

Monotype Corporation move towards Distributed Data Entry Systems



Computers are of fundamental importance at the Monotype Corporation. Not only are they essentials in the Corporation's commercial and production activities but they are a central part of the products they manufacture. Monotype specialise in equipment for the printing industry — and always have done throughout their long history. But it is only in the last ten years that developments in electronics have made possible the tremendous advances in the field of computerised phototypesetting so that Monotype's latest product, a laser based typesetter, is completely controlled by a mini-computer.

The first typesetting machines were hot-metal typesetters; they were developed by an American — Talbot Lanston — at the end of the last century and a few are still produced at Monotype's Salfords factory. The more modern machines in Monotype's product range embrace the latest technology in electronics and computer sciences.

With computer expertise spreading over a wide spectrum, it is perhaps not surprising that even ordinary data processing at Monotype is far from ordinary. Having had a commercial machine since the mid-sixties they obviously have a good deal of solid experience on which to base their systems; but even so their current applications reflect an enterprise and originality that makes them merit closer attention. Their mainframe machine is a Burroughs 3731 which has been installed and in use for about two years. Applications cover the normal commercial areas like payroll and invoicing but the most important single usage is production control. This is a vital activity and has been important since computers were first installed at Monotype.

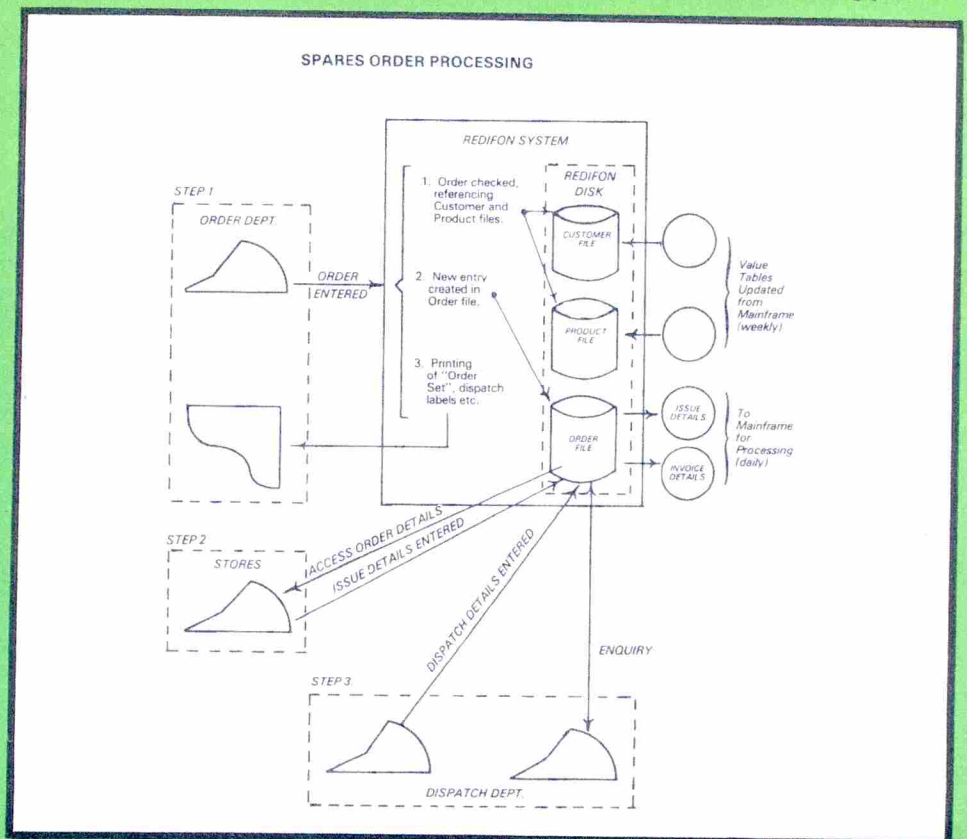
Originally all data, for production control and other systems, was prepared on paper tape in a traditional data preparation department. Then, when the current Burroughs mainframe was installed it was decided to modernise data preparation as well. A Redifon data entry system was selected, and to make the change-over 'transparent' to both users and mainframe

suites, all data was still prepared in paper tape format even though the output was to magnetic tape. The normal Redifon features were used to eliminate errors and ensure that all data was as clean as possible.

However, the capabilities of the Redifon to do much more than just 'ensure clean data' were recognised from the beginning. Three Redifon terminals, connected directly to the Redifon processor in the data preparation room, were installed in the clock office on the factory shop floor to record work in progress. Previously this work had been done on typewriters connected to paper-tape punches,

'Lusercomp' — Monotype's laser beam based phototypesetter.

but these were reaching the end of their useful life and needed replacement. Input on the Redifon terminals was controlled by formats that allowed the keying to be as similar to the typewriters as possible so avoiding problems



for staff concerned primarily with the processing of the 'work-in-progress' records, and who were not trained punch operators. A further problem was that the Redifon terminals installed did not have a hard copy device and so were not 'self-documenting' like the original typewriters. But the use of 'Audit' overcame this problem very effectively since it was possible to record on to a single magnetic tape the combined input from the three clock office keystations. The Audit also provides a method of re-constituting the clock office data in case of complete system failure, so no data is ever lost. The data entered from the clock office is output on a daily basis to form the input for the work-in-progress part of the production control system.

Although production control is a major function of the mainframe it is by no means the only one and the success of the Redifon terminals in the clock office had established their role outside the confines of the data preparation departments. The next step was to use three terminals for spares order processing. David Bridle, Data Processing Manager, explained the requirements: "Spares account for a great deal of our business — we have a customer base going back for many years, virtually as far as Monotype's formation in 1897! In addition a vast number of spares are involved for an extensive range of machines so the administrative overhead is a large function of spares order processing. Add to this the fact that over 80% of our business is export so considerable dispatch problems are involved, and the size of the problem becomes clear."

Monotype's solution to the problem is impressive as a system in its own right and almost obscures the fact that their Redifon system's primary function is data preparation! It provides for everything from the initial recording of an order to the location of spares in the various stores areas and their dispatch. There is also an enquiry system. The diagram outlines the system:

David Bridle commented that, in fact, the enquiry system is not really used now that the turn-around on spares is so much improved. "Our objective was to achieve same day service on spares for as many parts as possible. Now there is nothing to stop goods being dispatched on the same day if they are in stock. Also, as we now have direct entry of all details we are able to prepare invoices much more promptly — so customers are getting better service but quicker billing!"

Another, and even more recent 'remote' function is being performed by a Redifon terminal in the accounts area. It is being used mainly for purchase ledger work. The main aim is to cut out what is essentially 'dead effort' resulting from the filling out of punching documents just for the data processing department's use. Another bonus was described by David Bridle as follows: "Now that we have got the Redifon terminal in the Accounts department we can actually balance the documents and 'hit' the person at the point of entry whereas in the past they had to wait for a mainframe report. We are doing document balancing, batch balancing and check digit verification all at the point of entry where the data means something."

All this diversification is helping the data processing department at Monotype provide a better service to the Corporation as a whole. It is coupled with a bi-synchronous communications link with the Monotype factory in Dunfermline, Scotland: a smaller Redifon system is installed there and data entered is transmitted daily for processing on the Burroughs 3731 at Salfords. With such wide ranging uses, it certainly seems that Monotype's Redifon systems are computers to be proud of!

Redifon helps power Whitworth into the 80's

What happens when an old established company that has grown steadily over the years from a small family business decides to computerise? What happens too if that company is a wholesale business with a huge stock of 13,000 to 14,000 different items (many of which are sold on account at varying discounted prices) and whose very life depends on efficiency and a large turnover, since profit on individual items is very small? Considerable adverse publicity in the media conditions most people to anticipate major problems. Serious cash flow difficulties, perhaps, because accounts are not sent out on time or properly credited and debited? Or maybe staff hostility due to their fear of changes to familiar and long practiced procedures — with a consequent loss of efficiency for the company?

Happily, although these conditions can arise, they are by no means inevitable and can be avoided by good management, careful planning, proper re-training and the choice of the right equipment. The case of Whitworth Electric Company, an electrical wholesale company whose business area covers southern England, proves this. Whitworth are currently implementing what might be described as the third phase in their computerisation programme with the installation of a Redifon R850 distributed data processing system, but the first step was taken about five years ago, when an NCR

Century 75 computer was installed, primarily to do the sales ledger and statements. Previously accounting machines had been used, but the Company had grown a great deal and more machines were needed; these particular machines were by then obsolete so some kind of replacement equipment was needed. The then Managing Director and the Credit Controller felt that a computer was the answer: no one in the Company had any computer experience so along with their new computer the Company had also to acquire qualified computer staff. Bill Neville became their Data Processing Manager and, having spent his whole career in electronics and computers, had the necessary experience to get the initial computerisation project off the ground. Nevertheless it was 18 months before the first system was completely operational. There was the problem of winning round staff and managers to the idea of a 'computer'; the computer itself had to be enlarged since the machine originally ordered was not big enough to do the job required — more memory, a disk unit and a faster printer were needed. Then also there was the problem of input. In the original order it had been assumed that a small, 8 character per second, teletype kind of device would be sufficient, but in fact the volumes of data made a faster bulk input medium imperative. Punched cards were selected.

However, despite initial problems, the

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