IMPORTANT NOTE

This manual is incomplete and stops at the section for programming individual extensions.

However, the programming sequences are identical with those for the London 16 and reference to the London 16 Programming Manual will supply the missing information

1. INTRODUCTION

The London 32 and the London 64 PABXs have somewhat different hardware, relating to their different capacities. However, they use the same software, so that the programming of each system is done with the same codes. This manual can therefore be used with either system.

1.1. London 32/64 configurations and optional MF facility

The London 32 and the London 64 are modular systems, which can be expanded from their minimum configuration of four exchange lines and eight extensions. Expansion is achieved by adding further line cards to increment the number of exchange lines in groups of four or eight, and the number of extensions in groups of eight. One 4-exchange line card may be included in the system to provide a 4-line increment for expanding the exchange line capability. The maximum sizes of the systems are as shown:

London 32

	Increments	Maximum
Exchange lines	4 or 8	8
Extensions	8	24
Ports		32

London 64

Exchange lines	4 or 8	16
Extensions	8	56
Ports		64

An interface is provided on all systems for the connection of an RS232C/V24 printer to provide call logging information.

The London 32 and the London 64 can be installed with an optional facility allowing the use of MF (tone) extension telephones as well as loop-disconnect (pulse) telephones. With the MF option fitted, any extension socket is compatible with either MF telephones or loop-disconnect telephones. The MF telephones must have timed break recall buttons.

1.2. Operation in compliance with approval requirements 84/012I

This section contains statutory warnings and instructions which must be observed in operating the London 32 and the London 64.

All extension telephone sockets must be labelled "WARNING. Connect only apparatus complying with BS6301 to this port."

Only telephone instruments approved to BS6317 should be used as extension telephones on the London 32 and the London 64.

WARNING: Interconnection directly, or by way of other apparatus, of ports marked "WARNING: Connect only apparatus complying with BS6301 to this port" with ports not so marked may produce hazardous conditions on the BT lines and advice should be obtained from a competent engineer before such a connection is made.

The London 32 and the London 64 PABXs are suitable for connection to loop calling unguarded clearing bothway BT lines.

The London 32 and the London 64 PABXs have been designed by National Telephone Systems Ltd and are manufactured in the UK. "London 32" and "London 64" are the designated model numbers.

The London 32 and the London 64 are approved for loop disconnect signalling to the PSTN.

Extensions must be cabled in a 2 wires per extension star configuration with telephones connected via type LJ2/1A sockets using 0.5 sq mm copper cable. The maximum cable loop resistance is 97.8 ohms (500m .5 sq mm copper cable). The cable should comply with the appropriate parts of BS4808. The installation must comply with the DTI code of practice.

Refer to section 1.3 of this manual for details of the power fail operation of the London 32 and the London 64.

The maximum cable length between the PABX and the MDF/TJF is 30m. 2m cables are supplied as standard.

If the MF option is fitted the London 32 and the London 64 may be operated with either loop disconnect or MF4 telephones.

Only simple telephones approved to BS6317 and included in lists 1, 2, 5, 6, 7, 8, 9, 10 should be connected to the London 32 or the London 64.

The sum of the REN numbers of telephones connected to a single extension port must not exceed 3. The sum of the REN numbers of all telephones connected to the London 32 or the London 64 must not exceed 70.

PSTN lines may be selected either automatically by dialling "9" or manually by dialling "8NN" where NN is the number of the PSTN line to be selected.

The printer port fuse disconnection barrier on the system motherboard must be fitted with fuses rated in accordance with the motherboard labelling : 100mA / 250v.

1.3. Power fail operation

In the event of a mains power failure the London 32 and London 64 will automatically connect up to eight of the exchange lines directly to eight extensions. Lines 1 to 8 will be directly connected to extensions 221 through to 228. When power is restored, the exchange will again become fully operative.

Note: In Power Fail mode the extension telephones connected to the power fail fallback extensions must be loop disconnect, pulse dialling telephones. The London 32/64 Installation and Configuration Record will contain information concerning the numbers of the BT lines which will be connected to each power fail extension.

All stored numbers and system programming information will be retained for at least 10 hours by internal battery back up.

2. INTRODUCTION TO PROGRAMMING AND CONFIGURING THE LONDON 32/64

The London 32 and the London 64 have been designed to provide considerable flexibility in system configuration and modes of operation. In addition to the user features and programming facilities described in the user guide, the London 32 and the London 64 have a number of programming facilities which are normally not available to all users.

This manual describes programming facilities which may be useful to the system owner.

2.1. London 32/64 configuration and programming record

The system installer will have completed the Configuration Record on pp.28/29 for your London 32 or London 64 PABX. He should also have obtained a printout of the programming configuration. It is important that these documents are kept in a safe place and updated whenever the system configuration is altered in any way.

Certain items defining the system configuration can only be set or modified by the installer or approved maintainer of your system. These are:

* Number of outside lines connected to the London 32: up to 8

* Number of outside lines connected to the London 64: up to 16

* The telephone number of each line: as defined in the configuration record.

* Number of extensions on the London 32: up to 24

* Number of extensions on the London 64: up to 56

* Whether an operator display unit is present

If you have special requirements in relation to any of the above facilities then you should arrange for your installer to configure the system accordingly.

2.2. Programming codes

The special dialling codes listed in this manual can only be dialled from a master extension. Master extensions have all the properties of normal extensions with some additional capabilities which it might be undesirable to make generally available.

When the PABX is first powered up, only extension 221 is a master phone; but the system can be reprogrammed so that any desired combination of extensions have this privilege.

AFTER DIALLING ANY OF THE CODES LISTED IN THIS MANUAL YOU SHOULD HEAR AN INTERNAL DIAL TONE. A "NUMBER UNOBTAINABLE" TONE (CONTINUOUS HIGH PITCH) INDICATES THAT THE CODE HAS BEEN IMPROPERLY DIALLED OR IS NOT BEING DIALLED FROM THE MASTER PHONE.

2.3. Examining the PABX configuration

If you have a printer attached to the RS232C/V24 interface of your PABX it is possible at any time to examine the current programming configuration. The special dialling code:

1951

causes current programming information to be listed on the printer in the following format:

Number of extensions	- Set by installer
Number of outside lines	- Set by installer
Display unit extension number (if fitted)	- 221 unless altered using the '1967'dialling code (see section 9.1)
Time and date	- HH:MM:SS on ddd dd mmm
Day / night mode	- Whether currently in night mode
Outside line groups	- Group number to which each outside line belongs
Extension properties	- Listed for each extension:

Extension Programming Configuration
(Entries in table show standard shipping configuration)

Ext	Ring	Dial	Answer	Bar	Hunt	Divert	Attrib
221	63/63	01	63	0/0	0	None	M O S
222	63/63	01	63	0/0	0	None	S
223	63/63	01	63	0/0	0	None	S
224	00/00	01	63	0/0	0	None	S
225	00/00	01	63	0/0	0	None	S
	. . . . through to . . .						
276*	00/00	01	63	0/0	0	None	S

* 244 on the London 32

Day mode starts at hh:mm:ss A.M.
Night mode starts at hh:mm:ss P.M.

Ring: Outside line group mask for day/night mode ringing

Dial: Outside line group mask for outgoing calls

Answer: Outside line group mask for incoming call remote answer

Bar: Call Barring level for day/night mode:
0 = no calls barred
1 = international calls barred
2 = international and STD calls barred
3 = emergency calls only (999)

Hunt: Hunt group (01 to 19) that extension is in
(0 = no hunting)

Divert: Extension number to which calls for this extension are diverted

Attribute: M = Master phone
0 = Operator display unit phone
R = Remote answering of this extension barred
I = Call interruption barred for this extension
S = 40-second ringing on
D = 602xx codes disabled

2.4. Programming the switchover of day/night modes

It is possible to program the London 32 and the London 64 to switch between day and night modes at the same times each day.

The dialling code to set the start of day mode is:

1920hhmm

The dialling code to set the start of night mode is:

1921hhmm

Where hhmm is the time in 24-hour format.

To cancel, use 19200000 or 19210000.

In addition, a reception phone can manually switch the system between day and night mode, using the codes:

600 - set day mode

601 - set night mode

3. SETTING THE TIME AND DATE

The PABX has a built in clock and day/month calendar for use by the call logging option and the alarm call facility.

The dialling code for setting the time is :

1961 + time

The time is given in 24-hour format, hours then minutes, for example :

19610203	2.03 A.M.
19611639	4.39 P.M.
19610000	12.00 P.M.(midnight)

The time will be set and the "seconds" counter zeroed when the last digit has been dialled, and a dial tone will be heard.

The date, for call logging purposes, is set by two different codes, one for the numeric day and month, the other for the day of the week.

1962 + day + month
1963 + day of week

For example :

19620912	9 December
19623004	30 April
19620101	1 January
19631	Monday
19632	Tuesday
19633	Wednesday
19634	Thursday
19635	Friday
19636	Saturday
19637	Sunday

Once the time and date have been set, they need to be reset only on 1 March during a leap year.

When completed, these codes should give you a dial tone. A "NUMBER UNOBTAINABLE" TONE (CONTINUOUS HIGH PITCH) INDICATES THAT THE CODE HAS BEEN MIS-DIALLED OR THE TIME/DATE IS OUTSIDE THE APPROPRIATE RANGE.

4. CALL LOGGING

The call logging facility is switched on or off by the following codes :

19650	Call logging off
19651	Call logging on

All external calls (incoming or outgoing) are logged in the chronological order of their completion. The printout shows the following information, in column form from left to right :

1. Date of call (Day of week, day, month)
2. Start time (Hours, minutes, seconds, A.M./P.M.)
3. Outside line number (01 to 08 on the London 32
   01 to 16 on the London 64)
4. First 18 digits of outside number dialled
   (or "INCOMING" if incoming call)
5. Charge account code (if entered) - five digits
6. Length of call (hours, minutes, seconds)
7. Number of meter pulses used (if meter pulse detection is installed, three digits , if not then ---.)
8. Cost of call (if meter pulse detection is installed).
9. Number of extension involved
   (221 to 244 on the London 32
   221 to 276 on the London 64)
10. Number of extension that originally made or received the call
    (if different from 9 above)

The system will initially power up with call logging on.

5. PROGRAMMING THE CENTRAL DIALLING MEMORIES

In addition to the local memories belonging to each extension, the London 32 and the London 64 have 70 central dialling memories shared between all the extensions, which may be used for storing numbers likely to be dialled by more than one extension.

Numbers stored in memories 70 to 99 are subject to the call barring restrictions placed on any extension attempting to dial an outside call from them.

Memories 30 to 69 are freely accessible from all extensions regardless of any call barring.

The central memories are programmed in the same way as the local (extension) memories, except that the memory number is in the range 30 to 99 and that numbers can only be entered from a master programming extension.

To store a number in central memory, dial on the MASTER PHONE:

603 + NN + outside number

where NN is the 2-digit number of an unused memory in the range 30 to 99. The outside number may be up to 18 digits long. Wait until the phone has finished pulsing out the number (if pulse dialling is being used) and then put the phone down to store the number. Any number previously stored in that memory will be overwritten.

To dial an outside number from a central memory, pick up the extension and dial:

5

WAIT FOR AN OUTSIDE DIAL TONE and then dial the 2-digit code from the memory (30 to 99).

If a call logging printer is installed, the special dialling code:

1952

can be used to list out the contents of all the central dialling memories on the printer.

In addition, the code:

1955 + extension number

can be used to print out a list of the contents of the personal dialling memories for that extension.

Note: In the event of a mains power failure all stored numbers will be retained in the system memory. Stored numbers can be deleted by dialling 603 NN and then hanging up, or by reprogramming that location with a new number.

6. ASSIGNING OUTSIDE LINE GROUPS

Each outside line attached to the PABX belongs to one of six outside line groups, which are numbered 1 to 6. When the London 32 or London 64 is first installed, all outside lines belong to Group 1. This can then be altered if necessary, by dialling codes from the master extension.

Dividing the outside lines into groups allows greater control over which extensions will ring for which incoming calls, and which extensions dial out over which lines. Typically, the groups would correspond to different departments within a company. For example, the Accounts Department and the Engineering Department may have their own lines for incoming calls, which are not answered at the Reception desk; or it may be desirable for billing purposes that extensions in each department only dial out on their own allocated lines. Alternatively, the groups could correspond to different companies "sharing" the same London 32 or London 64.

To assign a range of outside line numbers to any given group, dial:

198 + group number + first line number + last line number

For example:

19820304 - set outside lines 3 and 4 to group 2

19810112 - set outside lines 1 through 12 to group 1

19831012
19831516 > set outside lines 10, 11, 12, 15, 16 to group 3

7. PROGRAMMING INDIVIDUAL EXTENSIONS

The following functions can be programmed individually for each extension :

* Outside call barring (various levels) for day and night mode
* Which outside lines are available for outgoing calls
* Which outside lines cause this extension to ring for incoming calls (independently programmable for day and night mode)
* Which outside lines can be remotely answered (using the "61" code)
* Call privacy - call interruption barring, remote call answering barring, remote call diversion barring
* Hunting group membership
* Whether extension is a master phone.

7.1. Setting the range of extensions to be programmed

Before dialling any of the programming codes for setting the facilities available to extensions, the range of extensions you wish to program must be set by dialling:

18 + first extension + last extension

For example :

18221252 - extensions 221 to 252
18227280 - extensions 227 to 280
18244244 - extension 244 only

Subsequent extension programming codes (listed below) will **then apply to this range of extensions only**, until a new range is set. The properties of any extensions outside the current range will not be affected.

7.2. Call barring

The selected range of extensions can be programmed for one of four categories of outside call service for day/night mode:

1974X = day mode barring; 1977X = night mode barring

X	day	night		
0	19740	19770	-	allow all calls
1	19741	19771	-	allow no international calls (numbers beginning with 010 or 000, or international operators)
2	19742	19772	-	allow no long distance calls (numbers beginning with 0 or operator services [100 to 109] or 15x)
3	19743	19773	-	allow emergency (999) calls only

Example of setting call barring:

To allow STD calls on extensions 259 and 260 in day mode and local calls only in night mode -

Set range of extensions by dialling:

18259260

Set the barring by dialling:

19741
19772

When the London 32 or London 64 is initially installed, all extensions are permitted to make any type of call (level 0).

7.3. Ringing

Ringing mode, outgoing line access and remote incoming call answering may be programmed for each extension:

1972 + mask - control day mode ringing
1973 + mask - control night mode ringing

These two dialling codes set the ringing mode **for all extensions in the extension range selected**, for day and night mode operation.

Mask is a two-digit value in the range 00 to 63 selected from the following table, according to which outside lines are to be assigned to the extension range.