ELECTRONIC CASH REGISTERS

An expanded model of the Class 230 has been introduced covering Preset amount applications. Before detailing the variations of this feature, a brief explanation of the first Electronic Cash Register is given for those not familiar with the C230.

Numerous advantages were achieved over the conventional Registers i.e. speed of operation (90 ops per minute), Keyboard layout with easy depression, greater number of accumulative totals, a calculating feature, Electronic Display, an audible bleep, are but just a few, but the most important asset of all is the ability to introduce new models with very little alteration to the basic design.

Its thirty department totals are accessed through the block of address keys on the left side of the keyboard, amount entries are made through the 10 key keyboard in the centre, and the Transaction total keys are contained on the right side together with the five Clerk initial keys. The mode keys including the calculator and the Auto "Read" and "Reset" are placed between the keyboard and Display panel. The audible bleep is an assurance sound to inform the operator that the key depression has been accepted in memory.

The Printer is based on the Class 21 machine, providing a good clear print with exceptional performance.

Easy access to the various electronic units is of great assistance when trouble shooting.

The Introduction of the Preset Model, 230-141-0, although similar to the standard machine in electronic and mechanical layout, displays, prints, and adds a predetermined amount by depressing a single address key. This increases the machine operation to 100 ops. per minute making it an acceptable machine to fast food systems, and Motor service areas, etc.

Address keys are optional and can be preset, or left open to function as normal department keys, according to the User's requirement and by simple keyboard entries the preset prices can be altered or checked.

Each address has two locations in memory, the first stores the preset amount or alternatively functions as a normal total, and the second stores the number of items or operations of the address key. On Read or Reset operation the two quantities contained in these locations are multiplied together to produce the cash total for each address. This has been accomplished by an alteration to the logic function of some of the keys and making full use of the multiplication feature, without destroying the ability to do normal multiple, subtract, void, non add, and change computations operations. A preset amount can be multiplied for a repeat operation by holding down the address key, or by use of the multiply key and the ten key keyboard.

To alter a preset amount and print out of a price check, alterations were necessary to the keyboard. Price set and Price check keys have been added to the transaction block, dispensing with the Charge, Paid out, Received on account. Auto 1-30, Auto price, and Auto Department keys have replaced the standard Auto Clearing Keys. Price Check can be made in Read mode on one or more keys, individually or by use of the Auto Price key for the full complement of thirty addresses.

Read and Reset controls operate in the normal way. Auto Department prints totals from the "Open" keys and Auto Price prints total from "preset" keys, whilst Auto 1-30 prints all thirty totals with their associated item counts.

Keyboard interlocks prevent an "open" Address key being depressed without an amount incorporated, and a preset Address key is locked out if used with amount keys.

TECHNICAL NOTE:

Should you require a replacement P.I.B. for the ½p model i.e. 230-101, complete sets are held at the following locations: BIRMINGHAM, BRISTOL, BONHILL ST., CROYDON, DERBY, DUBLIN, GREENFORD, IPSWICH, LEEDS, MANCHESTER, GLASGOW AND NEWCASTLE. Your request should be directed to the nearest Centre, and NOT the Bulk Stores. However, P.I.B.'s for 230-141 (Preset) should be made to the Stores at 1000.

250

E.C.R.

Due to flexibility in programming the number of totals are determined by the customer's requirements, with up to a maximum of ninety department and distribution totals. Major departments can be further analysed by using the distribution total features i.e. Grocery broken down into thirty further disections. Change computation, Subtract, Void, Error, Cash and Cheque tendered item count totals are but a few of the options available.

PERIPHERALS

The basic C250-1000 series can have the following peripherals:

C717 PUNCHED PAPER TAPE READER. Used for automatic programme input. (The programme may be entered through the keyboard and takes approximately 40 mins).

C710. Class 410 Interface for change dispensing.

Further models being released later in the year such as Hotel Posting, V.A.T., Fast Food Systems (Pre-set Amounts), and Data Capture capabilities will add the C785 Wand Reader and C761 Terminal Cassette Recorder peripherals to those already mentioned.

CONSOLIDATION

Two levels of expansion are available:

REGISTER CONSOLIDATION.
The consolidation feature enables the totals from up to eight C250 satellite registers to be transmitted to a master C250.The totals transmitted from the satellite registers are added to the like totals in a master register.Thus,a single report can provide details of the activity of an entire store, and be available at any time. The cashier identity number and the satellite register number can be updated from the master.

EXPANDED CONSOLIDATION.
This feature incorporates the facilities mentioned above together with the following additions.

The ability to transfer a cashier's totals from satellite to satellite provides a useful backup of relief cashiers, and avoids delays in continual cashing-up. The date, complete programme, or price look up table can be modified in all satellites without individual alteration. The master in both levels can be sited either on a checkout or in a central control office within a distance of 1000 feet.

N.C.R. have recently released a further addition to its Electronic Cash Register range with the introduction of the Class 250.

The 250-1000 E.C.R. is a self-contained, free standing, point of sale device. The basic model specifically relates to general purpose check-out requirements,and greatly increases our potential in this market. The flexibility obtained by programming introduces it to many other applications, and provides a fully comprehensive analysis of trading in the form of printed forms.

The design permits easy access to the eight modules which make up the C250, many of which have already been proven in the C280-270-299 systems. Extensive use of MOS/LS! circuitry enable the board change repair philosophy to be used in conjunction with the resident diagnostics.
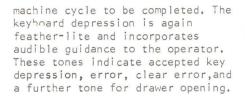
CONTROL

The control of the machine is under the protection of three locks,

1. On/Off
2. Mode (Read,Reset,Special functions)
3. Programme

which are used in conjunction with a four digit code number input through the keyboard to prevent unauthorised machine operation of any type.

KEYBOARD

The numeric keyboard is of the familiar 10 Key type with a further 46 or 90 locations for Function/Control keys. These keys are fully programmable and can be located in any position. The operator's speed is in no way restricted by the register's printing cycle, as a "buffer" stacks up keyboard entries eliminating delays, in awaiting the

machine cycle to be completed. The keyboard depression is again feather-lite and incorporates audible guidance to the operator. These tones indicate accepted key depression, error, clear error,and a further tone for drawer opening.

The TCU is again similar to that of the C280-270-299, with the Read only Memory controlling all other module functions and data flow within the system.

Read/Write memory consists of an 8K bit core non volatile memory contained on two PIB's holding the customer's programme and all the totals.

THREE STATION PRINTER

The Helical Printer is a modified version of that used in the C280 providing receipt, slip, and a lockable journal cassette, up to 20 columns of full alpha/numeric print are provided at each station. The replacement of the Receipt roll is now fully automated, and the Slip Station facilitates a multiple copy print of an original and up to three copies. A second electro is fitted in the Slip printer for cheque endorsement.

Impregnated ink pads for Electro print and the long life ink cartridges do away with the ribbons and reservoirs, and can easily be replaced by the Customer.

PLASMA DISPLAY

Plasma display provides operators instructions, and up to an eight digit number together with a programmed decimal point. The Display panel is a collection of controllable lighted area (plasma cells) which are enclosed in a common gas filled envelope. Each segment of the numeric characters/ data descriptor position is a separate plasma cell and operates in a similar way to a neon bulb.

CLASS 250 TECHNICAL EDUCATION

The first C250 Technical training was given in London recently by Bunny Labbett to provide coverage to early deliveries. Bill Gibson, C280 Instructor, attended this school and will undertake future instruction at the IEC Dundee. Current pre-requisites are BETA, BCC, and C280 training. Course duration for the basic model is two weeks.

Technical Jargon

"HARDWARE". Refers to the physical components of a system, i.e. the mechanical and electrical units.

"FIRMWARE". This is a programme, fixed in manufacture, and usually held in a read only memory.

"SOFTWARE". Used broadly to refer to the programmes run on a system in contrast to Hardware. A more precise use is to confine this term to refer to those programmes provided by a system manufacturer to handle tasks common to all customers, such as file control, & communication with the operator.

Appointments

MR. J.FOTHERGILL, Appointed Area Supervisor, South E.D.P.

John joined NCR in October, 1961, as a Computer Maintenance Engineer in the Southern Area covering 405 systems. He undertook further training of 315 and Century systems and in June 1971 was promoted to Senior Technical Office in the Southern Area.

MR. J.O.McCANN, Appointed Senior Field Engineer, IRELAND.

John commenced with NCR Dublin in November 1963 as a CRD Technician. He later undertook A/AMD training and progressed through the range including 395-400-735/6, and of late had been working on 399 systems. His new appointment covers both the Northern and the Southern areas of Ireland.

MR. R.H.TARLING - MR. C.R.PEGG, Appointed Field Support Engineers, London Area.

Ron joined NCR in 1938, and Charlie in 1939 as 3000 Accounting machine Engineers. Both progressed through the commercial range, with Ron in later years transferring to the School at Brent. Their valuable knowledge and experience will now be used to support and develop Class 31/32/33 engineers in the London Area.

DUNDEE PART TWO

Transport between the Schools and Accommodation areas is provided by hired Corporation buses or the NCR Coach. A further option of "Shank's pony" is available for those who find difficulty in awakening, but as the distance is around four miles this course is not really recommended.

The majority of Engineers are housed in the Maybole block of flats sited in the City suburbs which consist of one, two, and three bedroom accommodation. Each person has their own room with shared use of a pleasant comfortable lounge, and T.V. available in every flat. The kitchen includes a refrigerator, cooker, non-stick saucepans (ideal for the amateurs), crockery, etc., in fact every necessity even to the extent of soap and washing up liquid. Whilst the occupants are expected to keep the premises tidy, the flats are thoroughly cleaned once a week by a cleaning staff.

For those who look upon catering as a chore the Maybole restaurant is the answer, but many of the lads find self-catering an advantage to be able to cook whatever their tastes demand, varying from the ever faithful baked beans to a four course meal. A number of budding Clement Freuds were around but F.E.D.'s first contender for the Freud award must go to Derek Buck, although I hasten to add the meal was not for his dog, but colleagues Peter Shipp and Bunny Labbett.

Flat 66 has been set aside for a communial recreation area and provides facilities such as Darts, Table Tennis, Draughts, Chess, Cards, etc. A telephone is included for those wishing to keep in touch with home, and a further one to cater for the heavy demand is currently being looked into. Public transport in and out of Dundee can be a little confusing as the route numbers change. Remember it's Nos. 17 or 20 into town and No. 16 out. The fare is 6p. and takes approx. 20 mins. Taxis are available for those who miss the last bus and cost around 75p.

Social outlets in and around Dundee are in abundance and cater for everyone's tastes for those who are prepared to look for it. The short cut can be found in Instructors, Gerry Rushton, Bob Lowden, and the Centre's driver, Jim Smith, who have devoted many hours of their time to ensure as many benefits as possible are gained for your advantage. Dundee Manufacturing can provide honorary membership to their Social Club which has many interesting sections and with car hire available at reduced rates, weekend trips to the Aviemore Sports Centre is becoming very popular amongst the Students. Other sports available include Football, Rugby, Golf, Canoeing, Sailing, Karate, Bird Watching (Both feathered and the other variety), and a Dri Ski Run with instruction.
Before the fuel restrictions Coach trips were organised on Sundays, and it is hoped these will be restored as the weather improves. There are also disco and social evenings arranged in the local hotels and clubs, providing a good nights entertainment for the majority.

Well Done

We extend our thanks and appreciation to the EDP Field Engineering team comprising of Ollie Carless, Harry Walker, Peter Mathews, and Bob Grey for their effort, and dedication, when carrying out repairs to a 657 Disc Unit and Controller at the Associated Book Publishers of Andover.

Faced with a very difficult situation they worked shifts around the clock for two days and nights. The System was finally "back on the air" at five o'clock in the morning.

Their action undoubtedly impressed our Customer. We were pleased to learn from our Sales Colleagues that orders have now been placed for additional equipment to implement an on-line system.

Service Aid

There is nothing more helpful to Engineers than a good description of a machine fault by Customers. Bob Rogers, London, appears to have hit the jackpot when he was called in to repair a Class 52 recently and found the following note attached to the machine:

YOU WONT TO ADD'S SOMETHING ON A BILL WERE AS BEEN CLOSED. AND YOU FIT LAST FIGURE IN THE RETANGULAR SPACE AND THEN PUT PREVIOUS BALANCE, BUT THE BILL INSTEAD OF GOING UP IT STAYS AT THE SAME PLACE, SO OBVIOUSLY IF YOU TIP SOME MORE FIGURE INSTEAD OF FOLLOW THE ONE AFTER THE OTHER THEY TIP ON TOP OF PREVIOUS FIGURE AND YOU CAN READ ANYTHING.

Comments: Cannot see where his problem was, can you?

New Parts Centre

You will recall in the previous issue we announced the appointment of Mike Clancy. He is now currently engaged in setting up the new Service Parts Distribution Centre

Following upon the institution by Mr. W. Anderson of a new and dynamic phase out policy, it became necessary for Field Engineering to ensure the required parts would be available in order that we could continue to provide reasonable and proper service support to those customers who currently utilize our older products.

Mike's task is to ensure the required parts are available in the Service Parts Distribution Centre to meet the requirements of the International Field Engineering. This would be a difficult task even if only dealing with current models, but the S.P.D.C. will need to stock parts for both current and phased out products

Orders covering parts for the phased out models are being placed with the Dundee factory on the basis of a projected ten year requirement. Once this "final buy" quantity has been produced all the relevant tools, jigs, etc., will be destroyed, therefore, it is extremely important the original assessment is correct.

Fireball Morgan

Do you know Pete Morgan? If you don't you're lucky as the Staff at the International Education Centre Dundee found out when he recently attended a BCC course.

Pete being the character he is, and never missing out on anything, was in a group being given a guided tour around the School when all chaos was let loose. Whilst opening the rear doors of a CRAM Unit he inadvertently leaned back, and although unaware of his action his elbow set off the fire alarm. This resulted in immediate clearance of personnel from the Schools and the Class 24 Assembly Line, which are sited in the Dunsinane Building, and emergency calls to the Fire and Police Services were made.

Inspector Jack MacFowler of the Dundee Riot Squad was somewhat puzzled by the absence of burning odours and the lack of smoke, but quickly came up with the answer, and delivered the culprit
We learn an application has since been filed to the Scottish Home Office for extending the height of Hadrian's Wall, sufficiently to block the flight path from Gatwick

Holiday for Two

No doubt you will remember our "Top of the Pops" Maintenance Content operative during May to July, 1973 which offered the attractive first prize of a four day winter holiday in Benidorm for two. The winner, Bruce Tate of Brent Centre, opted out of the holiday for personal reasons and exchanged prizes with the close runner-up, Bill Coleman of Dublin. The little men certainly worked hard for Bill that day.

It gave me great pleasure to be assigned to meet Bill and his wife Maureen, at Heathrow on the morning of the 22nd February. A slight setback occurred at the onset when Bill realised they had left their money at home, however, upon hearing their plight Dennis Kampff organised express delivery of the Spanish Gold to the airport. After a delay of some two hours they arrived safely in London but our plan to introduce them to Mr. Wallace, and lunch at Head Office needed revising to ensure their connecting flight time was met. On our drive to Luton I learned they have five children, two girls and three boys, with the eldest daughter insisting on being "Mum" whilst they were away. They were excited with the thought of the trip as they had never been to Spain, or experienced a Package holiday before, and with only themselves to look after it set the scene for a second honeymoon.

The weather in Benidorm was reasonable, but not warm enough for the attractive Maureen to parade in her Bikini (Sorry fellas we had been promised a photo). An excursion to a Barbecue, flavoured with the local Sangria brew and a persistent Spanish casanova all added to the highlights. They also met Alf Harris, ex manager of Hull Centre who retired in May of last year. Unfortunately, he is still not enjoying the best of health but was making the most of his stay. Monday evening's return brought a further delay attributed to Court Line's Tri-star, which managed to blow a couple of tyres and arrive three hours late. An overnight stay was quickly arranged, and far from spoiling their fabulous weekend turned into another "goody" for Maureen. She took Bill out for what he thought would be a pleasant stroll "window" shopping but he should have known better, for like all true female species Bill returned looking like a heavily laden pack mule being led down the corridor by a very complacent partner.

After lunching at Head Office farewells were made at Heathrow in time for the afternoon flight home.

Champions Celebrate

League Champions of the M.Q.C. Football Contest have celebrated in grand style over recent months.

DIVISION 1 BIRMINGHAM. Headed by Alf Dowsett, their social committee skillfully organised a highly enjoyable evening. Each player, coach, trainer, masseur, and office staff were allocated two tickets. A sherry reception with A La Carte menue of prawn cocktails with "T" Bone steaks, together with wine, soon had everyone in the party spirit, and raring to go for the next challenge.

DIVISION 11 DUBLIN. Dennis Kampff and his Engineers held thier party on the 22nd December at the George Hotel, where together with their wives they thoroughly enjoyed a Buffet Supper Dance.

DIVISION 111 MAIDSTONE. George Newman and his merry men held their dinner dance at the Beams Restaurant Headearn in an Olde World setting with an historic background. Apparently it dates back to the days of the Stage Posts when Highwaymen were rife, and if it was not for the fact their ladies were present ! would suggest their choice was most fitting.

DIVISION IV INVERNESS. Sid Eden's team wined and dined their wives at the Craigmonie Hotel, Inverness. An excellent meal followed by soft lights, hard beverages, and dancing was enjoyed by one and all.

E. Anglia Seminar

An Exhibition was held recently in Ipswich to present the Class 299 C230 and the Thermal Printer to Customers in the area, and the usual requests for coverage were placed with FED.

Ted Long, Supervisor for the area, recognised this as an ideal opportunity for his engineers to look over the equipment and, together with Don Parris from H.O. they presented an evening Demonstration and Technical Explanation of the machines.

Although many of the lads from the Norwich, Peterborough, Rayleigh, and Ipswich areas lived some distance away, this in no way deterred their enthusiasm for knowledge, with a turn out of some 50 members, certainly a credit to them. Refreshments were laid on to add to the flavour of the occasion.