

INDUSTRIAL DATA PROCESSING APPLICATIONS REPORT

Applications Payroll, Accounting & Management Information
Type of Industry Aircraft Manufacturer
Name of User Handley Page Limited
St. Albans
England

Equipment Used Bull-GE Gamma 10 Computer System

Synopsis

A Bull-GE Gamma 10 computer system is being used at Handley Page Limited, aircraft manufacturers, for payroll and accounting functions as well as for supplying management information.

In the payroll system three types of payments are handled - hourly, payment by results and group bonuses. In addition, the system takes care of the cost and bought ledgers.

Management information consists of P. E. R. T. , critical path analysis, shop loading data and other detailed analyses. This information assists management in developing production curves.

The management information at Handley Page consists of P. E. R. T. , Critical Path Analysis, Shop Loading information and sundry detailed analyses which assist management in formulating production curves.

Previously, accounting/payroll work was performed on an electronic multiplier and two tabulators plus the usual ancillary equipment.

A card computer was ordered as a next step because it was felt this would be an easy transition. This indeed did prove to be the case; there was no loss of continuity of information, no increase in cost, and information was more complete and obtained earlier.

Management at Handley Page has decided that the next computer will be a medium but expandable machine using magnetic tapes/discs; this will enable Handley Page's own systems groundwork to move forward in step with computer techniques.

It is intended to move on to a more sophisticated machine after a period of consolidation, but any systems tackled now must be able, without re-orientation, to form segments of a fully computerized system.

In general, the company's policy is to grow up with computers without the growing pains. In addition to this, machines are, as time goes on, less expensive and, owing to improved software, easier to use.

Handley Page, Britain's first aircraft company, has been pioneering aviation advance since 1909 and its designs have made contributions to aeronautical developments. Currently, it is involved in producing twin prop-jet business aircraft, called 'the Jetstream' for which there is a large and ready market in America and Europe. Handley Page is also producing Herald 50-seat regional-service airliners, modifying for new roles and overhauling Victor V-Bombers and refurbishing Hastings military transports.

Works Payroll

There are mainly three types of payments: hourly paid; payment by results; group bonuses.

For payments by results, every operation is given an agreed time; time saved is paid for at a bonus rate per hour according to skill.

Group bonuses are varied; men who by the nature of their work are unable to earn a bonus are paid a comparative bonus rate. A machine setter, for instance, receives the average rate of the operators who work his machines. Process workers, such as anodic attendants, receive an average of shop bonuses paid and so on. To meet this difficulty, a two digit code number is allotted to each group. The group percentage calculations are made on the previous week's earnings. The codes are then given values which are fed into the computer each week and are referred to when evaluating job cards for men working on bonus codes.

All work on the shop floor must have a job ticket. When the job has been completed, a card is punched and verified showing full details: man, order number, time taken, time saved, etc. At the end of the week these cards are sorted into man-number sequence and compared with a wage card. The wage card is a pre-punched card made from the master rate file; it is interpreted and sent to the time office where the total hours from the employe's gate card are entered. The wage card is then returned for punching and verifying.

The reconciliation of job cards against wage cards clears errors of calculation, omission and duplication and thus ensures an error-free payroll.

After proving, the job cards are listed by clock number to provide each man with details of his earnings. They are then sorted to provide labor costing figures which naturally tie back to payroll cash and hours totals.

Cost Ledger

Design staff time sheets are analyzed and evaluated; figures go forward to the cost ledger and are also used for budget and statistical purposes. Material issues and sales invoices are, at the moment, merely analyzed for inclusion into the cost ledger.

Labor costs, after the application of appropriate overheads, are carried forward to the cost ledger (which is also done on the Gamma 10). The cost ledger carries all charges shown under their various headings for every order. In addition, it shows the billing total against each line; it thus gives the profit on completed jobs and the actual cost against target figures.

The bought ledger is also maintained on the Gamma 10 and, when analyzed, provides totals for the stock ledger and the cost ledger in addition to printing a monthly remittance advice for each of Handley Page's suppliers.



COMPUTER ROOM AT HANDLEY PAGE LTD.

P. E. R. T.

The system produces a critical path analysis covering some 2,000 activities by running the cards through the computer three times, one run being an error-detection run. In addition the cards are further sorted by areas of responsibility to produce bar chart print-outs. (This is a large job for a small machine providing a logical area for expansion where lessons have been well learned.) This particular program covers the production of JETSTREAM prototypes and is proving most valuable. The system is unable to deal with the whole of the factory's production on one P. E. R. T. program. However, production is broken down to projects and dealt with in modular fashion.

Shop Loading

Cards are punched for every operation showing all vital facts: quantity time, scheduled dates, etc. Information is added to the cards as they pass through the factory. The works manager is therefore given a considerable amount of information as to the work on the shop floor, work held for tools or materials, completed work and work yet to be issued. All information is related to program date, shop and machine. Once again bar charts are issued by shop/machine showing percentage of available work against resource and program date.

Defense Ministry Spares Re-order Schedules

Handley Page has defense contracts, and Britain's Defense Ministry plans to modify/refurbish X number (classified information) of Victor or Hastings military aircraft. Thus, provision has to be made for the manufacture of the estimated requirement covering some 100,000 items. A multi-part schedule is submitted covering every item showing mark applicability, stock in the warehouse, stock held at maintenance units, dues in, dues out, last year's issues split between usage on repairs to components and repairs to aircraft, non-recurring items, active and inactive items. Separate multiplication factors are decided upon by the Ministry according to its repair program, and these factors are applied to the usage figures on components and aircraft. All other previously mentioned factors are taken into consideration and either a "surplus" or "required" figure is arrived at. Handley Page's schedule becomes an order from the Ministry to manufacture "required" items.

Computer Staff

The computer staff totals 20 persons including supervisor, analyst/programers, punch operators and control clerks.

Computer operating time is approximately 37 hours per week; actual time roughly 30 hours.

RESULTS AND FUTURE PLANS

Prior to the introduction of electronic computers at Handley Page, an electronic calculator and two tabulators were used for accounting and payroll. The transition to a card computer proved to be easy and the new system provided Handley Page with substantially more accurate and complete information.

In the future, Handley Page will use a medium size computer with magnetic tapes and discs which will also have the capability to be expanded. Presently, systems being developed will have to be compatible with any future system.