

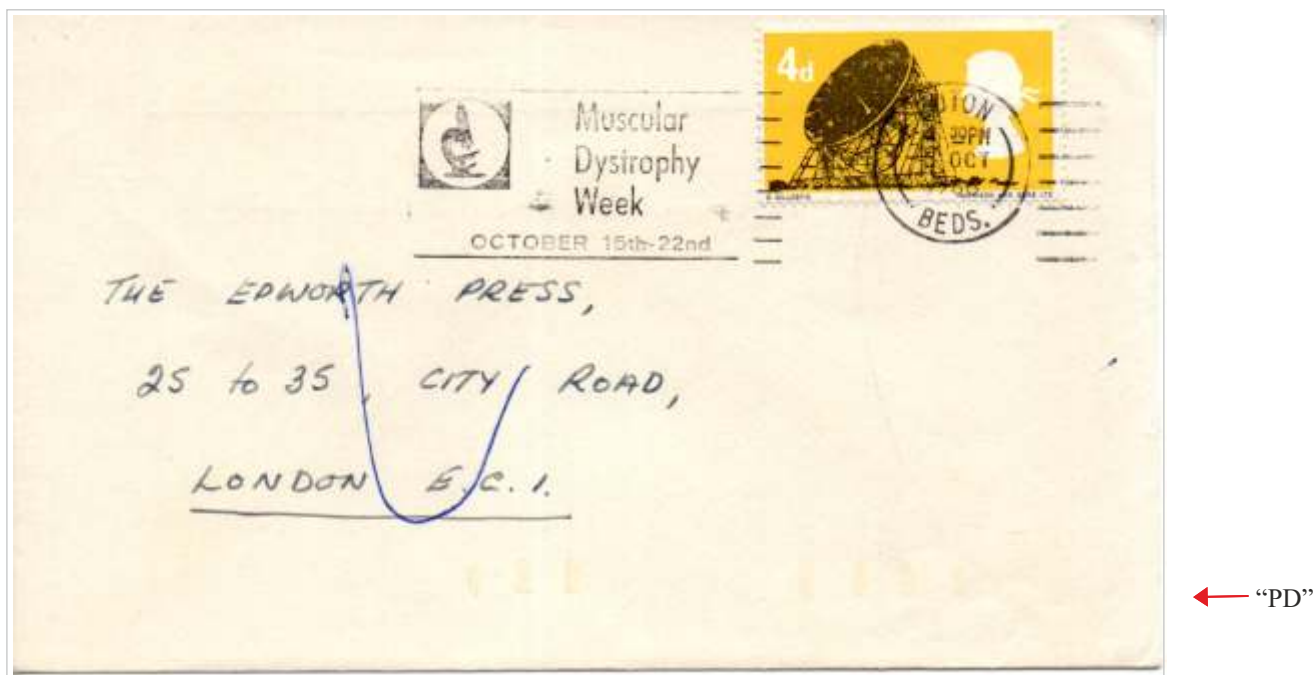
Luton began horizontal phosphor bar trials in 1964. By this time, Royal Mail considered the application of both outgoing and incoming codes to be possible. This would limit a letter to one pass through a coding desk rather than a pass at both sending and receiving post office. This was seen as best accomplished by moving the bars to a horizontal position.

Vertical Codes

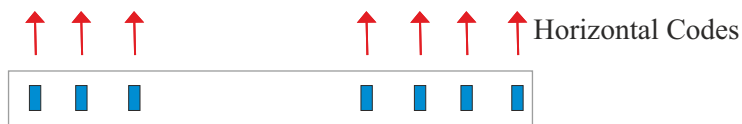


3d letter rate (1oz) used from Luton (Beds) to London (18th March 1964)

Outgoing bars were also trailed, at the bottom of the envelope .



4d letter rate (2oz) used from
Luton (Beds) to London
(5th Oct 1966)



Croydon was the first sorting office to be equipped with 'First Generation' coding desks, during 1969-70, and the first to use the 'National Post Codes' 16 C-03 coding desks were installed, which printed rectangular coding dots, and double letters idents on suited 4 & 5, and double numbers on suite 6.

2½p second class letter rate (2oz) used from Croydon surrey (B1) (25th May 1972)

Ident
"C"
→
D



← "PD"

Transparent Phosphor round dots ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

2½p second class letter rate (2oz) used from Croydon surrey (B1) (25th May 1972)



← "PD"

C

↑ Ident

Rectangular coding dots

☐ ☐ ☐ ☐ ☐

All of these desks were withdrawn during 1984, and replaced with 30 C18 desks.

Following a request from postal engineers in the North-Eastern Region, a blue dyestuff was added to render the phosphor code dots more easily visible, first appearing operationally at Sheffield in October 1978. Previously it had been a requirement to make the code marks as inconspicuous as possible, but with coloured code marks being used by other countries this was no longer considered necessary.



Sheffield M.L.O/F - 30th Oct 1978 - Ident 'D'

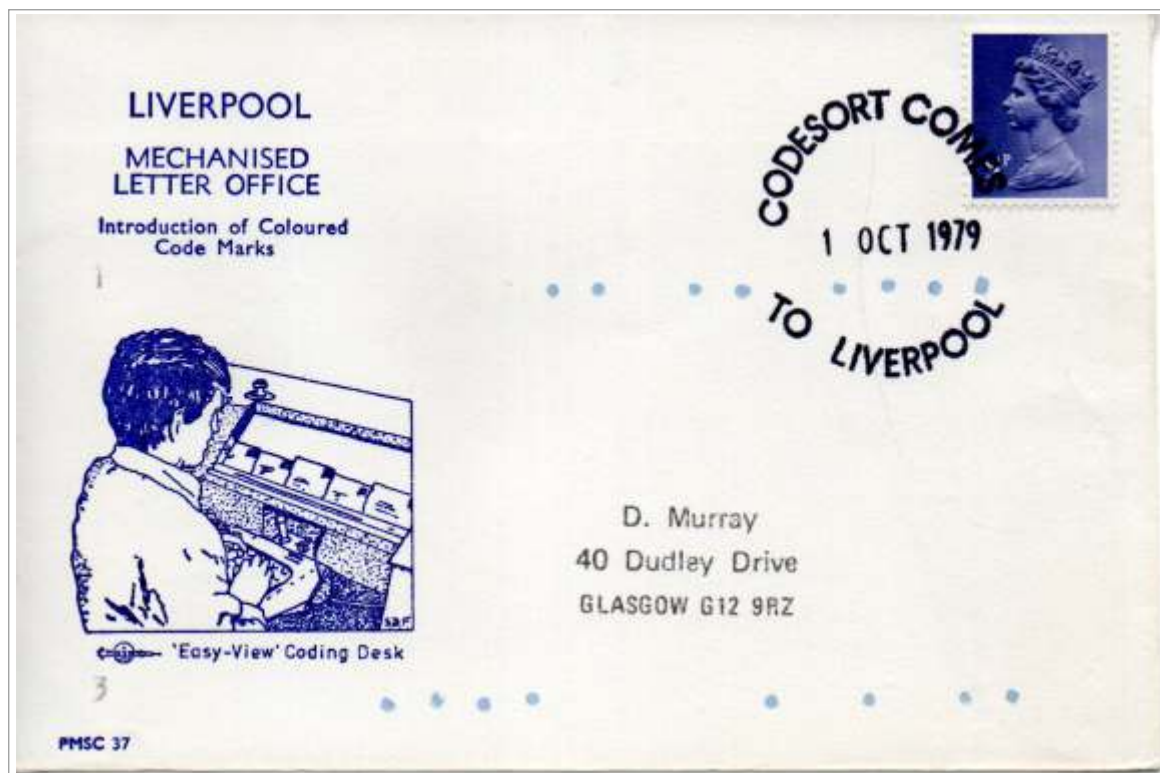


Sample of Used Phosphor tape



Huddersfield - 4th Jun 1979 - Ident '6'

Last Dot
(square dot) ↑



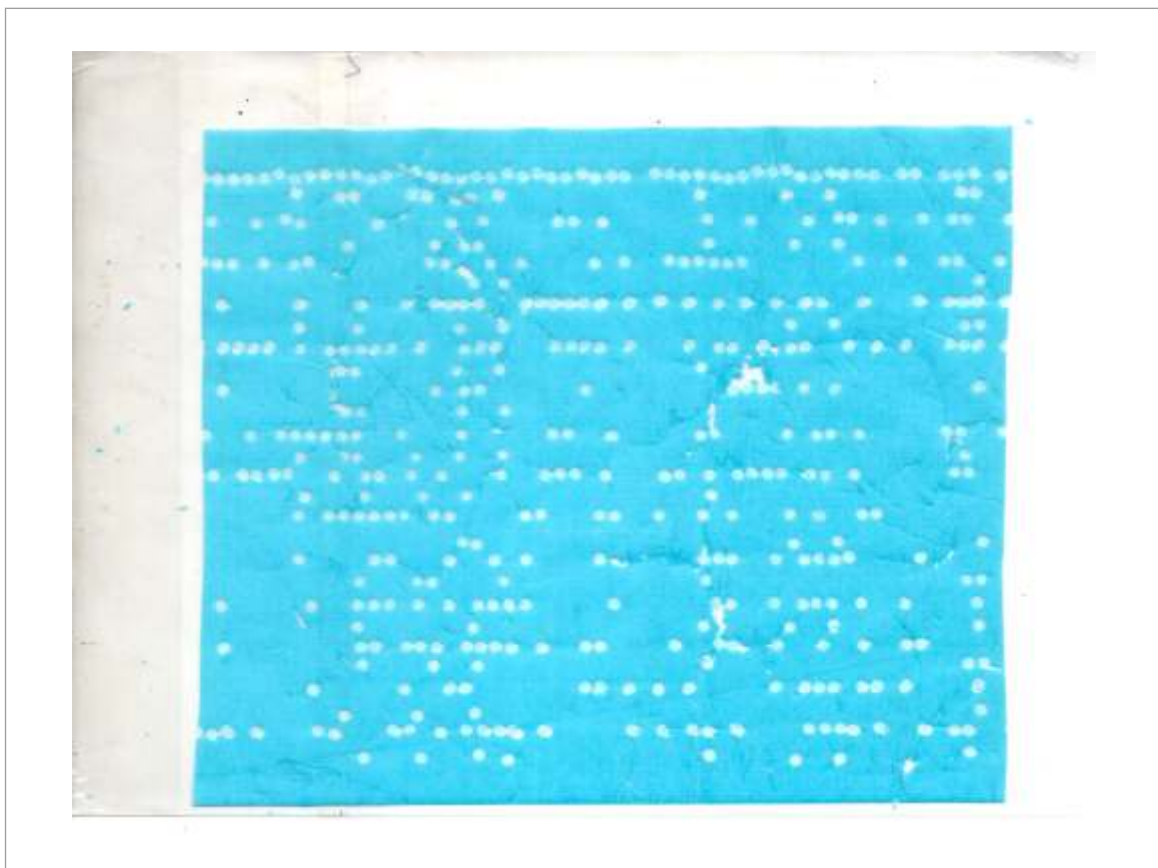
Liverpool - 1st Oct 1979 - Ident '3'

Last square dot ↑

Variations in colour included blue-green and also turquoise from experimental tapes manufactured by Harrisons using a phthalocyanine pigment.



Letter posted at Sheffield - 15th Aug 1980 - Ident 'H' at bottom LHS

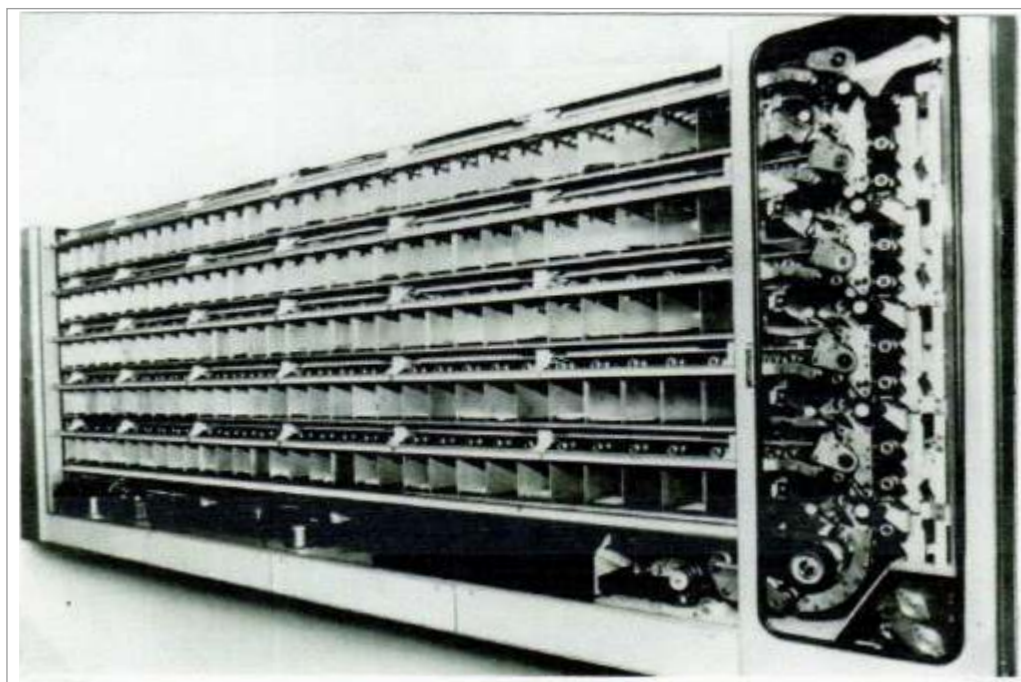


Sample of the tape used

With success at Redhill, the Post Office began expansion to other offices with the ultimate goal of having 84 MLOs. The Second Generation equipment was named the Multi-Selection Automatic Sorting Machine (MSASM).



A philatelic announcement of the London MLO opening using MSASM equipment. Note the clear dots.



Photograph of the MSASM Destination Bin system.

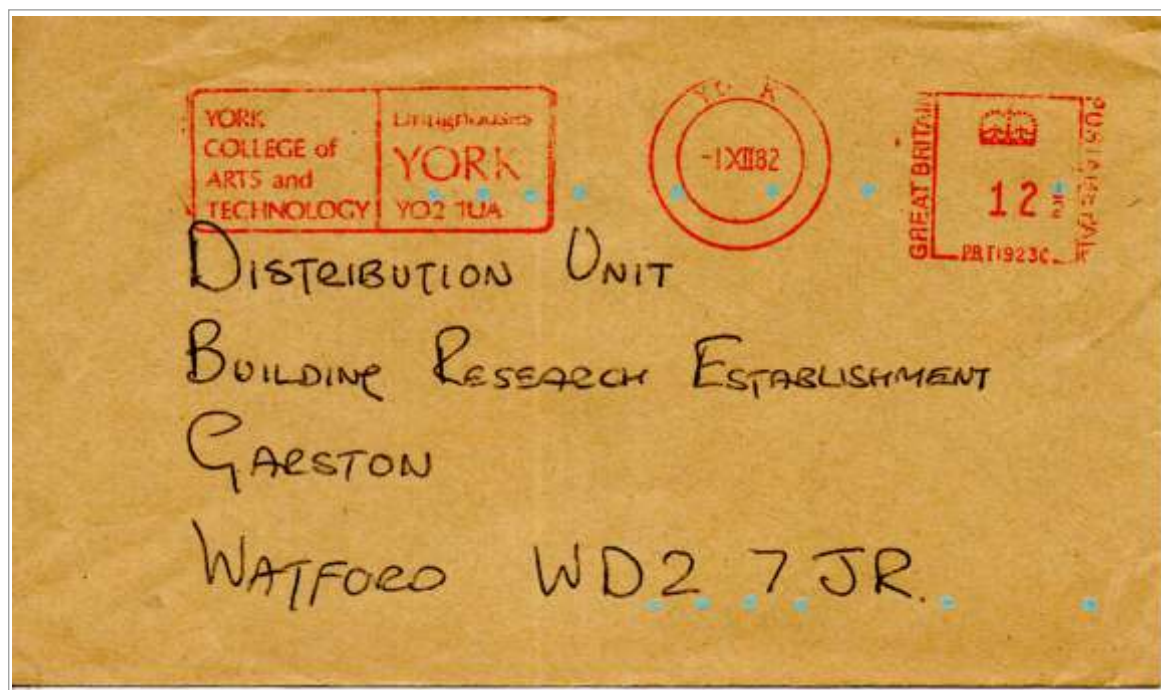
Video



Scan & Watch

An experimental phosphor tape, known as "opacified" (to make opaque) was trialed in 1959 in Luton. The purpose of the tape was to place a background behind the phosphor as difficulty in code reading occurred with buff or darker colored envelopes.

This tape format reappeared in 1981, with usage running into 1990's, and was produced in two colors: Turquoise and White.

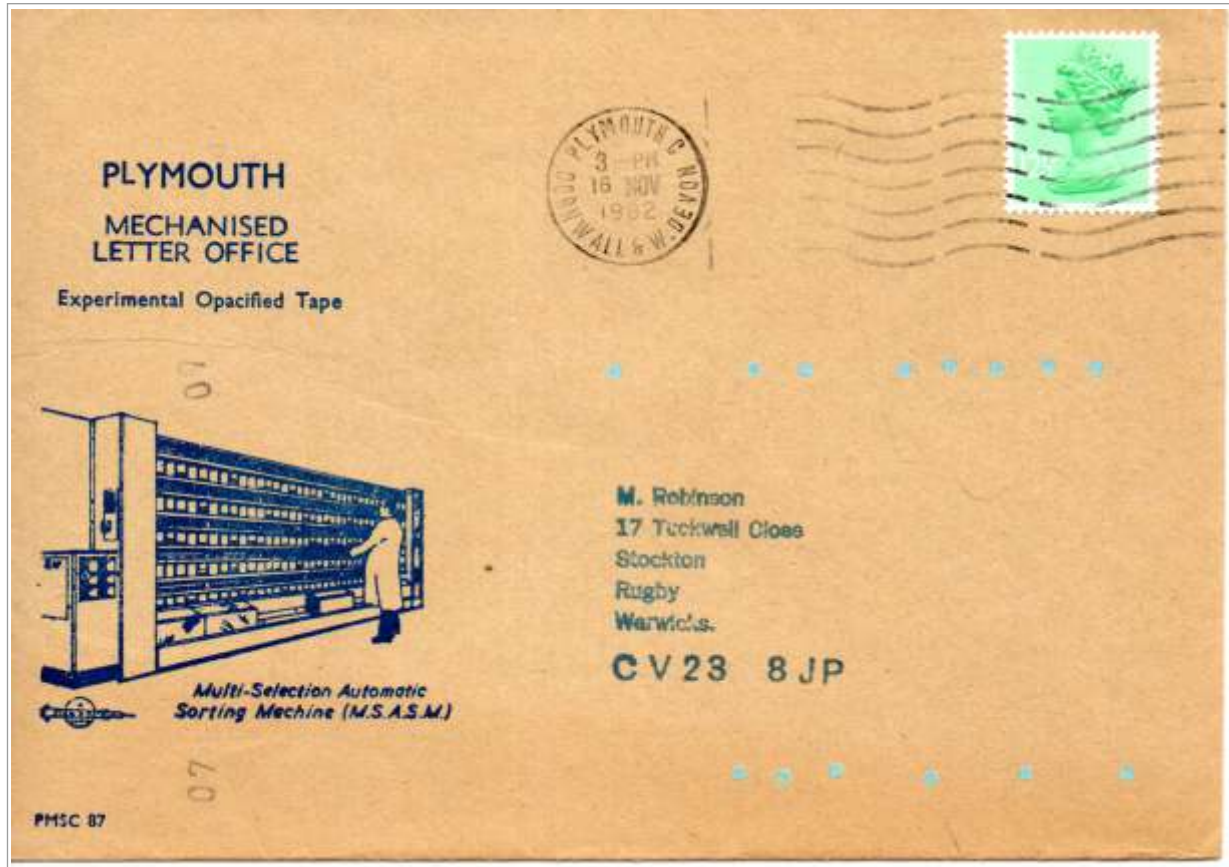


12½p second class letter rate (60g) used from York (1st Dec 1982)



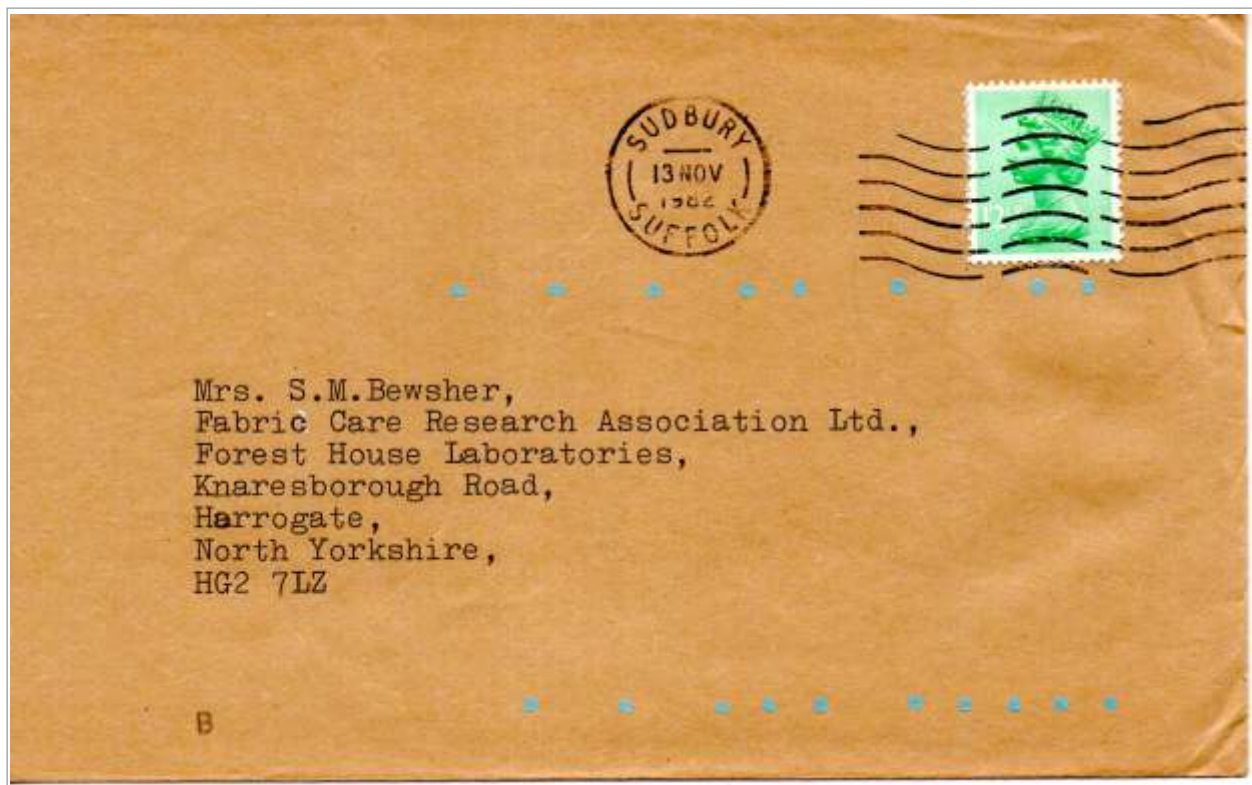
↑
'02' Ident

12½p second class letter rate (60g) used from Weymouth (24th Jan 1983)



↑
'7' Ident

12½p second class letter rate (60g) used from Plymouth (16th Nov 1982)



↑
'B' Ident

12½p second class letter rate (60g) used from Sudbury (13 Nov 1982)

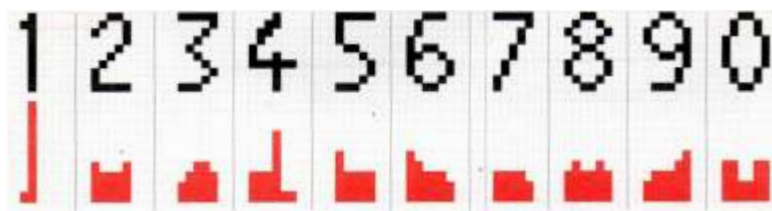
Optical Character Recognition is a process which allows text based images to be converted into an electronic form. In the case of address recognition of mail items, these images are generated by sophisticated scanners within the Sorting equipment.

The Optical Character Recognition software first of all cleans the raw image to maximise the chances of success. Translation of the characters into digital images is the primary function of the OCR.

Each image of every character is converted into a character code. If the algorithm is unsure of a character - then the software will produce multiple character codes before making a final choice.



Philatelic announcement of London MLO, 6th Oct 1983



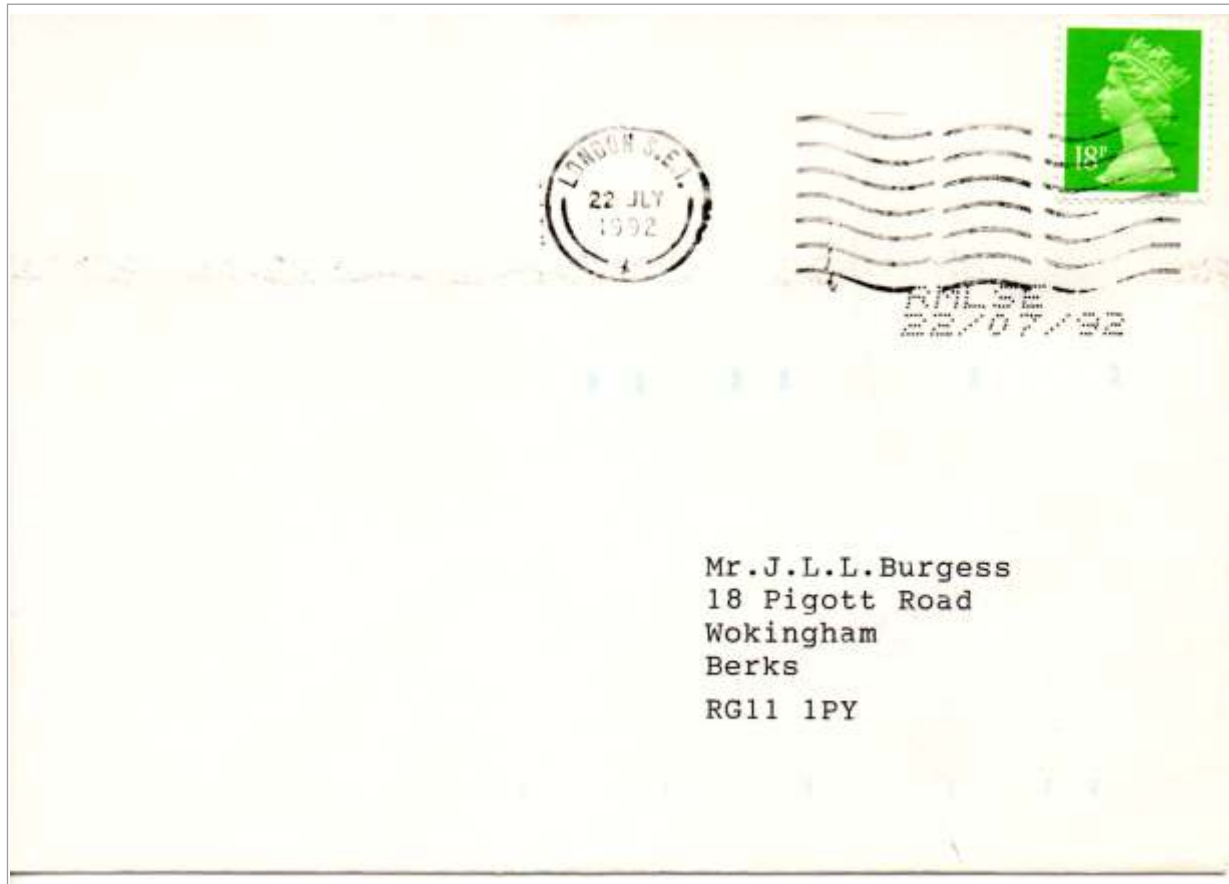
Below is a simplified way of showing how OCR works, taking the digits 1 to 9 and 0 as an example. Basically, as each character is read, it is 'sliced-up' and a histogram of that character (shown in red in the example) is formed in the computer memory. That pattern is then used to look up the nearest match from a library of pre-set patterns.

An AEG-Telefunken Optical Character Recognition (OCR) system was installed at Mount Pleasant in 1982 and various trials carried out during 1983. Phosphor bars were printed consisting of 3 vertical dots (or 7 on dark backgrounds), including an extra bar in position 15 in the lower line which would ensure rejection by an operational sorting machine.



OCR was present in the original ALF machines but used only to detect Official Mail. However, a cherished dream of Post Office engineers had been to implement a high-speed system that could automatically 'read' an address and apply the coding dots.

An early inkjet cancelled cover from London (22/07/92)

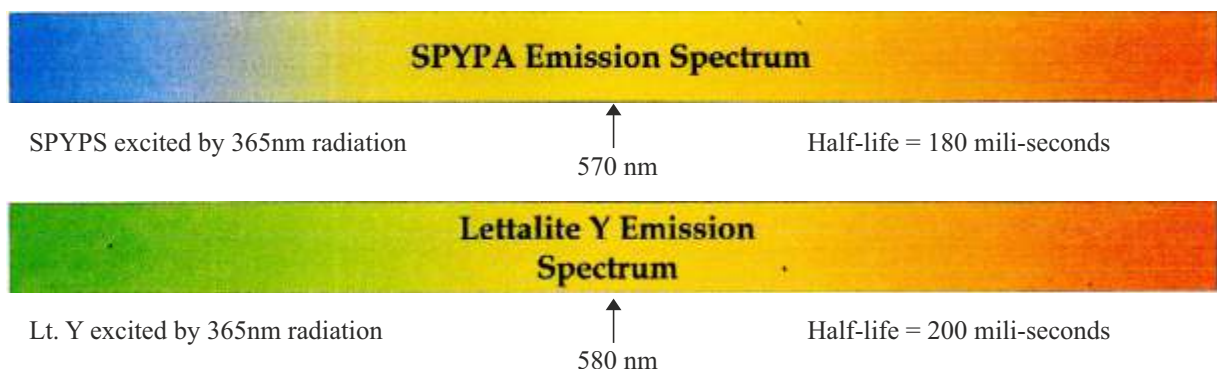


Inkjet Pr
RMLSE
22/7/92
←

18p second class letter rate (60g) used from London S.E.1. (22nd Jul 1992)

During the Postal Union ban on additional mechanisation between 1973-75, Dollis Hill had developed an additional phosphor compound that more closely simulated the emission range of inorganic phosphors such as zinc sulphide. The result was SPYPA and was well suited to high speed ink-jet application and the solid-state sensors found on new mechanisation equipment. The half-life was longer than DLMA but the peak emission in the yellow range outweighed this.

SPYPA would become the workhorse phosphor as OCR developments proceeded.



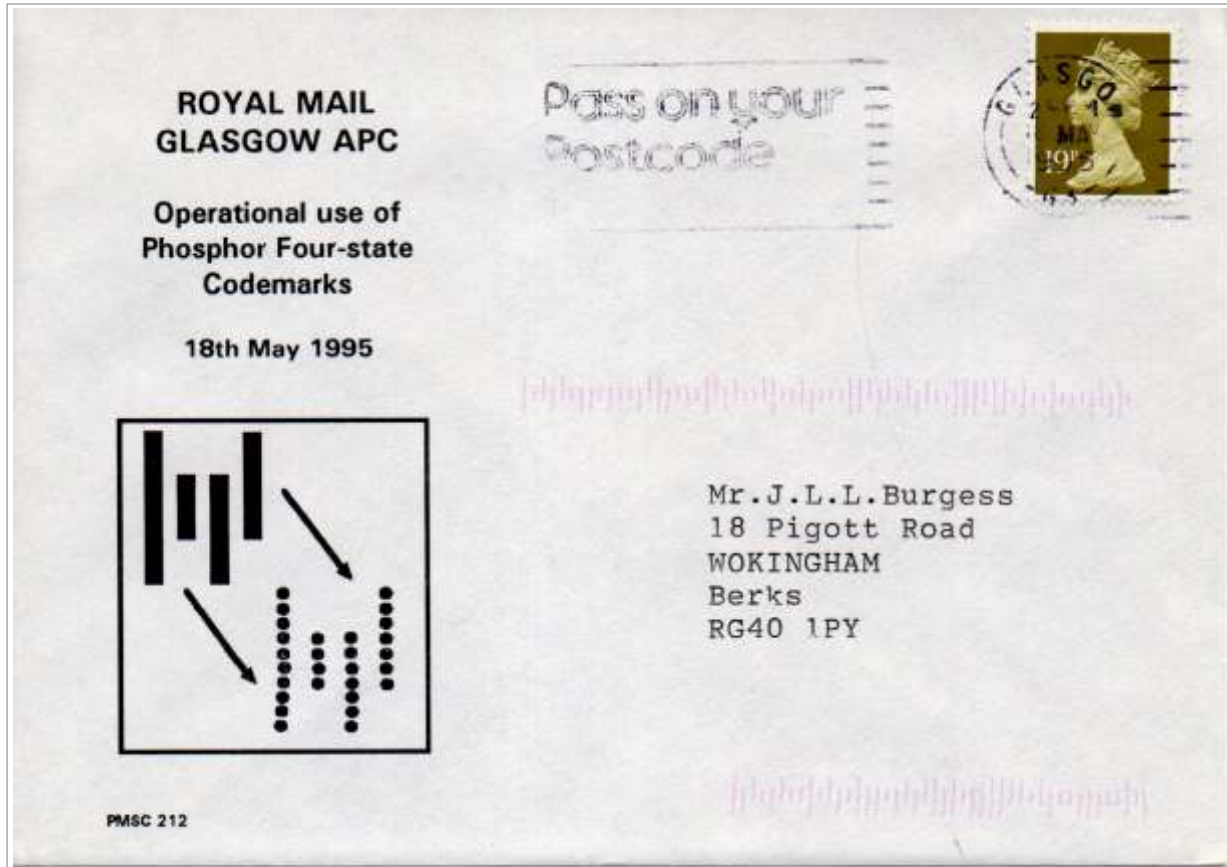
Note the similarity of emission spectrum between SPYPA and Lettalite Y.

The OCR equipment being acquired by the Post Office required an upper “Tag Line”. This is not a destination code but an internally used code in the sorting process. A four state bar-code structure was planned but reading equipment was not yet ready. Therefore, an Interim code was introduced which had the Outgoing & Incoming information all in one line.



Inkjet Pr
→
“25 / 31”





Philatelic Announcement of Phosphor (Four-State) Code Marks.

The Four-State Code

Once the four-state readers were available, the new code scheme was implemented. The top bar code is a Tag Code, used by the sorting machinery for sort routing control and the bottom code line contains both the outgoing and incoming destination information.

Code Part Name	State 1	State 2	State 3	State 4	Bar Height
Ascender					1.60 - 2.16 mm
Track					1.02 - 1.52 mm
Decender					1.60 - 2.16 mm

In this bar code structure, all bar positions are filled reducing read errors that occurred in the dot pattern scheme where a missing dot was part of the value calculations.

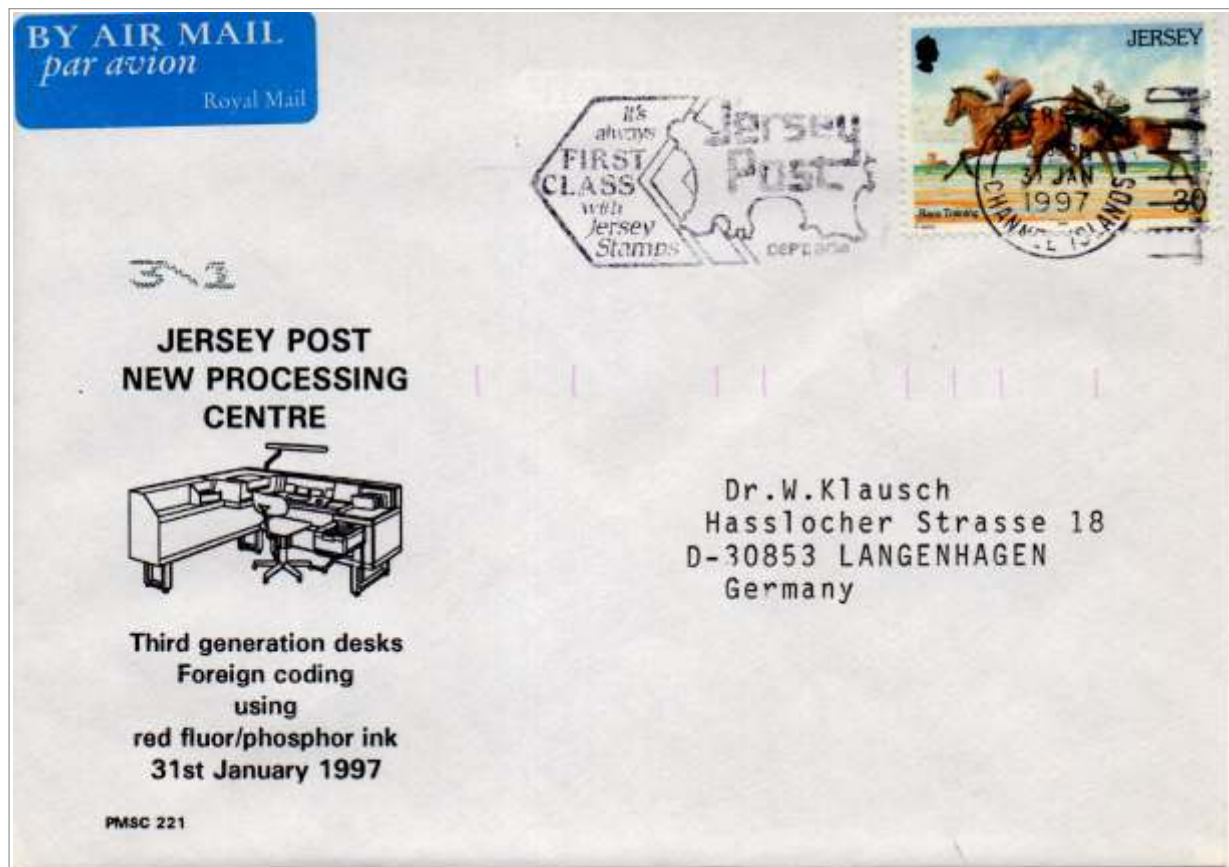
Bar density is 20 to 24 bars per inch

Features

- Each bar has four values encoding two bits vs. the one bit of the dot pattern.
- There is an overall parity check.
- There is an internal parity check for each bar providing additional error reduction.
- There is an algorithm that permits the correct reading of an erroneous or damaged code.

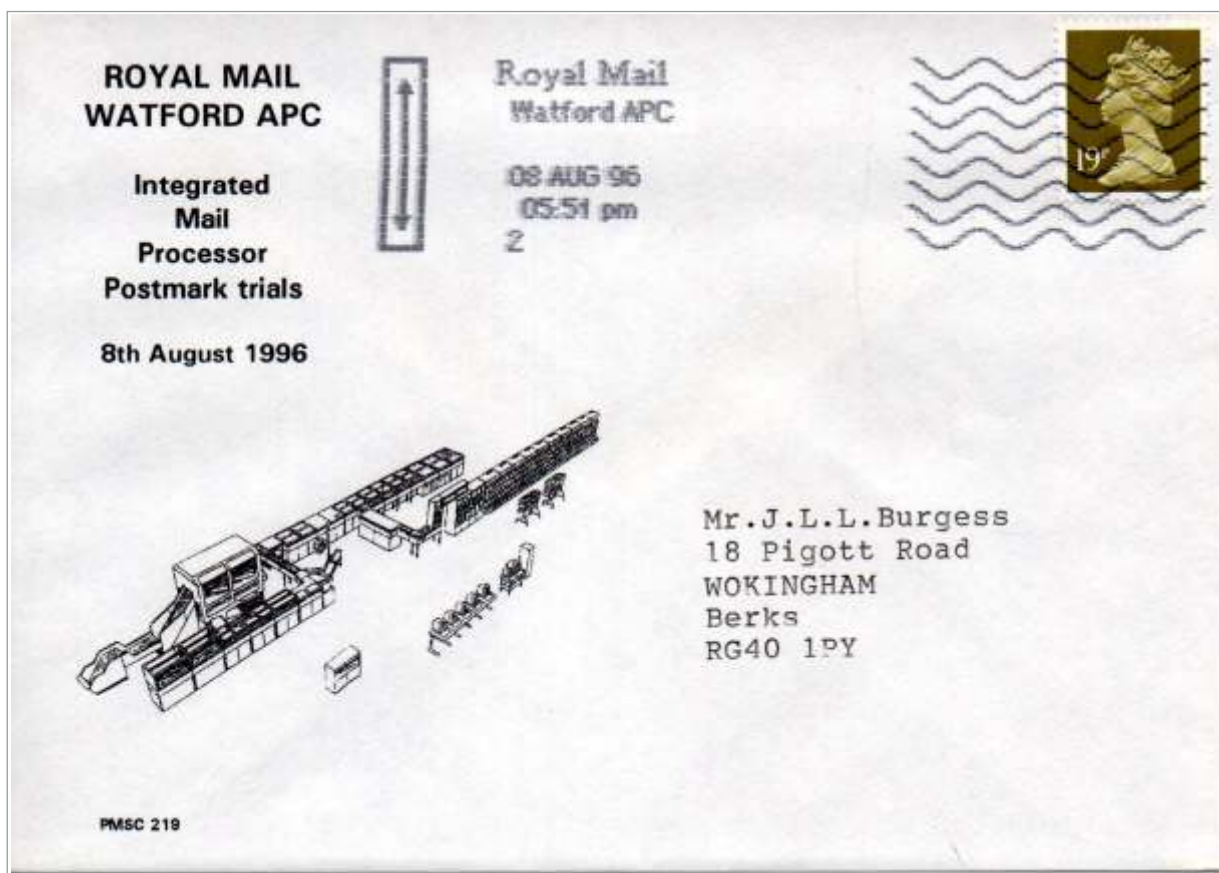


Philatelic Announcement for Trials, Notting APC (14th Sept 1996)

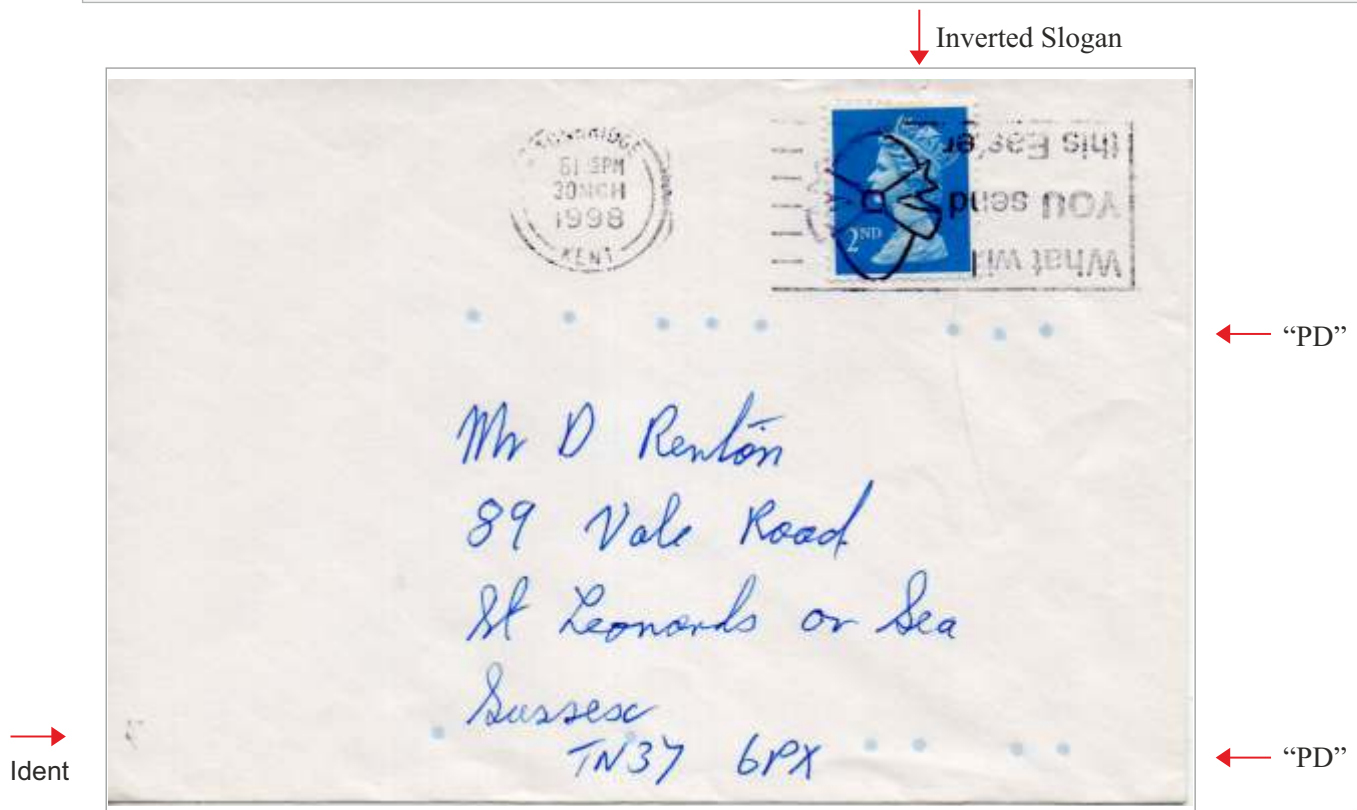


Philatelic Announcement for Third generation desks Jersey Post (31st Jan 1997)

Philatelic Announcement of Integrated Mail Processor at Watford APC (8th Aug 1996)



A test mail / Preflight IMP inkjet card from Birmingham (11th July 2000)



Error : Dater Straight up with Slogan die Upside down.

Errors in ALF cancellors (Inverted Dater) ↓ Dater Error



1st class Rate (14) paid for letter posted at ELGIN (Morayshire) 23rd Aug 1984.