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## Summaries

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### **Civil Defence Requirements for PTT Buildings**

F. Hufschmid, Berne

Legislation on civil defence structures is outlined along with general planning and technical principles. Several aspects of planning, such as standardization, design, layout, installations, and stages of extension, are dealt with in greater detail.

p. 218...221

### **Electronic Subscriber's Attachment for Earth-free Party Lines**

K. Stähli, Berne

The functioning of an electronic attachment replacing the conventional relay box is described. Its use is illustrated with the aid of diagrams and pictures.

p. 222...226

### **Mobile Private Automatic Branch Exchange**

H. Aebi, Berne

There are many large PBXs in use today where, in the event of a sudden breakdown due to fire or other causes, service cannot be restored within a reasonable time. For such emergencies the PTT now has available a trailer-mounted PBX, ESK 8000, with 400 extensions and 40 exchange lines as well as 2 operator's consoles and a main distribution frame with plug-in connections. Physical layout and possible applications are given along with details of the technical equipment.

p. 227...244

### **Digital Concentrator for a PCM Switching System**

K. Waber, Berne

The digital concentrator enables digital voice and/or data terminals to be connected to a PCM telecommunication system over digital subscriber's lines. As the telecommunication system consists of several autonomous, superimposed PCM networks (planes), the concentrator also serves as a point of interconnection for these networks. Besides the switching network and the interconnection of planes, the digital subscriber's line and control problems are discussed. Equipment flexibility is achieved through modular design.

p. 245...246

### **Progress in Optical Waveguide Communication Links**

C. Lucy, New York

Already the ancient Greeks took an interest in the guiding of light beams. Practi-

cal applications, however, had to wait till the arrival of the optical waveguide. The article treats the operating principles of optical conductor links and the latest developments in this field. Comparative cost and other figures of merit are discussed.

## News Items

### Telephone

**Switzerland's outgoing international calls** last year totalled 304.37 million chargeable minutes, of which 285.41 (93.7 pc) million were subscriber dialed.

At the end of 1976, **International Subscriber Dialling** was available from 858 exchanges serving 2,338,048 customers (92.7 pc). A further 5 exchanges with 2446 lines were ISD-equipped in the 1st quarter of this year.

**International circuits from and to Switzerland** increased by 1343 to 9426 last year. This number includes 440 intercontinental lines, routed over cable (219), satellite (212) and radio (9).

In 1976, **66 new exchanges or extensions** came into operation, increasing the total capacity by 87,090 to 3,462,050 lines.

A total of **85,171 PBXs** with 206,708 exchange lines and 1,482,460 extensions were in operation at the end of last year.

**A SPADE link to Rumania** was experimentally opened via Leuk earth station in March.

The 17 Telephone Regions are now **training staff in the use of system TERCO** (TElephone Rationalization with the aid of COmputers). For this purpose, each has been supplied with a control unit, a printer, and five vdu terminals.

### Radio, Television

In 1976, 9408 (1975: 8446) instances of **radio and television interference** were reported to the PTT. They concerned radio broadcast reception (2387), TV reception (6807) and other radio services (214). The number of complaints per 1000 licence holders was 1.13 for radio and 3.76 for television. As in previous years, many incidents were traced back to inadequate or faulty radio (593) and TV (3175) receiving equipments and installations.

**Microwave links** supplying German and Austrian television programmes from Berne-Ulmizberg multipurpose station to two **CATV systems** in the Berne region and one in Canton Fribourg came into operation in March.