Keeping a finger on operations

THE director who wants to keep his finger on the pulse of daily operations may find the answer in data capture systems.

Such a system, when linked to a computer, can locate manpower, materials or equipment on the factory floor or out on the field in a fraction of a minute.

It can also identify bottleneck situations in the use of labour and help in the accounting of man-hours used for a particular job.

Service-oriented industries like banking, public relations and advertising may favour the system's ability to speed up data collation so that the analysis of labour and productivity can be done on a daily basis, rather than for the week or month.

The data capture system also does away with the need for the filling of forms and other administrative procedures associated with labour and productivity analysis.

Information on how one spends one's work hours is also more likely to be accurate if entered into the system immediately. A time lag of a few days before data is collated is bound to include error and less effective management of time.

The Apricot system

data capture, offering information on-line, is to be introduced in Singapore at the AutomAsia 82 exhibition.

The system comprises two components, a reader and a terminal.

The reader — a small, handy unit — reads encoded plastic badges which are slotted into it: the identity of the worker, his location and the time he has clocked in.

Where a reader is used to keeping track of the movement of materials and equipment, workers will have to slot in the card allocated to each type of equipment and punch in information on weight of materials (or other information) required for the company's purposes.

The terminal, which has the ability to store 1,000 badge codes at a time in its memory, then transfers this information to the computer for analysis.

The terminal can also provide an immediate printout of data collected.

The Apricot system (top right of picture) can be used to monitor operations on the factory floor

A Singapore company, International Engineering and Textile Services Pte Ltd, plans to market this Indian-made system in this region.

A company spokesman said: "The most important factor in this business is finding cost-effective total system solutions for a client's needs and after-sales service."

The company is also looking into the possibility of manufacturing the systems locally.

A number of readers can be connected to one terminal. A reader costs about $2,000 while a terminal is priced at about $26,000, inclusive of software.

Computer peripheral venture

A LOCAL company has entered into a joint venture with an Indian company to manufacture computer peripherals in six months' time.

The computer peripherals include badge readers and terminals used in data capture systems. These were developed in India by Delhi Cloth and General Mills (DCM), which has diversified into the manufacture of mini and microcomputers in the last ten years.

The local company is International Engineering and Textile Services Pte Ltd. The Indian DCM is involved in the manufacture of textiles, sugar and engineering products. The group had a turnover of $1 billion last year.

Mr S Bhakat, manager of International Engineering, said both partners have not decided on a name for the joint venture, However, they are going ahead with assembly, which will initially be at the local company's premises at the PSA Multi-Storey Complex at Pasir Panjang Road.

The new venture has a paid-up capital of $500,000. It is now looking for a factory in Jurong.

Investment will increase to $700,000 in six months' time when the company goes into the manufacture of the peripherals.

It will require between 15 and 20 technicians and computer programmers in the next three months. An additional 10 employees will be needed when the company starts manufacturing here.

But it will be important the peripherals from India for integration into a system called the Apricot/I.

Apricot is the registered trade mark of DCM Data/ Products India, a division of DCM.

Essentially, Apricot/I is a general purpose data collection system for time-related data. It collects data from a badge reader through plastic badges or a keyboard. The data is transferred directly to a controller which can be hooked to a mainframe.

The system can be used in both manufacturing and service industries for job costing, inventory control, monitoring of job status in production or design. It can also be used to collect time and attendance data as employees clock in and out.

A system, comprising both software and hardware (badge reader, terminal and controller) costs about $40,000. The Apricot/I system is now exhibited at AutomAsia '82 at the World Trade Centre.

Mr Bhakat said: "In one-and-a-half years' time, when we raise investment to $1 million, we would qualify for pioneer status.

"The Economic Development Board has indicated that it is willing to give us a ten-year tax holiday when our investment level reaches $1 million, provided no similar investment by other companies is made during that time."

Mr Bhakat explained that although the new venture is not capital intensive, it is the sort of investment which Singapoe is encouraging.

"Our venture involves the development of skills as we will be training local staff to write the software programs for the systems."

COMPUTERS: MADE IN SINGAPORE

Indian firms to set up manufacturing base here

CATHERINE ONG

SINGAPOREANS will be able to buy made-in Singapore computers with Indian technology when two major Indian corporations join hands to set up a manufacturing base next year.

DCM, India's fifth largest corporation with a group turnover of $1 billion, is setting up a joint-venture company with International Engineering & Textile Services (IETS) to initially make computer peripherals.

DCM, formerly called Dehli Cloth and and General Mills, is a widely diversified company employing more than 25,000 employees while IETS is a local company formed four years ago owned by the Mehta brothers from the Star group in India.

In the first year, the investment will be a modest half a million dollars which will then be increased by $200,000 when plans :e off. The first product to be manufactured next February is the Apricot which took Mr Rajiv Swarup one year to design in New Delhi.

Apricot is the acronym for attendance, production, recording, and Information control terminal which depicts the main functions this computer peripheral can perform. Mr S Bhakat, manager of IETS, says Apricot is a data system which plugs the gap between the time the data is received and the time it is available on the computer.

It can be used by any organisation that has a clock-in and clock-out system for employees, or requires job costing or inventory control. A basic Apricot system comprises a $5,000 terminal, two badge readers of $1,000 each, one plastic badge and a concentrator costing $1,200. The system can be linked to a microcomputer where information is received and processed.

Apricot will be on sale beginning next year and the local market will be the first target while the region will be the ultimate goal. The joint venture company which awaits the Indian government approval has also plans to manufacture other types of peripherals and computers which are currently manufactured by DCM in India.

The joint venture is the first Indian company known to be setting up in Singapore to make computer peripherals and one of a handful from the developing country to manufacture here. Two others, Tata and Far East Computers, are already here although Tata will rely on US technology through its agreement with the Galaxy group in the States.

So far, local vendors have mainly been tapping computer knowhow from companies in the US and Japan and the transfer of technology from a less developed country to Singapore has been few and far in between.

Mr Kapil Jain, a product specialist at DCM, recalls that the first computer was installed in India in 1955 in the government's department of statistics. That was the Hollerith system, a very old-fashioned computer which had vacuum tubes sprouting from its sides and occupied several floors in the building.

In the 1960s, International Business Machines (IBM) made its presence and sparked off a keen interest in the chip. The first indigenous computer manufacturer was none other than an Indian government-owned company, Electronics Corporation of India.

Other Indian entrepreneurs were not slow in jumping onto the bandwagon and by 1978, there were at least 450 computer vendors in the country. A catalyst for further growth (another 30 to 40 vendors) was the expulsion of IBM from India in that year when it refused to inject Indian equity or pass on its technology to the Indians.

Mr Jain says DCM introduced the first microprocessor-based product in India in 1975. It was also responsible for marketing the first electronic calculator in its country.

Most computer companies in India are not export-oriented because the home market, with a population of 720 million, is so huge. Besides, it costs money to go abroad and unlike the Americans and the Japanese, Indians are not as bold in their marketing efforts. This is partly hampered by the fact that Made in India brands have yet to make any breakthrough among users outside their own country.

But probably the greatest obstacle that any computer salesman in India has to face is this: how do you sell a labour saving device in a country where labour is in an overabundant supply?

Notwithstanding that, Mr Bhakat says one in every five computer engineers in the world is an Indian.

APRICOT is latest in micro market

APRICOT is one of the latest fruits from the fast-expanding microcomputer applications market.

Developed by a New Delhi-based company called DCM, APRICOT is a micro-processor based time-keeping device with applications in attendance reporting, job-costing, production and inventory control.

The system known as Attendance Production Recording Information Control Terminals (APRICOT) consists of a real-time badge reader, a terminal and a Radio Shack TRS-80 microcomputer.

It can handle up to 1,000 entries. For entries over 1,000, the TRS-80 can be hooked to an IBM, a DEC or a Hewlett Packard computer using standard IBM 3879 protocol.

The system works much the same way as the manual punch card system except that data is stored in the computer instead of the punch card. As unpaid leave and overtime is recorded automatically, APRICOT reduces the time taken in computing saleries.

Depending on the configuration, the system can cost S$20,000 to $40,000. It is available in Singapore through International Engineering and Textiles Services, a company trading in machines and textile automation, and offering consultancy services.

APRICOT was introduced in New Delhi in June and there are now eight installations. It was shown in Singapore a fortnight ago at the Automasia trade exhibition.

Having received 'enthusiastic enquiries' during the exhibition, DCM is confident of a market in South-east Asia and is looking to setting up a manufacturing plant in Singapore under a joint-venture with IETS. DCM currently operates three plants in New Delhi.

Service Coupon No 21

TRADE WINDS

AN INTEGRATED DRIVE

THE DATA Products division of DCM is going international. The company has opened an office in Singapore for software as well as hardware sales, and is setting up a joint venture there for the manufacture of computer peripherals, in partnership with International Engineering and Textile Services Pvt Ltd, Singapore. DCM has also opened an office in Fort Worth, Texas, as another base for its software export operations, with a programme to develop software systems for Tandy Corporation. A few Indian engineers are already posted in Texas, and more are due to go soon. DCM has also signed up with Control Data Corporation for the manufacture of hard disc drives, with an investment of between Rs 1.5 crore and Rs 2 crore. The Data Products division had a turnover last year of over Rs 12 crore, and is expected to witness a quantum jump soon because of new systems being offered, some of them in partnership with Control Data.

Indian computer firm in Singapore

The first fully Indian-owned company to promote transfer of Indian computer technology in the region will soon be set up in Singapore.

The new company, now awaiting the final approval from the Indian Government, will be a joint venture

Trends 7-2-83

between the two New Delhi and Bombay based business houses.

The company, to be known as International Data System, will initially import peripherals from India for assembly and integration into a system called the "Apricot".

According to Mr Sanklv Bhakat, operations manager of the new company, after a few months the company will manufacture the entire peripherals in Singapore and also train local men.

Mr Bhakat has said the 'Apricot' is a micro processor-based time keeping device with application in attendance reporting, job costing production and inventory control. It consists of a real time badge reader, a termi-

nal and a radio shack micro computer and can handle up to 1,000 entries without seeking transfer of the data to the micro computer.

A similar system, he has said, exists in the United States and European countries but is new to this region. Therefore, the Indian technology has "tremendous potential".

At present two Indian computer firms are operating in Singapore. One has a plant with local participation, while the other is in the process of manufacture of main frame computers with American technology.

Indian computer firm to be set up in Singapore

SINGAPORE, Feb 5.—The first fully Indian-owned company to promote transfer of Indian computer technology in this region will soon be set up in Singapore, reports UNI.

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Transfer of computer technology to Singapore

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Indian knowhow for Singapore

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Mr Sankiv Bhakat, operations manager of the new company, told UNI that after a few months the company would manufacture the entire peripherals here.

## Customised Software

Technological developments in computers continue to improve performance and reduce hardware costs. However, while computer increases their capability and flexibility by leaps and bounds, the complicated process of feeding important data into the computer becomes a constraint. Data collection and keying-in continues to be expensive, time consuming — and error-prone due to the 'human element'.
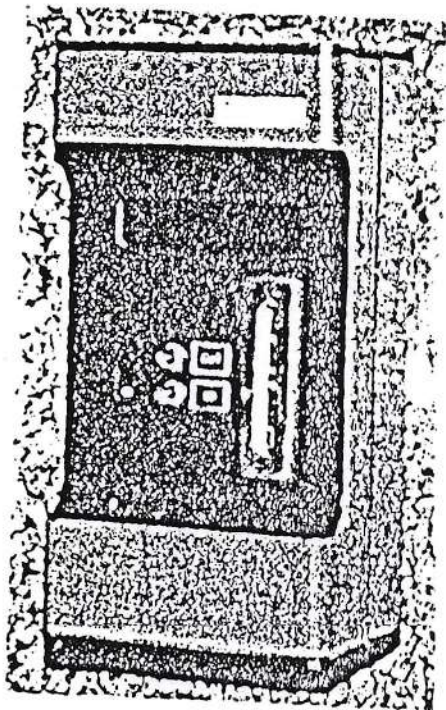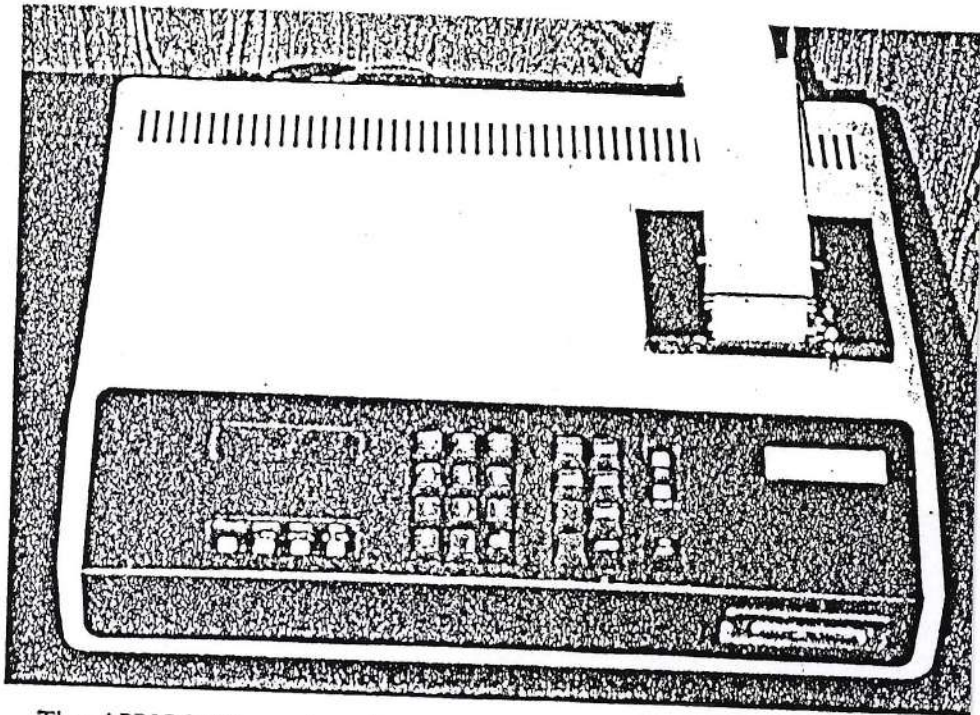
The APRICOT/1 — Attendance, Production Recording and Information Control Terminal — is designed specifically to bridge this gap between the availability of input information and getting it into your computer economically by offering speed, accuracy and more comprehensive information.

For example, the APRICOT/1 System instantaneously reads an employee's code number and sends all relevant attendance information to your computer for an immediate feedback on hours worked, absenteeism, late-coming and data on department or skills. You can use some information to further compute wages and salaries.

The company's major strength lies in its ability to write customised software to process and generate your specific requirements. This provides you cost savings in Clerical labour; Key-punching and verification; Data entry and calculating equipment; Consumables/supplies, such as time-cards; and Updated Management/Personnel .Information.

For further information, contact: International Engineering & Textile Services Pte Ltd, Block 18 PSA Multi Storey Complex #10-01, Singapore 0511, Tel: 2721206. □

IETS system keeps time for Keppel

KEPPEL Shipyard is bringing its 4,000 workforce on-line with the introduction of a microprocessor-based attendance recording system at both its Keppel and Tuas harbours last week.

But Apricot, as it is called, is a far cry from the mechanical punch-card system we are familiar with. The system will keep tabs on a variety of staff who are bound by a gamut of written and unwritten union and management rules.

Developed by International Engineering and Textiles, it will consist of seven Apricot terminals, 14 badge readers and two IBM PC-XTs at Keppel harbour and six terminals, 12 badge readers and two XTs at Tuas.

The XTs will in turn be linked via modems to Keppel's new Fujitsu mainframe.

But the path to acceptance for the system was not an easy one. Mr S. Bhakat, deputy general manager of International Engineering and Textile Services, said one of the reasons was the fact that it had to satisfy the union that no workers would suffer any loss in salary as a result of the implementation.

This meant that the system had to go on site trial to prove that it would not err.

As a result, the software had to take into account every conceivable combination of rules written or unwritten, practised or not. not.

The system went on trial with one cost centre in September last year, the plant and maintenance group with about 300 workers. A second group of 150 workers went on the parallel run in December before Keppel placed an order with IETS in January this year.

Mr Bhakat said the strength of his product was software. Other products of this sort had not been very successful because there had not been enough software development.

The system had also to be made tamper-proof. Security had to be written into the software while the hardware had to be weather-proof and rugged enough to take a physical blow.

Posed

In addition, it had to be fail-safe. What, posed Mr Bhakat, would you do if a failure in the system prevented the company from ascertaining the pay of its daily and hourly-rated workers. How would you pay them?.

Mr Bhakat said this was the most complicated project they had undertaken, because nowhere else are the rules more complicated. In addition, the fact that labour relations in Singapore were not hostile, unlike in India where the company has much experience, meant that there were many rules based on faith and which had to be observed, understood, and then incorporated into the system.

Two other companies, General Electric Consumer Services and Union Carbide are also installing the system.

Service Coupon No.47

Keppel Shipyard computerising staff clocking system

KEPPEL Shipyard has started computerising its staff clocking system at Keppel Harbour and Tuas Yard, in efforts to improve the accuracy of time-keeping data.

It is believed that Keppel is the first shipyard in Singapore to embark on such a project.

Work on the system was carried out by International Engineering & Textile Services (IETS), which supplied the project on a turnkey basis.

According to IETS, computerised clocking systems are also being implemented at General Electric (USA) Consumer Electronics and Union Carbide.

Keppel Harbour went on-line on Monday, and the system for Tuas Yard is scheduled to operate within a month.

With computerisation, all industrial and junior administrative employees of Keppel Shipyard will be clocking in for work by inserting a special badge through the Apricot optical badge reader.

The badge reader reads the identity and checks the authenticity of the inserted badge. It also records the employee and clocking details in the memory of the Apricot data capture terminal.

The raw data, fed through a micro-computer, is then converted through software designed and implemented by IETS into payroll input data and into management reports as required by Keppel Shipyard.

Before awarding the contract to IETS, a pilot project was carried out for over 10 months at one cost centre in Keppel Harbour to compare the accuracy of the computerised system with the conventional clock card-based system.
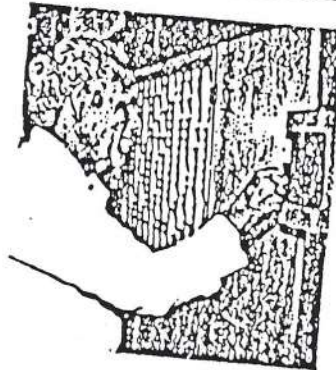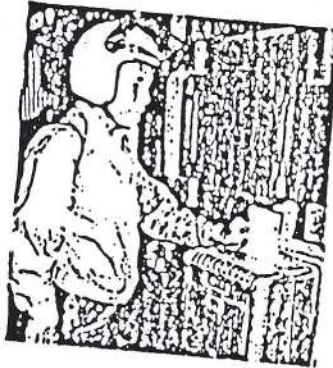
Computerized Timekeeping At Keppel

AFTER more than a year of study and development, the computerized timekeeping in Keppel Harbour has become a reality. 23 July 1984 marked a significant milestone in the history of Keppel Shipyard when the industrial workforce, yard-wide, commenced computerized timekeeping and did away with manual cardboard clock-cards.

By so doing immense savings are being achieved in time spent on preparing and computing data. Management reports can also be generated at an instant and stored in memory indefinitely, leading to better productivity and efficiency.

The Tuas yard will commence its computerized clocking shortly after the parallel run is satisfactorily carried out. Once that is done, the whole industrial workforce's time-keeping would be fully computerized.

COME ON SINGAPORE
LET'S ALL DO A LITTLE BIT MORE

Eureka can solve many parking woes

AN ATTENDANT-FREE, parking charges collection system which requires no effort from the user is being offered as an alternative to existing parking systems in Singapore.

The Eureka Access Control System, from International Engineering and Textile Services (IETS), comprises a transponder the size of a wrist watch and a tag interrogation system.

IETS deputy general manager S. Bhakat gave the example of how it might be offered as an alternative to the present HDB coupon parking system.

Bhakat said that eventually if such a system were adopted a ar owner could pay all his parking bills through the Giro system.

From the driver's point of view, the system would remove one of the most irritating aspects of the coupon system: Underestimating the length of time of his/her appointment resulting either in fines or wasted coupon time.

Bhakat also pointed out that the system would be suitable for use in the Central Business District restricted zone scheme relieving the police from having to post officers at all the gantry points every morning.

The transponder consists of a receive and transmit antenna and a customised chip. The tag interrogation system also has a receive and transmit antenna and a local microprocessor system LMS which is about 2" x 9" x 1 4" thick to be set in walls and around door frames.

The 1" x 1" transponder contains enough intelligence to identify itself to the LMS without any effort from the user. The transponder may be attached to security tags, on the user's body or on vehicles.

The tag incorporates 100 alphanumeric characters of information about the user and determine what access and time periods are permitted to him. This eliminates the need for the present HDB coupon system.

On approaching a magnetic field generated by the LMS, the tag will send out a signal identifying itself. After decoding and logging the identity of the tag, the LMS will trigger the release of a door lock or car park crash barrier depending on the application.

The system allows tags which have been lost to be immediately invalidiated so that the integrity of the system is preserved.
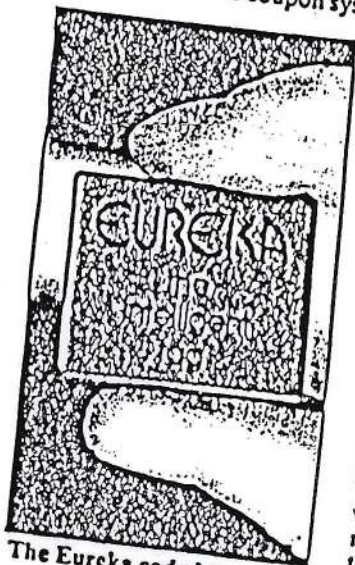
The Eureka coded tag.

Computerised timekeeping keeps track of staff, wages

PAYROLL computation at Keppel Shipyard and at General Electric (Consumer) Pte Ltd is no longer a series of laborious routines preparing time cards, sieving through raw data and working out individual wages.

Keppel's 1800 and GE's 2500 workers are issued with plastic badges on which their employee and work centre information is encoded. At the start of a shift, each worker simply feeds his badge into a badge reader hooked to an Apricot/1 terminal. The Apricot (Attendance, Production Recording and Information Control Terminal) is a general purpose data collection system for time related data.

The time of arrival and departure of each worker is recorded. This data is then transferred to a microcomputer via RS232 and RS422 communication links which runs the Star Time Office management software. The software is developed such that the user defines its own parameters and incorporates company rules and other statutory requirements.

The main application modules include time-recording in daily attendance files, calculation of wage related hours such as overtime, leave management and preparation of all payroll input data and printing of exception reports.

At GE, there are eight terminals and 16 badge readers. After every three or four hours use, the data collected by the PC XT is transferred to the host IBM 4381.

According to GE's accounting operations manager Y K Tang, attendance reports are generated for the 30 to 40 different areas in the factory, keeping management informed of the employee status.

Keppel installed a total of 25 badge readers at its shipyards at Keppel and Tuas harbours. DP manager Francis Tong said that with computerised timekeeping, the company was able to reduce manpower involved in preparing time cards and manually computing the data by about 30 per cent.

At present, data collected at the two harbours are held on diskettes and transferred to an IBM PC at the company's data centre.

Keppel is looking into the possibility of using dial-up lines to speed up the process of transmitting the data from the terminals to the data centre.