletions.
- Prints the *ABC Analysis Report* with optional update of inventory classifications.
- Prints the *Usage Exceptions Report* comparing actual to forecast.
- Allows warehouse transfers as well as issues and receipts.
- Provides physical count tag support and cycle counting worksheets.
- Allows quick inquiry through the terminal regarding the availability of any item.
- Prints the *Inventory Stock Status Report* showing the current condition of all inventory.
- Prints the *Reordering Advice Report* in three formats.

Application Details

Control File

An easily maintainable control file allows the user to pick average or last cost for all the reports and to indicate whether or not audit trail records should be kept. The length of accounting period is defined here so the user is not confined to using months.

Item File Maintenance

Complete Item File maintenance is provided through add, change/inquire and delete modes. The information for each item is divided into three areas: base data, management data and manufacturing data.

Base Data

- Item number (15 alphanumeric characters)
- Item description (60 characters)
- Product category (user defined - three characters)
- Primary warehouse (location) for this item
- User defined code (two characters)
- Average unit cost
- Taxable status
- Default price and special sale price with start date, end date and two yes/no codes governing price breaks and discounts - MCBA's COP package provides flexible user defined price and discount systems to correctly calculate prices on customer orders.
- Quantity on-hand, quantity allocated (or committed), quantity on-order, reorder level,order up to and bin number (or picking sequence) for the primary warehouse
- Stocking (or selling) unit of measure
- Unit weight
- Quantity used, quantity sold, dollar sales and cost of sales period-to-date and year-to-date
- Back order control code
- End item code indicating whether an item is a saleable product/replacement part or only used as a component in some larger assembly

Management Data

- Recommended minimum order quantity - automatically calculated
- Economic order quantity - set by the user
- Average usage per period - automatically calculated and used to forecast needs
- Usage weighting factor - to adjust how many periods of actual usage should be considered when forecasting
- Date and quantity of last order for this item - updated automatically by MCBA's COP package
- Safety stock - automatically calculated based