INDUSTRIAL DATA PROCESSING APPLICATIONS REPORT

Applications	Sales Analysis, Order Processing, Inventory Control Billing and Accounting
Type of Industry	Liquor Distilling
Name of User	Joseph E. Seagram & Sons, Inc. New York, N.Y.

Equipment Used	IBM System/360 Model 40 data processing system
	Honeywell H-200 data processing system

Synopsis

Joseph E. Seagram & Sons Inc., America's number one distiller and marketer of liquors, cordials and wines, according to a survey by an independent research organization, is building a total computerized management system to stay on top of one of the most fiercely competitive industries in the country.

Seagram marketing executives are able to stay abreast of daily developments with an IBM System/360 Model 40 computer system that utilizes data display. In addition, Seagram has been able to analyze retail sales by area and control barrel whiskey inventory flow with computers.

A Honeywell H-200 computer system handles an order Billing Information System which provides centralized machine processing for incoming orders, dispatching the orders to bottling plants for prompt fulfillment, while automatically preparing by-product reports of sales activity and inventory levels for company executives and appropriate state, federal and local agencies.

Seagram believes that its retail Sales Analysis System is providing the most up-to-date marketing information possible and giving executives the most accurate possible cross section of marketing in every area of the country.

Throughout the period of systems development -- a period that is expected to continue for several years to come -- the company's policy has been one of gradual and careful controlled implementation. Management has maintained a policy that new machine applications must bring "here and now" benefits in terms of economy and efficiency. Over the past several years Seagram's emphasis on the electronic approach to solving marketing and operational problems has given systems development an added impetus.

The systems department prides itself on operating economy, and in a recent eight-year period was able to show a net operational savings that ranged from $100,000 to $200,000 a year. More recently, a heavier investment in new equipment and programs has cut back the margin of savings, but this investment is eventually designed to pay for itself and start paying dividends in terms of improved operations and even more reliable management decisions.

In developing its systems, Seagram has followed a basic plan that included five concepts:

(1) Computerize the heavy volume of clerical work, making few substantial changes in the system. This gave the organization time to reduce clerical groups and gain systems experience through operations as the systems were developed.

(2) Capture all of the basic information and form data banks to correlate, formulate and display desired data; and impose uniformity, consistency and discipline on routine operations.

(3) Develop managerial systems in departmentalized areas. This generally involved low-level decision making, with little change in the organization concept.

(4) Integrate and improve systems, introducing new concepts and changing organizations.

(5) Develop higher level management systems, involving rapid communications for instantaneous service and more programed decision making.

Seagram's moves toward faster and more efficient computer operations have greatly improved the shipment of more than 20 million cases of bottled goods to 2,500 franchised dealers and special accounts across the nation each year. Approximately 1,600 individual orders are sent each week from state and division headquarters to the national office for processing. These orders call for combinations of hundreds of different brands in dozens of bottle sizes and packages including miniature bottles. In addition, the liquor industry is very closely regulated by State and Federal Government authorities, so the company must maintain accurate listings of every event in the history of each of its millions of barrels of whiskey aging in bonded warehouses. The varied nature of all the necessary reports, coupled with manpower requirements necessary to process them, has made computing power a necessity that has enabled the company to keep up with an ever-increasing workload.

ORDER PROCESSING

The emphasis on the competitive edge and marketing is evident in the allocation of computer time. Marketing receives 40 percent of all computer time, followed by accounting with 22 percent, distribution with 21 percent, production's 13 percent and planning and control's 4 percent.

The Order Billing System's function, for example, is to provide centralized machine processing of incoming orders, dispatch them to processing plants for prompt fulfillment and automatically compare by-product reports in sales activities for company executives and government agencies. The Honeywell H-200 is used to expedite the system.

Prior to the H-200 installation all orders were forwarded to the New York billing department. There, order sets were prepared on Friden Flexowriters with a by-product tape being punched for use in transmitting order information to plants via Teletype.

After shipment, another paper tape was punched at the plant and transmitted to New York where the customer was invoiced. Clerks manually matched the orders to what was shipped, checked freight charges, applied several price allowances and changes (if applicable), checked state government requirements and performed a variety of coding functions. The documents were then forwarded to a Friden Computyper operator who inserted the paper tape received from the plants, and keyed in any information received from the clerks that prepared the invoices. A by-product tape was cut simultaneously. When converted to punched cards, the tape was used by the tabulating department to prepare monthly accounts receivable and sales analysis reports. The completed invoices were taken to the clerical section of the order billing department where they were proofread, broken down and copies distributed and filed away.

This procedure accounted for 75 percent of the order billing operation and was relatively slow and expensive. The other 25 percent were exceptions to normal routines.

After a thorough analysis by Seagram's systems and procedures analysts, it was decided that computer control could provide substantial economies and produce a number of hitherto unavailable by-product documents and reports. The nature of these reports was first discussed with top management and then with plant executives to determine what information should be programed into the new system.

Today, information from all orders arriving in New York from state and division offices is edited and keypunched. The cards contain the customer number and variable order information and serve as input to the H-200 system. All of the necessary customer, brand and price information is transferred from magnetic tape files. The open order file is updated, customer and price changes, credits and other miscellaneous data are applied, and an 18-part combination sales order, bill of lading and shipping memo is printed out on the H-200 system's printer.

Simultaneously, the data is stored on magnetic tape. Later, it is transmitted to the plants via Mohawk Data Recorders. The receiving terminals print out the information.

When merchandise is shipped from a plant, a shipping clerk phones the New York office and verbally reports shipping, plant production and inventory information to a data control clerk who uses the latest listing of order and inventory information to check off shipments. For those orders shipped, cards are keypunched and fed into the computer to update the appropriate files.

During H-200 processing, the open order file is updated, special state requirements are applied and the customer's invoice is automatically calculated and printed. An important by-product of invoice production is the simultaneous preparation of a magnetic tape record which provides input for the financial data flow and retail sales analysis procedures.

The Order Billing System contains an important parallel routine for control of finished goods data flow which provides management with daily and monthly reports.

Data gathered during order processing is stored on magnetic tape to produce a series of detailed daily reports. These include:

(1) Orders -- A listing of each individual incoming order.

(2) Order Register -- A summary of orders received that day.

(3) Order Status Report -- A list of customer information, shipping date, brand and size of each open order.

(4) Bottling Schedule -- A listing of line, brand, bottle sizes, applicable state regulations, order (or stock replenishment requisition number), tentative shipping date, time of bottling run, number of items for combined orders and number of cases for each order.

(5) Shipping schedule for each order.

(6) Reconciliation of case goods for accounting and inventory control.

(7) Inventory and transaction report -- A listing of shipping and bottling activity and previous day's closing inventory.

(8) Bottling supplies inventory of caps, labels, bottles, etc.

The tapes containing this data are then used to transmit the reports to the bottling plants.

DATA DISPLAY

Key executives -- the administrative assistants in four of the larger sales companies -- have 2260 data display terminals on their desks, so they can tell exactly how well the brands in their product line are doing nationwide, and in particular geographical areas, and act quickly on the information. Eventually, administrative assistants in each of the seven sales companies will have data display terminals on their desks. The data display system is updated daily in keeping with the tempo of an industry that turns over a complete inventory every 60 to 110 days.

Printouts of the information available on the data display terminals are produced at the end of each month, or upon request, on a 1,000 word-per-minute IBM 1403 printer.

Sales Orders and Order Shipment information are also available on the 2260's, giving Seagram marketing men an idea of the exact status of every order received each day. In this area, four reports are available:

(1) Summary of orders and shipments -- a tabulation of orders, shipments and monthly sales estimates for the current calendar month.

(2) Christmas Report -- a season-to-date tabulation of Christmas orders, shipments-to-date and sales estimates for Christmas orders.

(3) Order detail -- a reproduction of each order, including the up-to-date shipping status of individual sales order items.

(4) Open order and shipping index -- a tabulation by order number of all open orders and orders shipped within the previous 15 days.

Each division within Seagram is a separate entity, in essence, competing against other Seagram divisions. Therefore, the marketing information is distributed on a "need to know" basis, and not readily available to the top executives of competing divisions.

RETAIL SALES ANALYSIS

The keystone to marketing in the liquor industry is in the local retail market. This is due to very distinct regional preferences that exist for various types of liquor products. For example, there is a heavy consumption of bourbon in the South, where blended whiskey does

not do well at all, while the opposite prevails on the Eastern seaboard. Even within regions, marked preferences exist at the state, county and community levels -- and even down into the neighborhood level. The purchase of liquor is based on such subtle and shifting factors as ethnic origins, local tradition, prevailing fashion and receptiveness to new product advertising. Conflicting customer demands in widely varied areas make it extremely important for liquor marketing executives to always have their fingers on the pulse of local demand so they can control the nature, scope and quality of local distributor coverage.

Obtaining this type of information is a major concern to the liquor manufacturers. Seagram believes that its own retail sales analysis system represents the most comprehensive realization in this area. The system analyzes 500,000 retail sales accounts in the United States and the Canadian Province of Ontario for the various sales divisions.

Daily, weekly and monthly, the New York office receives periodic reports from most of the 2,500 distributors. The information arrives in a variety of forms, ranging from typed documents to punched cards, paper and magnetic tape and magnetic discs. Much of the information must be converted into computer-compatible input for entry into memory. The distributors represent a wide range of systems from the very simple to the very sophisticated. Each has his own system for reporting to the New York office. This data is refined into two basic reports:

(1) Brand for each account.

(2) Each distributor by sales region (regions correspond to U.S. Census Bureau's standard metropolitan survey districts).

For example, Seagram has broken down the New York Metropolitan area almost by neighborhood, and can tell from past experience what kind of product sells best in each area. It is interesting that with the system the company's marketing executives have found that the most expensive products don't always sell best in the high income neighborhoods, but the top quality products often sell extremely well in low and middle income areas around New York.

With this type of data, the manager can make decisions regarding the splitting of territories or franchises, or send a direct representative (called a missionary) to the trouble spot, or take whatever steps are necessary to improve sales. In areas where the market has grown so rapidly that the original distributor can't provide adequate coverage, a franchise realignment is sometimes necessary. One of the important aspects of the system is that it allows management to catch these situations early, before they become critical.

Retail sales analysis data also permits the production of special reports upon request from top management. These reports may include sales by type, size of retail outlet, ethnic origins, region, seasonal volume, etc.

Barrel Whiskey Flow

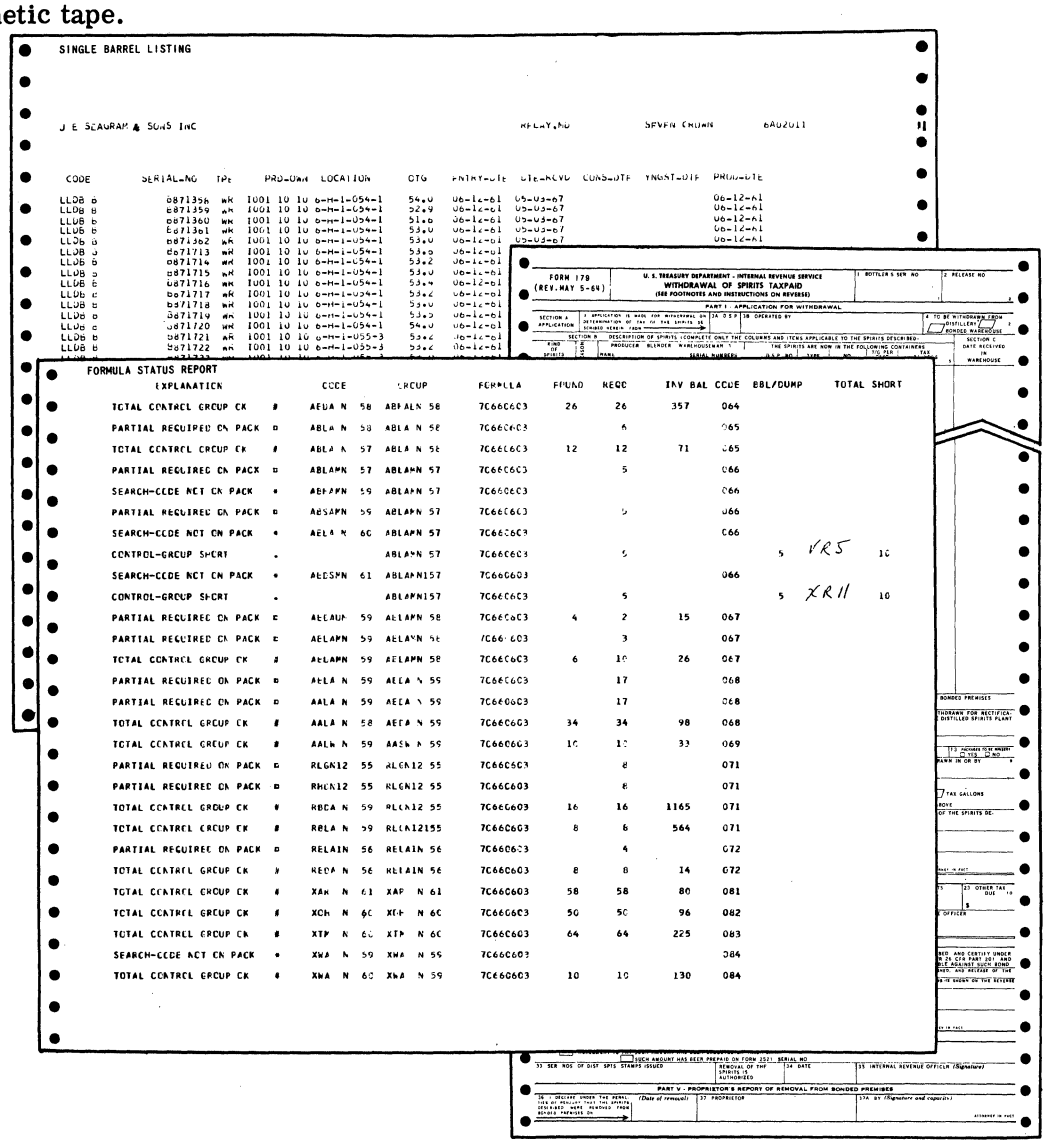
Seagram maintains a huge inventory of whiskey distilled in plants and stored in bonded warehouses to age until withdrawn for blending and bottling. When a barrel is withdrawn it is said to be dumped. Under Federal regulations, a continuous record must be kept of the history of each barrel from the time it is put into bond until its final withdrawal.

This job was done with tabulating equipment for more than 20 years and required key-punching machines in each plant. With the development of the New York data processing complex, the job has been cut over to computer. The codes for barrels in storage are kept on magnetic tape and disc files for easy manipulation. Using Mohawk Data Recorders and Bell Data-phone data sets, the plants send information on the number of barrels produced and barrel transfers to be added to the master tape in New York. Conversely, whiskies withdrawn for bottling requirements are deducted from the tape.

The data recorders are then used to send a daily Warehouse Records Report back to the plant. Controls are built into the Warehouse Records Report to ensure accuracy in the inventory files.

Entry of barrels is a relatively simple manual job done by blenders at the factory on a pre-designed form. Withdrawal, however, is much more involved and generates more reports. The operation carries back into the determination of whiskies for a particular brand known as the "formula." It has many ramifications of quality, availability and warehouse location (involving barrel movement). Seagram emphasizes high quality in all of its products and strives for perfection in every barrel.

The formula designating the amounts of each particular code of whiskey and spirits to be used for each brand is stored in the computer. Formula codes used continually are stored on disc packs for fast file search. Those used less frequently are kept in a master file on magnetic tape.



SINGLE BARREL LISTING

J E SEAGRAM & SONS INC

FORMULA STATUS REPORT

EXPLANATION		CODE		GROUP	FORMULA	FPUND	REQD	INV BAL	CODE	BBL/DUMP	TOTAL SHORT
TOTAL CONTROL GROUP CK	#	AEUA N	58	ABPALN 58	7C66C6C3	26	26	357	064		
PARTIAL REQUIRED ON PACK	D	ABLA N	58	ABLA N 58	7C66C6C3		6		065		
TOTAL CONTROL GROUP CK	#	ABLA N	57	ABLA N 58	7C66C6C3	12	12	71	065		
PARTIAL REQUIRED ON PACK	D	ABLAPN	57	ABLAPN 57	7C66C6C3		5		066		
SEARCH-CODE NOT ON PACK	*	ABLAPN	59	ABLAPN 57	7C66C6C3				066		
PARTIAL REQUIRED ON PACK	D	AELAPN	59	ABLAPN 57	7C66C6C3		5		066		
SEARCH-CODE NOT ON PACK	*	AELA N	60	ABLAPN 57	7C66C6C3				066		
CONTROL-GROUP SHORT	.			ABLAPN 57	7C66C6C3		5			5 VR5	10
SEARCH-CODE NOT ON PACK	*	AEDSPN	61	ABLAPN157	7C66G6C3				066		
CONTROL-GROUP SHORT	.			ABLAPN157	7C66C6C3		5			5 XR11	10
PARTIAL REQUIRED ON PACK	D	AELAUP	59	AELAPN 58	7C66C6C3	4	2	15	067		
PARTIAL REQUIRED ON PACK	D	AELAPN	59	AELAPN 58	7C66C6C3		3		067		
TOTAL CONTROL GROUP CK	#	AELAPN	59	AELAPN 58	7C66C6C3	6	10	26	067		
PARTIAL REQUIRED ON PACK	D	AELA N	59	AELA N 59	7C66C6C3		17		068		
PARTIAL REQUIRED ON PACK	D	AALA N	59	AELA N 59	7C66C6C3		17		068		
TOTAL CONTROL GROUP CK	#	AALA N	58	AELA N 59	7C66C6C3	34	34	98	068		
TOTAL CONTROL GROUP CK	#	AALA N	59	AALA N 59	7C66C6C3	10	10	33	069		
PARTIAL REQUIRED ON PACK	D	RLGN12	55	RLGN12 55	7C66C6C3		8		071		
PARTIAL REQUIRED ON PACK	D	RHGN12	55	RLGN12 55	7C66C6C3		8		071		
TOTAL CONTROL GROUP CK	#	RBCA N	59	RLGN12 55	7C66C6C3	16	16	1165	071		
TOTAL CONTROL GROUP CK	#	RBLA N	59	RLGN12155	7C66C6C3	8	8	564	071		
PARTIAL REQUIRED ON PACK	D	RELAIN	56	RELAIN 56	7C66C6C3		4		072		
TOTAL CONTROL GROUP CK	#	RECA N	56	RELAIN 56	7C66C6C3	8	8	14	072		
TOTAL CONTROL GROUP CK	#	XAK N	61	XAP N 61	7C66G6C3	58	58	80	081		
TOTAL CONTROL GROUP CK	#	XCH N	60	XCH N 60	7C66G6C3	50	50	96	082		
TOTAL CONTROL GROUP CK	#	XTP N	60	XTP N 60	7C66C6C3	64	64	225	083		
SEARCH-CODE NOT ON PACK	*	XWA N	59	XWA N 59	7C66C6C3				084		
TOTAL CONTROL GROUP CK	#	XWA N	60	XWA N 59	7C66G6C3	10	10	130	084		

FORM 179 (REV. MAY 5-64) U.S. TREASURY DEPARTMENT - INTERNAL REVENUE SERVICE
WITHDRAWAL OF SPIRITS TAXPAID
(SEE FOOTNOTES AND INSTRUCTIONS ON REVERSE)

PART I. - APPLICATION FOR WITHDRAWAL

PART V - PROPRIETOR'S REPORT OF REMOVAL FROM BONDED PREMISES

THREE OF THE REPORTS PRODUCED ARE A LISTING OF BARRELS IN INVENTORY, REQUIRED BY THE GOVERNMENT: ANOTHER GOVERNMENT FORM USED FOR TAX PURPOSES: AND A LIST OF THE REMAINING ACTIVE CODES, USED IN PREPARING SPECIFIC BRANDS.

Dump Requests

A barrel dump request is initiated at the plant Warehouse Dept. It is forwarded to New York by Teletype, fed into the computer, the individual barrels are reserved and a listing is prepared for the warehouse to find and select the barrels that will be needed for that month. Besides the Barrel Dump Selection Report, the computer also prints out all the necessary government forms, as well as inventory updates and activity reports. The printouts include:

(1) Federal Government Report 2630 single barrel listing for the warehouse and government office.

(2) Federal Government Form 179 for tax purposes.

(3) A formula status report on the inventory of remaining active codes.

(4) Government Forms 2630 and 236 are prepared using a printout called an "In-Bond Order." This is done when barrels must be moved from outlying warehouses or other plant locations. Barrel transfers are handled similarly.

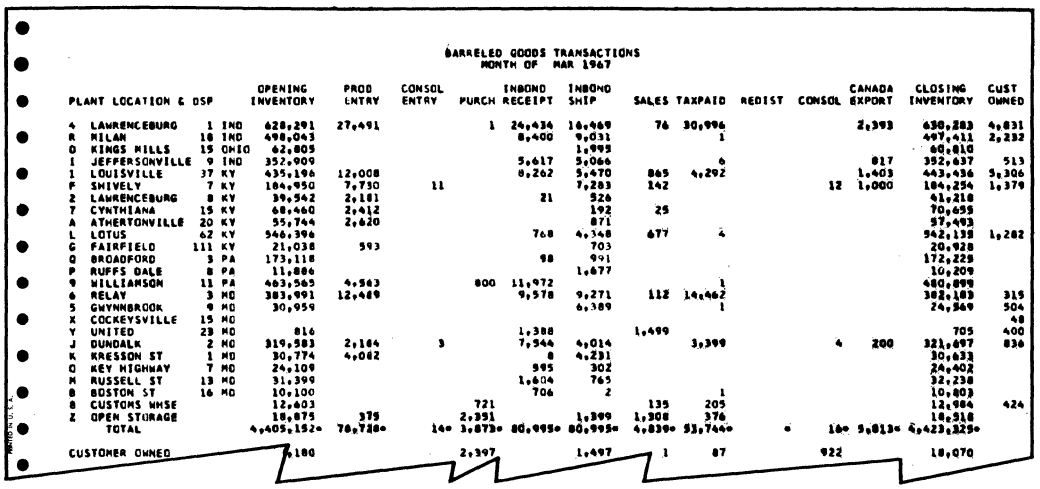
In addition to Barrel Dump Requests, the computer also prints out a number of other reports that have provided the Quality and Warehousing Depts. with greater information. The monthly reports include:

(1) The inventory of active codes and the barrel and lot numbers still available in the warehouse.

(2) Production Entry which is a run of entry of whiskies by type and by code, showing the current month-to-date and year-to-date barrel totals.

(3) Barreled Goods Transactions which is a complete inventory report of all whiskies with opening inventories, all activity and closing inventories (summarized).

(4) Warehouse Space Report which shows the number of barrels in each warehouse by bourbon, whiskey and spirit.



BARREL GOODS TRANSACTIONS
MONTH OF MAR 1967

	PLANT LOCATION & DSP		OPENING INVENTORY	PROD ENTRY	CONSOL ENTRY	INBOND RECEIPT PURCH	INBOND RECEIPT	INBOND SHIP	SALES	TAXPAID	REDIST	CONSOL	CANADA EXPORT	CLOSING INVENTORY	CUST OWNED
4	LAWRENCEBURG	1 IND	628,291	27,491		1	24,434	16,469	76	30,996			2,393	630,283	4,831
R	MILAN	18 IND	498,043				8,400	9,031		1				497,411	2,232
D	KINGS MILLS	15 OHIO	62,805					1,993						60,812	
I	JEFFERSONVILLE	9 IND	352,909				5,617	5,066		6			817	352,637	513
1	LOUISVILLE	37 KY	435,196	12,008			8,262	5,470	865	4,292			1,403	443,436	5,306
F	SHIVELY	7 KY	184,950	7,750	11			7,283	142			12	1,000	184,254	1,379
2	LAWRENCEBURG	8 KY	39,542	2,181			21	526						41,218	
7	CYNTHIANA	15 KY	68,460	2,412				192	25					70,655	
A	ATHERTONVILLE	20 KY	55,744	2,620				871						57,493	
L	LOTUS	62 KY	546,396				768	4,348	677	4				542,138	1,282
G	FAIRFIELD	111 KY	21,038	593				703						20,928	
Q	BROADFORD	3 PA	173,118				98	991						172,225	
P	RUFFS DALE	8 PA	11,886					1,677						10,209	
9	WILLIAMSON	11 PA	483,565	4,563		800	11,972			1				480,899	
6	RELAY	3 MD	383,991	12,489			9,578	9,271	112	14,462				382,183	315
5	GWYNNBROOK	9 MD	30,959					6,389		1				24,569	504
X	COCKEYSVILLE	15 MD													48
Y	UNITED	23 MD	816				1,388		1,499					705	400
J	DUNDALK	2 MD	319,583	2,164	3		7,544	4,014		3,399		4	200	321,697	836
K	KRESSON ST	1 MD	30,774	4,082			0	4,231						30,633	
O	KEY HIGHWAY	7 MD	24,109				595	302						24,402	
M	RUSSELL ST	13 MD	31,399				1,604	765						32,238	
B	BOSTON ST	16 MD	10,100				706	2		1				10,803	
8	CUSTOMS WHSE		12,603			721			135	205				12,984	424
Z	OPEN STORAGE		18,875	375		2,351		1,399	1,308	376				18,918	
	TOTAL		4,405,152-	78,728-		14- 3,873-	80,995-	80,995-	4,839-	53,744-	-	18-	5,813-	4,423,325-	
	CUSTOMER OWNED		5,180			2,397		1,497	1	87		922		18,070	

BARRELED GOODS TRANSACTIONS IS A COMPLETE INVENTORY STATUS REPORT OF ALL WHISKIES WITH OPENING INVENTORIES, ALL ACTIVITY, AND CLOSING INVENTORIES (SUMMARIZED).

Seagram feels that "the surface is just being scratched" in the distillery operations and hopes to use the computer to a greater degree in the future. It is felt that the computer will be able to write inter-plant transfers of barrels and make formula substitutions as codes are used up.

With a large number of brands and increasing usage, future requirements are becoming more and more complex. One problem area is maintaining a constant quality age for each whiskey in the given brand formula. The company believes that as market research and forecasting improves, distiller planning will be in a better position to use the computer.

Financial Data

The financial information system is designed to keep management at all levels informed regarding cost and finance matters with a minimum of time lag. It encompasses all the conventional accounting operations through approximately 50 analytical reports which show results at various responsibility levels. The reports are broken down into three areas:

(1) Accounting Operating System.

(2) Reports and Analysis.

(3) Financial Planning.

Financial data was one of the earliest computer applications at Seagram, and as a result the system covers virtually every area of the company's financial picture -- not only giving the "what," but the "how" and the "why" of each function in a precise, man-digestible form.

It is significant that two of the company's 2260's are being used in finance. The company believes that the data display devices have helped speed up payments and improved the cash flow allowing Seagram to earn additional income.

PROBLEMS AND SOLUTIONS

Few systems go in without problems of one sort or another. Seagram has found that programers working in the multi-processing mode must be constantly aware of foreground and background relationships. The company has more than 2,000 tapes in the retail sales history system alone. In order to maximize tape usage, the company has gone to 1,600 bpi tape running on six IBM Model 5 tape drives. This has led to some problems because throughput of the Mod 40 doesn't appear to be fast enough to handle two major tape oriented processing jobs simultaneously.

RESULTS AND FUTURE PLANS

Despite some of the programing problems inherent in any sophisticated system, Seagram's management is well pleased with the concrete results the company is receiving. In the all important areas of marketing and inventory control, the company has moved forward with programs and systems which are drawing out information that would have been almost impossible to extract without the efficiency of the computer. The use of this information has enabled top management to make better decisions and keep a tighter rein on a $1 billion a year business.

The future and philosophy of the company is best described in "SAMIS", a book compiled by Seagram to serve as an introduction to the system for employes.

"We should make haste slowly, realizing that evolutionary, not revolutionary, processes offer the best chance for growth and survival. Some companies have made massive and rapid installations...and many have regretted it. This is a Herculean task which is too costly for many and fraught with excessive danger...The evolutionary approach is sometimes slow and frustrating. It involves selling each system, rather than dictating it. However, it preserves the continuity of the organization and does not unnecessarily gamble the resources of the company.

"Development of a management information system requires the careful enumeration and definition of the information requirements at each level of management."

Seagram will expand the use of data display terminals where dynamic information is needed for management decisions on a day-to-day basis such as depletions, inventory and supply status.

The planning process will assume a critical role in the information system. As the automated system grows and the information cycle shortens, managers can devote more time to planning -- which can then be computerized. Presently, managers are busier gathering information than they are doing something about it. In the future this will be changed, with particular emphasis on long-range planning of sales and financial forecasting, finished goods, control formula planning, and scheduling bottling and whiskey manufacturing.

JOSEPH E. SEAGRAM & SONS, INC.

MANAGEMENT INFORMATION SYSTEM