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## Summaries

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### The Development of Microwave Antennas by the PTT

P. Hügli, Berne

The characteristics of microwave antennas are being continuously improved with the aim of exploiting to full advantage the frequency range from 2 to 12 GHz as well as the infrastructures of the high altitude stations. The PTT are actively participating in this process with the development of multiband antennas. The development of new, higher frequency bands for short-range links begins with compact installations and simple antennas. The increasing network density will, also here, require improved specifications for the antennas.

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### The Sodium-Nickel-Chloride Battery – a New High Energy Battery

Dr. H. Böhm, Ulm

The author reports on the development of a high energy sodium-nickel-chloride battery which is being done by AEG together with an English firm, Beta Research and Development. The advantages of the system, which at present is undergoing a test for reliability and durability, lie in a more simple production method as compared to the sodium-sulphur batteries. Not only the high energy density is of importance but also the high efficiency and durability.

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### The Engineer in Today's Industry

A. Poretti, Berne

The author describes, based on his consulting experience, the profile which the industry requires from engineers in higher positions.

## News Items

### Telephone

The new alarm clock equipment **WA 4901** was recently put into operation in **Chur-Gäuggeli**. It permits the storage of 4500 wake-up requests and replaces the old **WA 49** type equipment which will be put at the disposal of the PTT museum.

**18 new Natel C base stations** of the phase 3 were put into operation in September.

### Teleinformatics

The Bern/LCC-Singapore 2 Mbit/s IDR Bearer for leased lines via the **Leuk satellite earth station** was put into operation on 1 August.

The service transition between the **Videotex** message handling service and the **arCom 400** message handling service was analyzed in a research project in cooperation with Alcatel STR. The resulting pilot system is now being tested. The operational test for a private user group started in the beginning of August. The link allows the exchange of messages between videotex and arCom 400 users.

### Radio, Television, Radiocommunications

Recently the three DRS FM radio programmes began broadcasting over the provisional **Appenzell multifunctional installations**. The **FM station in the Isla-Bella road tunnel** (between Chur and Thusis) was replaced in September and at the same time the radio-data-system (RDS) was put into operation. Also in September two further **FM Radio transmitters** were definitely put into operation at the **Balsthal** and **Mümliswil** stations. Both broadcast the DRS 3 programme on the 105.5 and 107.0 MHz frequencies for

Balsthal and Dünnerthal as well as for Mümliswil and Ramiswil.

A new **television transposer** was put into operation in **Elm/GL** as a replacement for an existing installation. The TV broadcasting to the Sernftal can be considerably improved with the new equipment and a higher mast.

The **Wil-Strichboden** and **Strichboden-Wildhaus** trunk network microwave links were put into operation on 31 August with a transmission capacity of 140 Mbit/s each.

The PTT is participating on an international operational experiment for the **Eutelsat land-mobile satellite system**. This system allows two-way data transmission between the operational centre of a trucking company and its vehicles which can be located accurately any time within a distance of about 500 metres. Eutelsat will definitely introduce the new system in Europe on 1 January 1991.

### Miscellaneous

The second meeting of the **WARC 92 ad hoc working group of CEPT** took place in Jersey (GB) from 3rd to 7th September to prepare for the World Administrative Radio Conference which will take place in 1992. At the meeting various ECP (European Common Proposal) of the CEPT member countries were dealt with and, wherever possible, specifically defined.

The **62nd International Television, Radio and Hi-Fi Exhibition (Fera)** took place in Zürich/Oerlikon from 29 August to 3 September. At the PTT booth, the visitor was informed primarily about the digital radio which, at this exhibition, began being gradually introduced under the name of **Dig'it Super Radio**. For this new service, the PTT will be offering the cable TV network operators over the radio link programme supply network (GAZ) a range of 16 radio programmes in almost CD quality by the end of 1992.