

Summary: On-line transaction processing is the current fashion and many companies today will not even contemplate batch data entry solutions. So when an efficiency-conscious and profitable financial institution such as Hambro Life Assurance bucks the trend and uses key-to-disk for a good deal of its input, it is worth asking why. This article analyses the Hambro data preparation operation. It describes the workload and the equipment used and identifies a number of key management actions which in combination have raised productivity by 15 per cent.

In the minds of many, batch data entry has been relegated to the realms of ancient history by the march of technological progress. On-line transaction processing is the name of the game today, and superficially its advantages seem so enormous that in many companies no other solution is contemplated for new applications.

At Hambro Life Assurance, this view does not hold sway. The company does use on-line systems, but it also has a large key-to-disk installation, with two processors and 49 workstations, processing some 35,000 transactions a day. Says data preparation manager Ross Kitchener, "For the foreseeable future there will always be a need for bulk batch data entry. For some transactions it's quicker and more accurate; it's more efficient; and it enables us to provide a better service to our users".

Such a view from such a source has to command both attention and respect. Hambro Life Assurance is, naturally, a financial institution: and financial institutions are well-known for their willingness to explore the frontiers of technical progress if they think it desirable. They are also well-known for demanding value for money. If such a body uses batch data entry techniques on a large scale, then many others should too.

Three classes of work

And Hambro Life Assurance has a track record that would impress anyone. Founded only 11 years ago, it has grown to the point where it is one of the UK's top 100 listed public companies, with funds in excess of £1.4 billion at the end of the last financial year. In 1981 it issued 191,000 unit-linked insurance policies, representing a sum assured of £2850 million.

The company's key-to-disk workload splits into three broad categories. First, there are documents relating to new business, principally life insurance, pensions and investment schemes. Second, there is what you might describe as "after-sales service" documentation: changes of name and address, changes of investment within funds, and so on. And third, there are documents relating to internal accounting requirements and the payment of commissions.

These three broad classes of work involve something like 300 different



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types of document. Many of them are not ideal punching documents, says Kitchener. "They are designed with the client rather than the data entry system in mind. We do make it easier for the girls by putting menus and prompts on the screen, much as is done in on-line systems".

On a typical day, there are some 35,000 transactions of all kinds, involving around two million key depressions. The aim is to clear all work on the day it arrives — "we can't afford to let the data prep department become a bottleneck".

Hambro Life Assurance has been a key-to-disk user since 1974, when it replaced its IBM card punches with a Rediffusion Seecheck system. That equipment immediately produced such an increase in throughput that Hambro was able to send four of the original 14 keystations back. As the company's business grew, so more keystations were added, till eventually the machine was running to capacity. The theoretical maximum was 32 keystations, but Hambro found a degradation of performance when it reached the mid to high 20s.

A new system was necessary and Hambro looked at the market to see what was available. It decided to stay with its existing supplier, Rediffusion, and ordered two of the latest R400 processors together with 32 keystations. Since then the number has risen to 49, one above the maximum limit for a single processor. The stations are normally

shared between the two processors, but when either of them has gone down Hambro has found that 48 keystations will run off one with an acceptably small degradation in performance.

Kitchener says that his operators average 11,000 keystrokes per hour. Taking time out for breaks and for non-productive work such as sorting out batches, that results in a daily output of around 55,000 keystrokes.

Such a figure is only meaningful in the context of Hambro's workload. As Kitchener points out, data prep competitions normally produce much higher figures, somewhere near 30,000 keystrokes an hour, but they are completely artificial circumstances. One of Hambro's operators did enter Rediffusion's competition and came third with a rating of 28,000 keystrokes per hour.

Highly efficient

So perhaps the real indication of the key-to-disk equipment's performance is the figure quoted earlier of 35,000 transactions a day. Kitchener thinks it would be impossible to get near that with the same number of on-line data entry terminals for those particular types of transaction.

Hambro Life Assurance, in its annual report, identifies "a highly efficient and professional administration" as one of the four cardinal principles on which its philosophy and objectives are based. So it is not surprising to find that careful

Getting the best out of key-to-disk

thought has been given to ensuring that the best results possible are obtained from its data prep operation. The actions that have followed will be of interest to data prep managers everywhere.

As a first step, the company has developed its own statistical analysis system to provide both a measure of efficiency and a yardstick by which potential improvements can be tested. This system uses the operational data recorded by the R400 operating system, and runs on Hambro's IBM mainframes (there are two systems, a 3081D and a 3033N).

The system has also provided the company with a means of keeping the operators informed about their individual performance. Every day each girl is given a copy of her own statistics report so that she can check her performance and progress for herself.

The girls are paid by results, not on a bonus basis but according to a productivity rating determined by the analysis system. There is a series of pay grades, through which an operator can expect to progress as she gains in experience and proficiency.

One performance factor highlighted by the analysis system was the extent to which throughput is dependent on a smooth flow of work throughout the entire department. Accordingly, a data control operation was set up to make sure this happens. Apart from ensuring that the operators receive work in a controlled fashion in accordance with their own measured ability, this section is also responsible for varying the workload of each girl, so that each gets her fair share of each of the 300 different types of job.

This naturally makes the work more interesting. Ensuring job satisfaction is one of Kitchener's most important objectives and he has set about achieving it in a variety of other ways as well.

First, "we try to make it as relaxed as possible, with no silly rules". The operators work in groups of three or four, sharing the work between them and helping each other out. Each group has a supervisor, who sits and works with them. This has helped to make the girls feel involved and relaxed while providing the necessary degree of management control over production rates and quality.

The operators key for about two hours at a time, with a quarter hour break mid-morning and mid-afternoon and an hour off for lunch. They have their own rest-room with coffee facilities, nicely decorated and with pictures on the wall. While working, they can listen to music if they wish. A piped system has been installed, and the choice of music is under their own control. Each group of operators can independently control the volume. All of this makes for a pleasant atmosphere that you can feel the moment you walk into the room.

Perhaps the best indication of the attention paid to the comfort of the operators is the thought that has gone into the office lighting. Initially the lighting was by phosphorescent strips, but it was found that the operators developed a lot of headaches. Various cures were tried. Yellow blinds were put over the windows, but this cut out a lot of natural light. So white blinds were installed instead.

In the meantime, the diffusion of light in the office was analysed, and it

was found that there were two major problems. The first, reflections from the keystation screens, was easily solved by going for a matt finish. The second was rather more obscure and rather more difficult. It was found that the keys themselves acquired a highly polished finish after a period of use and their slightly dished design serviced to concentrate the reflected light. The solution was to put prism diffusers on the lights.

But the matter wasn't left there. Since then Hambro has tried a new solution – uplighting. The lights stand on pedestals and are shielded so that the light is directed up onto the ceiling, which is painted white and so reflects it evenly back down again. These devices have been the subject of controlled experiments that have shown that headaches are reduced with all the groups of operators. As a result, they are now to be installed throughout the office.

The effect of all these management actions has been to increase productivity by around 15 per cent. This can be represented as some 5000 transactions a day, or as a saving of seven or eight keystations. Those are gains worth having. A happy staff is also a good thing to have. Hambro Life Assurance's data preparation department is certainly playing its part in the company's "highly efficient and professional administration", and its policies must provide food for thought for data prep managers everywhere.



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