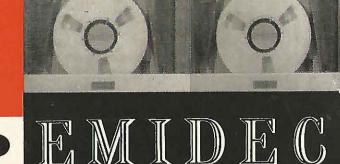
*introducing you to EMIDEC







RETAIL COMPUTER SYSTEMS MANUAL



This is Mr. TRANSISTOR who with several thousand of his fellows is a very important and versatile component of the EMIDEC I100 computer. He fulfils all the functions that would previously have required valves, and by replacing their unpredictable life-span with his more assured characteristics he makes EMIDEC a most reliable Computer.

preface

For many years our Company has been recognised as one of the leading Retail Organisations in the country. To maintain this position, and to increase our Sales and Profits year by year, we must continually be searching for ways of improving the efficiency of all our operations.

The application of Electronic Computers to office work can be a major step towards improving the efficiency of clerical work and the effectiveness of management. This has been proved, during the past five or six years, by the experience of many companies both here and in the United States.

We are proposing to take advantage of the new technique of 'Electronic Data Processing'—which means using a computer to perform, at very high speeds, all the operations involved in dealing with routine paper work—and the Company's present intentions in this respect are set out below:

- The Company is installing an Electronic Data Processing System because:
 - (a) It will yield advantages in Retail and Wholesale operations and to Retail and Wholesale management.
 - (b) It will relieve the pressure on clerical staff, whose work increases with every increase in turnover.
- It will be used for 'Merchandise Accounting'—i.e., the clerical work of keeping Warehouse Stock Records and Accounts, Branch Supplies Accounts, and dealing with Branch Orders and other documents which record stock movements.
- The changeover will start in 1960 and will be spread over several years.
- The maintenance or improvement of the service to Branches from Warehouses has been constantly borne in mind.
- The Company has guaranteed that no one will lose their job with Boots as a direct result of the installation.

why are we having a computer?

There are three reasons why the Board, looking to the future expansion of the Company, has allocated over £200,000 to buy and instal an electronic computer, the EMIDEC 1100.

First, it will simplify the Retail task of ordering goods from warehouses and will introduce other advantages described in this manual. To do this, procedures have been re-designed, and the new methods have been tested by sixty-five branches of all sizes taking part in two 'Pilot Schemes'. Their experience justifies our claim.

Second, by performing all necessary operations on a Branch Order in one operation, instead of in several different offices in succession, statistical information will be immediately available for management instead of being days or weeks out of date. In addition to providing figures faster EMIDEC will be able to carry out analyses which were too time-consuming without a computer.

Third, as our business grows it becomes more and more difficult and expensive to recruit, accommodate, train, manage and generally provide for the necessary clerical staff and to co-ordinate their efforts. EMIDEC will make a major contribution to easing this problem in the warehouse and accounting offices.

In re-designing procedures we have reduced the variety of Order Forms by eliminating 'Printed Order Forms'. In their place we have introduced an Order Card to be used with a Pre-printed Stock Book listing selected lines. The majority of orders will be placed on these Cards, which are so designed that, having indicated which page of the Stock Book you are using, you need only mark the Quantity Required of any lines you wish to order and nothing else. The only other forms to be generally used for ordering listed lines will be a Stock Order Form (for lines not in the Pre-printed Stock Book), a Supplementary Order Form, and Special Order Form, with Prescription Specials in certain Departments.

A four-letter Item Code is allocated to each line and will be used in place of a full description when using Order Forms, but not on the Order Cards on which each line is identified by its pre-printed line number. All orders to be processed by the computer will be sent, in an Order Envelope within the Branch Envelope, to Nottingham and there will be a saving in postage because all the triplicate order forms for listed lines are replaced by single-sheet Cards or Forms, except for the Special Order Form which is in duplicate.

Warehouse staff will be able to assemble your orders more quickly because the computer, as it deals with an order, will only print on each Order/Invoice, clearly and in the exact sequence in which an Assembler makes her journey round the warehouse, those items which are in stock at that time. The computer will at the same time print a separate 'Out of Stock Advice' advising you of all items which cannot be supplied immediately, or which have only been supplied in part. This Advice will be posted direct to you and will tell you that there is no need immediately to re-order the items shown as they have been recorded as 'Outstanding Orders' and will be supplied when they become available. You will be able to cancel these outstanding orders if the items are no longer required.

The Invoice you receive with, or before, the goods will show the value of each item and of each invoice. On the last invoice of each Stock Order you will see the total of Warehouse Supplies to Date for the Section concerned. This information, which could never have been provided so quickly without the computer, will for the first time give you a means of assessing Stock Investment with sufficient accuracy to prevent overstocks before they occur. The reduction of overall Stock Investment in Warehouses and Branches, made possible by accurate up-to-date information from the computer, may be the most valuable contribution EMIDEC will make to the Company's prosperity. Closer Stock control in the Warehouses should also mean fewer lines out of stock at any time.

what is the computer?

It is called the EMIDEC 1100 and is made by E.M.I. Electronics Ltd., of Hayes, Middlesex. It costs approximately £170,000, and with installation costs and certain necessary extra pieces of equipment the total cost is over £200,000.

Basically EMIDEC consists of electronic equipment that can perform arithmetical and logical operations (such as those involved in sorting items into sequence) at speeds up to 8,000 operations a second. Associated with these circuits are units for 'feeding in' the information to be processed, and two units each capable of printing 300 lines (each 140 characters wide) per minute. Within the computer there is a store for up to 33,000 separate words, numbers, or sterling values, each in a separate 'register'. There is no limit to the amount of extra information which can be stored on Magnetic Tape and brought into the computer when required.

EMIDEC, in common with all computers now available, requires all information to be presented to it in coded form. As Morse Code represents letters and figures by combinations of dots and dashes so the EMIDEC code represents them as patterns of holes punched in paper tape ('ticker-tape') or cards. These patterns are sensed photo-electrically in the paper-tape or card 'readers' and become trains of electrical pulses within the computer. When the necessary operations have been performed, with these trains of pulses moving at the speed of light, the pulses representing the results cause the printer to print the appropriate letters or figures.

The operations which EMIDEC performs on each order must be determined in advance down to the smallest detail. When this has been done, a list of instructions to the computer, called a 'Program', is written and fed into the computer. The computer will then obey the Program quite automatically, instruction by instruction.

EMIDEC is a general-purpose digital computer. If we write the appropriate Program it can do anything from calculating the trajectory of a moon rocket to translating French into Russian or playing a game of chess. Naturally it is most suitable for the commercial operations which its designers had in mind, and the list of firms and Ministries which have already ordered EMIDEC indicates its popularity. This list includes Glaxo, Sainsburys, I.C.I. Plastics Division, B.E.A., Kodak, Austin, Barclays Bank, the Air Ministry, and the Ministry of Labour.

how will it affect branches?

Initially, EMIDEC will only deal with orders for the Photographic Department, and all orders for the Photographic Department Warehouse will be placed in accordance with the procedures set out in this manual. Other Warehouse Departments will follow at dates to be announced later. As far as possible, the same forms and procedures will be used for each Department.

The routine of stock keeping and order placing will not change in principle. You will still have stock books, and will place orders with reference to normal stocks. You will still send your order off on the usual day, and receive goods on the same day as before.

The difference which you will find will occur in the design of the stock books, order forms and invoices, and the elimination of re-ordering for items not supplied at the time of the first ordering. The re-design of forms will involve considerable change in the way you fill them in. Details of all the new forms and changes in procedure are given in this manual.

In making such a major change as is involved in the introduction of the computer, it is wise to proceed slowly. Preliminary plans have been discussed whereby the computer would itself calculate the supplies necessary to replace branch stocks. If this system becomes a reality, it will virtually do away with Retail Branch Stock-keeping and ordering as you know it today. There are, however, many details still to be worked out, and it would be unwise to attempt too much until we have several years' experience of using the computer.

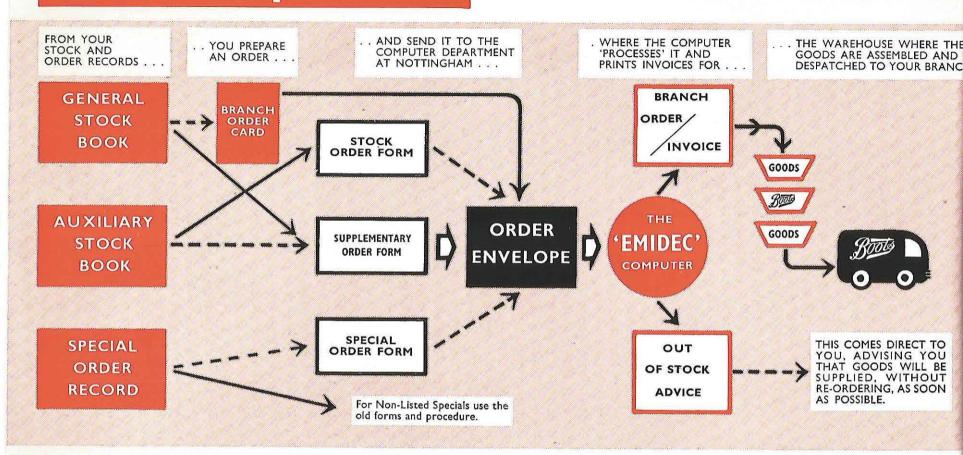
As you read this manual, and when you start using the new procedures, you are bound to discover points which are not explained here.

If you are in doubt as to where to address your immediate queries, send them to the General Office Manager, Station Street, Nottingham.

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the overall picture





With this general impression in our minds let's see what the new forms look like . . .

The illustrations shown in this manual do not correspond, in either size or colour, to the actual forms you will use. Stock Books will be 8" x 10", the Branch Order Card will be the size shown on page 5, and all illustrations on pages 7-17 are half-size.



definitions of new terms

GENERAL STOCK BOOK (see Page 3) Similar in appearance and use to the present Stock Book, but pre-printed with a list of the most frequently ordered lines and used for recording and ordering those lines only.

AUXILIARY STOCK BOOK (see Page 4) Also similar to the present Stock Book and used for recording all lines stocked by your Branch which do not appear in the General Stock Book.

BRANCH ORDER CARD (see Page 5)
The form on which Stock Orders for lines in the General Stock Book are placed.

SPECIAL ORDER (see Page 12) An order for an item urgently required by a customer. Special Order Forms must never be used to order goods for stock.

An order for stock, occasioned by exceptional demand, which is placed on any day other than the normal day for stock orders and for which delivery is required before the next Stock Order.

ITEM CODE (see Page 6)
The four letter code for each line which can be ordered through EMIDEC will be printed in the Departmental Price List.

Use the Item Code in place of the full Description of each line which you order on Stock or Supplementary Order Forms (see pages 10 and 11). When placing Special Orders (see page 12) for Listed Lines use both the Item Code and Description of each line.

ORDER ENVELOPE (see Page 7)
A means of conveying all Order Documents intended for one Warehouse Department from one Section to the Computer Department.

BRANCH ORDER/INVOICE (see Page 14) The form on which the computer prints all the items you have ordered which are in stock in the warehouse. The computer will sort these items into the sequence in which they can be most easily assembled in the warehouse, and will print the total value of each item and the total value of the invoice.

OUT OF STOCK ADVICE (see Page 16) The form on which the computer prints all items which cannot be supplied by the warehouse. All these items except those marked as Discontinued or Suspended will be automatically supplied when available without your having to re-order them.

OUTSTANDING ORDER (see Page 16)
The name given to an order which cannot be supplied immediately and has been recorded by the computer for supply when stock becomes available.

BALANCE ORDER/INVOICE (see Page 17)
The form on which the computer prints all Outstanding Orders which are to be supplied by the warehouse.

WAREHOUSE SUPPLIES STATEMENT (see Page 17) This form is printed by the computer at each Month-end, showing the total value of all supplies to each Section from each Warehouse against orders which have been processed by the computer.

the general stock book

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	Agiflash 44			1.	£2-15-0	ESEZ				\cap						1						1			

This book is:-

Similar in use to present Stock Books. The method of entering stock, and calculating and entering order quantities, remains unchanged.

Pre-printed with the most frequently ordered lines in the Departmental Inventory, arranged in merchandise groups.

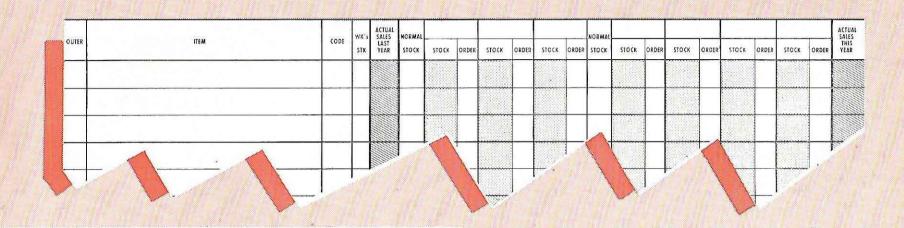
Designed for use with Branch Order Cards when placing Stock Orders.

Re-issued with a revised list of lines every three months. A list of all lines added or deleted will be issued with each new book.

NOTE

- 1 Page Identification Mark which, when copied on to an Order Card, identifies the line numbers on the Card with the items printed on the corresponding lines of the Stock Book Page.
- 2 Stock columns are coloured to distinguish them from Order Columns.
- 3 Item Codes. You will need these when placing Supplementary or Special Orders for the printed lines.
- 4 The period during which the Stock Book is to be used. The dates are printed at the foot of each page. Always use the current book.
- 5 Actual Sales Last Year. Bear in mind the sales achieved in the same period last year when estimating Normal Stock for this period. This applies especially to seasonal lines.
- 6 Actual Sales This Year. Fill this in at the end of the period for reference next year.
- 7 Merchandise Group Headings are printed at the foot of the page for speedy reference.

the auxiliary stock book



Similar in appearance and use to present Stock Books, and almost identical in layout with the General Stock Book.

Designed to record all lines you stock which are not in the General Stock Book, and to record at least a year's sales.

Arranged and written by you in the most convenient sequence.

Used for placing orders on Stock or Supplementary Order Forms by means of the Item Code of each line.

The Item Code for each line will be printed in each Departmental Price List. Codes for New Lines will be given in the Bulletin.

Make sure the Item Code is always written correctly, in Block Letters, in the Stock Book and on the Order Forms. When compiling the Stock Book refer to the Price List for correct Description, Price, and Item Code of each line.

Remember to leave room for seasonal lines which may be omitted from the next edition of the General Stock Book, but which you will continue to stock.

special order record

This is not illustrated as it is identical with the present Special Order Book except for the addition of three columns—one for recording the Item Code when a Listed Line is ordered, one for recording the date on which the goods are delivered, and one for recording the date of a query letter to the warehouse in cases where delivery is delayed without explanation.

The goods supplied from the warehouse against orders processed by EMIDEC will be accompanied by an Invoice printed by the computer, and this will not indicate the customer's name. It is very important, therefore, that you record full details of all Special Orders in the Special Order Record since this is your only means of identifying which customer ordered the goods received.

the branch order card

The small numbers in the ellipses on the face of the card indicate the value allotted to a mark made in that position on any line.

You can order any quantity from 1 to 1164 by marking one or more positions, the values of which, when added together, come to the quantity required.

Most order quantities can be indicated by one or two marks. If you want to order a quantity requiring several marks, refer to the examples given at the front of the General Stock Book.

Marks made on an Order Card are detected in the EMIDEC DIVISION by a machine which informs the Computer, for each Card, of:

The Page Identification, which tells the Computer to refer to its own index of the lines printed on that page of the General Stock Book, and . . .

The marks made on each subsequent line of the Card.

The Computer will deal with each line in turn. If marks have been made on the line being dealt with the Computer will calculate the Quantity Ordered by adding together the values allotted to each mark detected, and will attach to this Quantity the Description which it knows to be printed on the relevant line of that page of the General Stock Book. This information is then 'processed' as an Order.

If no mark has been made on a particular line the Computer will pass straight on to the next line without recording an order.

The machine which detects marks on the Cards does so by establishing an electrical contact across the surface of the Card where an adequate amount of Graphite has been deposited by a pencil mark.

Because of this it is very important that you...

Always use the special marking pencils which will be issued. Pen or ball-point marks, however clearly visible, will not be detected.

Make marks which fill the area indicated on the Card.

Do not make marks where you do not intend to mark a quantity. Never write anything on the Cards where you are not instructed to do so. Special rubbers will be provided for erasing errors.

Do not leave surplus Graphite dust on the Card as it will accumulate on the Detector Brushes and cause shorting. Beware of sharpening your pencil too much for it will snap and scatter dust.

NOTE

Make no mark for lines you do not wish to order.

Do not send in blank Cards for pages with no orders.

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the new order forms

The redesigned Stock, Supplementary, and Special Order Forms are illustrated on pages 10, 11, and 12.

The first two are single-sheet forms with no carbon. The Special Order Form for Listed Lines is in duplicate.

PLEASE COMPLETE THESE FORMS CLEARLY AND CORRECTLY

ITEM CODES must be:

- COPIED CORRECTLY—it is easy to transpose letters when copying, or to mishear when one person calls out and another writes CHECK EACH CODE FOR COPYING ERRORS.
- 2. WRITTEN CLEARLY—always use BLOCK LETTERS and remember that groups of these can be confused with each other, especially . . .

H with N and W O with O L with C and G Y with V and X

QUANTITIES must be:

- 1. WRITTEN CLEARLY.
- 2. IN OUTER QUANTITIES where possible. In some cases, where the Order Quantity is very near the Outer Quantity, the Computer will round up Orders to the Outer Quantity.
- 3. IN THE UNIT shown in the Price List for the Code used.
 - e.g., When you want 20 singles of a line.

 If the Code is for a Pack of 10, order 2.

 If the Code is for Singles, order 20.

 DO NOT ORDER 2 x 10.

ORDERING BY ITEM CODE

The reasons why we have adopted the four letter code are:

The computer requires information to be presented to it in standard form, and so all descriptions used must have the same number of letters.

Each letter and figure on all Order Forms must be entered by hand on the keyboard of a machine which prepares the orders for the computer. The fewer letters to be copied the quicker the job is done.

The four letter code allows 12,000 lines to be given separate codes in each Warehouse Department and, by its construction, it enables the computer to check that certain copying errors have not occurred.

Besides identifying the line ordered, the code is a convenient means of identifying the position, in the computer's storage 'registers', where all information about that line is kept for reference during order processing.

A few lines may appear in Departmental Price Lists without Item Codes. These are to be treated as Non-Listed Lines.

REMEMBER

If you write a code incorrectly or indistinctly you will either receive a query from EMIDEC DIVISION or the wrong goods from the Warehouse.

the order envelope

Holds all orders from ONE SECTION for ONE WAREHOUSE.

Branch Order Cards, Order Forms, and Outstanding Order Cancellations (see page 16), all go in together. Do not include Non-Listed Specials, or any other Order Forms which would not normally be sent to the warehouse.

Carries the Orders safely from your Branch to the EMIDEC DIVISION.

Identifies, in the EMIDEC DIVISION, the Branch Section ordering and the Warehouse addressed, enabling orders to be sorted quickly for processing in the correct sequence.

NOTE

Always fill in your Section Letter and have the Envelope ready before writing any orders, so that each Card or Form can be enclosed as you complete it.

Post all Order Envelopes to Nottingham in the Branch Envelope.

Make sure the Branch Envelope is posted in good time to reach Nottingham by first post next day.

The 'Order Day' on which Stock Orders are received in EMIDEC DIVISION from your Branch is indicated next to your Branch Number on the Envelope. In the half-size example shown, 'THU A' means Thursday of 'A' week.

Please correct the 'Order Day' on each Envelope if it has been changed since they were issued. If this is not done, the orders will be processed on the wrong day and may miss the normal means of despatch.

SECTION LETTER

SECTION LETTER

SECTION LETTER

SECTION LETTER

LEGIS PURE SAUG CO 115.

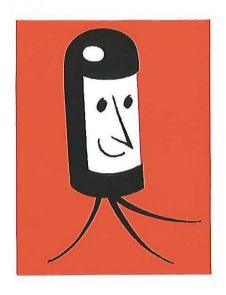
warehouse departmental letters

The letters listed below are to be used when writing Special or Supplementary Orders to identify the warehouse for which the order is intended. They are to be used in place of such terms as 'Notts.' or 'Queens Road'.

The same letters are printed boldly on Order Envelopes to identify the warehouse for which all the enclosed orders are intended.

Do not confuse these letters with your Branch Section Letters.

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TOILET	30 X	* *	9-16		T
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ART	78-24-	**			А
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SILVER	***	**		4.4	1.1
STATIONE	RY	**	* *	**	s
FARMS AN	D GA	RDEN	S		F G



Now we have been introduced to the forms, let's see how they are used.

writing a stock order with cards

ALWAYS USE A SPECIAL MARKING PENCIL.

MARK THE PAGE IDENTIFICATION.
SEE THAT LINE NUMBERS CORRESPOND.

NEVER Sharpen your pencil too much—the mark it makes may be too thin to be read

mechanically.

Write any comments on Order Cards—you may inadvertently order items you do not require.

ROUTINE

HAVING TAKEN STOCK AND CALCULATED YOUR ORDER QUANTITIES IN THE NORMAL WAY:

ALIGN a blank ORDER CARD with the STOCK BOOK PAGE.

ENTER your BRANCH NUMBER.★

COPY PAGE IDENTIFICATION MARK(S) on to the CARD.

MARK each ORDER QUANTITY on the CORRECT LINE of the FRONT or BACK of the CARD.

TEAR OFF the COMPLETED CARD.

THE DOCKET CONTRACTOR

ENCLOSE it in the RIGHT ORDER ENVELOPE BEFORE MARKING THE NEXT CARD.

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ma)	200€	STX ACTUAL		STOCK	-	ocx oss	\$100	K ORDER								1	*****	2	2 1 1	CIL	0		0 0 0
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Kodak 620 Brownie Box, Flash III	11-10 EV	-	4	3	3 -				+	+	+	1	T				2400	11	11 0 0	0 0	00	00	00
Bantam Colorshap	11-11 CJA	_	7	3	3 -	*********			1				-	-	+	-		13	- 0 0	3 8	3 3	36 7	1 194 289
Silette Varie (2100/328)	11-5-6 EF	-	1	1	ī -					-	+	-	+	-				14	- 10 0	UU	10 0	0	0 0
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writing a stock order with forms

- N.B.—(i) ANY LINES may be ordered on a STOCK ORDER FORM, providing that you have been notified of, and use, the correct ITEM CODE.
 - (ii) Please do not write any COMMENTS or NOTES on the ORDER FORMS. The computer cannot interpret or act on them.

ROUTINE HAVING TAKEN STOCK AND CALCULATED YOUR ORDER QUANTITIES IN THE NORMAL WAY:

SELECT a STOCK ORDER FORM printed with the name of the appropriate warehouse.

ENTER your SECTION LETTER and the ORDER DATE, making sure your BRANCH NUMBER is clearly shown.

AMEND the 'ORDER DAY', previously overprinted on the form with your Branch Number, if it has been altered.

ENTER the QUANTITY and ITEM CODE of each line you wish to order—CLEARLY, in BLOCK LETTERS.

CHECK that ITEM CODES have been copied correctly.

PLACE completed ORDER FORMS in the ORDER ENVELOPE for the RIGHT WAREHOUSE from the RIGHT SECTION.

	THE CHACK	T	T		PHO	1	3000	THU A	P.		CK OR	RITE ITEM COI CLEARLY IN LOCK LETTER DER	DI
Johnson's	Unwersol	1004	tra trata	OCK DROPE STOCK	CHANTITY	17EH CODE	CUANTITY	IVEM CDOE	QUANTITY	ITEM CODE	QUANTITY	ITEM CODE	_
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n's A	10		" 7 4 3	1-1-1	1	CZFK	M				-		_
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writing a supplementary order

ROUTINE

SELECT A SUPPLEMENTARY ORDER FORM.

ENTER your SECTION LETTER, the WAREHOUSE and the ORDER DATE, making sure your BRANCH NUMBER is correctly shown.

ENTER the QUANTITY REQUIRED and the ITEM CODE of each line.

RECORD each ORDER QUANTITY in the appropriate STOCK BOOK.

CHECK that all ITEM CODES are correctly and clearly written.

ENCLOSE the completed form in the ORDER ENVELOPE for the RIGHT WAREHOUSE from the RIGHT SECTION.

PHOT	in a	3000	P	4	WARE	touse 🌕	3 0 0	0	DN:
	PLEMENTAI			25 ·		LEMENTAL			
QUANTITY	ITEM CODE	QUANTITY	ITEM CODE		QUARTITY	ITEM CODE	QUARTITY	ITEM CODE	T
1	ESHC			1					1
1	EFGC			2					1
1	ERCA			3					1
ı	CLH O			4					1
				5	-				1 5
				6	×				6
/3/60	IN AF	TO HEAD ORDER EN THE WAREH	VELOPE IOUSE		ORDER DATE	IN A	TO HEAD N ORDER EN THE WAREI	IVELOPE HOUSE	4

A SUPPLEMENTARY ORDER IS USED WHEN IT IS NECESSARY TO ORDER AND RECEIVE GOODS FOR STOCK ON ANY OTHER DAY THAN THE NORMAL DAY FOR STOCK ORDERS.

IT MAY INCLUDE ANY LINES WHICH HAVE AN ITEM CODE, INCLUDING LINES IN THE GENERAL STOCK BOOK.

THE WAREHOUSE WILL IN ALL CASES DECIDE THE MOST APPROPRIATE TIME AND MEANS FOR DESPATCH.

N.B.—A Supplementary Order should not be used on the same day as a Stock Order. When Monthly Ordering Branches are placing a Stock Order they should use Stock Order Forms, or Cards, for all lines from any section of the inventory.



The Forms illustrated on these two pages are half actual size.

The Supplementary Order Form is printed, as shown, with a perforation down the centre of two forms which should be separated when required.

writing a special order

Prescription Special Order Forms will be provided for use in the same Departments and circumstances as at present.

Non-Listed Special Order Forms, and the procedure for using them, remain unaltered.

In cases of exceptional urgency you may still telephone Special Orders to the Warehouse (via Station Street or W.12 if appropriate) quoting Description and Code. PLEASE DO NOT TELEPHONE ORDERS TO THE EMIDEC DIVISION.

Enter Code and Description for every line. Normally the Computer will process your order, using the Code, and will provide a printed Order/Invoice for the Warehouse. Where it would delay despatch of your order to wait for the next computer processing run your order form will be passed straight to the warehouse, where the Description is needed.

If the customer orders a specific colour of an assorted line you will be able to state this with the Description.

- We ask you to obtain the Manager's Signature not only to confirm that the goods are wanted urgently by a particular customer, but also because he can exercise better control over Merchandising and Stock Investment when he knows which lines being ordered by customers cannot be supplied from Branch Stock.
- Complete the Delivery Instructions accurately in every case. Always delete either TO BRANCH or TO CUSTOMER. Do not enter anything in the Name and Address space unless the order is to be despatched direct to the customer from the warehouse.

P.HOT		3000	P	LISTED LINES OF	and the same	HEAD OFFICE	ONLY
QUANTITY	H.O. CNLY	ITEM CODE		DESCRIPTION	SELL	HEAD OF	ICE ONLY
1		EWFT	g. B. Bell a	nd Howell 624EE and case	4/16/0	ASSEMBLER	CHECKER
						-	DATE ASSEMBLES
	RDER WILL NOT	R'S SIGNATURE	D BRANCH	CUSTOMER'S NAME		ess	
14/3/40 W	/RITE ITEM IN BLO CHECK	VERY * TO * DELETE AS REQI * CODES CLI OCK LETTERS ITEM CODE IG TO HEA!	UIRED EARLY S	(Direct Delivery Only	n)		

ROUTINE - LISTED LINES ONLY

RECORD full details of every SPECIAL ORDER in the SPECIAL ORDER RECORD when the Order is placed.

SELECT a SPECIAL, or PRESCRIPTION SPECIAL, ORDER FORM.

ENTER your SECTION LETTER, the WAREHOUSE, and the ORDER DATE, making sure BRANCH NUMBER is correctly shown, and indicating DELIVERY INSTRUCTIONS.

REFER to PRICE LIST for correct DESCRIPTION, ITEM CODE, and PRICE.

ENTER the QUANTITY, ITEM CODE, DESCRIPTION and PRICE of each line.

OBTAIN the MANAGER'S SIGNATURE.

ENCLOSE the completed form in the ORDER ENVELOPE for the RIGHT WAREHOUSE from the RIGHT SECTION.

posting orders to Nottingham



When EMIDEC gets your order it will produce the documents described on the next four pages. How it does this is indicated on pages 19 to 22.

YOU HAVE BY NOW . . .

Prepared an Order Envelope by writing your Section Letter on an Envelope printed with the right Warehouse Departmental Letter.

Written all the Orders you are placing today and will have had each Order checked by the Manager or Senior.

Enclosed each Card or Order Form in the Envelope as it was completed;

NOW ...

Seal the Envelope.

Check that the 'ORDER DAY' shown with your Branch Number is correct.

Enclose the Order Envelope in the Branch Envelope.

POST IT IN GOOD TIME TO REACH NOTTINGHAM
BY FIRST POST ON THE
FOLLOWING MORNING.

Orders which arrive later than the first post may miss the Computer Processing Run in which they should be included. If they do, despatch of the goods may be delayed.

Special measures will be taken to deal with certain types of Order (e.g., Prescription Specials) which have been delayed in the post.

the branch order/invoice

The details on this document are printed by a SAMASTRONIC PRINTER attached to EMIDEC, at the rate of about 2,000 Invoices per hour.

THE HEADING LINE SHOWS . . .

BRANCH NUMBER and SECTION LETTER.

WAREHOUSE DEPARTMENT and TYPE OF ORDER (see below right).

DAY and MEANS of DESPATCH for STOCK ORDERS, with a number showing the Despatch Group in which the Order is included.

FOLIO NUMBER: The computer will print Folio Numbers, using a separate series for each Branch Section, and for each Warehouse Department, as at present.

THE BODY OF THE FORM SHOWS . . .

ALL LINES ordered by you which are AVAILABLE in the Warehouse, arranged in the sequence of warehouse storage locations.

The VALUE of each item, i.e., Quantity x Price.

The TOTAL VALUE of each Invoice.

The TOTAL VALUE OF SUPPLIES TO DATE.*

NOTE

Stock, Special, and Supplementary Invoices will be identical in appearance, except that the Type of Order will be indicated at the head of the form.

Items not supplied are shown separately on an Out of Stock Advice described and illustrated on page 16.

Abbreviated Descriptions are used where the usual Description exceeds the standard unit of computer 'word storage'. You should have no difficulty in recognising the Descriptions used.

Where warehouse stocks are limited or exhausted the computer may print either part of the quantity you ordered, or the original quantity of a substitute line. Normally where orders are supplied in part the balance will be recorded as an Outstanding Order. Substitute lines will be identified by a small black square in the column headed 'W'hse'.

N B RP O O DESCRIPTION OF STREET OF	D 2 I III THER PA SALPA		PRICE 1/ 4/5 1/14/11 2/12/4 1/ 5/0 14/6 15/6 3/6 1/0	4 3 2 1 3 3 6 12	3000 WHSE. XXX///	P	4 5 5 1 2	5	8 9 8 0 6 6
OWNIE 127 MOI OWNIE MODEL: OWNIE FLASH: MET CASE LEA' MET CASE SALI ROLL 24 CSE (OWNIE 127 CAS BUM E19	D 2 I III THER PA SALPA		1/ 4/5 1/14/11 2/12/4 1/ 5/0 14/6 15/6 3/6	4 3 2 1 3 3 6	メメメノノノ		4 5 1 2 2	17 4 4 5 3	9 8 0 6
OWNIE MODEL: OWNIE FLASH: MET CASE LEA! MET CASE SAL! ROLL 24 CSE : OWNIE 127 CAS	I III THER PA SALPA		1/14/11 2/12/4 1/ 5/0 14/6 15/6 3/6	3 2 1 3 3 6	***////		5 1 2 2	4 4 5 3	9 8 0 6
OWNIE FLASH : MET CASE LEA! MET CASE SAL! ROLL 24 CSE S OWNIE 127 CAS BUM E19	III THER PA SALPA	1	2/12/4 1/ 5/0 14/6 15/6 3/6	2 1 3 3 6	XX////		5 2 2	4 5 3	8 0 6
MET CASE LEA! MET CASE SALI ROLL 24 CSE : OWNIE 127 CAS BUM E19	THER PA SALPA		1/ 5/0 14/6 15/6 3/6	2 1 3 3 6	X///		2 2	5	6
MET CASE SALI ROLL 24 CSE : OWNIE 127 CAS BUM E19	PA SALPA		14/6 15/6 3/6	3 3 6	1111		2	3	6
ROLL 24 CSE 8 OWNIE 127 CAS BUM E19	SALPA		15/6 3/6	3 6	1		2		
OWNIE 127 CAS BUM E19			3/6	6				6	6
BUM E19	SE				-				
			1/0	10			1	1	0
BUM E 5				12		1		12	0
			5/0	6	-		1	10	0
DAK FLASHOLDE	ER 2	3	1/ 4/5	3	/	6	3	13	3
DAK VP 127 F	ILM		2/9	50	_		6	17	6
DAK VP 620 F	ılı		2/9	25	-		3	8	9
FORD SP 127 I	FILM		2/9	10	/		1	7	6
FORD SP 620 I	FILM		2/9	10	/		1	7	6
TTERY B121			2/0	24	1		2	8	0
TTERY D23			-/9	36	/		1	7	0
INVOICE TO	OTAL					1 2	44	14	7
SUPPLIES !	TO DATE	1	£ 725						
111111111111111111111111111111111111111	DAK VP 127 F DAK VP 620 F FORD SP 127 FORD SP 620 TTERY B121 TTERY D23 INVOICE T SUPPLIES	TTERY D23 INVOICE TOTAL SUPPLIES TO DATE	DAK VP 127 FILM DAK VP 620 FILM FORD SP 127 FILM FORD SP 620 FILM TTERY B121 TTERY D23 INVOICE TOTAL SUPPLIES TO DATE	DAK VP 127 FILM 2/9 DAK VP 620 FILM 2/9 FORD SP 127 FILM 2/9 FORD SP 620 FILM 2/9 TTERY B121 2/0 TTERY D23 -/9 INVOICE TOTAL SUPPLIES TO DATE £ 725	DAK VP 127 FILM 2/9 50 DAK VP 620 FILM 2/9 25 FORD SP 127 FILM 2/9 10 FORD SP 620 FILM 2/9 10 TTERY B121 2/0 24 TTERY D23 -/9 36 INVOICE TOTAL SUPPLIES TO DATE £ 725	DAK VP 127 FILM 2/9 50 DAK VP 620 FILM 2/9 25 FORD SP 127 FILM 2/9 10 FORD SP 620 FILM 2/9 10 TITERY B121 2/0 24 INVOICE TOTAL SUPPLIES TO DATE £ 725 M 1/3/60 BRANCH ORDE	DAK VP 127 FILM 2/9 50 DAK VP 620 FILM 2/9 25 FORD SP 127 FILM 2/9 10 FORD SP 620 FILM 2/9 10 TTERY B121 2/0 24 INVOICE TOTAL SUPPLIES TO DATE £ 725	DAK VP 127 FILM 2/9 50 6 DAK VP 620 FILM 2/9 25 3 FORD SP 127 FILM 2/9 10 1 FORD SP 620 FILM 2/9 10 1 TERY B121 2/0 24 2 INTERY D23 -/9 36 1 SUPPLIES TO DATE £ 725 M 1/3/60 BRANCH ORDER/INV	DAK VP 127 FILM 2/9 50 6 17 DAK VP 620 FILM 2/9 25 3 8 FORD SP 127 FILM 2/9 10 1 7 FORD SP 620 FILM 2/9 10 1 7 TTERY B121 2/0 24 2 8 TTERY D23 -/9 36 1 7 TTERY D23 44 14 SUPPLIES TO DATE £ 725

All Invoices will be printed on the same form, and the TYPE OF ORDER will be indicated, with the Warehouse Department, thus:

Stock Order.
Special Order.
Special Order—goods direct to customer.
Supplementary Order.
Urgent Special Order assembled and despatched before processing by the computer.
As above—goods direct to customer.
Balance Invoice for Outstanding Order supplied—goods originally ordered on a Stock Order.
As above—goods originally ordered on a Special.
As above—originally ordered on a Supplementary.
As above—originally ordered on a Special for direct despatch to a customer.
14.05
Adjustment Invoices (see page 17).

^{*} This total only appears on the last Invoice for each Stock Order, and includes all supplies from the Warehouse to the Section concerned since the beginning of the current month.

receiving & checking goods



THE ORDER/INVOICE,
PRINTED BY THE COMPUTER . .

ARRIVES WITH, OR BEFORE, THE GOODS,
LISTS ALL THE GOODS DESPATCHED
AND
NOTHING BUT THE GOODS DESPATCHED

- IF The Warehouse have made any alterations to the printed Invoice you should make the appropriate alteration, where necessary, in your Stock Records. You will later receive an ADJUSTMENT INVOICE (see page 17) confirming that the right adjustment has been made to your Branch Supplies Account.
- The goods do not correspond with the Invoice, as altered by the warehouse if it has been altered, make out a MISSING OR EXCESS REPORT as usual. The M. & E. procedure will, initially, not be altered, but the computer will have to make the appropriate adjustments to its records. The computer will issue Adjustment Invoices for these items.

Where goods are rationed by the warehouse you may receive an Out of Stock Advice for the whole quantity you ordered, and a Balance Invoice for the rationed quantity. You will receive the outstanding quantity if further stock becomes available before the Outstanding Order is automatically cancelled (see page 16).

ITEMS NOT SUPPLIED FOR ANY REASON WILL NOT BE SHOWN ON THE ORDER/INVOICE BUT WILL APPEAR SEPARATELY ON THE OUT OF STOCK ADVICE (see Page 16).

the out of stock advice

PHO	то этоск	PROCESSING DATE 10/ 3/60	24/ 3/60	3000	SECTION P
BRANCHI USE	DISC F 2485 F 2486	KOROLL C	ASE LEATHER E VIEWER COD OUTFIT	1/ 7/0 12/6 12/0	3 1 1
	6	ITEMS with reference "I discontinued and are no ITEMS with reference "S and are temporarily not	langer available. USP'' have been suspended	ITEMS with refere	nce prefix letters a overleaf for further details.

This is a duplicate form showing all items which could not be supplied at the time when your order was processed. Items appear in the same sequence as they were ordered.

NOTE

The computer will have recorded an Outstanding Order for each item shown (except those marked DISC—Discontinued—or SUSP—Suspended) for the quantity shown. Where your order has been supplied in part the quantity shown will be the balance still outstanding.

These Outstanding Orders will be supplied automatically (or stock will be reserved for supply with a Stock Order) when the goods become available in the warehouse, providing this occurs on or before the Cancellation Date shown on the form.

If you wish to cancel any Outstanding Orders you can do so at any time, but DO NOT RE-ORDER any of the items until after the Cancellation Date—or you may receive the Outstanding Order plus the new order.

For Stock Orders the Cancellation Date is a fortnight after the day on which the order was originally processed. Stock will be reserved for all Outstanding Orders but they will not be supplied until a fortnight after the original order. For Special and Supplementary Orders the period is a month, and they will be supplied on the first day that stock becomes available.

ON RECEIPT OF AN OUT OF STOCK ADVICE . . .

CANCEL any items no longer required by writing 'Cancel' against the appropriate Reference Numbers.

SEPARATE the two copies. By holding the outside edges of the form and using a 'snap-apart' action you will be left with the two copies in one hand and the stub with inter-leaved carbon in the other hand.

If you CANCEL any items ENCLOSE the top copy in an Order Envelope for the right Warehouse and post it, as if it were an order, to Nottingham.

AMEND your Stock Records by noting 'T.F.' (To Follow) against the Order Entry in the appropriate Stock Book or Special Order Record, or by deleting the Order Entry when you cancel an item.

FILE the second copy as a record of Outstanding Orders.

AT ANY TIME BEFORE THE CANCELLATION DATE SHOWN . . .

You may make FURTHER CANCELLATIONS by writing a Memo to EMIDEC DIVISION quoting the Warehouse and the Reference Letters and Numbers (in sequence please) and posting it in an Order Envelope.

You should then AMEND your Stock Records (as above) and write 'Cancel' against the appropriate entry on the record of Outstanding Orders.

WHEN A BALANCE INVOICE IS RECEIVED . . . (See Page 17).

AMEND your Stock Records by deleting the 'T.F.' note previously made against the Order Entry.

AMEND your record of Outstanding Orders by deleting the appropriate entries.

TWO DAYS AFTER THE CANCELLATION DATE

(Or after reasonable delivery time if more than two days).

INSPECT your record of Outstanding Orders to see which items have not yet been supplied.

DELETE the original Order Entries for these items in your Stock Records.

RE-ORDER any items still required, using the type of Order which would be appropriate if this were a new order. Do not use a Special Order unless the original was a Special Order.

the remaining documents

BALANCE INVOICES

(see page 14)

A Balance Order is the name given to an Outstanding Order (or 'To Follow') when it is supplied.

You will receive the goods with a Balance Invoice and you should . . .

CHECK the goods with the Invoice as usual.

DELETE the 'T.F.' note previously made in your Stock Records.

DELETE the entry on your record of Outstanding Orders (Out of Stock Advice).

ADJUSTMENT INVOICES

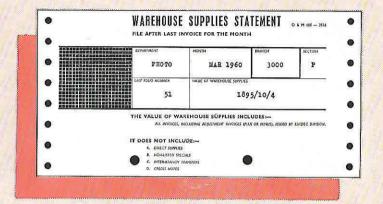
(see page 14)

Whenever the Branch Supplies Account kept by the computer has to be adjusted as the result of an alteration made by the warehouse to an Invoice printed by the computer, an Adjustment Invoice will be printed. Adjustment Invoices will also be printed when Excess Goods are reported, or when Missing Goods are later found in the warehouse. All other 'Missing' Reports will be dealt with as at present by the Invoice Department.

An Adjustment Invoice confirms that your Branch Supplies Account has been amended by the computer. The Adjustment Invoice is numbered in the normal Folio Series and should be filed with other Invoices.

THERE IS NO NEED TO CLAIM CREDIT FOR AN ORDER/INVOICE ALTERED BY THE WAREHOUSE, BUT YOU SHOULD CHECK THAT AN ADJUSTMENT IS RECEIVED FOR EACH ALTERATION.

WAREHOUSE SUPPLIES STATEMENT



You will receive this document within two or three days of the Month-end.

It tells you the final figure for Supplies from the Warehouse named to the Section named which have been entered in your Branch Account for the month. This figure for Supplies from the Warehouse will be included in the full Supplies and Credits Statement issued later by the Invoice Department.

The value of this document is that it tells you, at least a fortnight earlier than was possible without the computer, whether the value of Warehouse Supplies was more or less than you anticipated. It thus enables you to take corrective action to prevent overstocks much sooner than was previously possible.

This Statement only refers to the value of Supplies against orders processed by the computer. It does not include the value of Non-Listed Specials, Local Purchases, Transfers, or Direct Supplies, and it has not been adjusted for any Credits other than those mentioned under Adjustment Invoices. The Supplies and Credits Statement, which does take account of all these things, will be issued as usual when it has been completed.

summing up

WHEN EMIDEC COMES INTO FULL OPERATION

You will gain

Directly A 'To Follow' service for all lines.

A printed and evaluated invoice.

A guide to current Stock Investment.

A printed stock book for 'Bread and

Butter' lines.

Indirectly . . . Because Buyers will be able to control

warehouse stock levels in response to trends revealed by the computer.

The Company gains

The Company gams

Directly A powerful tool for analysing the

trends of current business.

Indirectly A means of reducing overall Stock

Investment.

AT A LATER DATE

It may be possible to introduce an 'Automatic Re-order' System.

REMEMBER

Electronic Data Processing is an entirely new departure for Boots. We have a lot to gain from it and much to learn. Please withhold your judgment, but not your constructive criticism, until we have had a year or so to overcome the initial problems and to gain some practical experience in the operation of our Data Processing System.



Particular queries regarding ORDERS which you have sent for processing by the computer should be addressed to EMIDEC DIVISION, STATION STREET, NOTTINGHAM.

Particular queries regarding DESPATCH OF GOODS should be addressed to the WARE-HOUSE.

Particular queries regarding ORDERING ROUTINE AND FORMS should be addressed to ORGANIZATION AND METHODS DEPT., STATION STREET, NOTTINGHAM.

GENERAL QUERIES should be sent to the GENERAL OFFICE MANAGER, STATION STREET, NOTTINGHAM.



data preparation

For your interest, this last Section outlines the routine and equipment used in order processing with EMIDEC.



Mark-Sensing Card Punch and Paper Tape Punches

All information must originally be prepared for EMIDEC in the form of coded patterns of holes punched in Paper Tape or Cards. The use of Cards in our system is restricted to the Branch Order Cards.

All Orders not placed on Cards, and details of all Stock Movements in or out of the warehouses, are punched each day into Paper Tape.

This photograph shows a Punch Operator using a Tape Punch which has a keyboard like that of a typewriter. The other Operator is checking the first girl's work—this is always done in full—using a Verifier which compares the tape being checked with each keydepression made by the Checker. By means of this checking, punching errors are reduced to negligible proportions. The Marksensing Punch appears on the left of the picture, with the Operator withdrawing some cards which have just been punched.

The Mark-sensing Punch is fully automatic in operation. When your Order Cards are received in EMIDEC DIVISION a special 'leader card' is placed at the front of each pack of cards from a separate Branch Section. All the Cards for, say, Stock Orders for the Photographic Warehouse are then placed in a Hopper on the machine, and the Start button is pressed.

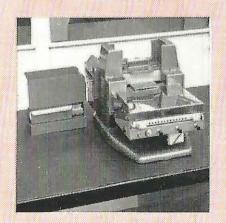
The Cards are then fed through the machine at the rate of 100 a minute. Each Card passes under a set of Detector Brushes, and where a properly made mark occurs, the Graphite on the Card surface allows an electric current to flow between two Brushes. This current actuates a punch which creates a hole in the Card at a point corresponding to the mark.

Cards can be prepared for the computer faster than Paper Tape, but the cost is higher and cards are not suitable for originating certain types of input.

computer input



Tape Reader



Card Reader

PAPER TAPE AND CARDS

All the new information which is needed for each Computer processing run is punched into a series of Paper Tapes each headed by a coded symbol to tell the computer what sort of information it contains (e.g., Warehouse Receipts, New Lines to be included in the Inventory, Special Orders for Direct Despatch to Customers, etc.). Paper Tapes will be prepared by a team of more than twenty-five Punch Operators, and there will be two Mark-Sensing Punches for preparing cards.

During a processing run up to forty Paper Tapes and a pack of punched Order Cards must be fed into the computer in proper sequence. This is done by the Computer Operator in addition to supervising the running of the Program. When a Paper Tape has been loaded into the Reader it will automatically be read at the right point in the Program after the computer has checked, by means of the heading symbol, that it is the Tape which it expects. Two Paper Tape Readers and one Card Reader will be used.

MAGNETIC TAPE

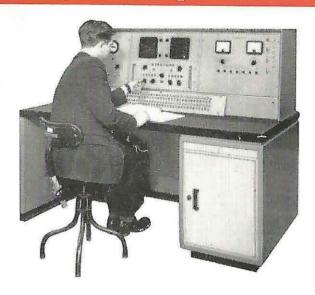
We shall have six Magnetic Tape Units each able to feed information into the computer at the rate of 8,000 characters a second, which compares with a rate of 300 characters a second for Paper Tape. Unfortunately, we have no practical means of recording information directly on Magnetic Tape—it must first be fed in as Paper Tape or Cards and then, if required again, it can be written on Magnetic Tape by the computer.

The Program of Instructions and the files of information which are carried forward from day to day (the Master Stock File with details of all lines in the Warehouse, and the Branch Supplies Accounts) are naturally kept on Magnetic Tape. They are read in each day, the information is stored in the computer for use during processing, and the new information—as amended by the processing—is written on Magnetic Tape for permanent storage until next required by the computer. This will usually be in the next processing run for that Warehouse Department.



Magnetic Tape Unit

computer processing



CONTROL CONSOLE

For each processing run the computer follows a Program which has been permanently recorded on magnetic tape, obeying each instruction 'faster than thought'. A team of three operators provides the computer with the input information it requires—Paper Tapes, Cards and Magnetic Tapes—and receives the output from the printers. One of the team supervises operations at the Console.

Should errors occur in the input information or in the functioning of the computer the Operator acts in accordance with information displayed on the Console, which shows the contents of selected storage registers and the functioning of the peripheral units.

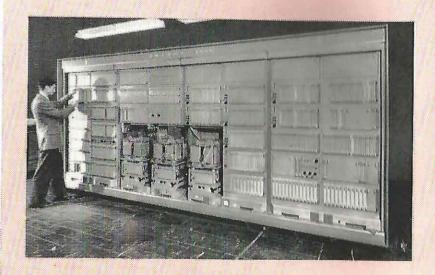
Errors which were anticipated by the Programmer who wrote the instructions will usually be indicated by the computer sounding an alarm, typing out an error report, and then halting until the error is rectified. Other errors will usually cause the computer to halt, but without giving an error report.

THE COMPUTER CABINETS

These Cabinets contain the Control Unit (which interprets the Program), Arithmetic Unit (which performs instructions selected by the Control Unit), and the Magnetic Drum and Core Storage in which instructions, order details, and stock records are kept in numbered registers.

Typical instructions are: 'Subtract the number in register 510 (an Order Quantity) from the number in register 959 (the Stock of the line ordered)' or 'Test the number in register 752 (a Stock figure); if it is zero obey the instruction in register 100; if not zero obey the instruction in register 122'. Each of these examples would take less than 1/5000th of a second to carry out, although the same set of instructions will be repeated for each item ordered.

The Photographic Department Program, written by a team of 'Programmers', has over 5,000 instructions and has taken several man-years to prepare. Each day it will deal with some 7,000 items ordered by about 550 Branches, and print 1,000 or so Invoices, all in approximately an hour's processing run.



THE SAMASTRONIC PRINTER



This prints a whole line of up to 140 characters at a time at the rate of 5 lines a second. In an actual line of print many of the 140 positions will, of course, be blanks to provide spaces.

Each character is formed by a minute stylus which vibrates very fast and forms any letter by a series of dots as the paper moves under it, rather like a tattooist's needle.

We shall have two of these Printers. To save computer time, since the Printer works much slower than the computer can output information to it, only one will be attached directly to the computer. Much of the information to be printed will be output by the computer at high speed onto Magnetic Tape which can later be read and printed by the Printer while the computer is occupied with other jobs.

TO SUM UP

For each processing run EMIDEC must have:

- (a) A Program of Instructions.
- (b) Complete records of every line in the Warehouse, all Outstanding Orders, and all Branch Supplies Accounts.
- (c) All Orders, and all amendments to warehouse information, punched into paper tape or cards.

EMIDEC will then read in the Program of instructions and, working at high speed under automatic Program control, will:

- (a) Read in and store the records required during processing.
- (b) Read in, and give effect to, any amendments to those records (such as Warehouse Receipts).
- (c) Inspect all Outstanding Orders and print invoices for those which can now be supplied.
- (d) Read in all new Orders, comparing each item with the Warehouse records.
- (e) Print invoices, and reduce warehouse stock figures, for all items which can be supplied.
- (f) Record outstanding Orders, and print Out of Stock Advices, for items which cannot be supplied.
- (g) Charge Branch Accounts for all items supplied.
- (h) Print any Buyer's Reports or Statistics, showing the position after order processing has been completed.
- (i) Record the Warehouse Stocks, Branch Accounts, and outstanding Orders (as amended by order processing) for use in the next processing run.

This is a complicated schedule of operations and we hope you will do your best to make it run smoothly by placing your orders according to the routine described in this manual and by posting them in good time to arrive in Nottingham by first post on the day on which they are to be processed.