

# The Post Office Electrical Engineers' Journal

## INDEX

### VOLUME 69

(April 1976–January 1977)

A	
ADAMS, R. H., and THARBY, R. The Protection of Operational Buildings against Gas Entry	110
Address (1928), The Birth and Babyhood of the Telephone: Dr. Watson's	3
Aid for International Exchanges, A New Maintenance	191
Alexander Graham Bell	2
Amplifiers for Local-Line Wideband Distribution Systems	116
Area's Involvement, Installation of the UK–France No. 1 Cable: Brighton Telephone	187
Associate Section National Committee Report, The	63, 131, 205, 272
Associate Section Notes	62, 130, 203, 271
Audio Junction Cables	239
AXE, G. A. The Development of Dual-Cable Systems for New Towns	48
B	
Babyhood of the Telephone, The Birth and: Dr. Watson's Address (1928)	3
BACK, R. E. G., HORNE, F. A., CROFT, E., DAVEY, K., and COLLETT, R. E. S. The Experimental Changes of Practice Committees: ECOPCs 2 and 3	87
BARLOW, G. H., HAWKES, J. B., and ROBBINS, C. H. Translation Equipment for British Post Office Local-Line Wideband Systems	51
BEALE, G. A., MOON, R. J., and TARRY, D. G. TXE2 Electronic Exchange System: The Evolution from Mark 1 to Mark 3	210
Bell, Alexander Graham	2
Birth and Babyhood of the Telephone, The: Dr. Watson's Address (1928)	3
Book Reviews	18, 57, 78, 92, 109, 121, 153, 174, 184, 198, 216, 234, 246, 249, 264
Box for Renters' Use, Portable Coin-Collecting	265
BRIGHAM, E. R., SNAITH, M. J., and WILCOX, D. M. Multiplexing for a Digital Main Network	93
Brighton Telephone Area's Involvement, Installation of the UK–France No. 1 Cable:	187
Bristol's Floating Harbour, Underwater Duct-Laying in	247
BROWN, N. W., and WILLETTS, D. The Thames Valley Radiopaging Trial	103
Buildings against Gas Entry, The Protection of Operational	110
BURGESS, M. J., and LOCKWOOD, J. A. Experimental Packet-Switched Service: The Customers and their Packet Terminals	122
BURT, D. R., DUDMAN, E. C., and WILLIAMS, R. N. A Computerized Spare-Plant Return for Local Lines—SPRET	180
C	
Cable, Installation of the UK–France No. 1: Brighton Telephone Area's Involvement	187
Cable Pressurization in the British Post Office Network, A Review of	169
Cables, Audio Junction	239
Cable Systems for New Towns, The Development of Dual-	48
Carrier Digital Transmissions by Satellite, Single-Channel-per-	38
Centre, The Design of Martlesham Research	146
Part 1—Basic Design Requirements and Design of Buildings	258
Part 2—Services Provided	87
Changes of Practice Committees, The Experimental: ECOPCs 2 and 3	87
Channel-per-Carrier Digital Transmissions by Satellite, Single-	38
CLINCH, C. E., and HARE, A. G. ISSLS 1976—The Local Telecommunication Network: The International Scene	185
Coin-Collecting Box for Renters' Use, Portable	265
COLLETT, R. E. S., HORNE, F. A., BACK, R. E. G., CROFT, E., and DAVEY, K. The Experimental Changes of Practice Committees: ECOPCs 2 and 3	87
Committees, The Experimental Changes of Practice: ECOPCs 2 and 3	87
Computerized Spare-Plant Return for Local Lines—SPRET, A	180
CROFT, E., HORNE, F. A., BACK, R. E. G., DAVEY, K., and COLLETT, R. E. S. The Experimental Changes of Practice Committees: ECOPCs 2 and 3	87
Customers and their Packet Terminals, Experimental Packet-Switched Service: The	122
D	
Data Transmission in the United Kingdom, A Review of	19
DAVEY, K., HORNE, F. A., BACK, R. E. G., CROFT, E., and COLLETT, R. E. S. The Experimental Changes of Practice Committees: ECOPCs 2 and 3	87
DEAN, P. Reliability Targets for Telephone Exchanges	235
Design of Martlesham Research Centre, The	146
Part 1—Basic Design Requirements and Design of Buildings	258
Part 2—Services Provided	79
Design, Production and Installation of the Waveguide, The Millimetric Waveguide System: The	79
Development, Local Distribution—An Assessment for Future System	27
Part 2—Systems Examples and Longer-Term Proposals	154
Development of a 120 Mbit/s Digital Line System	217
Part 1—System Principles, Equipment Engineering and Maintenance	48
Part 2—Equipment Description	154
Development of Dual-Cable Systems for New Towns, The Digital Line System, Development of a 120 Mbit/s	217
Part 1—System Principles, Equipment Engineering and Maintenance	93
Part 2—Equipment Description	38
Digital Main Network, Multiplexing for a	38
Digital Transmissions by Satellite, Single-Channel-per-Carrier	27
Distribution, Local—An Assessment for Future System Development	116
Part 2—Systems Examples and Longer-Term Proposals	140
Distribution Systems, Amplifiers for Local-Line Wideband	116
Dollis Hill, The Story of	140

Dr. Watson's Address (1928), The Birth and Babyhood of the Telephone:	3
Dual-Cable Systems for New Towns, The Development of Duct-Laying in Bristol's Floating Harbour, Underwater	48
DUDLEY, L. W., MARTIN-ROYLE, R. D., and FEVIN, R. J. A Review of the British Post Office Microwave Radio-Relay Network	247
Part 1—History and Planning	162
Part 2—Performance and Reliability	225
DUDMAN, E. C., WILLIAMS, R. N., and BURT, D. R. A Computerized Spare-Plant Return for Local Lines—SPRET	180
DUFOUR, I. G., and LAWRENCE, A. J. Audio Junction Cables	239

E

ECOPCs 2 and 3, The Experimental Changes of Practice Committees:	87
Editorial	1, 67, 139, 209
Electronic Exchange System, TXE2: The Evolution from Mark 1 to Mark 3	210
Electronic Exchange System, TXE4	68
Part 2—Design of Switching and Control Equipment	51
Equipment for British Post Office Local-Line Wideband Systems, Translation	250
Equipment, The Millimetric Waveguide System: Terminal and Repeater	250
Evolution from Mark 1 to Mark 3, TXE2 Electronic Exchange System: The	210
Evolution of the United Kingdom Telephone Service, The Exchanges, A New Maintenance Aid for International Exchanges, Reliability Targets for Telephone	191
Exchange System, TXE2 Electronic: The Evolution from Mark 1 to Mark 3	235
Exchange System, TXE4 Electronic	210
Part 2—Design of Switching and Control Equipment	68
Experimental Changes of Practice Committees, The: ECOPCs 2 and 3	87
Experimental Packet-Switched Service: The Customers and their Packet Terminals	122

F

FEVIN, R. J., MARTIN-ROYLE, R. D., and DUDLEY, L. W. A Review of the British Post Office Microwave Radio-Relay Network	247
Part 1—History and Planning	162
Part 2—Performance and Reliability	225
FIELDING, J. Underwater Duct-Laying in Bristol's Floating Harbour	247
Floating Harbour, Underwater Duct-Laying in Bristol's	247
FLOYD, C. F. The Design of Martlesham Research Centre	146
Part 1—Basic Design Requirements and Design of Buildings	258
Part 2—Services Provided	187
France No. 1 Cable, Installation of the UK—: Brighton Telephone Area's Involvement	187

G

Gas Entry, The Protection of Operational Buildings against	110
--	-----

H

HAILES, B., and NICHOLLS, D. P. Amplifiers for Local-Line Wideband Distribution Systems	116
HALL, G. C. Single-Channel-per-Carrier Digital Transmissions by Satellite	38
Harbour, Underwater Duct-Laying in Bristol's Floating	247
HARCOURT, E. N., and MYNOTT, C. R. A Review of Cable Pressurization in the British Post Office Network	169
HARE, A. G., and CLINCH, C. E. ISSLS 1976—The Local Telecommunication Network: The International Scene	185
HARE, A. G. Local Distribution—An Assessment for Future System Development	27
Part 2—Systems Examples and Longer-Term Proposals	51
HAWKES, J. B., BARLOW, G. H., and ROBBINS, C. H. Translation Equipment for British Post Office Local-Line Wideband Systems	87
HORNE, F. A., BACK, R. E. G., CROFT, E., DAVEY, K., and COLLETT, R. E. S. The Experimental Changes of Practice Committees: ECOPCs 2 and 3	87

I

Installation of the UK—France No. 1 Cable: Brighton Telephone Area's Involvement	187
Installation of the Waveguide, The Millimetric Waveguide System: The Design, Production and	79

Institution of Post Office Electrical Engineers	65, 132, 206, 272
International Exchanges, A New Maintenance Aid for	191
International Scene, ISSLS 1976—The Local Telecommunication Network: The	185
ISSLS 1976—The Local Telecommunication Network: The International Scene	185

J

Junction Cables, Audio	239
Junction Network, The	175

K

KYME, R. C. The Junction Network	175
----------------------------------	-----

L

LAWRENCE, A. J., and DUFOUR, I. G. Audio Junction Cables	239
Line-Plant Statistics for the United Kingdom, Local-Network Lines—SPRET, A Computerized Spare-Plant Return for Local	190
Line System, Development of a 120 Mbit/s Digital	180
Part 1—System Principles, Equipment Engineering and Maintenance	154
Part 2—Equipment Description	217
Line Wideband Distribution Systems, Amplifiers for Local-Line Wideband Systems, Translation Equipment for British Post Office Local-	116
LINFORD, N. S. The Evolution of the United Kingdom Telephone Service	51
Local Distribution—An Assessment for Future System Development	12
Part 2—Systems Examples and Longer-Term Proposals	27
Local Lines—SPRET, A Computerized Spare-Plant Return for	180
Local-Line Wideband Distribution Systems, Amplifiers for Local-Line Wideband Systems, Translation Equipment for British Post Office	116
Local-Network Line-Plant Statistics for the United Kingdom	190
Local Telecommunication Network, ISSLS 1976—The: The International Scene	185
LOCKWOOD, J. A., and BURGESS, M. J. Experimental Packet-Switched Service: The Customers and their Packet Terminals	122

M

Main Network, Multiplexing for a Digital	93
Maintenance Aid for International Exchanges, A New	191
Mark 1 to Mark 3, TXE2 Electronic Exchange System: The Evolution from	210
Mark 3, TXE2 Electronic Exchange System: The Evolution from Mark 1 to	210
MARTIN-ROYLE, R. D., DUDLEY, L. W., and FEVIN, R. J. A Review of the British Post Office Microwave Radio-Relay Network	162
Part 1—History and Planning	225
Part 2—Performance and Reliability	225
Martlesham Research Centre, The Design of	146
Part 1—Basic Design Requirements and Design of Buildings	258
Part 2—Services Provided	34
MERLO, D. The Millimetric Waveguide System: The Current Situation	34
Microwave Radio-Relay Network, A Review of the British Post Office	162
Part 1—History and Planning	225
Part 2—Performance and Reliability	225
Millimetric Waveguide System, The:	34
The Current Situation	79
The Design, Production and Installation of the Waveguide	250
Terminal and Repeater Equipment	210
MOON, R. J., BEALE, G. A., and TARRY, D. G. TXE2 Electronic Exchange System: The Evolution from Mark 1 to Mark 3	210
MOORE, M. B. Portable Coin-Collecting Box for Renters' Use	265
Multiplexing for a Digital Main Network	93
MYNOTT, C. R., and HARCOURT, E. N. A Review of Cable Pressurization in the British Post Office Network	169

N

Network, A Review of Cable Pressurization in the British Post Office	169
--	-----

Network, A Review of the British Post Office Microwave Radio-Relay	
Part 1—History and Planning	162
Part 2—Performance and Reliability	225
Network, ISSLS 1976—The Local Telecommunication: The International Scene	185
Network Line-Plant Statistics for the United Kingdom, Local-	190
Network, Multiplexing for a Digital Main	93
Network, The Junction	175
New Towns, The Development of Dual-Cable Systems for	48
NICHOLLS, D. P., and HAILES, B. Amplifiers for Local-Line Wideband Distribution Systems	116
Notes and Comments	64, 134, 207, 273

O

120 Mbit/s Digital Line System, Development of a	
Part 1—System Principles, Equipment Engineering and Maintenance	154
Part 2—Equipment Description	217
Operational Buildings against Gas Entry, The Protection of	110

P

Packet-Switched Service, Experimental: The Customers and their Packet Terminals	122
PHILLIPS, J. L., and ROWE, M. T. TXE4 Electronic Exchange System	
Part 2—Design of Switching and Control Equipment	68
Plant Return for Local Lines—SPRET, A Computerized Spare-	180
Plant Statistics for the United Kingdom, Local-Network Line-	190
Portable Coin-Collecting Box for Renters' Use	265
Post Office Press Notices	135, 208, 274
Practice Committees, The Experimental Changes of: ECOPCs 2 and 3	87
Pressurization in the British Post Office Network, A Review of Cable	169
Production and Installation of the Waveguide, The Millimetric Waveguide System: The Design,	79
Protection of Operational Buildings against Gas Entry, The	110

R

Radiopaging Trial, The Thames Valley	103
Radio-Relay Network, A Review of the British Post Office Microwave	
Part 1—History and Planning	162
Part 2—Performance and Reliability	225
RAVENSCROFT, I. A. The Millimetric Waveguide System: Terminal and Repeater Equipment	250
Regional Notes	58, 127, 199, 267
Relay Network, A Review of the British Post Office Microwave Radio-	
Part 1—History and Planning	162
Part 2—Performance and Reliability	225
Reliability Targets for Telephone Exchanges	235
Renters' Use, Portable Coin-Collecting Box for	265
Repeater Equipment, The Millimetric Waveguide System: Terminal and	250
Research Centre, The Design of Martlesham	
Part 1—Basic Design Requirements and Design of Buildings	146
Part 2—Services Provided	258
Return for Local Lines—SPRET, A Computerized Spare-Plant	180
Review of Cable Pressurization in the British Post Office Network, A	169
Review of Data Transmission in the United Kingdom, A	19
Review of the British Post Office Microwave Radio-Relay Network, A	
Part 1—History and Planning	162
Part 2—Performance and Reliability	225
RITCHIE, W. K., and ROWLANDS, C. E. The Millimetric Waveguide System: The Design, Production and Installation of the Waveguide	79
ROBBINS, C. H., BARLOW, G. H., and HAWKES, J. B. Translation Equipment for British Post Office Local-Line Wideband Systems	51
ROWE, M. T., and PHILLIPS, J. L. TXE4 Electronic Exchange System	
Part 2—Design of Switching and Control Equipment	68
ROWLANDS, C. E., and RITCHIE, W. K. The Millimetric Waveguide System: The Design, Production and Installation of the Waveguide	79

S

Satellite, Single-Channel-per-Carrier Digital Transmissions by	38
SCHICKNER, M. J., and ZICK, L. C. Development of a 120 Mbit/s Digital Line System	
Part 1—System Principles, Equipment Engineering and Maintenance	154
Part 2—Equipment Description	217
Service, Experimental Packet-Switched: The Customers and their Packet Terminals	122
Single-Channel-per-Carrier Digital Transmissions by Satellite	38
SMITH, R. N. Installation of the UK-France No. 1 Cable: Brighton Telephone Area's Involvement	187
SNAITH, M. J., BRIGHAM, E. R., and WILCOX, D. M. Multiplexing for a Digital Main Network	93
Spare-Plant Return for Local-Lines—SPRET, A Computerized	180
SPENCER, H. J. C. Local-Network Line-Plant Statistics for the United Kingdom	190
SPRATT, C. J. A Review of Data Transmission in the United Kingdom	19
SPRET, A Computerized Spare-Plant Return for Local-Lines—	180
Statistics for the United Kingdom, Local-Network Line-Plant	190
Story of Dollis Hill, The	140
SYLVESTER, D. J., and WEST, N. V. A New Maintenance Aid for International Exchanges	191
System Development, Local Distribution—An Assessment for Future	
Part 2—Systems Examples and Longer-Term Proposals	27
System, Development of a 120 Mbit/s Digital Line	
Part 1—System Principles, Equipment Engineering and Maintenance	154
Part 2—Equipment Description	217
Systems, Amplifiers for Local-Line Wideband Distribution	116
Systems for New Towns, The Development of Dual-Cable	48
Systems, Translation Equipment for British Post Office Local-Line Wideband	51
System, The Millimetric Waveguide:	
The Current Situation	34
The Design, Production and Installation of the Waveguide	79
Terminal and Repeater Equipment	250
System, TXE2 Electronic Exchange: The Evolution from Mark 1 to Mark 3	210
System, TXE4 Electronic Exchange	
Part 2—Design of Switching and Control Equipment	68

T

Targets for Telephone Exchanges, Reliability	235
TARRY, D. G., MOON, R. J., and BEALE, G. A. TXE2 Electronic Exchange System: The Evolution from Mark 1 to Mark 3	210
Telecommunication Network, ISSLS 1976—The Local: The International Scene	185
Telephone Area's Involvement, Installation of the UK-France No. 1 Cable: Brighton	187
Telephone Exchanges, Reliability Targets for	235
Telephone Service, The Evolution of the United Kingdom	12
Telephone, The Birth and Babyhood of the: Dr. Watson's Address (1928)	3
Terminal and Repeater Equipment, The Millimetric Waveguide System:	250
Terminals, Experimental Packet-Switched Service: The Customers and their Packet	122
Thames Valley Radiopaging Trial, The	103
THARBY, R., and ADAMS, R. H. The Protection of Operational Buildings against Gas Entry	110
Towns, The Development of Dual-Cable Systems for New	48
Translation Equipment for British Post Office Local-Line Wideband Systems	51
Transmission in the United Kingdom, A Review of Data	19
Digital	
Digital Transmissions by Satellite, Single-Channel-per-Carrier	38
Trial, The Thames Valley Radiopaging	103
TXE2 Electronic Exchange System: The Evolution from Mark 1 to Mark 3	210
TXE4 Electronic Exchange System	
Part 2—Design of Switching and Control Equipment	68

U

UK-France No. 1 Cable, Installation of the: Brighton Telephone Area's Involvement	187
Underwater Duct-Laying in Bristol's Floating Harbour	247
United Kingdom, A Review of Data Transmission in the	19
United Kingdom, Local-Network Line-Plant Statistics for the	190
United Kingdom Telephone Service, The Evolution of the	12

W	
Watson's Address (1928). The Birth and Babyhood of the Telephone: Dr. . . . . .	3
Waveguide System, The Millimetric: The Current Situation . . . . .	34
The Design, Production and Installation of the Waveguide . . . . .	79
Terminal and Repeater Equipment . . . . .	250
WEST, N. V., and SYLVESTER, D. J. A New Maintenance Aid for International Exchanges . . . . .	191
Wideband Distribution Systems, Amplifiers for Local-Line	116
Wideband Systems, Translation Equipment for British Post Office Local-Line . . . . .	51
WILCOX, D. M., BRIGHAM, E. R., and SNAITH, M. J. Multiplexing for a Digital Main Network . . . . .	93

WILLETTS, D., and BROWN, N. W. The Thames Valley Radio-paging Trial . . . . .	103
WILLIAMS, F. E. The Story of Dollis Hill . . . . .	140
WILLIAMS, R. N., DUDMAN, E. C., and BURT, D. R. A Computerized Spare-Plant Return for Local Lines—SPRET . . . . .	180

### Z

ZICK, L. C., and SCHICKNER, M. J. Development of a 120 Mbit/s Digital Line System	
Part 1—System Principles, Equipment Engineering and Maintenance . . . . .	154
Part 2—Equipment Description . . . . .	217

### VOLUME 69

Part 1 (Apr. 1976) . . . . .	pp. 1-65
Part 2 (July 1976) . . . . .	pp. 67-137
Part 3 (Oct. 1976) . . . . .	pp. 139-208
Part 4 (Jan. 1977) . . . . .	pp. 209-275