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HOME OFFICE  
DIRECTORATE OF TELECOMMUNICATIONS

Forward Planning and Research Section

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SURVEY OF THE USE OF FACSIMILE  
FOR DOCUMENT TRANSMISSION BY  
THE POLICE IN ENGLAND & WALES.

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Directorate of Telecommunications

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IN ENGLAND AND WALES

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November 1974.

SURVEY OF THE USE OF FACSIMILE FOR DOCUMENT TRANSMISSION BY THE POLICE IN ENGLAND AND WALES.

1. INTRODUCTION

To assist a Cabinet Office Working Party studying methods of document transmission in use by Government Departments, the Home Office Directorate of Telecommunications undertook to carry out a survey and report on the use of facsimile for document transmission by the Police. The survey on which this report is based was intended to ascertain the extent and nature of use of facsimile, to discover its limitations and to try to identify any desirable features not provided by currently available systems which might encourage its wider use.

Although the survey was carried out during April and May 1974, it reflects conditions and views existing prior to 1 April 1974 ie pre-Local Government Reorganisation and the subsequent changes in Police boundaries.

2. METHOD OF SURVEY

With the agreement of the Communications Committee of the Central Conference of Chief Constables, all Chief Constables in England and Wales were asked to complete a questionnaire on the use and possible use of facsimile equipment for document transmission. The covering letter explained the need for information to assist the work of a Cabinet Office Committee on the uses of facsimile by government departments and provided some background notes on the subject.

The questionnaire was in two parts. Part I was designed to be answered by those forces with experience of the use of facsimile, either for a trial evaluation or operationally, to show whether presently available machines were satisfactory in use and their limitations if any. Part II was designed to be answered by all Police forces, whether they had used facsimile or not, to show the likely demand for such equipment and the facilities thought necessary for operational use.

It is desired to acknowledge the considerable assistance in the preparation of the questionnaire given by G Twist Esq CBE QPM LL.M lately Chief Constable, and Officers of the Communications Branch, Bristol Constabulary. (On 1 April 1974 Bristol Constabulary became part of Avon and Somerset Constabulary).

3. RESPONSE

The number of Police forces responding was 42, of whom 17 completed Part I, having used facsimile on trial or operationally. 41 respondents completed Part II. The overall response and quality of replies was high, particularly when taking account of the additional work caused by Local Government Reorganisation to the Officers concerned. A list of forces participating in the survey is attached as Appendix I.

4. RESULTS, ANALYSIS AND SUMMARY

PART I. Questionnaire relating to details of machines and systems in use or used.

Ia.	Number of forces with experience of any kind in the use of facsimile . . . . .	17
Ib.	Number of forces using facsimile at the time of the survey for operational purposes . . . . .	6

- Ic. Total number of machines reported on in survey . . . . . 73
- Id. Number of machines in operational use by the six police forces as at 1 April 1974 . . . . . 39
- Ie. Machines by type and make:

MUIRHEAD	D900/1 AM . . . . .	23
"	D268 A3 Tx . . . . .	1
"	D700 A6 Rx . . . . .	1
"	SENDOK . . . . .	7
DEX	DEX 1 . . . . .	18
RANK XEROX	X244 . . . . .	1
"	TELECOPIER 3 . . . . .	1
"	K400/1D . . . . .	9
PLESSEY	KD 111 . . . . .	12

If. Communications Channel.

Public Switched Network and Private Wire lines were used by six forces, the remainder were divided about equally between two types. No difficulties were reported for normal point-to-point working. The use of the broadcast facility was stated to be very dependent upon line quality. Short distance lines in areas such as Bristol and Bradford were satisfactory; in larger cities such as Manchester with longer noisier lines, performance in broadcast mode were unsatisfactory. (Sub-paragraph Ik refers).

Ig. Unattended Reception.

This was possible with about half the machines reported on and this proportion also applies to machines remaining in operational use. No force reported any difficulty.

Ih. Source Documents.

The majority of source documents were manuscript or typescript (80-90%). The remainder comprised Plans, Sketches and Photographs. No distinction was made in comments on the suitability of the equipments for handling the various types of source document. (Sub-paragraph Il refers).

Ij. Use of Machines.

This varied widely, from Bristol City, using a system comprising 20 machines and broadcast/concentrator equipment carrying some 3,000 messages per week to about 60 messages per week for a group of 3 machines used in a point-to-point application. Bristol City and Bradford City use facsimile for all internal, hard copy communication; other operational users use facsimile as a supplement to teleprinters, mainly for criminal records purposes between criminal records offices and courts.

Ik. Broadcast Facilities.

These were used by four forces including the current operational users. The two forces who did not continue with the use of facsimile after trials had difficulty in the use of this facility because the available lines were not suitable for use with the concentrator equipment.

Il. Quality of Copy.

Quality of copy handling and ageing were said to be satisfactory by the majority; only one force was dissatisfied with ageing properties (Muirhead) and the remainder could not comment as the trial periods were too short.

Im. Paper Supplies.

No paper supply difficulties were reported.

In. Reliability.

The questionnaire asked for reliability to be expressed as faults per machine year. However, as evaluations were carried out over periods of weeks or a few months, answers were mostly in the form of estimates and these indicated an expectation of 2 or 3 faults per machine per year. This was considered to be reasonable for police use. System failures reported by operational users listed more faults due to lines and operators than to the facsimile machines, with later design machines showing fewer operator errors.

Io. Maintenance.

Most forces (15) relied on manufacturers maintenance and, with one exception, all were satisfied. Two forces used their own technical staff with the manufacturer providing back up facilities. The method of restoration of service was generally by repair, a minority (2) by replacement.

Ip. Other Comments.

Lack of compatibility between machines of different manufacture was said to be the main factor limiting more widespread use of facsimile. An additional factor is the incompatibility between the present generation document transmission facsimile equipment and digital communications systems used for telegraphy and computer data.

The machine attracting most favourable comments was the Plessey KD111.

PART II. Questionnaire relating to possible extent of future use and nature of desirable facilities.

IIa. Need for Document Transmission.

The majority of replies indicate that, except for the transmission of photographs and fingerprints, the demand for facsimile is small.

IIb. Staff.

No overall staff saving was foreseen if facsimile is introduced though its use might lead to changes in skills and type of operator required.

IIc. Terminal Facilities.

Terminal equipment facilities thought to be necessary have been tabulated and are attached as APPENDIX II. Facilities not thought to be of value by the majority were: colour transmission, colour discrimination and Secure transmission.

III.d. Methods of Operation by Operational System Users.

- i. For all 'hard' copy internal communications, (by Bristol City Divisions of Avon and Somerset Constabulary and Bradford City in West Yorkshire Police).
- ii. For transmission of Criminal Records from Criminal Records Office to Police stations adjacent to Courts (by Metropolitan Police, Merseyside (Liverpool) Police, Northumbria Police and South Wales Police).

III.e. Comments stressed the need for compatibility before serious consideration could be given either to further use or the introduction of facsimile. The only 'cost effective' use foreseen was that of the transmission of criminal records for use at Courts since this can save a considerable amount of officers' time and the cost of transport.

In general, facsimile is seen as a possible complement rather than a substitute for the teleprinter, particularly as the use of keyboard machines for computer systems increases.

Comments on advantages and disadvantages of facsimile included:-

i. Advantages:

Very little training of operators necessary.  
Photographs and sketches can be transmitted.  
Unattended operation possible.  
Quick by comparison with currently-used Post Office teleprinters.

ii. Disadvantages:

Slow speed of transmission.  
Lack of multiple copy.  
No standard specification (compatibility).  
Cost of terminals and paper is high.  
Lack of definition for small type.

5. CONCLUSIONS

Those police forces that use facsimile have found existing equipment adequate for their purpose and satisfactory in operation. However, satisfactory operation of broadcast facilities is dependent on the availability of suitable quality lines.

The survey shows that the likely requirement for document transmission by facsimile in the police service is very limited. Most forces prefer teleprinter or teleprinter compatible systems, for the transmission of hard copy messages. The only cost effective application for the currently available document transmission class of facsimile equipment shown by the survey is for the transmission of criminal records from records offices to courts.

There is an unfulfilled requirement for the transmission of high quality photographs and fingerprints which cannot be met with equipment of the type covered by this survey. The Home Office is at present investigating this problem, but no conclusions have been reached.

It is possible that the demand for document transmission by facsimile for

police use might increase if machines capable of faster transmission became available, working to compatible standards.

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1. Responding to Part I and II

a. OPERATIONAL

Avon & Somerset Constabulary  
Merseyside Police  
Metropolitan Police  
Northumbria Police  
South Wales Constabulary  
West Yorkshire Police (BRADFORD CITY)

b. TRIAL EVALUATION

Cheshire Constabulary  
Derbyshire Constabulary  
Devon & Cornwall Constabulary  
Dorset Police  
Greater Manchester Police  
Gwent Constabulary  
North Wales Police  
North Yorkshire Police  
Nottinghamshire Constabulary  
Staffordshire Police  
West Midlands Police

2. Responding to Part II only

Bedfordshire Police  
City of London Police  
Cleveland Constabulary  
Cumbria Constabulary  
Durham Constabulary  
Dyfed-Powys Police  
Essex Police  
Gloucester Constabulary  
Hampshire Constabulary  
Hertfordshire Constabulary  
Humberside Police  
Kent County Constabulary  
Lancashire Constabulary  
Leicester Constabulary  
Lincolnshire Police  
Norfolk Constabulary  
Northampton Police  
South Yorkshire Police  
Suffolk Constabulary  
Surrey Constabulary  
Sussex Police  
Thames Valley Police  
Warwickshire Constabulary  
West Mercia Constabulary  
Wiltshire Constabulary.

Desirable Terminal Facilities.

APPENDIX II.

The following facilities required by the majority of respondents:

1. Broadcast
  - a. To all connected terminals
  - b. To pre determined groups of terminals
  - c. To selectable individual terminals.
2. Source Documents to be Transmitted
  - a. Black/white and half tones
  - b. Typescript, manuscript, Photofit and Photographs
  - c. Sketches, Maps and Line Diagrams
  - d. Size up to A4.
  - e. Smallest type size "elite".
3. Automatic answering on PSTN connections.
4. Automatic acknowledgement.
5. Unattended reception.
6. Ability to select part of document for transmission.
7. Multiple copies (between 3 and 6).
8. Transmit/Receive Machine.
9. Durable copy to withstand rough useage and retention of image clarity in files.
10. Environment
  - a. Normal office with 240v 50 Hz supply
  - b. Incident vehicle with nominal 12v DC supply.
11. Compatibility with machines of different manufacture.

**END**