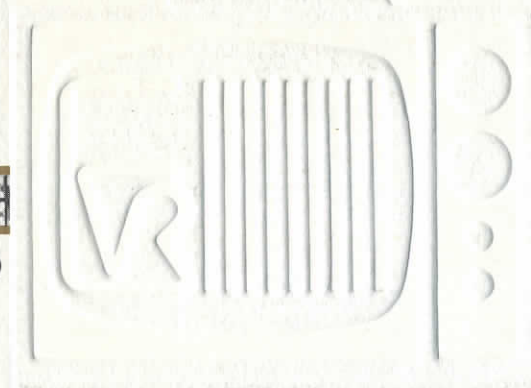
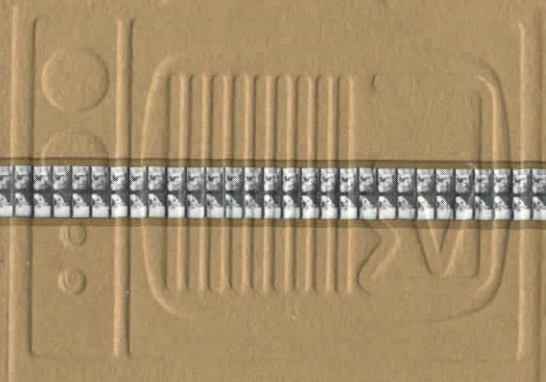


**Choice:
The Innovation
in Television
Communications.**

A system for extending television into



new dimensions.



Electronic Video Recording... the next step in television.





To communicate . . . is a basic human necessity. Throughout history man has struggled to create new media through which he could transmit ideas from person to person and from one generation to the next.

It took at least 500,000 years to advance from purely oral communication to the earliest writing on the clay tablets of Mesopotamia. It took 5,000 years to advance from clay tablets to the post-Gutenberg book. But it took little more than a single century for man to trigger a sunburst of communications innovations: photography . . . telegraphy . . . high-speed presses . . . the telephone . . . movies . . . radio. And then, striking with incredible social force: television.



These innovations increased man's freedom of choice. Just as printing opened man's mind to life beyond his environment, television opened man's eyes to newer styles of life. Satellites, space probes, football games and classical concerts, ballots, bullets and ballet exploded into the consciousness of ordinary men and women with an impact never before encountered.

Television quickly became the most accessible and universal medium for audio-visual communications. Yet even television had its limits. For while it sped images across space, the images leaped from the receivers at fixed times, and once they had flickered across the screen, they vanished.

Now a new system, springing from research into outer space, has broken this communications barrier. Enhancing the viewer's power of choice, it extends television into the realm of selective viewing.

This system is called Electronic Video Recording. It is a unique method for displaying audio-visual materials on ordinary television sets. Any audio-visual program—movie or videotape—can be compressed into tiny images, onto special thin film, and enclosed in a cartridge that permits the user to play it back at will. The playback is accomplished on an EVR™ player and the picture transmitted is viewed on a television screen. The EVR™ system is the most versatile visual communication system yet available to man. Developed by CBS Laboratories, a division of the Columbia Broadcasting System, Inc., this innovation in communications has been called the audio-visual counterpart of the long-playing recording. LP records "store" sound in a convenient, inexpensive form and can be played on standard equipment readily available in millions of homes and offices. The EVR™ cartridge does the same for sound *and* sight.





Two basic elements go together to form the EVR™ system—the cartridge and the playback unit.

The cartridge, seven inches in diameter and about half an inch thick, represents a significant breakthrough in image storage capability. It holds fully 780 feet of specially made thin film. This film is 8.75mm wide (less than $\frac{3}{8}$ of an inch), and holds as many as 187,200 frames of pictorial information. This extremely high concentration of visual information is a triumph of miniaturization.

Each cartridge contains up to 52 minutes of program material. The dual-track film carries its own sound track in two parallel ribbons of magnetic tape that are built into its edges.

Despite its surprisingly small size, the film offers

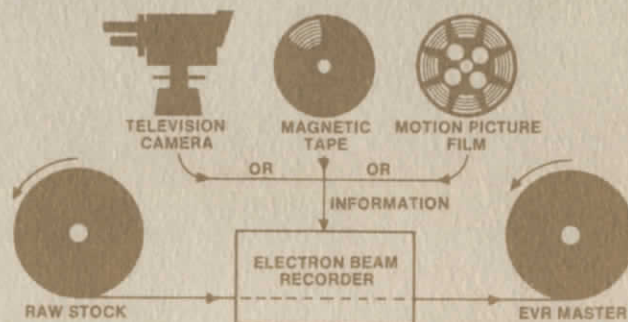
even sharper image definition than conventional television sets require. Moreover, it has no sprocket holes to wear or tear. It is so made that when wound on its reel, each layer of film is separated from the next by a tiny cushion of air.

The film is designed for durability as well as high definition.

The playback unit is equally ingenious. The size of a portable typewriter or table-top tape recorder, the EVR™ player comes with a simple antenna lead that clips onto the antenna terminals of any ordinary television set. It requires no other installation. Operation of the player is easy enough for a child to master: the cartridge is placed onto the player; the push of a button starts it.

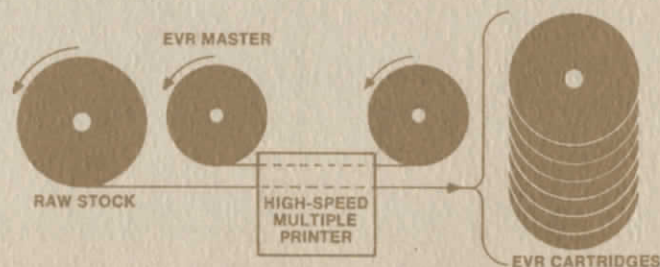
1 RECORDING THE MASTER

Pictures and sound, originating from a live TV camera, from magnetic videotape, or from a reel of movie film are transferred to an EVR™ master film by means of a special electronic beam recording process. This transfer process, accomplished at CBS cartridge processing plants, guarantees extremely high definition.



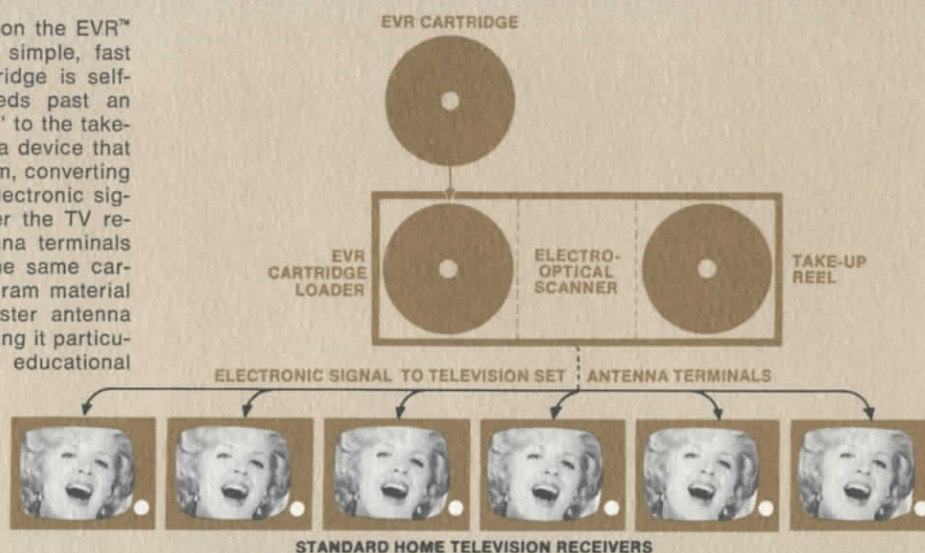
2 MAKING THE CARTRIDGE

The EVR™ master is then run through a high speed EVR™ film printer. Images are reproduced in multiple prints at extremely high speeds. The printed film is then slit into separate 8.75mm film strips and loaded into individual EVR™ cartridges.



3 SHOWING THE FILM

The cartridge is placed on the EVR™ player unit. Loading is simple, fast and foolproof. The cartridge is self-threading. The film feeds past an "electro-optical scanner" to the take-up reel. The scanner is a device that optically analyzes the film, converting variations in light into electronic signals. These signals enter the TV receiver through its antenna terminals and activate the set. The same cartridge can transmit program material to many sets via a master antenna distribution system, making it particularly useful for certain educational and training purposes.



4 THE EVR™ FILM

Illustrated below in three times its normal size is a segment of the EVR™ cartridge film. Each channel of visual information contains its own separate audio track, providing 26 minutes or any desired portion thereof of uninterrupted programming on each channel. Rapid rewind of each channel is accomplished in less than 60 seconds. A channel selector allows the user to select either channel at will, before or during viewing.

EVR MONOCHROME FILM



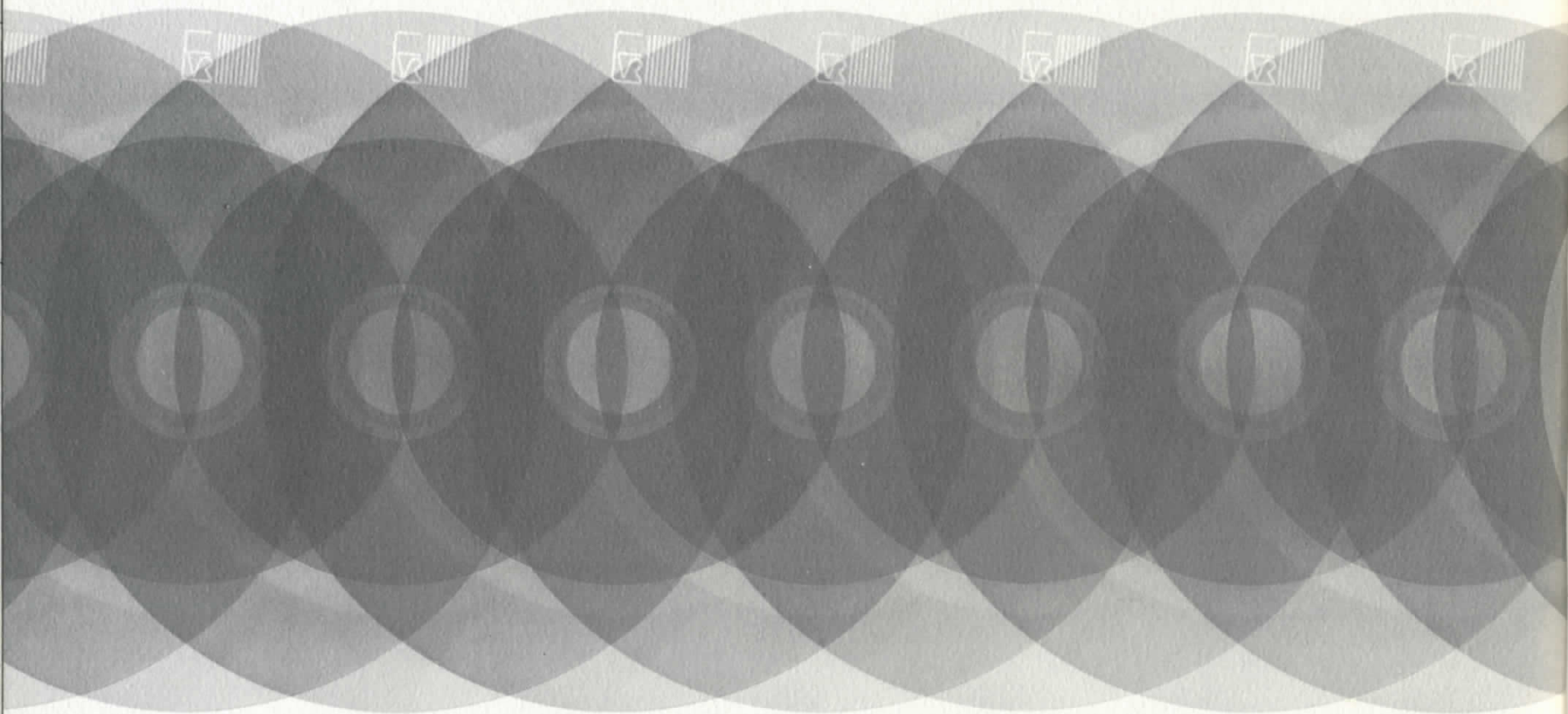
Within this playback unit the film feeds past a device that converts the light and dark areas of the film into electronic impulses which feed directly into the TV set.

There is a miniature broadcast transmitter in the playback unit, beaming its program to the set. Since these signals are not transmitted over the air and do not bounce off buildings, automobiles or bridges, there is no ghosting on the screen, no distortion of sound or pictures.

The system offers a highly significant additional feature: fast forward and rapid rewind. This permits the user to skip over sections of a film to zero-in on small segments for close or protracted study. One other important feature: any frame can be fixed on the screen in stop motion, without dimming, flicker-

ing or blurring. And without injury to the film. For the user, there is no need to lower shades, to dim lights or to raise a screen. There is no cumbersome equipment. There is no projector noise to drown out conversation or commentary.

The EVR™ cartridge and EVR™ player unit make it possible, in effect, for every user to have his own private TV station. So long as the program material has been converted to the EVR™ cartridge—a process that can only be done in specially equipped plants operated by CBS—there is virtually no limit to the range of picture-and-sound material that can be displayed on the television screen. EVR™ allows you, for the first time, to program whatever you want, whenever you want it.



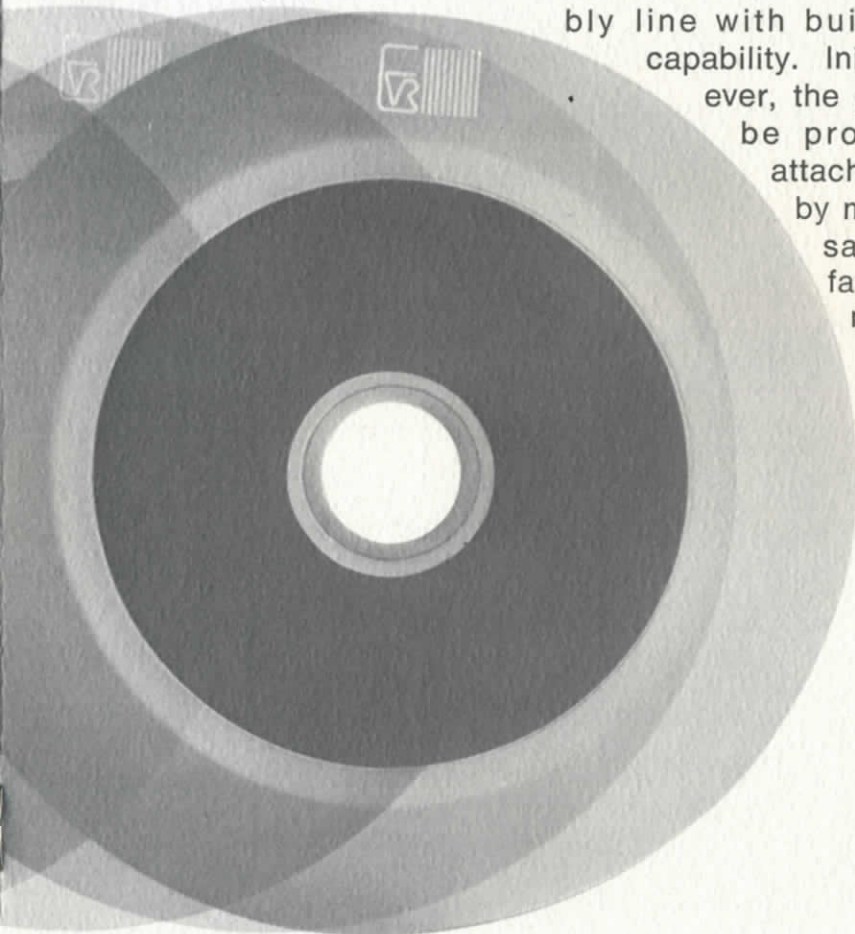
Though the EVR™ system originated in its own laboratories, as an offshoot of research into photo reconnaissance of the moon, the Columbia Broadcasting System will not manufacture the playback units. Rather, it will license leading television-receiver manufacturers and other companies to produce the device. TV sets will roll from the assembly line with built-in EVR™ capability. Initially, however, the players will be produced as attachment units by many of the same manufacturers who now make

home-entertainment products.

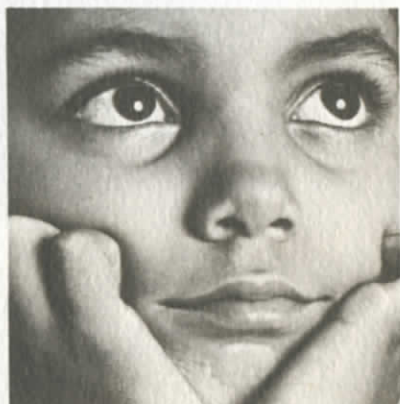
In this way, users will be offered a variety of equipment styles and models, as the resources of many companies will be mobilized to provide the consumer with maximum choice of equipment.

CBS will encourage television producers, publishers, movie producers, videotape libraries, educational television stations, film distributors and others to create the widest possible variety of program material in EVR™ form.

With all these forces working to develop the system and broaden its usefulness, EVR™ is destined to have a powerful impact on education, business, entertainment, the arts, and information processing industries. Its applications are almost numberless.







In the classroom. . .EVR™ will supplement the teaching process by bringing to fruition the immense potential of television in education.

According to the Carnegie Commission for Educational Television, improved playback technology promises "to return to the classroom the flexibility that the present uses of . . . broadcasting denies it. The teacher can select the program, play it at the moment of his own choosing, replay it at will in whole or in part, interrupt it for comments." Because the EVR™ system makes all this possible, it can help educational television make the "massive contributions to formal education" that the Carnegie Commission regards as necessary.

Today, many classroom television sets are dark for all but a few hours every week. Rather than using television when it fits best into the learning program, the teacher is forced to schedule classwork around broadcast hours. Moreover, she has little control over what appears on the screen. The EVR™ system reverses this situation.

By making a wider choice of programs available, by permitting the teacher to preview programs with ease ahead of time, by permitting her to stop a program when she wishes to comment or lead discussion, to start, stop and repeat at will, the EVR™ system makes it possible for the first time to integrate television into the smooth flow of classroom work.

Since the room need not be dark, students can take notes. Since no bulky equipment is needed, no special arrangements are necessary. Since the equipment is simple to operate, even young pupils can use the EVR™ system by themselves. EVR™ thus makes it possible to extend the principle of independent study to subjects requiring fast and efficient visual display. At the same time, a single playback unit can feed multiple TV outlets when needed to reach more than a single class at one time. And, because EVR™ cartridges are so economical, individual schools can develop their own libraries of often-used programs, rather than depending upon centralized local or regional audio-visual libraries.

For these reasons, the EVR™ system will help educators make the most of classroom television.



In home study. . . Not all education occurs in the classroom. Ever-increasing numbers of Americans are turning to home study programs for self-education and improvement. In art, music, languages and other subjects, students are working at their own pace, in their own homes, to gain greater understanding or competence. Since 94 per cent of American homes are equipped with television, the EVR™ system makes it possible to add audio-visual impact to home instruction.

The best instructors in the world, not merely telling but showing the student how to progress, become easily and inexpensively available. A French lesson is accompanied by an EVR™ film taking the learner for a walk down a Paris street. An EVR™ art lesson shows him how to handle his brushes correctly. It makes it possible to reinforce the intellect of the educator with the communicative power of graphic artists, actors, musicians and photographers, and to seal both together into a simple, lightweight and economic cartridge for the home study pupil.

In industry, government and the professions . . .
New industrial developments and rapidly changing technologies are causing industry to seek new

means of training to achieve better and earlier utilization of manpower and equipment. The EVR™ system's low dollar-per-minute costs bring new advantages to training requirements. It can aid in the training of salesmen, machine operators, engineers, computer programmers and executives. In the government, the training of manpower volunteers, astronauts and administrators, soldiers and scientists, as well as training programs for the culturally underprivileged and others can benefit from the flexibility and versatility that the system offers. In the professions, refresher and post-graduate courses are commonplace. Physicians, dentists, lawyers, accountants and others devote an increasing portion of their time to keeping up with rapidly accumulating knowledge in their various fields.

The same qualities that make it so versatile a tool for use in the classroom, will make it indispensable in these fields as well. EVR™-based training programs will become a key part of the training director's resources, and will be combined with many of the latest instructional techniques such as role-playing, simulations, games, and multi-media programmed instruction that accelerate and enrich the learning process.



In entertainment, too . . . The impact of the EVR™ system will be felt. Just as music lovers today buy millions of LPs and build their own private music libraries, the day may arrive when televiewers rent, borrow or buy EVR™ cartridges for their personal use. The EVR™ system, says a writer in the New York *Times*, "will probably turn all of us into film collectors." Movies like *The Gold Rush* and *Citizen Kane*, *Moulin Rouge* and *My Fair Lady* might be packaged EVR™ cartridges and made available to the public at low cost. The viewer would not only choose his television fare from listings in the daily newspaper, but from an enormous repertoire of possibilities, ranging from Broadway musicals and Off-Broadway dramas, to documentaries, variety shows, Olympic contests, cultural and historical events. There may be special film anthologies — great comic routines, famous fights, or moments of great tragedy. Replays of classic television dramas, films of coronations or Congressional hearings, pageants, even collections of famous or clever commercials might be offered for those who want or need them. Producers may begin to turn out movies made especially for the EVR™

market. Individuals may join cartridge-of-the-month or cartridge-of-the-week clubs. They may even go to their supermarket rack to find their evening's entertainment.

In laboratories and libraries . . . The EVR™ system will prove to be a vital tool in helping man cope with the knowledge explosion of our times. The capacity of Electronic Video Recording for dense data storage lends itself to the miniaturization and retrieval of masses of information. With nearly 200,000 frames available in a single cartridge, the equivalent of a whole library of encyclopedias can be stored on film in a space little larger than that occupied by a single paperback. But the system can take us further than the mere warehousing of present books or reference works. It opens up the possibility of entirely new types of encyclopedias combining sound and motion. Ultimately, reference books might be produced in special EVR™ editions, using animation and motion pictures to illustrate such concepts as the circulation of the blood, how a nuclear reactor works, or the ebb and flow of national boundaries through history.

In all these ways, EVR™ promises to change our lives, to create totally novel possibilities for communication among men. It offers a wide variety of practical benefits. But it offers something even more significant—a further extension of human freedom. For freedom means choice.

Like the clay tablet and the printing press, like each new advance in communications technology, Electronic Video Recording brings us choice—the innovation in television communications.



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