

European market in 1975 by Telefunken without notable success. Each eight-inch disc provides up to 10 minutes' playing time.

Several optical videodisc systems have been demonstrated. The only one definitely scheduled for production is a compromise between two similar systems — the Philips VLP and MCA Disco-Vision. This system employs a 12-inch reflective disc upon which electrical impulses are represented by a series of pits of various lengths and spacings. The beam from a low-powered laser is aimed at the disc, reflected into a transducer and reconstructed into television picture and sound.

A variation on this system was developed by Thomson-CSF of France, using a transparent, rather than a reflective, disc. Another optical system has been built in prototype by Hitachi of Japan, using the principle of holography. Other optical systems which have been proposed are based on film techniques. A common characteristic of optical systems is lack of physical contact between the pickup and the disc.

A capacitance system, known as SelectVision VideoDisc, has been developed by RCA. This also uses a disc containing pits representing picture and sound elements. The disc is metallized, and when placed on the turntable becomes, in effect, one plate of a capacitor. The stylus, riding in a pre-cut groove in the disc, is the other plate. The differing small voltages on the stylus are reconstructed into color television pictures and sound.

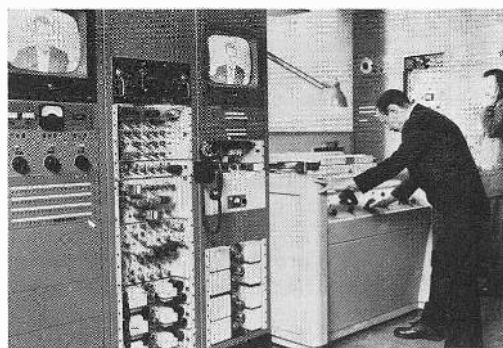
The discs of the TeD, Philips/MCA and Thomson-CSF systems revolve at 1,800 rpm for the American NTSC television system and 1,500 for the CCIR-PAL and SECAM systems. The RCA capacitance disc spins at 450 rpm for the American system. Hitachi's holographic system uses a speed of six rpm. With the exception of TeD, all major systems announced to date are capable of providing playing time of at least 30 to 40 minutes per side of a 12-inch disc.

Philips/MCA players are scheduled for production late in 1977 in the United States by Magnavox, a subsidiary of North American Philips, and later in Europe by Philips. RCA's system, if produced, will not be marketed before late 1978. Each system's developers are seeking licensees among other manufacturers, and a standards battle could develop among the proprietors of non-compatible systems.

A magnetic videodisc system, designed to

record as well as play back, has been developed by Erich Rabe in West Germany.

VIDEOPLAYER — a device which plays back recorded video material when attached to a television receiver. The material may be recorded on magnetic tape, film, disc or other medium. See also EVR, videodisc, videocassette, VTR.



Videotape Recording

VIDEOTAPE RECORDING — the recording of television signals on magnetic tape for later replay. The videotape recorder (VTR) is the principal device used for storing television programs; in fact, recorded shows have virtually replaced "live" television except for sports events.

Three principal types of VTRs are currently in use or under development: longitudinal-scan, helical-scan and quadruplex.

The first VTRs were of the longitudinal-scan type; on these, the tape passes at high speed before fixed recording and playback heads, in a manner similar to an audio recorder. The first VTR to be publicly demonstrated was built by Bing Crosby Laboratories in 1951. The tape ran at 100 inches per second, with a total of 16 minutes recording time per reel. The picture had poor resolution, flickered and displayed a diagonal pattern. RCA displayed longitudinal-scan monochrome and color VTRs in 1953; they had similar deficiencies.

The type of VTR that revolutionized television, and is in use at virtually all television stations today, was demonstrated for the first time by Ampex Corporation in 1956, where it created a sensation at the annual convention of the National Association of Broadcasters in Chicago. The quadruplex, or quad, VTR,