

INDUSTRIAL DATA PROCESSING APPLICATIONS REPORT

Applications Order writing, Invoicing, Accounts Receivable,
Inventory Control, Sales Statistics, Payroll

Type of Industry Food Supplier

Name of User Alaga and Whitfield Companies
Montgomery, Alabama
Dallas, Texas

Equipment Used IBM 1130 Computer System

Synopsis

The Alaga-Whitfield companies first began automated data processing operations in 1954 with a very limited unit record system. The business has since grown and plant facilities have increased to a point where some sort of computer system was needed to keep pace with company operations. With the completion of a \$3 million fully automated plant facility capable of packing up to 15,000 cases in a single shift, one of the prime concerns was an inventory management system. The problem was not one of volumes of printed output but rather of timely information available when needed. Alaga-Whitfield needed a system on an "exception reporting" basis so that management did not need to pour over endless reports for decision making. IBM's 1130 Computer System provided the means for solving information control problems.

The IBM 1130 System used at Alaga-Whitfield is comprised of the 1131 central processor, the 1442 card read-punch, and the 1132 printer. The 1131 CPU has core storage of 8,192 sixteen-bit words with a memory cycle of 3.6 microseconds. An additional 512,000 sixteen-bit words of storage are available on-line with the disc storage feature. The 1130 system has a built-in cartridge drive in the central processor. The interchangeable disc cartridge allows off-line random or sequential storage. The 1130 monitor system provides, among other advantages, the capability for job stacking, thereby reducing set-up time substantially.

Present applications include order writing, invoicing accounts receivable, inventory control, sales statistics, payroll and other related jobs. In addition, preparations are underway to go into payable, general ledger and product cost.

The volume involved in Alaga-Whitfield's applications may be reflected in these figures:

Number of Customers Accounts	4,000
Invoices (Average per day)	150
Orders (Average per day)	150
Average lines per invoice	20
Number of items in inventory	600
Number of employes	400

The problems in setting up the system were described by Richard M. Eatman Jr., data processing manager. "We had the 'standard' problems. The biggest one was facing the unknown-- we had no experience with a computer before, and installed one of the first 1130s in a capacity of this kind. The unit record people moved from their operations to the computer's. No one at Alaga-Whitfield had any previous computer experience and most of the staff training was through the IBM P. I. courses. Getting used to the system and learning it were two problems that were solved together. We managed without additional help or extensive training programs and even with very little overtime expense." All the programing on the system was done in FORTRAN with the aid of the COMET subroutines supplied by IBM.

Before the installation of the new system, Alaga-Whitfield used the IBM 402-604 installation-- an accounting machine-calculator combination. The same number of people operate the new system as worked with the old: two girls, a man and the data processing manager.

The Alaga Syrup Co. was founded in 1906 by L. B. Whitfield Sr., and the Whitfield Pickle Co., a subsidiary, in 1923. Under Whitfield Sr.'s, and Jr.'s managements, the companies' properties and sales have grown. The Alaga-Whitfield Companies distribute products in 42 states, Mexico, South America and Europe. The firm's home office and plant facilities are located on a 40-acre site in Montgomery, Alabama. In addition, the company operates a large warehouse in Dallas, Texas, as well as maintaining stock in 30 other locations throughout the U. S.

Order Writing, Invoices, Inventory Control

The original orders are received in the sales department from brokers, salesmen and in some cases directly from the customer. The majority of these orders are already on the standard company order form containing item description and the all important item code. At this time, those orders not on the standard form are transferred to it in order to make keypunching possible with less chance for error. Customer numbers are also posted to the original order. The original orders, ready for processing, are sent to the keypunch department. Prepunched name and address cards are pulled for each order and visually checked for accuracy. Two types of cards are punched for each order: a miscellaneous data card containing warehouse number, price selection code, customer purchase order number, warehouse release number and shipping instructions; later, when orders are run, the warehouse number will guide the system to the proper disc data file for updating

inventory records. In addition, there may be one or more item spread cards. Up to five line items may be contained in one item card. Normal punching of these cards consists simply of two fields for each item, item code and quantity. Freight allowances, promotions, special prices and/or special discounts are designated by specially punched codes in the item spread card which allows a vast amount of flexibility. Name and address cards are inserted as orders are being punched. The cards are then key verified to ensure accuracy.

P. O. Box 2111 Montgomery, Alabama 36103 Phone A/C 205 263-2541										WHITFIELD PICKLE COMPANY										P. O. Box 13262 Dallas, Texas 75247 Ph. A/C 214 Fleetwood 1-6457									
DATE					CUST. ACCT. # <small>(Home Office Use)</small>					CUST. PURCHASE ORDER NO.					WHSE. RELEASE NO. <small>(Home Office Use)</small>					TERMS									
SHIP TO										BILL TO																			
STREET AND NO.										STREET AND NO.																			
CITY STATE										CITY STATE																			
SHIPPING DATE					ROUTING					P. SEL. WHSE. NO. <small>(Home Office Use)</small>					BUYERS NAME OR SIGNATURE														
DESCRIPTION		WHITFIELD		ALA. GIRL		G. B.		(Other)		Per Case		DESCRIPTION		WHITFIELD		ALA. GIRL		G. B.		(Other)		Per Case							
12 - 8 oz.		Code No.	No. Cases	Code No.	No. Cases	Code No.	No. Cases	Code No.	No. Cases	Code No.	No. Cases	12 - 22 oz.		Code No.	No. Cases	Code No.	No. Cases	Code No.	No. Cases	Code No.	No. Cases	Code No.	No. Cases						
Imp. Cocktail Onions		720										Banana Peppers		782															
24 - 8 oz.												Salad Picklettes		790															
Whole Sweets				001		101						Whole Sweets		784		027		127											
Sweet Salad Cubes				002		102						Sweet Gherkins		785															
Sweet Mixed				003		103						Sweet Mixed		786		028		128											
Sweet Relish				004		104						Candied Crispy Wafers		783															
Dill Salad Cubes				009		109						Sweet Relish		781		029		129											
Whole Dills				005		105						Whole Dills		788		030		130											
Whole Sours				010		110						Whole Kosher Dills				031		131											
												Hot Kosher Dills		791															
												Hamb. Dill Chips		789		032		132											
												Whole Sours		792		034		134											

THE STANDARD COMPANY ORDER FORM CONTAINS THE ITEM CODE.

The cards are now ready for processing as shipping orders. As the orders are run, all information needed to complete the order such as pack, size, item description, unit weight, unit price (selected from one of several on the disc according to the price selection code in the miscellaneous data card) etc., are taken from the disc record. Extensions are made, computations of discounts, freight and allowances are made as desired and totaled for the completed order. As the orders are being run, the system also determines what effect each will have on the "unshipped orders" portion of the disc data file and adjusts accordingly.

The orders are then dispatched to the various departments to await further processing. The cards go into a hold or "bookings" file to await shipment. The Alaga-Whitfield Companies do the majority of their own shipping with the company owned and operated fleet of some 50 tractor-trailer trucks. As a good portion of this shipping is done by pool truck, frequently several days separate the original order process and actual shipping. The traffic department makes up its trucks from the delivery tickets received from the computer. When a truck is ready to be loaded, the stock is pulled using the original computer order. Any changes are noted on the order at this time. The order is dated, assigned a folio number and returned to the computer for invoicing.

The cards are pulled from the bookings file. Further data such as folio number, via code and route information are punched into the miscellaneous data card. Any changes noted on the original orders are made in the item spread cards by the use of one of a set of three punched codes. For instance, adding a new item, deleting an item or increasing or decreasing quantities. Such situations are recognized by the system as requiring "special handling" in order to keep the data file correct. The invoices are now run. As invoicing is taking place, the disc record is being updated, both functions reducing unshipped orders and stock on hand as well as adjusting for "special handling" situations mentioned earlier. The item sales (cases and dollar volume) are also updated while

invoicing. At month's end, this data, along with the most recent five months sales also on the disc, supplies the information for a variety of useful sales and statistical reports. An invoice summary card, or accounts receivable sales card, is also prepared in conjunction with invoicing. On a single pass of the invoice cards through the 1130, a customer invoice has been fully computed, extended and totaled. Second, stock adjustments on the disc data file have maintained a perpetual inventory. Third, the updated item sales file provides up-to-the-minute sales data and last, an accounts receivable card has been punched to be used in that accounting function. The invoices are now ready for mailing.

CARDS USED INCLUDE (FROM TOP) THE SALES AND STATISTICAL CARD, THE CUSTOMER NAME AND ADDRESS CARD AND THE ITEM SALES AND MISCELLANEOUS DATA CARD.

To complete the inventory picture, production, returns, and other miscellaneous adjustments must be recorded. Such stock changes are reported to the computer on a specially designed form which facilitates punching and key verifying. These items are then entered into the system, updating the disc record, and balanced.

As always, control is the key word. Control totals are maintained both on number of cases on hand and unshipped orders by tapes of the day's orders, invoices, production and various adjustments. A quick check of the disc data file on a daily basis will reveal any error that may have occurred. This check assures that the total cases are in balance along with key verification of all data entered into the file. The disc data check provides maximum accuracy.

A minimum stock inventory amount has been determined for each item considering lead time and lead time usage. In addition, a maximum stock quantity has been set to eliminate the possibility of over-stock situations. This information together with an up-to-the-minute stock balance and unshipped orders balance provides a means for reporting critical stock. This report shows each item

that requires attention and also indicates the number of cases needed to pack to reach the maximum. It can be run in any of several status formats. In addition to the periodic exception report a full stock status report is prepared. Frequently all that is required is an individual item inquiry via the 1131's console keyboard.

PAGE NO. 1

"The Pickle with the Perfect Pucker"

S SMITH WHOLESALE GROCERY CO
 O 210 E 5TH ST
 L DALLAS TEXAS

S
H
T
I
O

1	7009	75	24	5	24	67
TEER.	CUST. NO.	BR.	SWAN	MO.	DAY	YE.

OK _____

SEAL NO. _____

SEAL NO. _____

VIA		CUSTOMER'S ORDER NO.	ORDER NUMBER	INVOICE NO.	SHIPPING DATE
1 PCT 10 30 60 SHIP WK OF MAY 22 WHITFIELD TK		30	1282	8495	

CK	QUANTITY	CON	PACK	SIZE	DESCRIPTION	WEIGHT	UNIT PRICE	AMOUNT
	90.		4	1	GREEN BEAUTY HAMB DILL CH 1 8 SM	175	4050.	378.00
	10.		4	1	G B HAMB DILL CHIPS 3 16TH WAFFL	186	450.	42.00
	25.		4	1	GREEN BEAUTY WHOLE DILLS 20 CT	168	1125.	100.00
	20.		4	1	GREEN BEAUTY WHO KOS DILLS 30 CT	173	900.	85.00
	10.		4	1	GREEN BEAUTY SWEET MIXED	164	490.	59.50
	5.		4	1	GREEN BEAUTY SALAD CUBES C	189	245.	28.75
	50.		4	1	GREEN BEAUTY SWEET RELISH	165	2450.	290.00
	20.		4	1	WHITFIELD CANDIED CRISPY WAFER E	794	980.	164.00
	LESS 3.00PER CENT DISCOUNT ON 1147.25							34.42CR
	230.					10690.		1112.83

TYPE	CUST. NO.	TRANS. DATE	INV. NO.	REF. NUMBER	GROSS SALE	ACCTS REC. AMT
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8

All Orders Subject to Fire, Strikes and Crop Conditions. WE RESERVE THE RIGHT TO PRORATE ALL ORDERS.

AN INVOICE SUMMARY CARD (OR ACCOUNTS RECEIVABLE SALES CARD) IS PREPARED ALONG WITH THE INVOICE.

WHITFIELD PICKLE COMPANY
 CRITICAL STOCK
 MONTGOMERY
 5 24 67

WHSE	ITEM	PACK	+	DESCRIPTION	MONTG	DALLAS	TOTAL	MINIMUM	UNSHIPPED	NEEDED
CODE	SIZE				ON HAND	ON HAND	ON HAND	BALANCE	ORDERS	TO PACK
1	4	24	8	ALABAM GIRL SWEET RELISH	1088.	25.	1113.	1200.	131.	1887.
1	10	24	8	ALABAM GIRL WHOLE SOURS	0.	145.	145.	200.	25.	555.
1	201	24	8	D S SWEET MIXED	148.	0.	148.	150.	70.	252.
1	202	24	8	D S SWEET RELISH	180.	0.	180.	200.	40.	520.
				D S WHOLE DILLS	173.	0.	173.	200.	40.	427.
					147.	0.	147.	150.	0.	253.
								100.	25.	85.

WHITFIELD -- MONTGOMERY
 STOCK STATUS REPORT
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PACK +	DESCRIPTION	BEG. BAL.	PROD.	SALES	ADJ.	NEW BAL	MINIMUM	ORDERS AVAILABLE	NE
24 8	ALABAM GIRL WHOLE SWEETS	568.	2448.	1181.	-2.	1833.	1000.	157.	833.
24 8	ALABAM GIRL SALAD CUBES	2501.	0.	788.	4.	1717.	750.	244.	967.
24 8	ALABAM GIRL SWEET MIXED	2672.	0.	1327.	0.	1345.	1000.	228.	345.
24 8	ALABAM GIRL SWEET RELISH	2495.	0.	1380.	-2.	1113.	1200.	131.	0.
24 8	ALABAM GIRL WHOLE DILLS	147.	0.	147.	0.	147.	150.	0.	0.

A CRITICAL STOCK REPORT AND A STOCK STATUS REPORT SHOW EACH ITEM REQUIRING ATTENTION AND THE NUMBER OF CASES NEEDED.

Management receives these critical stock reports and stock status reports which serve as summarizations on production, inventory control and accounting. "This is one of the advantages of the system," Eatman explains. "We can show management only those items that need attention. They don't have to wade through bundles and bundles of paper."

Another advantage, this one from the staff viewpoint, is that there is no huge workload between transactions and reporting. "The greatest advantage is the on-line storage capability, especially inventory storage, for maintaining a running inventory," Eatman says.

Accounts Receivable

An open invoice type of accounts receivable is maintained at Alaga-Whitfield. The detail record is kept in the form of a card file which allows easy reference at any time. Any unusual situations such as shortages, damaged merchandise claims, etc. are noted directly on the cards themselves at the time the invoice is paid. This eliminates much searching at a later date when someone must question an outstanding balance. A balance is also kept on disc for each customer.

As checks are received by the accounting department, with the aid of the accounts receivable open file for reference, a cash receipts slip is written. The slips show data, customer number, invoice number, amount of deposit, discount, allowances, total credit and the number of the bank into which the deposit is made. The slips are sent daily to the computer accompanied by a copy of the deposit slips for each bank involved.

A card is punched for each cash receipts slip and a single balance card showing the total of bank deposits. These cards are key verified and held for further processing to follow.

From the invoicing operation, the first copy of the shipping order is taken and the day's billing is arranged in folio sequence to ensure that no numbers are missing. An adding machine tape is run on the net sale amount of the day's invoices. The sales summary cards, also from the billing operation, are sorted in folio number sequence and placed with the cash receipts cards for that day. The total net sale is keypunched into another field of the same balance card prepared for cash receipts.

Any miscellaneous entries, journal vouchers, cash disbursements, etc., are punched into cards and the net amount of these is also punched into the same balance card. Cards then ready to be processed on the system are arranged as follows:

1. Balance card
2. Cash Receipts cards
3. Sales cards
4. Miscellaneous entries

From these cards the Accounts Receivable Transaction Register is run. As the register is being run, the system is checking the cross balance of each card. (gross sale = net sale + freight + promotion allowance + discount, etc.). Any card found to be out of balance automatically causes the printing of an error message on the console printer pointing out exactly where the error occurred. If no errors are detected in the card cross balance, the day's total transactions are checked against the balance card totals. If an error is found either in the cross balance or total balance, no file update occurs. If no error is detected, two types of file updates occur. First, the accounts receivable balance, which is kept on the disc record, is adjusted for each customer involved in that day's transactions. Second, the month to date totals of the general ledger accounts involved are updated along with the accounts receivable total itself. A recap of these totals at month's end is posted to the general ledger. In conjunction with the register run, a new sales and statistical card is created which contains additional information necessary for running Brokerage Statements, Truck Operations Reports, etc. It is important to note that all balancing is done by the 1130 itself, making it virtually impossible for an error to slip through.

At this point the new accounts receivable cards are sorted and merged with the open file. This complete file is then run through the system and checked for any zero balance items which are pulled and filed into the history file.

From this open file the Aged Trial Balance of Accounts Receivable is prepared. Open items are separated into current, 30 to 60 days old, 60 to 90 days old and over 90 days old. This provides a very clear picture of which accounts need attention. During the running of the trial balance the card total for each customer is checked against the disc total for that customer and an error message is printed on the console if any discrepancy occurs. This points out any problem area in case the accounts do not balance.

Because customers pay by invoice, no monthly statements are prepared; however, it would be simple to do so if required. The same data file that contains the accounts receivable balance also contains a history of the last three years' sales by quarter for each customer.

Payroll

All information relative to each employe's earnings is contained on the disc data file. This includes employe number, name, pay rate, exemptions, social security number, etc., as well as current, quarter to date and year to date earnings records. Also on the disc are each of the miscellaneous deductions (Credit Union, Group Insurance, United Appeal, etc.) applicable to each employe.

At the completion of each work week, the time cards are sent to the computer for processing. A card is punched for each employe showing total and overtime hours. In addition, codes are gang punched, denoting the payroll week being processed. The code will later be used to denote which miscellaneous deductions are due to be taken since some are not due every week; these cards are then key verified.

Miscellaneous employe changes that have occurred during the past week are reported to the computer on a specially prepared form. These are punched into cards and verified. Disc data file adjustments are then made from the cards. The file is now ready for processing payroll.

The key punched time cards are run through the 1130 system, and the payroll register is prepared. While the register is run, the system determines which of the miscellaneous deductions are due and how much of each is to be taken. This is done by use of the week code punched into the time cards. These miscellaneous deductions are punched into the time cards for use in running the actual payroll checks. Of course, all gross pay, tax computations and net pay are calculated as well. The system will not allow deductions to exceed gross pay.

The time cards are again run through the system, this time for the check writing process. During this run the payroll checks are prepared, a printout of miscellaneous deductions is run on the console printer and a new year to date earnings card is punched. In conjunction with this, the disc data file is updated. From this information an assortment of payroll reports can be prepared such as overtime schedules, weekly labor distributions, etc.

From the data file, the accounting department is furnished with account distribution reports at month's end to be posted to general ledger. Quarterly tax reports are also readily available as are the W-2's at the end of the year. Any information desired concerning a particular employe is available by direct inquiry into the data file by way of the console typewriter keyboard.

Richard M. Eatman Jr., Data Processing manager for Alaga-Whitfield says, "We have a means not only of handling the normal business and accounting functions in an excellent manner but a very powerful information system as well."

This particular system was chosen because Alaga-Whitfield could consider the cost applicable to plan to develop linear programming. "The 1130 is scientific enough," Eatman says, "to be extended. The company is beginning to work on linear programming. Its implementation is planned for the near future."

