

FLAMEPROOF ENCLOSED TELEPHONE APPARATUS AND INSTALLATION

★[NOTE : In this Instruction the word 'flammable' has been used in place of 'inflammable' ; both words having the same meaning.]

★1. **Scope of Instruction.**—This Instruction lists the certified flameproof enclosed telephone apparatus which is used by the P.O. and the procedure to be followed for its installation. It states the circumstances in which telephone apparatus of various kinds should be installed, and the precautions which must be observed in areas where explosive materials, gases and liquids are likely to be encountered. It does not apply to coal mines (see Z 3014), to areas with an explosive dust hazard (e.g. Royal Ordnance Factories) (see Z 3010) or to ammunition depots (see A 3918). Details of the arrangements for external construction in ammunition depots are given in LINES, General, Z 3901, and those at petroleum premises in LINES, General, Z 3902. Telephone service to oil tankers is dealt with in Z 3012.

This Instruction does not apply to areas where explosives or flammable atmospheres normally exist (i.e. continuous hazard) as telephone apparatus or wiring must never be installed in such areas.

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3. **Flameproof enclosures.**—A flameproof enclosure is defined in B.S. 229 as follows:—

'A flameproof enclosure for electrical apparatus is one that will withstand, without injury, an explosion of the prescribed flammable gas that may occur within it under practical conditions of operation within the rating of the apparatus (and recognised overloads, if any, associated therewith) and will prevent the transmission of flame such as will ignite the prescribed flammable gas, which may be present in the surrounding atmosphere.'

4. **Flameproof certificates.**—A specimen of the type of apparatus is tested and examined by the Ministry of Power (Mines Division), for compliance with the definition of a 'flameproof enclosure,' using for the tests typical mixtures of gas for which the apparatus has been designed. If these tests are successful, the particular type is given a flameproof certificate covering the complete group, or groups, or sub-group of explosive mixtures in which it is safe to operate the apparatus.

5. **Groups of flammable gases and vapours.**—For purposes of flameproof constructed enclosures, flammable gases met in industry are divided into four groups representing different grades of risk. These groups are listed in B.S. 229. Typical gases in these groups are as follows:—

- Group I Methane (firedamp).
- Group II Various gases commonly met in industry (includes petroleum vapour etc.)
- Group III (a) Ethylene, diethyl ether and ethylene oxide
(b) Town gas and coke-oven gas
- Group IV Excluded gases (acetylene, hydrogen, etc.)

6. **Excluded gases and vapours.**—Flameproof enclosed apparatus is not certified on the basis of type tests for the more volatile gases which are known as 'excluded' gases. Therefore where such gases may be present, other techniques must be applied if the use of electrical apparatus cannot be avoided. Such techniques include the following:—

(a) *Intrinsically safe equipment.*—Intrinsic safety, when applied to apparatus, denotes that the apparatus is so constructed that any electrical sparking that may occur is incapable of causing the ignition of the gas or vapour for which it is certified.

(b) *Pressurized systems* are obtaining some prominence for use in situations where 'excluded' gases

are likely to exist. There are two methods, either pressurization of the apparatus, or by pressurization of rooms containing the apparatus. Where pressurized systems are proposed, details of the system, telephone apparatus and wiring requested should be referred to the Eng. Dept. (S1/1).

★7. **Anaesthetic gases.**—These dangers exist in anaesthetic rooms and operating theatres at hospitals. As the source of danger is within these rooms, a flameproof telephone is not permitted. It is usually possible and preferable to use an ordinary telephone installation sited in an adjacent safe area, such as the surgeons' or sisters' changing rooms. Certified telephone apparatus is not available for these gases, but a Loudspeaking Telephone No. 3 can be used in accordance with F 3004, bearing in mind that it is generally accepted that the zone of risk of anaesthetic gases is between 4 ft. 6 in. above floor level and the floor itself.

8. Danger and safe areas.

(a) A 'danger area' is an area within which danger of fire or explosion from the ignition of gas or vapour exists, or is liable to occur. In areas where a hazard normally persists telephone apparatus or wiring must never be installed. In areas where occasional hazard is liable to occur, flameproof enclosed apparatus certified to cover the particular hazard should be requested; this can only be recommended as a precautionary measure and is provided at the subscriber's own risk.

(b) A 'safe area' is any area (no part of which lies within a danger area) where the atmosphere is safe and is incapable of ignition by an electric spark and where a hazard is never likely to exist. Ordinary telephone apparatus and wiring may be installed, but if the wiring passes through a danger area, then the wiring through this area must be of a flameproof enclosed type, or if underground it must be armoured cable. If the subscriber feels that even in safe areas he would still prefer to use apparatus which has been certified flameproof enclosed, then such apparatus as designated in this Instruction may be used.

9. **Subscribers' requests.**—Requests from subscribers for telephone service or extension to an existing installation, or any other telecommunication facility at premises of the nature referred to in this Instruction, will be dealt with by the Sales Divn. who will ensure that the appropriate conditions specified in Tp. S.I. B1 XIII are observed. Positions where it may be proposed to install telephones and wiring are classified as danger or safe areas (see par. 8). Before any agreement to install telephone apparatus and wiring is undertaken, the subscriber will be required to indicate these areas in respect of the proposed installation. If possible a plan should be obtained showing the extent of the safe areas where ordinary telephones

can be used, and the danger areas where only flameproof enclosed apparatus is permitted. The plan should also be marked with the proposed routing of the flameproof wiring which has been agreed with the subscriber for the danger area. If areas exist where there is continuous hazard, i.e. areas where electrical apparatus is not permitted, then these should also be shown on the plan.

10. **Special precautions.**—Special precautions are necessary and must be strictly observed when work is being done in premises of this type (see GENERAL, General, S 4050). It is the responsibility of supervising officers to ensure that staff who install and maintain flameproof enclosed telephone apparatus have access to and are acquainted with the contents of the relative E.I.s. The extent of danger areas and safe areas should be ascertained before any work is commenced. Inquiry should be made as to whether a plan (see par. 9) has been supplied by the subscriber. If a plan has not been supplied by the subscriber, every endeavour should be made to obtain one. The completed work should be inspected by a supervising officer to ensure that the requirements called for in this Instruction have been met. Flameproof enclosed apparatus must not be opened in the danger area until the circuit has first been disconnected by its isolating switch, or alternatively, by disconnecting the circuit in a safe area. Before removing flameproof covers on relay units special care must be taken to ensure that the mains isolating switch is in the 'off' position and the telephone with which the relay unit is associated is also isolated. When flameproof covers and flanged joints are removed, the joint faces should be carefully cleaned and a thin coating of Grease, Lithium No. 3 applied before reassembly. Flanged joints must be carefully aligned to ensure even fitting of the joint faces. All flameproof enclosures must be reassembled before the circuits are reconnected. Inspection of flameproof enclosed telephone equipment is dealt with in TESTS & INSPECTIONS, Routine, S 5302.

11. **Types of wiring.**—Types of wiring recommended for installations in danger areas are as follows:—

- (a) Cable P.V.C., No. 1 in screwed steel conduit.
- (b) Mineral insulated copper-covered (M.I.C.C.) cable.
- (c) Armoured cable.

Screwed steel conduit is satisfactory for many situations, but should not be used where vibration may cause fracture or loosening of the joints. In some circumstances the subscriber may wish to provide and install the telephone wiring. The P.O. should then indicate the positions of junction boxes (for terminating external to internal cables etc.) and should be responsible for fitting the telephone apparatus and, where conduit is fitted, for drawing in the cables.

12. Screwed steel conduit.

(a) When using conduit all internal wiring (Cable, P.V.C., No. 1) within the danger area must be enclosed within the conduit. On reaching the safe area the conduit should be terminated:—

(i) using a Bush, Conduit, Brass, No. 2 if the enclosed Cable, P.V.C., No. 1 is to continue as surface wiring, or

(ii) in a Box, Weatherproof, CD 364 if the lead-in is by overhead wiring.

(b) The ends of the conduit should be sealed with Mixture No. 2 to prevent the entry of gas. All elbows and tees should be of the flameproof inspection type, except when used for the immediate connexion of conduit to apparatus. The conduit should be earthed in accordance with LINES, General, Z 3902. Where the telephone conduit run is close to conduits carrying electricity supply mains, they should also be bonded to that system. This is contrary to instruction on earthing in INTERNAL WIRING, Stations, A 3006, but multiple protective earthing is essential at flameproof enclosed installations to minimize the possibility of potential differences occurring between the two conduit systems. The bonding should be effected using Wire, Copper, Soft, Stranded, 7/20 and a Clip, Earth, No. 3.

(c) For screwed conduit joints, the minimum length of engaging thread must be $\frac{3}{4}$ in. for conduit up to 1 in. in diameter. Locknuts must be provided on all screwed joints, e.g. where conduit enters telephones, junction boxes and couplings. All conduit joints should be painted after assembly with an approved protective paint as a precaution against rusting and corrosion. Oil companies permit the use of aluminium paint, but the painted surface must be free of rust.

(d) If it is necessary to form a junction with armoured cable, the conduit should be terminated on a flameproof junction box.

13. All conduit fittings must be of the approved flameproof type. Suitable galvanized fittings are obtainable from Messrs. Walsall Conduits Ltd., Excelsior Works, West Bromwich, or from their branches under the following descriptions:—

Flameproof inspection bends 5030 BX/G for $\frac{3}{4}$ in. conduit

Flameproof-weatherproof circular junction boxes:
(two-way) 691 BX/G for $\frac{3}{4}$ in. conduit
(three-way) 693 BX/G " $\frac{3}{4}$ in. "
(four-way) 695 BX/G " $\frac{3}{4}$ in. "

Flameproof circular junction boxes:
(angle tangent) 456 BX/G for $\frac{3}{4}$ in. conduit
(through-way) 457 BX/G " $\frac{3}{4}$ in. "
(three-way) 459 BX/G " $\frac{3}{4}$ in. "

Flameproof couplings 301 BX/G " $\frac{3}{4}$ in. "
Flameproof locknuts 746 G " $\frac{3}{4}$ in. "

Flameproof reducing sockets 744 BX/G (state size, i.e. 1 in. \times $\frac{3}{4}$ in.)

Flameproof screwed nipples 304 BX for $\frac{3}{4}$ in. conduit

Flameproof conduit unions

Suitable items are also obtainable from:—

The General Electric Co. Ltd., London

The Simplex Electric Co. Ltd. Birmingham.

14. Mineral insulated copper-covered cable (M.I.C.C.) with flameproof glands may be used in lieu of special conduit. P.V.C. served M.I.C.C. cable should be used if there is a possibility of corrosion due to the effects of atmosphere or made up soils. The reference number for the recommended cable is 238/2/L. This should be obtained by local order from either Messrs. Pyrotenax or any member firm of the Cable Makers' Association. Further information, instructions on sealing and installation methods may be obtained from these companies. To minimize the effect from corrosive soil, dust and mixture in external situations, surface wiring using the normal type of M.I.C.C. cables should not be run lower than 1 ft. from ground level. On reaching a safe area M.I.C.C. cable should be terminated with its appropriate gland for $\frac{3}{4}$ in. conduit in a Box, Conduit, No. 202, Cable, P.V.C., No. 1 should be terminated in this box to the M.I.C.C. cable using the following Rate Book items:—

Bush, Conduit, Smoothbore, $\frac{3}{4}$ in.

Connector, Porcelain, 1-way and Cover

Box, Conduit, Flat, Galvanized.

The cable entry through the bush should be effectively sealed with Mixture No. 2. M.I.C.C. cable should not be used in situations subject to heavy vibration or movement, as work hardening effect on the sheath might result in fracture. Corrosion of the sheath can also occur from contact with certain walls etc. Where this is known to occur the cable should be kept clear of such surfaces. If it is necessary to form a junction with armoured cable the M.I.C.C. cable should be terminated in a flameproof junction box.

15. Armoured cables are suitable and may be used with advantage for conditions where other types of wiring are not acceptable, e.g. where the cable may be subject to small movement. The cable should be adequately supported throughout its length, care being taken to avoid excessive pressure.

16. Termination of wiring.—With the exception of screwed steel conduit which may be directly connected to telephone apparatus other types of wiring are connected to the apparatus, only by certified flameproof glands. Table 1 shows typical items used to connect the wiring to apparatus. Orders for the Ericsson N 89240A and N 89234A glands should state the appropriate size of cable being used. Orders placed for glands to be used with M.I.C.C. cables should state the size of cable being used and the size of the conduit entry.

★TABLE I

Type of apparatus	Method of wiring		
	Conduit	M.I.C.C. cable	Armoured cable
Telephone No. 149 Telephone No. 153	Direct	See Note	See Note
Telephone No. 703 Telephone No. 723	Ericsson Gland No. N 89247A5	Ericsson Gland No. N 89240A11	Ericsson Gland No. N 89234A5
Bell No. 69A Bell No. 69B	Gland, P.O., No. 1A	Ericsson Gland No. 89240A or Pyrotanax gland	Ericsson Gland No. 89234A
Bell No. 70A Switch No. 8 Press-button V	Direct or Walsall Conduit Union No. 7505 BX	Pyrotanax gland	Walsall Gland No. 1763 BX
Bell No. 77A/78A Relay-unit CD 393 Relay-unit CD 1982	Reducer:— G.E.C. No. 8036 or Walsall No. 744 BX Walsall Conduit Union No. 7505 BX if required	Pyrotanax gland	Reducer:— G.E.C. No. 8036 or Walsall No. 744 BX Walsall Gland No. 1763 BX

NOTE :—For connecting M.I.C.C. or armoured cable to Telephones No. 149 and No. 153, it is necessary to change the existing conduit fitting for the M.I.C.C. or armoured cable fitting. These fittings and the appropriate glands are obtainable from Ericssons.

17. Types of flameproof enclosed telephone apparatus.—Table 2 lists the types of flameproof enclosed telephone apparatus.

★TABLE 2

Item	Dgm. No.	System	Classified group
Telephone No. 149	N 249	Auto. and C.B. (see Note 1)	II and III
Telephone No. 153	N 253	Magneto	II
Telephone No. 266	N 366	Auto. and C.B. (see Note 1)	See Note 2
Telephone No. 702	N 802	Auto. and C.B. (see Note 1)	II and IIIa
Telephone No. 703	N 803	Auto. and C.B. (see Note 1)	II and III
Telephone No. 723	N 823	Magneto	II and III
Bell No. 69A	N 366	All	See Note 2
Bell No. 69B	N 802	All	II and IIIa
Bell No. 70A	—	All	II and III
Bell No. 77A	—	—	II and III
Bell No. 78A	—	—	II and III
Relay-unit CD 393	N 1294	All	II and III
Relay-unit CD 1982	N 1282	All	II and III
Press-button V	—	—	II and III
Switch No. 8	—	—	II and III

NOTE 1:—Also suitable for C.B.S. working, by fitting Unit, Auxiliary Apparatus, CBS 536 at the exchange or at the P.B.X.

NOTE 2:—Certified for sub-groups IIa and IIb (B.S. 229-1946) petroleum industry only.

18. **Telephone No. 149** is a wall-mounted weather-proof, flameproof-enclosed type telephone for automatic and C.B. working. It is fitted with a Dial, Automatic, No. 26, which consists of a flameproof enclosure with finger-plate fly-back mechanism and a modified Dial, Automatic, No. 10. An isolating switch is fitted in the telephone, the contacts of which break when the inner door is opened. It is important that the telephone is correctly connected, i.e. the negative line to terminal L1 and the positive line to terminal L2. If this is reversed, certain internal parts of the telephone will be 'live' to earth via the external EB strap after the isolating switch contacts have opened. Overall dimensions of the telephone are $20\frac{3}{4}$ in. \times $12\frac{3}{4}$ in. \times 10 in.; the weight is 82 lb. Flameproof enclosed push-buttons will be necessary when Telephones No. 149 are used as extension instruments to provide enquiry and transfer facilities. Telephone No. 149 is superseded by Telephone No. 703 for new work.

19. **Telephone No. 153** is a wall-mounted weather-proof, flameproof-enclosed-type telephone for magneto working. Overall dimensions of the telephone are $20\frac{3}{4}$ in. \times $12\frac{1}{2}$ in. \times 10 in.; the total weight is 92 lb. including batteries. Telephone No. 153 is superseded by Telephone No. 723 for new work.

20. **Telephone No. 266** is a table-type instrument for use with a Bell No. 69A in place of a Telephone No. 149 in suitable locations. It includes a finger-plate fly-back mechanism with a modified Dial, Automatic, No. 12. A press-button is fitted and may be used for operator recall. When recall is required it should be provided as shown on Dgm. N 366. The telephone includes a tough rubber-sheathed instrument cord for connecting into the Bell No. 69A. Overall dimensions of the telephone are $9\frac{3}{4}$ in. \times $9\frac{1}{4}$ in. \times 6 in. measured with the handset on its cradle; the weight is $12\frac{1}{2}$ lb. Telephone No. 266 is superseded by Telephone No. 702 for new work.

(a) *Telephone No. 266 Mk. I.*—This telephone is suitable for use on lines up to 600-ohm loop resistance. It is fitted with an extensible handset cord (Ericssons N 4514) and has a 160-ohm resistor in series with the A line to meet the safety requirements of the testing authority. In consequence of this transmission is degraded by approximately 2 dB as compared to that of the standard telephone circuit. The transmission and signalling limits given in TRANSMISSION, Telephone, B 3502 should, therefore, be reduced by 250 ohms T.E.R., and 160 ohms on signalling limits when this telephone is used. This telephone will be unsuitable in some situations.

(b) *Telephone No. 266 Mk. II.*—This telephone is suitable for use on lines up to 1000-ohm loop

resistance, and is fitted with a rocking-armature receiver. The transmitter and receiver caps are locked on to the handset to prevent accidental disconnexions of the circuit. The neoprene sheathed handset cord (Ericssons N 4521595) is protected by metallic and nylon braiding.

21. **Telephone No. 702** is a table-type instrument with the same physical appearance as the Telephone No. 266, and is suitable for lines of up to 1000-ohm loop resistance. The handset is intrinsically safe, as d.c. does not flow in the handset cord (Ericssons N 9622). Both the transmitter and receiver are transformer coupled to the appropriate section of the telephone circuit. A rocking-armature receiver is used in this telephone as a transmitter, transmission taking place through a two-stage transistor amplifier. A Bell No. 69B must be used with this telephone. For maintenance instructions see Z 5013. Telephone No. 702 supersedes the Telephone No. 266.

★22. **Telephone No. 703** is a wall-mounted, flameproof-enclosed type telephone with a weatherproof cover, for automatic and C.B. working. It is fitted with a modified Dial, Automatic, No. 12 (Ericssons, Code N 99017) with a fly-back mechanism. When used on C.B. systems the dial mechanism can be locked. A press-button is fitted and may be used for operator recall as shown in Dgm. N 803. A switch in the telephone, the contacts of which break when a screw is released, isolates the instrument from the line. The telephone has an intrinsically safe handset and an amplifier as in the Telephone, No. 702. Overall dimensions of the telephone are 13 in. \times $13\frac{7}{16}$ in. \times $7\frac{1}{8}$ in.; the weight is 60 lb. When mounting the Telephone No. 703 a minimum space of 12 in. on the left-hand side of the telephone should be allowed for subsequent adjustment of the bell gongs. Telephone No. 703 supersedes the Telephone No. 149. For maintenance instructions see Z 5015.

★23. **Telephone No. 723** is a wall-mounted, flameproof-enclosed-type telephone with a weatherproof cover, for magneto working. It has an isolating switch, intrinsically safe handset and amplifier similar to the Telephone No. 702. Overall dimensions of the telephone are 13 in. \times $13\frac{7}{16}$ in. \times $7\frac{1}{8}$ in.; the weight, excluding batteries, is 63 lb. Telephone No. 723 supersedes the Telephone No. 153. For maintenance instructions see Z 5015.

24. Bells No. 69A and 69B.

(a) *Bell No. 69A* is used in conjunction with a Telephone No. 266. It provides the terminating unit for the telephone instrument and line connexion and may be used as an extension bell. A gland is provided with the bell for terminating the telephone instrument cord. An open $\frac{3}{4}$ in. conduit

outlet is provided for either a conduit, M.I.C.C. or armoured cable glands as required. Two spare plugged outlets are also provided for additional external connexions if required. The bell has a single 4 in. gong; its range of audibility is limited and is not equivalent to that of a Bell No. 59A. Overall dimensions of the bell are $6\frac{1}{4}$ in. \times $6\frac{1}{4}$ in. \times $4\frac{1}{4}$ in. ; the weight is 7 lb.

(b) Bell No. 69B is similar to the Bell No. 69A but is the superseding item, and is used with the Telephone No. 702. For maintenance instructions see Z 5013. Bells No. 69A and 69B must be mounted with the hinge at the left-hand side and should be mounted under cover.

25. Bell No. 70A is a flameproof enclosed loud-sounding magneto bell fitted with two 6in. gongs. It is fitted with one $\frac{3}{4}$ in. conduit side entry. It can be used as a loud-sounding bell in danger areas, or if an extension bell is required in a danger area. Overall dimensions of the bell are 15 in. \times $12\frac{1}{2}$ in. \times 5 in. ; the weight is 23 lb.

26. Bell No. 77A is a flameproof enclosed a.c. mains-operated bell. It is superseded by the Bell No. 78A. Overall dimensions of the bell are $14\frac{1}{2}$ in. \times 8 in. \times $3\frac{3}{4}$ in.

★27. Bell No. 78A is a flameproof enclosed a.c. mains-operated bell. It will be used with a Relay-unit CD 1982 in danger areas if one or more loud-sounding bells are required. The terminal chamber has two 1 in. conduit entries (one is fitted with a screwed flameproof plug). The bell is fitted with a single 6 in. gong. Overall dimensions of the bell are 17 in. \times 8 in. \times 4 in. ; the weight is 12 lb.

28. Relay-unit CD 393.—This relay unit has the same uses as, and is superseded for new work by, the Relay-unit CD 1982 described in par. 29. Overall dimensions of the unit are 9 in. \times $6\frac{1}{4}$ in. \times $3\frac{1}{2}$ in.

★29. Relay-unit CD 1982.—This flameproof enclosed relay is required to provide the facilities outlined in par. 33 for mains-operated flameproof enclosed apparatus such as loudsounding bells, hooters and visual signalling devices; it should be connected in circuit as for an extension bell. The terminal chamber is provided with two $\frac{3}{4}$ in. conduit side entries. Overall dimensions of the unit are 10 in. \times $9\frac{5}{8}$ in. \times $4\frac{1}{8}$ in., the weight is 27 lb.

30. Press-button V is a flameproof-enclosed-type push-button with one 'make' action, used with Telephone No. 149 to provide enquiry facilities. It has

three entry points for $\frac{3}{4}$ in. conduit. The press-button is $5\frac{1}{2}$ in. high, $3\frac{3}{8}$ in. across centres of fixing lugs and weighs approximately 6 lb.

31. Switch No. 8 is a flameproof enclosed double-pole switch, with four entry points for $\frac{3}{4}$ in. conduits. As Telephones No. 266 and No. 702 have no integral isolating switches, a Switch No. 8 should be fitted in the line preceding the bell. This will allow the line to be disconnected and maintenance to be performed on the installation. The switch, which is operated by a removable triangular-headed key, should be fitted close to the bell and be readily accessible by the maintenance officer. The switch is $5\frac{3}{4}$ in. high, $3\frac{3}{8}$ in. across centres of fixing lugs and weighs approximately 6 lb.

★32. Apparatus in exposed positions.—With the exception of Telephones No. 149, No. 153, No. 703 and No. 723, flameproof enclosed telephone apparatus is not classified as weatherproof; where possible such apparatus should be fitted in sheltered positions. However, when wall-mounted apparatus is required in exposed positions the flanges should be coated with Grease, Lithium, No. 3.

33. Extension bells, etc.—Extension and loud-sounding bells, hooters and visual signalling devices may be provided as follows:—

(a) If any of these devices are to be fitted outside the danger area, A 3113 and A 3117 applies.

(b) If these devices are required to be fitted inside the danger area, the subscriber should be informed that the P.O. will supply and maintain Bells No. 69A, No. 69B, No. 70A, and mains-operated Bell No. 78A with a Relay-unit CD 1982. Other types of signalling devices cannot be provided by the P.O. but there is no objection to the subscriber providing privately-owned and maintained flameproof enclosed signalling devices operated from a P.O. Relay-unit CD 393 or CD 1982. The loading of the privately-owned signalling device should first be ascertained from the subscriber to ensure that the contacts of the relay-unit are not overloaded (maximum 2 amp non-inductive load). The P.O. cannot be held responsible for the satisfactory operation of private apparatus. Subscribers should provide at their own expense a double-pole flameproof isolating switch to the mains supply (200/250V a.c. or d.c.). The switch should have facilities for taking $\frac{3}{4}$ in. conduit and be fitted in a position readily accessible to P.O. maintenance staff, and if possible near to the Relay-unit CD 393 or CD 1982. All necessary electrical energy to operate the mains operated loudsounding bell and/or privately-owned signalling apparatus should be supplied by the subscriber free of cost to the P.O.

34. Existing installation.—Where flameproof enclosed apparatus exists the installation should be brought up to the standard specified in this Instruction when renewals are necessary under normal maintenance procedure. If an existing installation is situated in what the subscriber considers an area of continuous hazard (as specified in par. 1) the subscriber should be asked to agree to the removal of the apparatus and wiring to a position outside this area. If the subscriber does not agree to such removal the Eng. Dept. (S1) should be advised.

References:—A 3113, A 3117, A 3918, F 3004, Z 3010, Z 3012, Z 3014, Z 5013, Z 5015
(S1/1) GENERAL, General, S 4050
INTERNAL WIRING, Stations, A 3006
LINES, General, Z 3901, Z 3902
TESTS & INSPECTIONS, Routine, S 5302
TRANSMISSION, Telephone, B 3502
Tp. S.I. B1 XIII

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