

INDUSTRIAL DATA PROCESSING APPLICATIONS REPORT

Applications	Spare parts Order and Inventory Control
Type of Industry	Lift-Fork Truck Manufacturer
Name of User	Conveyancer Fork Trucks Ltd. Warrington, England

Equipment Used	I. C. T. 550 Calculator
	I. C. T. 915 Tabulator

Synopsis

A comprehensive scheme designed to streamline spare parts inventory and order control now enables Conveyancer Fork Trucks Ltd., Warrington, England, to better serve its customers in 92 countries around the globe. The company's thoroughly reorganized distribution facilities now include a 150-foot long conveyor belt with an automatic ejection station. At the same time, an I. C. T. data processing installation processes the flow of documentation. This installation, centered around a 550 calculator and a 915 tabulator, permits the centralization of inventory control for all eight of the company's warehouses in the United Kingdom.

Spare parts orders received every morning are first machine-checked for correct part number. They are then processed, using prepunched name and address cards and an issue card for each item ordered. Output takes the form of advice notes and invoices, as well as a list of all shortages and the availability of these items in other warehouses. This document is passed back to the order section for further action. Usually, orders are processed the same day that they are received so that "picking" can begin early the following morning. The advice note is sent with the goods; the invoice follows after dispatch.

Stock balance records are automatically updated as a result of order processing. Consequently, accurate inventory data is always available each week when a reordering run is done for a quarter of stock items held. This routine permits the extraction of all cards for items below reorder level. They are merged with depot balance cards for calculation of total stock holdings. Reordering then takes place on the basis of these figures, taking account of whether items are purchased outside or are made in-house. Certain fast-moving items are processed weekly.

Lift fork trucks manufactured by Conveyancer Fork Trucks Ltd., Warrington, England, lift, transport and stack over 2.5 million tons of materials a day in 92 countries around the world. These trucks are battery-electric, diesel or gasoline powered -- and have varying capacities and attachments. To keep them in operation, Conveyancer is, therefore, required to maintain an efficient and up-to-date world-wide spares service, ready to provide anything from a torque converter to a tire. The nerve center of this organization is at company headquarters in Warrington. From this one single point, Conveyancer, relying on an I. C. T. (International Computers and Tabulators Ltd.) data processing installation, now controls the dispatch of spare parts from warehouses throughout the United Kingdom to serve customers around the world more expeditiously.

Conveyancer Fork Trucks Ltd. ranks among the founding firms of the British materials handling industry. The company, a subsidiary of Electro-Hydraulics Ltd., specialists in the manufacture of hydraulic equipment for the English aircraft industry, is now a member of the Owen Organization. Conveyancer delivered its first fork truck in October 1946, and its current place in the materials handling field is largely based upon the world-wide service available to its customers.

The company is today the largest manufacturer of fork trucks in the British Commonwealth, and the Conveyancer range is the most comprehensive in Britain -- including electric, diesel and gasoline-driven trucks with capacities ranging from 1,500 to 12,000 pounds. The spare parts service and the availability of mobile service teams based in nine centers in the United Kingdom have been important factors in Conveyancer's success. Overseas customers have benefited from the network of 80 agencies and distributors, reinforced by experienced engineers from Warrington and the Conveyancer factory in Australia.

Data Processing at Conveyancer

To serve its customers, Conveyancer must maintain an inventory of 26,000 different spare parts at Warrington and eight other depots in the United Kingdom, all but 5,000 of which are in frequent demand. Recently, in an imaginative effort to improve customer services, the company reorganized its central distribution facilities, installing a 150-foot long conveyor with an automatic ejection station. At the same time, an I. C. T. data processing installation was brought into service to handle the flow of documentation. This installation, which processes 80-column punched cards, is centered on an I. C. T. 550 calculator and an I. C. T. 915 tabulator. This installation handles all accounting and invoicing for fulfillment of customer orders and inventory control and replenishment.

Order Fulfillment

Orders are received at Warrington between 10 and 10:30 a. m. daily and are machine-checked for correct part number. They are then passed straight into the machine room where prepunched name and address cards are pulled and an issue card for each item ordered is punched.

From this point, the major work flow includes collation of issue cards with cards showing receipts, new orders on suppliers and balance and a blank card -- to become the new balance card -- and the processing of the deck through the I. C. T. 550 calculator. The 550 at this stage does a stock control computation to update inventory balance records, and indicates those few instances where parts ordered are not available.

During 550 processing, name and address cards and various other cards, for freight and labor charges (the latter where spares are part of an overhaul or repair undertaken by the company), are being sorted into account number order. From the two sets of cards, customer advices and invoices are tabulated on the 915, as well as a list of all shortages and determinations of the availability of these items at the depots. This document is passed back to the order section for further action. In practice, orders received in the morning are processed the same day so that order picking begins early the following morning, thus giving rapid customer service. The advice notice is sent with the goods; the invoice follows after dispatch.

The Warrington data processing installation also produces invoices for goods dispatched directly from depots. While the processing flow is similar, the advice note from depots, however, is a handwritten document, a copy of which is sent to Warrington control. There, it takes its place in the procedure, which differs in that the set of balance cards is replaced by one card which shows the stock of the item at each depot, total stock and price. There are no "new orders on suppliers" cards as all replenishments are ordered from Warrington and arrive there for distribution.

Replenishment

The replenishment and inventory updating procedure has been made much more flexible since the installation of the I. C. T. punched card system. There are two daily tests for active items. The first is for below minimum stock levels. This is tested every time an item moves, the 550 comparing actual stock against a predetermined minimum. The second test, for reorder figure, occurs when the 550 adds the number on order to actual stock and tests against a given reorder figure. This figure is itself normally automatically arrived at through data processing routines.

The main reordering run is done each week for a quarter of the stock items held, thus providing a four-week cycle for all items. A summary card, containing all issues during the past period is fed into the 550 with a master balance card. Lead times established for each item are already punched in the balance card and the machine calculates the reorder figure and punches it back into the summary card which becomes the new balance card. The 550 also designates the card for those items which are below the predetermined order level and is used to calculate the new minimum stock level. This is also punched into the new balance card.

The routine from there is to extract all cards designated as being below reorder level to merge them with the depot balance cards (see Fig. 1) and to tabulate this deck in order to arrive at total inventory. Reordering takes place on the basis of the figures calculated, and takes account of whether items are bought outside or made in-house. Certain fast moving items are processed weekly.

Results

According to a Conveyancer spokesman, the biggest advantage of the punched card system is the centralization of stock control at Warrington for stores held there and in the other eight British depots. "For the first time," he says, "it is known what is held, where and in what quantities, and it is possible to draw on such stocks flexibly to improve the service." At the same time, the overall value of stocks held has been significantly reduced. Previously, any part ordered by a

CONVEYANCER FORK TRUCKS LTD.

depot was, for control purposes, considered "sold", even though it might be lying on a depot shelf for months; and a customer might well be waiting for it while the company reordered.

Another major advantage lies in the new procedure for reordering. There used to be a nine month reordering cycle for all items. Since the introduction of the I. C. T. data processing system, items such as tires are scheduled weekly, and realistic lead times have been allocated

and are maintained. With such a system it is possible to cope efficiently with fluctuations in demand, reducing the need to carry stock which is unlikely to be sold. In addition to savings achieved, the system enables items with long procurement times to be carried in somewhat greater quantities, another customer benefit. In this way, the reordering procedure has made replenishment much more scientific and for many lines automatic. At the same time, the department's commercial know-how can now be applied fully in deciding reorder quantities since accurate information on which to base these decisions is available for the first time.

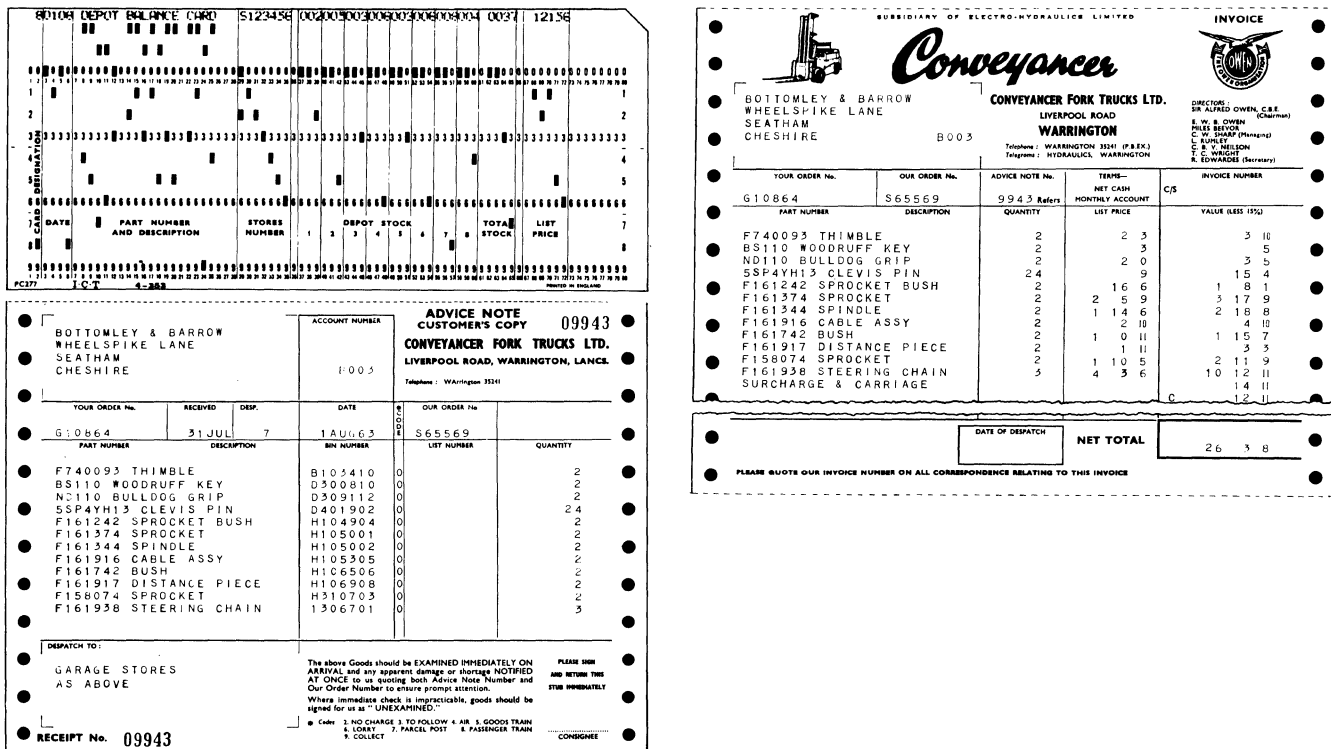


Fig. 1. DEPOT BALANCE CARD (upper left) showing updated stock levels of one line at each of Conveyancer's eight British depots is produced during preparation of ADVICE NOTE (lower left) and INVOICE (at right).

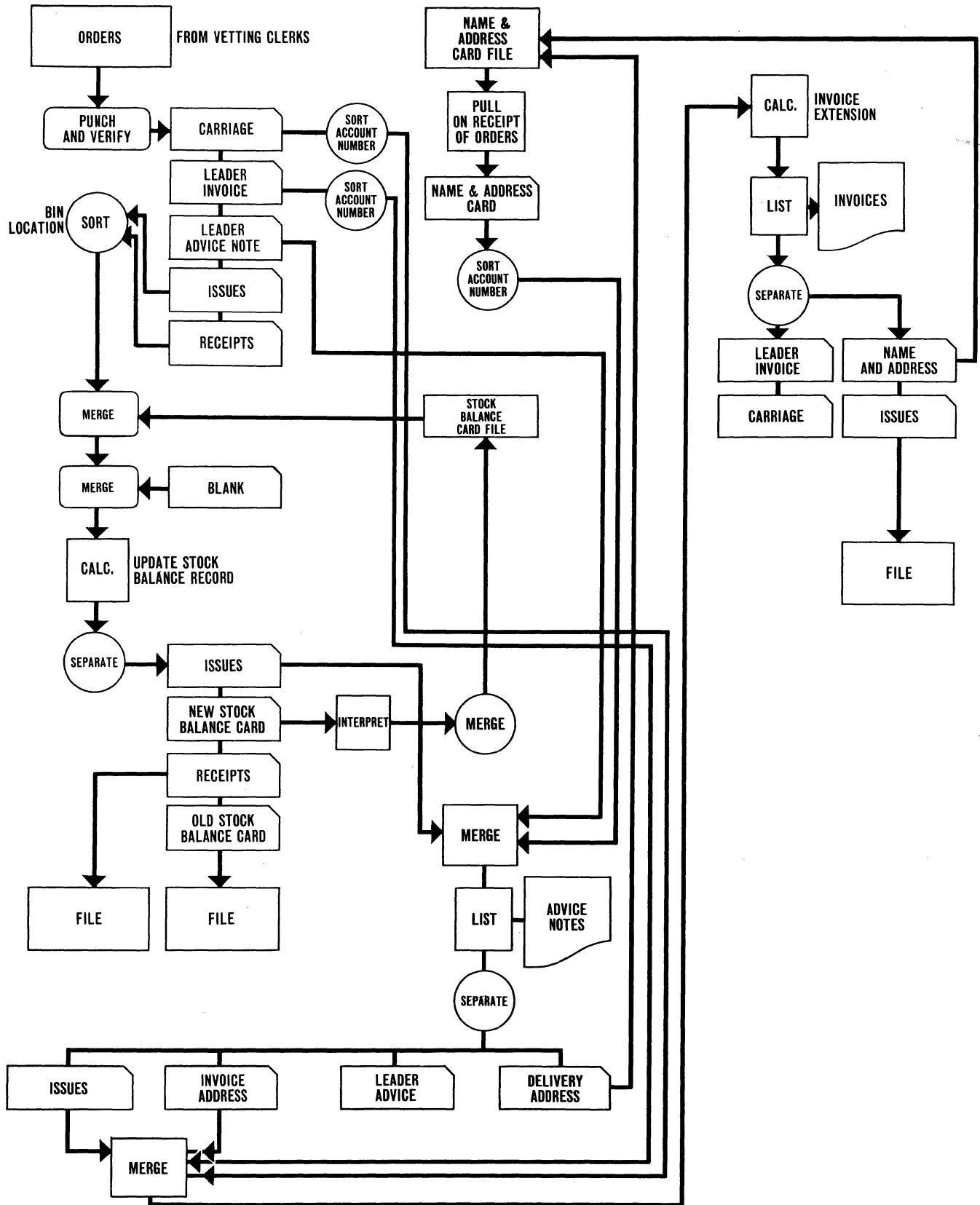


Fig. 2. Conveyancer Fork Trucks Ltd.; Daily Stock Control and Invoicing Routine.

Finally, it is possible to discontinue the lengthy procedure for physical stocktaking, which used to employ six to eight additional staff for a month for Warrington stock alone, in favor of a continuous inventory and periodical physical stocktaking of various sections, which is well within the potential of the regular staff.