

# CURRENT COMMENTS

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## Telephones for use in Apartment Flats.

**A** GOOD criterion of the quality of service afforded in apartment flats is found in the measures taken to enable tenants to get into touch with the staff. Those responsible for the equipment of new or existing flats who place service in the forefront of administrative ideas are forsaking the old methods of bell, lamp or indicator signalling and adopting telephone systems expressly designed for their needs.

The essentials of such a telephone system are that it should be inexpensive and reliable, whilst enabling communication to be obtained with a minimum of effort on the part of the user. Further, the telephone instruments employed should be in keeping with modern ideas of contour in order to become assets to the decorative schemes. To meet this demand The General Electric Company has developed a telephone system incorporating features calculated to secure maximum economy without any sacrifice of reliability, and introducing a new type of telephone instrument which has already met with general approbation. A notable feature is the fact that the system operates entirely from A.C. mains, thus dispensing with the need for batteries. Special precautions are taken to ensure that adjacent radio circuits are in no way affected.

A telephone system installed in a block of flats, although privately owned, differs from other private telephone installations in that its purpose is to serve, not members of one organisation, as is the case in a business house, but a number of people who, although resident in the one building and indirectly employing a common staff, are independent members of the public. Since in many countries the provision of telephone communication between members of the public is a monopoly either of the State or of Companies operating under Charter, the establishment of a system which permitted tenants of flats to communicate with each other would be illegal. A flat telephone installation therefore does not provide for intercommunication between tenants. The objects are to enable tenants to obtain immediate communication with the staff, that is, with the hall attendant and, where such services are a feature of the flats, to kitchen, garage and administrative office. Similarly, the porter may call any flat, either on his own behalf or in order to extend a service line.

As intercommunication between tenants is not provided, the equipment by means of which connections are set up is termed a "reply panel" rather than a "switchboard".

This panel may be fitted in any convenient position in the vestibule or entrance hall at which a porter is normally stationed. All lines from the flats and service points terminate on the reply panel, the lifting of a handset by a tenant causing both audible and visual calling signals to be given on the panel. The porter responds, a very simple manipulation of a plug-ended cord enabling him to reply by means of a handset associated with the panel. The tenant may request the porter to perform any of the usual duties of his office or may ask for connection to a service line, such connection being established by a further simple use of plug-ended cords. A summary of the operating procedure is given later.

When a large number of flats are contained in one building of considerable size or in two or more neighbouring buildings under the same management, there will almost certainly be more than one member of the staff whose duties permit of attention to the simple requirements of a reply panel. Advantage may be taken of this fact to give the best possible service and to secure the greatest measure of economy in line wires by installing at suitable points reply panels terminating lines in that particular building or portion of a building. By linking the panels together by means of tie lines, any flat may call any attendant or service office without the necessity for lines to be run from all flats to one central reply panel.

The telephone instrument specially developed for the G.E.C. flat telephone system is illustrated in Fig. 1. The case and handset are high-class moulded products, ivory in colour, and present an appearance that harmonises well with the majority of decorative and furnishing schemes. Included in



Fig. 1.—Telephone Instrument for use in Flats.

the case are a buzzer, condenser and switch springs, the latter being actuated by removal and replacement of the handset. A specially designed transmitter and receiver are incorporated, connection being made between the handset and terminals in the case by means of a cord, coloured to match.

The standard range of G.E.C. flat telephone systems provides for installations of 10 lines upwards, reply panels of the following standard sizes being available 20, 50, 100, 160, 240 and 360 lines. Panels may be equipped initially for less than the maximum, the design enabling apparatus to be added for multiples of 10 lines within the capacity limits shown. These figures are for actual flat lines, additional provision being made for service and tie lines as specified for any particular installation.

In addition to permitting flat lines to be connected to all service lines and, over tie lines, to other panels, full intercommunication between service lines themselves can be provided if required. Alternatively, as a

matter of administrative policy, or in order to conform with legal restrictions, it may be necessary to withhold such means of inter-communication, extending the facility only to the manager's line. This gives rise to two types of service line, one, type (a), which may be connected only to the manager's line in addition to all flats, and a second, type (b), which may be connected to all services, including the manager, and, of course, to the flats.

The total number of service lines which may be incorporated in the various sizes of boards is shown in the following list, these totals being divided into types (a) and (b) in order to meet specified requirements in particular instances —

<i>Size of Board. (Lines to Flats).</i>	<i>Service Lines.</i>
20	4
50	4
100	4
160	9
240	9
360	9

When two or more reply panels are installed, linked together by tie lines, the main panel has capacity for ten such lines. It will be seen that the system is extremely flexible and that almost every practicable requirement can be satisfied without recourse to special or modified equipment.

A typical reply panel, equipped for 40 lines to flats, 4 service lines and 10 tie lines to other panels, is shown in Fig. 2. Each flat is terminated on a jack, associated with which is a calling lamp, the caps of the lamps being of a special type to ensure maximum signal visibility. This feature, together with the fact that a buzzer fitted in the panel provides an audible signal when a call is originated,



Fig. 2.—Attendant's Reply Panel.

relieves the attendant of the necessity for paying attention to the board except when his services are actually needed. The lamps and jacks for the 40 flat lines are seen in four rows of ten whilst at the top of the panel are ten jacks and lamps provided for the maximum capacity of tie lines. Plug-ended cords are associated with the attendant's hand-set and the service lines.

An understanding of the manner in which connections are established is conveyed by the following descriptions of the operating procedure for two typical calls.

*Installation with one reply panel.*

*Flat requires Attendant.*

*Procedure.*

*Result.*

- |   |   |
|---|---|
| 1. Flat occupant lifts handset.   | Lamp lights on reply panel and buzzer sounds. |
| 2. Attendant inserts reply plug in appropriate jack and answers the call. | Lamp goes out and buzzer signal ceases.       |

3. At the end of the call the flat occupant and attendant replace their handsets and the attendant withdraws reply plug.

*Flat requires Kitchen, Garage or other Service Line.*

*Procedure.*

*Result.*

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Flat occupant lifts handset.</li> <li>2. Attendant inserts reply plug in appropriate flat jack and takes requirements.</li> <li>3. Attendant withdraws reply plug. The plug of the required service line is then inserted in flat-line jack and appropriate "Ring" key depressed.</li> </ol> | <p>Lamp glows on reply panel and buzzer sounds.</p> <p>Lamp extinguished and buzzer ceases.</p> <p>Service-line telephone buzzer is operated.</p> |
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4. Service lifts handset and conversation proceeds.

5. At the end of the call both handsets are replaced. Service-line lamp glows and buzzer is operated.

6. Attendant withdraws service-line plug from flat line jack. Lamp extinguished and buzzer ceases.

*Power Equipment.*

The G.E.C. flat telephone system is designed to operate on an A.C. mains supply of 40/60 cycles, a small power unit supplying direct current for speech and lamps, whilst providing also a supply of alternating current at a suitable voltage for operating the buzzers in the telephone sets. By the use of 40/60 cycle alternating current for operation of the buzzer the possibility of interference with adjacent radio circuits is removed.

The equipment of a complete installation includes a power unit for each reply panel. The standard unit is designed for operation on supply mains of 230/260 volts, special units being employed for other voltages.

