

# INDUSTRIAL DATA PROCESSING APPLICATIONS REPORT

**Applications** Invoicing/Reporting System  
**Type of Industry** Plastic Products Manufacturer  
**Name of User** Shamrock-Neatway Products, Inc.  
Minneapolis, Minnesota

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**Equipment Used** Friden 6010 Computer System

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## Synopsis

A leading plastics manufacturer, Shamrock-Neatway Products, Inc., of Minneapolis, Minn., has installed a Friden 6010 Computer System to meet the sales order/invoicing and reporting needs of the company, which markets over 900 plastic houseware and food and dairy container items, nationally. With four mutually exclusive methods of plastics production and its accompanying complexity, coupled with the huge distribution task that follows fabrication, the automated invoicing/reporting system is providing Shamrock-Neatway with appreciable savings. Automated information handling is producing efficiencies impossible with the previous unit record system used to handle the paper work burden in the multi-faceted plastic products manufacturing business.

The Shamrock-Neatway system is geared to production of sales orders, invoices, management reports, and inventory control. Operations are conducted in three phases. The first phase semi-automatically produces sales orders and maintains inventory control. Invoices containing discount totals and commission totals, as well as gross and net sales totals, are written in the second operation, using input media created during the production of the sales orders. Production of invoices is almost completely automatic. The final phase of this system provides for the automatic production of meaningful management cost and sales reports through the use of input media, created as invoices are prepared.

The major benefits of the invoicing/reporting system at Shamrock-Neatway are significant because the company is able to transform newly attained operating efficiencies into products of higher quality and additional savings for its customers.

The constant quest for new substances with which to fabricate familiar household products and new inventions, to give them greater reliability and longer lasting qualities, generally brings experimenters to the use of versatile, light-weight plastics.

Plastic products are now replacing other widely used substances because of the many desirable advantages gained through their use and the benefits derived from their unique qualities. Plastics offer the user strength, yet are light weight; they are generally cheaper than metals or woods; they are often cheap enough to be fabricated in disposable models, a boon to industries where sterility and cleanliness is a must; they are easily cleaned by conventional methods without risk of damage; they are often translucent but prevent undesirable agents from contaminating materials within plastic containers; they are virtually heat and cold resistant under normal conditions.

Such a multi-purpose, worthwhile substance with so many excellent qualities to attract manufacturers is being used to fabricate the plastic housewares and food and dairy containers by Shamrock-Neatway Products, Inc., of Minneapolis, Minnesota.

Engaged in one of the fastest expanding industries in American business today, Shamrock-Neatway, concentrating on the development of better plastic products, has shown very substantial growth over the years. Accent around the company has always been on quality, satisfied customers being the best advertisements.

But, with the growing volume of business and demand for the over 900 items manufactured by the company and marketed on a nation-wide basis, the need arose for an invoicing/reporting system to meet the information needs of burgeoning company sales. Consequently, automated procedures were studied and the company installed a Friden 6010 computer system to deal with the increased paperwork load that mounted when sales volume escalated.

The resultant efficiencies and expanded data handling capabilities realized after installation of the Friden 6010 computer allow savings to be passed on to the consumers of Shamrock-Neatway products in the form of lower prices and quality products.

### Background to EDP

To maintain continued growth, Shamrock-Neatway is constantly searching for new inventions, new products, new uses for plastics to add to the list of over 900 items already being marketed by the company.

Originally known as the Sperzel Co., Shamrock-Neatway manufactured a single quality line of plastic toilet seats. Then, diversification was decided upon and houseware and packaging businesses were developed. Today, four separate sales divisions under the consolidated name of Shamrock-Neatway are maintained: Sperzel for toilet seats and plumbing supplies, Shamrock for housewares, Neatway for containers and packaging, and a custom manufacturing division to service other manufacturing companies.

Diversification in production methods as well as product line is an unusual aspect of the Shamrock-Neatway operation, and it has brought with it increasing demands for the most efficient methods of information and materials handling than could be handled by a previously existing unit record system. Shamrock-Neatway actually uses four different methods of plastics production while other manufacturers utilize one or possibly two. This has allowed them to market a varied product line but at the same time obsoleted its previous data processing system.

Prior to the installation of the Friden system, a punched card accounting system was used for preparing sales orders and invoices. This system required the manual keypunching and verifying of input cards, a process which many times caused a substantial delay in the processing of orders. Inventory control was performed and sales/cost reports were prepared, using manually keypunched input cards. In most cases the inventory records were not up to date, and the reports were not detailed

SHAMROCK-NEATWAY PRODUCTS, INC.

enough for Shamrock-Neatway managers. These problems have been significantly reduced through the use of the Friden 6010 computer system.

To process sales orders, control inventory, prepare invoices and print out management reports in an efficient way requires a fast moving system with multi-purpose capabilities.

The Friden system at Shamrock-Neatway is aiding in the production of sales orders invoices, management reports, and control of inventory. The system is actually a three phase operation. The first phase semi-automatically produces sales orders and maintains inventory control. Invoices containing discount totals and commission totals, as well as gross and net sales totals, are written in the second operation, using input media created during the production of the sales orders. Production of invoices is almost completely automatic. The final phase of this system provides for the automatic production of meaningful cost and sales reports through the use of input media, created as invoices are prepared.

SALES ORDERS are semi-automatically prepared on the Flexowriter with constant information from edge-punched cards (upper right hand corner).

IN	DATE	OLD BALANCE	BALANCE DUE
56-	02/27/64	100	44
12-	02/27/64		32
4-	02/27/64		28
2-	02/27/64		26
6-	02/27/64	26	20-

  

QUANTITY	UNIT	STOCK NUMBER	DESCRIPTION	PRICE	AMT	TOTAL	EXT
5000	EA	5 800SB	TURQ IND 80Z BASES	45.66M			
5000	EA	5 800SL	WHITE 8 OZ. LIDS	12.00M			
45	DZ	2 5101	CLEAR UTILITY BOX	4.560Z			
5000	EA	2 3200SL	WHITE HALFGAL LIDS	50.00M			

The System - Order Writing/Inventory Control

Approximately 150 sales orders are prepared daily at Shamrock-Neatway on two Flexowriter units. One Flexowriter is used for processing orders for the Sperzel line of plumbing supplies, and the other is used for houseware and container products. Edge-punched cards have been prepared for all active customers and for all items. These cards contain information which is constant for each order. They are a source of error-free input to the Flexowriter. Customer cards are filed alphabetically, and item cards are filed by product code number.

Orders are received by the sales department via mail, telephone, and telegraph. All orders are edited and the terms and the freight carrier are entered on the form. These orders are then routed to a flexowriter operator for preparation of an eight copy order entry form, which includes shipping papers and the bill of lading.

Using the customer's order as a source document, the Flexowriter operator selects the appropriate customer card. This card is processed on the Flexowriter to automatically type the header portion of the document. During this period, the operator selects the required item cards from the file. Both a Selectadata reader and an auxiliary accounting keyboard unit are cable-connected to the Flexowriter. The Selectadata at Shamrock-Neatway, having data selection capabilities, processes a "program tape" which controls all movement of the document in the Flexowriter. It also controls punching of a tape by the Flexowriter, and causes the current date to be automatically printed on the sales order form.

Through the Friden auxiliary accounting keyboard, numeric information that has been entered is automatically transferred to the document when an assigned code is sensed in the Flexowriter reader. At Shamrock-Neatway, the auxiliary accouter is used for item entry and for inventory updating.

When the customer card has been processed, it is removed from the reader of the Flexowriter and the first edge-punched item card is inserted. The Flexowriter operator enters the quantity, variable price and the commission rate through the keyboard of the accounting machine. Constant item information, such as unit measure of the item, item number and description is automatically printed on the document from the item card. The item card also contains: a standard cost for the item, a manufacturing department number and a sales department number. These figures are not printed on the sales order but they are punched into tape by the Flexowriter. Also, a printed record of the current inventory is typed on the face of each item card.

Since the Flexowriter is equipped with a "split platen," it is possible to process two different documents during the same operation.

When the item card has been processed, it is removed from the Flexowriter reader and inserted in the right-hand side of the split platen at the next writing line on the card. A touch of an accounting machine key causes the quantity ordered by this customer and the date to be automatically typed on the item card. Then the operator manually keys in the old balance via the accounting machine keyboard. This balance is printed on the item card, subtracted from the quantity ordered, and the updated inventory balance is automatically typed on the edge-punched card. The item card is then removed from the Flexowriter and refilled. This procedure for processing item cards is repeated for each line item on the order.

During the preparation of the sales order, a punched paper tape is produced on the punching unit of the Flexowriter. This tape contains all of the information typed on the document, plus additional information which is used in invoice and report preparation. When the sales order is completed, copies of the form are distributed to the various departments for processing. One copy of this document and the punched tape for the order are placed in a folder to await notification of the shipment of goods.

### Invoicing

At Shamrock-Neatway approximately 150 invoices, containing from 5 to 70 line items are prepared daily on the Friden 6010 computer. The 6010 accepts input from punched tape, edge-punched cards, auxiliary input units, or from the keyboard of the Flexowriter. It produces output in the form of a printed document, and punched paper tape or edge-punched cards. Also a removable program panel on the 6010 allows the computer to be used for more than one application.

In this system when goods are shipped, a copy of the packing slip is forwarded to a file clerk who pulls the folder for that order. This folder, containing both a copy of the order and a punched tape, is directed to the 6010 operator for the preparation of an eight copy invoice.

Two Friden auxiliary units are cable connected to the 6010 computer for the invoicing operation. One is the Selectadata reader which processes a program tape that controls the invoicing program and causes the date to be automatically printed on the invoice. The second auxiliary unit, a

SHAMROCK-NEATWAY PRODUCTS, INC.

tape punch, allows a second punched tape to be produced as invoices are prepared. This tape is subsequently used to prepare management reports.

To prepare an invoice, the computer operator inserts the punched tape into the input/output unit of the Flexowriter. A touch of the button causes the information contained in the punched tape to be printed on the invoice at a speed of 100 words per minute. Switches on the Selectadata reader are manually depressed by the operator, depending on the price structure of the items (per hundred or per thousand) and depending on whether a line discount applies.

All computations on the invoice are automatic, and performed speedily. The 6010 computer types and calculates the gross sales amount per line, the discount amount, and the commission amount. (Commission figures are typed on a "tear-away" portion of the invoice form). The cost per line items are extended and punched in tape, but not printed on the document. Four totals are printed on each invoice. These are: gross sales, total discount, net sales and total commission. When completed, copies of the invoice are mailed to the customer. Others are distributed to the various departments within the company for subsequent processing.

INVOICES are prepared on the Friden 6010 computer at the rate of over 100 daily. Right hand portion, bearing commission figures, is detached prior to mailing.

**Shamrock-Neatway**  
 2323 HOLMES AVENUE SOUTH, MINNEAPOLIS, MINNESOTA 55404  
 PHONE: 338-8888  
 TELETYPE: 817

**IMPORTANT**  
 Detach this strip at perforation before invoice is mailed to customer.

**DETACH HERE**

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	GROSS AMOUNT	DISCOUNT	NET AMOUNT	COMMISSION
5	BOUSD	TURB ID 80Z BASES	45.66M	228.30	5	11.42	216.88	00.05
5	BOUSD	WHITE 8 OZ. LIDS	12.00M	60.00	10/5	8.70	51.30	00.02
45	2 5101	CLEAR UTILITY BOX	4.560Z	205.20			205.20	05.05
2	320USL	WHITE HALF GAL LIDS	50.00M	250.00	10/5/5	46.94	203.06	10.05
		PLUS PREPAID FREIGHT		8.72			8.72	
				752.22T			67.06T	685.16T

NOTE: FOLLOWING ORDER ENTRY NOTS HAVE BEEN SHIPPED TOGETHER.

AT SHAMROCK-NEATWAY over 100 invoices are prepared daily on the FRIDEN 6010 Electronic Computer. Four totals are printed on each invoice. These are: gross amount total, discount total, net amount and a commission total. All commission figures are printed on a "tear-away" portion of the invoice which is detached from the form prior to its being mailed.

REPORT WRITING

Two punched tapes are created during the invoicing operation. One, called the data tape, is produced by the punching facilities of the 6010. The second tape, known as the invoice register tape, is created on the Friden auxiliary tape punch.

At the end of the working day, the data tape is processed on the 6010 computer to produce an invoice data report. This report gives a breakdown of each invoice and contains the following data: customer number, salesman's number, invoice number, quantity, product code, manufacturing department, sales department, sales amount, and cost amount for each line item and the total amount of the invoice. A program tape in the Selectadata reader controls this program. Preparation of this report is an automatic operation with the computer operator simply monitoring the system.

The total figures, which are processed during the preparation of this report, are retained by the 6010 and used to produce a sales distribution report by product line. This report contains 14 totals -- all dollar figures. After the daily totals are printed on the document (under Selectadata control), a punched tape is processed on the 6010. This tape contains monthly sales-to-date figures; and the new, updated sales-to-date balances are printed on the sales distribution report. Therefore, the sales distribution report gives daily sales figures, as well as month-to-date figures for each of the company's 15 product lines. During this operation, a punched tape containing the updated sales-

to-date figures is automatically produced on the auxiliary tape punch. This tape is filed and used for the next day's report.

A second punched tape is produced by the 6010 during the above operations. Once a week this tape is sent to the local service bureau where the follow-up reports are produced: sales report by salesman, cost reports by products, and profit reports by products. All of the above reports give unit as well as dollar amounts.

At the end of each working day, the invoice register tape (produced by the auxiliary tape punch) is also processed by the 6010. This program produces a daily invoice register which is merely a listing of invoice numbers and dollar amount of each invoice. This report provides management with a check on the number of invoices that has been processed. This program is also controlled by a program tape in the Selectadata reader, and all typing is completely automatic.

## RESULTS

The major benefits of the invoicing/reporting system at Shamrock-Neatway are significant, for the company has transformed newly attained operating efficiencies into products of higher quality and savings for its customers. Stewart Pinkerton, secretary-treasurer of the company, feels the major benefits readily observable are:

(1) A larger number of orders is now being processed than under the previous system, in a more efficient manner and on time.

(2) A tight control over inventory is maintained thus giving the company an accurate view of production capabilities and status. This is possible because inventory records are updated at the time of sales order writing to reflect new balances after commitments are taken into consideration.

(3) Sales, cost and product analysis reports are provided for management as automatic by-products of the basic sales order/invoicing system. These reports enable management to exercise exacting control over the entire operation.



FRIDEN COMPUTER  
underlies invoicing/reporting system at Shamrock-Neatway.

# MANAGEMENT REPORTS

No. 2 **DAILY SUMMARY BY DEPARTMENTS - INVOICES**  D/M  C/M

ITEM	Total Accts. Receivable	SHAMROCK		SPERZEL SEATS		NEATWAY PACKAGING			CUSTOM SALES			Tool Room	FREIGHT		Postage	Misc.	
		Housewares Dept. #311	Containers Dept. #312	Domestic Dept. #321	Canadian Dept. #322	Containers Dept. #331	Printing Dept. #332	Injection Dept. #341	Extrusion Dept. #342	Dept. #349	Added Code #170		Deducted Code #413	Code #1129			Code #399
Monday Date _____ Prev. Mo. To Date _____ Prev. Yr. To Date _____																	
Today's Totals	45350.15	18462.99	48891.20	6980.11	4789.00	88765.20	326.00	44987.00	100.00	100.00	132.00	6.85	34.00	2.65	876.00		
Gross Mo. To Date	6987234.00	39662.30	104862.00	24556.11	4789.00	265432.25	1476.00	44987.00	6954.00	69854.00	98.97	278.65	12.94	1832.65			
Gross Yr. To Date																	
Tuesday Date _____ Today's Totals	52460.75	16002.67	37999.20	7365.25	2525.00	74815.35	248.00	100.00	100.00	132.00	4.25	40.05	.95	563.00			
Gross Mo. To Date	7039694.75	55664.97	142861.20	31921.36	7314.00	340247.60	1724.00	44987.00	7054.00	69986.00	103.22	318.70	13.89	2395.65			
Gross Yr. To Date																	
Wednesday Date _____ Today's Totals																	
Gross Mo. To Date																	
Gross Yr. To Date																	
Thursday Date _____ Today's Totals																	
Gross Mo. To Date																	
Gross Yr. To Date																	

No. 1 **DAILY INVOICE REGISTER** DATE \_\_\_\_\_

ITEM	Accounts Receivable Total	Miscellaneous Sales		Freight Parcel Post & Express Invoice Charges	Merchandise Sales
		Code	S		
Month: To Date _____ Year: To Date _____ Today's Invoice, D/M or C/M					
SN 04-6180 54.00T	54.00				54.00
SN 04-6181 68.40T	68.40				68.40
SN 04-6182 7.68T	7.68				7.68
SN 04-6183 5.26T	5.26			1.66	7.00
WC 04-1104 11.98T	11.98			1.06	13.04
SN 04-6184 22.00T	22.00				22.00
WC 04-1105 23.42T	23.42			1.89	25.31
SN 04-6185 7.68T	7.68				7.68
SN 04-6186 77.00T	77.00				77.00
SN 04-6187 13.92T	13.92				13.92
Today's Total					
New Month: To Date					
New Year: To Date					

5 16530 40	273				
3 EA 605003 700321	27.45				WC 04-1102
27.45T					9.75
5 16530 40	273				
6 EA 607101 700321	78.00				WC 04-1103
78.00T					43.86
05 05240 01	310				
15 02 10074 800311	55.80				SN 04-6171
55.80T					41.40
23 2220 39	357				
2 02 11175 800311	14.40				SN 04-6172
1 02 26076 800311	9.60				9.12
24.00T					7.45
15 13622 51	190				
10000 M 21775 800331	2000.00				SN 04-6173
10000 M 21775 800331	700.00				1281.50
2700.00T					550.90
15 12964 07	190				
20 EA 60078 800311	55.00				SN 04-6174
55.00T					47.00
40 03178 52	450				
1 02 16078 800311	3.84				SN 04-6175
1 02 16078 800311	3.84				2.88
1 02 16071 800311	3.84				2.88
11.52T					
13 7445 12	310				
30 02 10074 800311	192.00				SN 04-6176
26 02 10174 800311	156.00				138.00
348.00T					106.08
15 12189 39	190				
4 EA 60077 800311	11.00				SN 04-6177
11.00T					9.40
20 12193 39	315				
20 02 14974 800311	16.00				SN 04-6178
20 02 15074 800311	17.40				12.00
40 02 15174 800311	12.00				9.60
4 02 15274 800311	54.00				28.80
7 02 27580 800311	6.00				4.32
6 EA 18778 800311	3.96				2.84
2 02 16278 800311	12.00				1.80
12 EA 26178 800311	22.20				6.96
4 EA 80078 800311	14.00				12.60
4 EA 60078 800311	14.40				9.40
4 EA 60077 800311	14.40				5.40
189.96T					

MANAGEMENT REPORTS are prepared in a wide variety through processing of two punched tapes produced automatically during the invoicing process.

INDUSTRIAL DATA PROCESSING APPLICATIONS

S-N/7

(4) The system provides built-in error prevention, because items are described in the same way every time. This means a minimum number of mistakes in shipping the wrong merchandise.

(5) Individual salesmen's reports are provided for over 100 salesmen by the service bureau. These reports were not available with the previous system.

"We feel," states Pinkerton, "that we have a unique application, one that fully utilizes the concept of office mechanization. Not only does the present Friden system meet our present needs, but it is flexible enough to allow for changes in the future which will result from company growth and expansion."