

# REPLACING DATA ENTRY SYSTEM

By Monday evening a large number of the readings taken that day have reached the computer centre in north Leeds. (In the case of some outlying districts this is not possible; these readings arrive by 8am the following morning.)

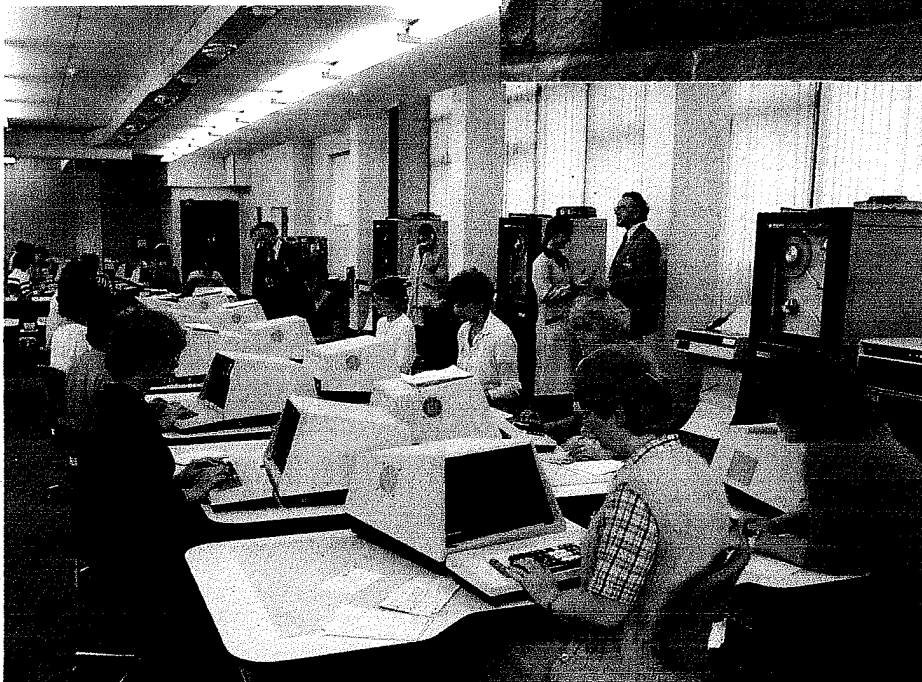
The readings are read into the computer by a Scan-Optics 20/20 OCR reader. Meter readings which fall outside parameters imposed by the OCR system are subject to clerical scrutiny and where necessary amended and resubmitted to be entered by operators using Rediffusion Computers' key-to-disk equipment.

As well as the meter readings, it is necessary also to enter any details of changes to the customer file — changes of tenancy, of meter and so on. All of these, together with the meter readings, are received by 8.30am on Tuesday morning, and the aim is to complete the various methods of input preparation by noon on the same day. This allows the computer system (based on ICL 2900 mainframes — twin 2976s and a 2988) to produce the bills by 6pm that evening, for delivery to customers on Wednesday.

A tight schedule, therefore, has to be adhered to and the data preparation section plays an important role in this in meeting a strict

timetable for data entry activities. These include the keying of transactions in respect of cash received, both in settlement of bills and in payment for appliances sold through YEB's shops; stock control data relating to inventories of both appliances and distribution equipment (such as cables and transformers); accounting and management data relating to both purchases and sales; and wages data.

The YEB employ a variety of methods to input data promptly and cleanly into the mainframes. In addition to Rediffusion key-to-disk and Scan-Optics OCR equipment, a tape is submitted daily from the bank of all payments made within the banking system.



Picture shows Terry Lavelle — principal executive officer, Yorkshire Electricity Board, outside the board's computer centre at Leeds.

The R800 system has three processors and 49 terminals installed in the data preparation section at the Yorkshire Electricity Board's computer centre north of Leeds. One is used as a development system and has three VDUs, while the other two are used for production work and each have 23 workstations. The Rediffusion system supports a total of around 200 data entry jobs.

The board runs a large TP network on the ICL mainframe supporting around 300 terminals some of which are used for DD1 and also has 107 off-line point-of-sale terminals in its shops recording data on to cassette.

Despite these developments and planned extensions it is expected that there will be a need for centralised data entry for the foreseeable future.

The Rediffusion key-to-disk equipment supports a total of around 200 data entry jobs and the overall average speed of the operators is in excess of 13,000 key depressions per hour.

The YEB was one of the first electricity boards in the UK to adopt an integrated data preparation system when it installed a Honeywell dual processor Keyplex system in 1972. Indeed the board has a history of pioneering achievements of this kind. It was the first electricity board to centralise its accounts on a large mainframe — that was a KDP 10, way back in the early sixties. It was one of the earliest users of OCR equipment and also of computer-output-microfilm systems.

The Keyplex system had worked well and had given good service, but had got to the point where it was due for replacement. In the decade since it had been introduced, the technology naturally had advanced considerably, and it was decided to replace the Keyplex with one of the more modern systems.

The investigation process was thorough, and was carried out by a three person team, consisting of Terry Lavelle — responsible for day-to-day computer operations, Eric Price — senior executive officer, and Mrs Pat Childs — the supervisor in the Keyplex punch room.



Eric Price — senior executive officer at YEB.

The first step was to define the requirements of the new system. These were largely conditioned by the need for the system to perform the same service with the same degree of reliability and security as the old system.

Security is very important at the YEB. The 48 workstations on the Keyplex system were equally divided between two processors with full switching facilities, so that if either failed the other could still support the total operation. To guard against the remote possibility of both systems going down at the same time, back-up arrangements were negotiated with neighbouring sites, and it was a requirement of the new system that there should be satisfied local users with whom a similar deal could be struck.

There followed a preliminary evaluation of six suppliers selected as possibles. This evaluation required demonstrations of the equipment, and attention was paid to operational and ergonomic considerations. Support arrangements and the possibility of local back-up arrangements were also considered. This enabled the team to reduce the original six to a short list of four, which were then evaluated in further detail.

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### **Rediffusion Computers' solution 'best suited the board's requirements'.**

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The result of this was a report which summarised the feelings of the team, and which listed initial cost, annual cost, and perceived advantages and disadvantages. It concluded with a recommendation, subsequently accepted, that the Rediffusion Computers' solution 'best suited the board's requirements'.

The system chosen has three R800/70 processors, each with 128KB main memory and 33MB disk storage. One is used as a development system and has three workstations, while the other two are used for production work and have 23 keystations each. Full switching facilities are incorporated. A feature of particular value to YEB is that maintenance can be done on-line during prime shift without disrupting the data entry workload.

Deciding which system to acquire, however, was only the end of the beginning. There then arose the task of getting the new equipment installed. Full production naturally had to be maintained throughout the changeover, and there were two other major constraints. There was no spare office space available, so the Rediffusion equipment was going to have to be installed in the same room as the existing Keyplex equipment. And that room had a solid floor, so special prefabricated keystation

wiring units had to be constructed and installed at the same time as the new kit.

These considerations made it undesirable to remove all the Keyplex equipment at once and switch over to the new system in one fell swoop. Instead, one of the Keyplex processors with its attendant workstations would be replaced by the first R800 as a first step. The second Keyplex processor would be replaced some time later. Negotiations were set in train with Honeywell to effect this.

As a result of this decision, conversion of the software had to be a straight translation job in the first instance. If anything went wrong with either system in this transition phase, the other would have to be used for all the urgent work. Revising the programs to take account of the more powerful facilities of the R800s was deferred till later.

Before the changeover period started, Rediffusion delivered a pilot system, consisting of a CPU with three keystations. YEB used this system for rewriting the Keyplex programs and testing them. At the same time, the operating procedures, security check files and keying instructions were revised for the new system, and operator training started. By the time the programs were tested and ready, more than half the operators had been trained. The remainder were trained as soon as the first R800 was operational.

Finally the time arrived for the changeover to begin. The first of the new systems, with 23 keystations, went in smoothly over one weekend, and was ready to run first thing on the Monday morning. That brought sighs of relief — apart from the normal problems, the joiner had had to produce the prefabricated keystation units completely blind, but nonetheless all of them fitted smoothly. The old and the new worked in parallel for a month, and then the second system was changed over another weekend with similar lack of undesirable drama.

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### **"better performance, fewer errors, and cleaner data"**

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After that the programs were steadily converted to take account of the new system's facilities, most notably its more powerful validation facilities and its use of full size screens on the workstations.

After a year's operation, Terry Lavelle sums up the effect of the new system as "better performance, fewer errors, and cleaner data". There have been very few problems with the kit, and these were dealt with promptly and efficiently under the maintenance arrangement.