

**Field
Engineering
Division**

CONFIDENTIAL MATERIAL FOR THE EXCLUSIVE USE OF NCR

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RE-ALIGNMENT OF MIDDLE MANAGEMENT

Since our announcement advising you of the new Senior Management appointments, considerable re-alignment of the Middle Management has taken place at Head Office and Brent.

To update you with these changes we briefly outline their new responsibilities, lines of communication, and locations.

Personnel reporting directly to Mr C O Green, Divisional Director

ALBERT BARDEN - Manager
Finance & Planning, H.O.

BRIAN BEAUMONT - Manager
UK Support & Tech Planning, H.O.

GEORGE ATTLE - Manager
Administration, H.O.

DENNIS BATES - Superintendent
London Service Centre, Brent.

LES BALL - Supervisor
Special Projects, H.O.



Personnel reporting to
BRIAN BEAUMONT:

STAN GRAVES - Regional
Specialist, Century Products
Support, H.O.

FRED FOWLER - Superintendent
Major Accounts, Business M/C's H.O.

FRED FARMER - Technical
Adviser, Retail Products. H.O.

GUIDO SIDOLI - Supervisor
Accounting Products, H.O.

CHARLIE MORGAN - Supervisor
Retail Systems & Terminals, H.O.
Supporting C210 - 220 - 225 - 230
C279 - 280 - 723 - 725 - 726.
PCMI/Fiche

BRIAN DORDAY - S.F.E.
(Electronic Cash Registers) H.O.

BUNNY LABBETT - S.F.E.
(Retail Systems - Microform)
H.O.

KEN BEARMAN - Supervisor
Financial Systems & Products, H.O.
Supporting C770 - 773 - 774 - 775
C450 - 482 - 446.

JOHN HARRIS - Supervisor
(C775 - 450 - 482) Brent.

TOM EDWARDS - S.F.E.
(C770 - 773), Brent.

TED MILLER - S.F.E.
(C775 - 774 - 446) H.O.

KEITH ROSSITER - S.F.E.
(C450 - 482), Brent.

DON PARRIS - Supervisor
C299 - 7200 Systems. H.O.

TOM BALDWIN - S.F.E.
(COM Recorders & Duplicators)
H.O.

ALAN CHARD - S.F.E.
(C8200 - 399) H.O.

RON HARRIS - S.F.E.
(Training Development) Brent.

GERRY PARSONS - S.F.E.
(Programme Diagnostics &
Software) H.O.

GEORGE RANKINE - S.F.E.
(On-line Communications) H.O.

PETER SHIPP - S.F.E.
(C499 - 399) H.O.

WILF PRESTON - Supervisor
Tech Administration & Education
H.O.



Personnel reporting to
ALBERT BARDEN

DAVID PELLY - Superintendent
Agreements & EDP Costing, H.O.

JOHN BURCHFIELD - Supervisor
Costing, H.O.

LOUIS VERTESSY - Manager
Stock Control, Brent

ROY WALKER - Computer
Co-ordinator, Brent.

JACK WOUFF - Manager
Costing Department, Brent.

Personnel reporting to
GEORGE ATTLE:

GEORGE PHILLPOT - Manager
Maintenance Records Department
Brent.

JOHN TAYLOR - Manager
Data Encoding & Control, Brent.



Personnel reporting to
DENNIS BATES:

DON ROGERS - Supervisor
Service Centre, Brent.

Circuit News in Brief...

MR. A. TILSON retired at the end of November after 40 years service with the company. Bert as he was more affectionately known to his friends has now returned to his native land and intends to enjoy his well earned retirement by the sea at Brighton.

Following the retirement of Bert MR. W.J. SCHOUTEN has been appointed Manager, European Field Engineering and will be based in Amsterdam. We wish him every success in his new position.

Following the re-alignment of the Supervisors areas in the Southern Region we reproduce a listing of the Centres together with the Supervisors responsible.

W R MACEY
BRIGHTON - GUILDFORD - OXFORD -
SITTINGBOURNE - SOUTH LONDON.

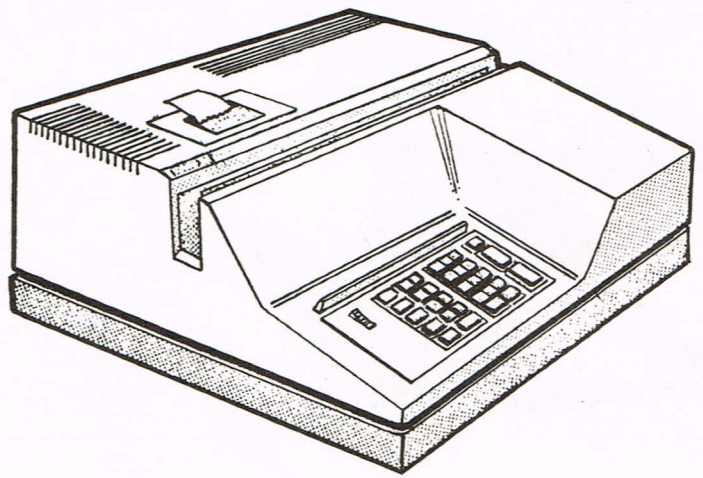
E SCOTT
CENTRAL LONDON, CR, BM, VRC, -
RAYLEIGH - ROMFORD.

D TREEN
IPSWICH - LUTON - N/W LONDON -
NORWICH - PETERBOROUGH.

CLASS 774

PROOF

ENCODER



The C7740 Desk Top Encoder is a low cost 4 total proof encoder. Designed for banking systems, it encodes in E13B MICR characters over 7 fields, and can be used as an adding machine.

Its design incorporates assemblies from the C775 and a micro computer system employing the INTEL MCS4.

4x1Kx8 bit ROMS, 1 custom PROM, and 4x80x4 bit RAMS coupled to the necessary driver circuits and power supply, motivates the system.

Logic and drivers are located on 2 PCB's.

The custom PROM provides for optional features such as check digit verification, check digit generation, field lengths, spaces and symbols.

Journal Printer

This is a SEIKO printer which has the capability of printing 18 columns, 13 characters to a column, (black print only) at the rate of one print line and paper space in 375 milliseconds.

Each special field printed is prefixed by an "F" and then followed by the number of that field.

A subtotal print in the proof mode will display the accumulated total and the number of items processed to achieve this total. Symbols will also be printed to denote total, plus, minus, etc.

Encoder Printer

The encoder printer is identical to the one used on the C775. It has one print wheel and encodes serially. Selection is by stepping motor controlled by the logic, it is positioned by an aligner and the print is completed by a solenoid driven hammer driving the back of the document against the selected character via a total transfer ribbon thus depositing the correct amount of iron ferrite ink to the document.

Because of the varying areas of ink to be deposited on the different characters the pulse to the hammer is logically controlled. For example 8 has the largest area and symbols have relatively smaller areas of ink and require different pressures of the hammer.

The introduction of the serial printer has increased the capabilities of this desk top encoder and because of this technique a complete document can be encoded apart from the amount field, for example, transaction code, check number, account number and two more fields which are available to requirements.

KEYBOARD

The principle of the keyboard is a simple leaf switch operated by each key, timing pulses from outputs of logic will format the key depressed as a pulse within a time frame, which can now be interpreted by the logic. Switch bounce, keys held down and simultaneous depressions are detected by logic and the audible error tone triggered.

Adding Machine Key

This is a stay down key and when down the system operates as an adding machine using Total One. When released the system is in the proof/encoder mode, the proof total is register one.

Auto Increment

This is a stay down key and will cause the serial number encoded to advance one when used in conjunction with the repeat key.

Repeat Key

A stay down key which will cause data indexed to be repeated until released.

Total Key

This key will print contents of register one only when in adding machine mode. When in proof mode the subtotal key only can be used. The total key is used with amount keys 2, 3, and 4 to total the 3 remaining totals. ie Total accumulated proof, Total debits and Total credits.

Print Key

This key is used when encoding any fields or field other than the amount field.

Serial No. Trans Code, Bank No, Account No Keys. These keys are used in conjunction with the amount keys to encode the appropriate fields.

No Document Key

The use of this key will cause the amount keys selected to print on the journal printer only and not encode a document, but will affect the totals.

Add and Subtract Keys

Are self explanatory and will affect the totals algebraically according to their sign.

Clear Key

Will clear errors and clear the data from keys indexed in error.

Resident Diagnostics

Startup diagnostics checks that every module is in the home position and logic is reset to zero, successful completion of this sequence is signified as "READY" printing on the journal.

Special diagnostics are used to check out the keyboard and logic. Further diagnostics are used to "set-up" the stepping motor of the serial printer to obtain optimum performance.

Transport

From the Hand Drop area the document to be processed is transported at high speed to the encoding station, it is then taken through the encoding station at slow speed and finally rejected into the pocket at a resumed high speed.

Training

It is anticipated that training will take one week for this equipment, as like most modern equipment board change philosophy is adopted.

Variations

This system is available using OCR CMC7 and IBM1428 print. Variations of this model will be Parent Machine controlled encoder, and stand alone encoder (no proof or Journal Printer) Details of which will be released.

Appointments

MR D JONES, Appointed Manager, Field Engineering Centre, Oxford.

Dave joined NCR in 1947 as a Junior Technician in Bristol where he was progressively trained on A/AMD Equipment. In 1958 he emigrated to Canada and continued to work with the Company until his return to Bristol in 1956. He was promoted to Depot Manager at Swindon in 1972 and successfully held the position until the Centre closure early last year when he again returned to his native Bristol as a DFE.

We wish him every success in his new appointment.

EDITORS NOTE

Please accept my sincere apologies for the delay in publication since our last edition. Unfortunately, I am engaged in a number of projects which needed to be given precedence, however, you may be assured we shall endeavour to improve on the frequency during the coming year. I might add, we do need your assistance with items of information which can be used in this media.

CLASS 210

The Class 210 is shipped from the Manufacturing Company with one lead disconnecting from the dual purpose battery.

Centre Managers must ensure only Engineers who have been trained on this equipment are permitted to connect this lead as incorrect fitment will result in damage to the wiring harness.

WELL DONE

DERBY

Mr David Bagguley, Cash Register Unit of Boots Ltd has requested we pass on his sincere thanks and appreciation to Jack Hillon and his engineers, especially John Wheeldon, for the assistance they gave during the opening of their new branch on Devonshire Walk.

He states without their help the installation of the new registers together with existing machines, would not have gone so smoothly.

EDINBURGH

The East Lothian District Council wish to express their appreciation to John Meal and Mike Johnson for the prompt assistance and courtesy shown when a malfunction occurred to their CL500 during payroll. The customer went on to say "I know you have a difficult job covering a wide area with your team and each customer, like ourselves, thinks their troubles are the greatest.

SOUTH LONDON

Mr Johnny Knox of Marks & Spencer wishes to express on behalf of his Directors thanks and appreciation to Mick Rodden for the first class assistance given by him during the opening of their new store at Eltham.

GLASGOW

Clydesdale Bank Ltd recently re-configured their Century Computer Systems which called for a major re-design of the computer floors. The efforts made by our N C R Personnel, in particular, Messrs Langer and McKenzie, FED Engineers went a substantial way to ensuring the success of the project.

Airdrie Savings Bank wish us to convey their thanks for excellent service provided by Scott Caldow and his engineers when their two Class 400 machines sustained water damage. The team headed by M Martin included J Falconer and J McMahon, worked to achieve the promised deadline of Monday morning and together with the assistance of Messrs Mackintosh, Hamilton, Andrews and Moriarty, redelivered the machine on time.

LONDON SERVICE CENTRE.

The British Bank of the Middle East has requested we convey their thanks and appreciation to Denis Bates and his Engineers, Roy Southwood, John Souster, and Peter Staines for ensuring eight C131-32 machines were ready for shipment to Beirut. Due to the recent troubles in the Lebanon the machines were required urgently to enable the Bank to re-open, this entailed working throughout the weekend to meet the deadline.

REEVE BUGGY - MACH 1

Buying presents for children these days becomes somewhat of a headache what with prices as they are and trying to obtain something different from the normal run of the mill.

Roger Reeve, Field Engineer, SLSC certainly came up with an idea which must have made his daughter Tracy's eyes light up when she saw the REEVE BUGGY MACH 1.

We learn from Roger his invention took six weeks of evenings to produce at a cost of £1.80 plus scrap parts. The basic make up is a mini starter motor - 1/31 Back cover - 2/31 Gearboxes & belts - 1/Plinth - some washing machine pulleys and an old 12 volt battery. A word of warning though if you are thinking of dabbling yourself Roger found on early trials, wheel spin left his dining room carpet the worse for wear and it also cornered on two wheels, but we are pleased to report these problems have been overcome satisfactorily.



You will re-call in a previous issue we published the first of a series of articles on Terminology written by our colleagues in NCR France.

We have pleasure in presenting the second write-up on the subject.

This is the first of several bulletins which will deal with the subject of HARDWARE.

Among the items to be introduced to the reader are modules, memories and electronic components. This edition of JARGON presents modules and their classifications.

MODULES

You know already that a terminal is a piece of equipment used for the capturing of and transmission of information (DATA).

In order to begin a study of a terminal it is necessary to find out about its component parts.

A terminal is, in itself, a UNIT which is referenced by its family name. This family name is called the CLASS NUMBER. Almost all NCR units, irrespective of type, are given class numbers by which the units may be identified. For example one can refer to the CLASS 270 (C-270), CLASS 42 (C-42) etc.

Terminals have a modular structure and all the MODULES which go to make up a terminal are PACKAGED in a CABINET.

Sometimes a MODULE may be a complete sub-assembly with only one specialised function eg a forms handler or a remote display unit. Sometimes the MODULE may be in the form of a plug-in-board (P.I.B.) which can have many functions but only one application.

This illustrates the basic point that the term MODULE in itself does not infer any dimensions of size, shape, weight, function or application. To do this one needs some more information ie the MODULE NUMBER.

In much the same way that the CLASS NUMBER can identify a particular UNIT the MODULE NUMBER can identify a MODULE or even a type of MODULE precisely. The system used to number the MODULES is such that it is generally possible to state whether a particular MODULE may be used in UNITS with different CLASS NUMBERS or whether it is restricted to one particular CLASS NUMBER.

THE MODULE NUMBER

$\frac{Mxxx}{1} - \frac{xx}{2} - \frac{xxx}{3} - \frac{xxx}{4}$ (x 0 to 9)

- 1 Mxxx basic MODULE designator
This is the module family. Module numbers range from M01 to M190. For example M01 indicates a key-board; M50 a communications adapter.
- 2 -xx the major variations
This indicates any important variation which exists in this type of module, for example:
M01-01 10 numeric key keyboard.
M01-02 alphabetic keyboard.
M01-05 alphanumeric keyboard.
- 3 -xxx CLASS NUMBER with which the module is associated. If the same module can be used in all classes of modular terminals, the three digits are replaced by STD (standard).
- 4 -xxx this indicates a variation of the module within the class number specified. For example
M01-01-280-02 is a 10 key keyboard for C-280 phase I.
M01-01-280-06 is a 10 key keyboard for C-280 phase II.

LIST OF BASIC MODULE DESIGNATORS

- M01 Keyboards
M02 Full Numeric Keyboards
M04 Function Display Keyboard
M05 Processor
M09 Control Panel
M11 Intercoupler
M12 Teletype Adapter
M15 Terminal Control Unit
M16 Transaction Programmer
M17 Read/Write Memory
M18 Terminal Indicator Control
M19 Terminal Clock
M21 Miscellaneous Control
M23 Interface Trunk
M24 Remote Cable
M25 Transport Control
M30 Miscellaneous
M31 Packaging
M32 Power Supply
M33 Power Panel
M41 Ball Printer Mechanism
M42 Ball Printer Forms Handler & Controller.

- M43 Helical Printer
M45 Drum Printer (Human Readable)
M46 Color Bar Printer
M47 Miscellaneous Printers
M48 Automatic Line Find
M49 Continuous Forms Feeder
M50 Terminal Communication Adapter
M51 Modem
M52 Communication Line Scanner
M53 Communication Adapter
M55 Routing Control
M56 Detector
M58 CCITT Adapter
M59 Poll/Select Monitor
M62 Digital Recorder Interface
M63 Digital Recorder
M64 Cassette Terminal Adapter
M71 Punch
M72 Reader
M73 Magnetic Card Writer/Reader
M80 Currency Dispenser
M85 Integral Color Bar Reader
M90 Display
M95 Matrix Display
M115-02 TCU Logic Plug In Board Developed to handle larger ROM programs than M15-02.

WANTED ! YOUR IDEAS

We are faced with an increasing problem concerning the storage and handling of PIB boards. With more and more electronic equipment coming onto the market we are anxious to install an economical uniform method of storage in Centres.

Its design must be suitable for all sizes of boards to ensure ease of retrieval with a minimum amount of damage occurring within the Centre, and the ultimate installation at a customers premises. There are no doubt a number of you who have some excellent ideas in this direction and we would be pleased to hear from you what they are, so come on lads, put pen to paper for here is your chance to set your name up in shining lights

Help us to help you and stop some of the frustration you experience when fitting a replacement PIB only to find it is damaged. All correspondence should be addressed to L G Ball, Supervisor, Special Projects, FED Head Office. The person who in our estimation submits the best idea will be suitably rewarded for their efforts.