

The Last, Best Hope for the TV Documentary, by Philip Weiss

CHANNELS

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1983 NOV-DEC

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FANTASTIC WORLDS Inside the Computer Game

BY STEVEN LEVY



SPECIAL PULL-OUT SECTION
CHANNELS

**1984
FIELD GUIDE
TO THE
NEW MEDIA**

**What Vietnam
Taught Us
About Television**



Multichannel News

A Fairchild Business Publication
The Newspaper for the New Electronic Media

Vol. 4 No. 39 - October 3, 1983 - \$1.00

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1984 Field Guide
To the Electronic Media

1984 FIELD GUIDE TO THE NEW MEDIA

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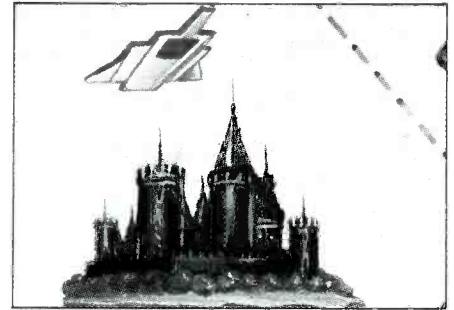
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The series reveals much about the war—and even more about television itself.

BY T.D. ALLMAN



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David Fanning is fighting on the front lines to breathe new hope into a dying form.

BY PHILIP WEISS

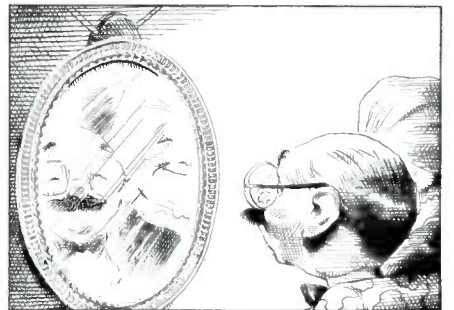


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We've Got It Made: NBC Stoops to Conquer

Is NBC's new show a reflection of society, or is it merely someone's erotic daydream?

BY WILLIAM A. HENRY III



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COVER ILLUSTRATION BY HOVIK DILAKIAN

CARTOONS BY PATRICK McDONNELL

CROSS CURRENTS

TV Criticism, by the Numbers

Back in the '70s, social scientists began totting up instances of violence on television and gained some national attention: Their tallies became important evidence of television's over-indulgence in murder and mayhem—ammunition for citizens groups and legislators in getting television to clean up its act. But the repentant networks were not about to replace profitable action-adventure with the drawing room, so they quickly found a substitute for people violence: automobile violence. Since then prime time has become a veritable speedway, filled with screeching tires, chases, crashes, and pile-ups.

Heady with success—for how often do mere academicians influence change in so powerful an institution as television?—social scientists have continued to plow the fertile field of quantified sin, making a respectable academic discipline of what is called “content analysis.” And what are these content analysts totting up today? You guessed it: their own creation, dangerous driving on television.

Two Michigan State researchers have published the findings of a major driving-on-television study in a recent issue of *The Journal of Communications*, which is to content analysis what the *Journal of Cardiology* is to the heart attack. For “The Portrayal of Driving on Television,” Bradley Greenberg and Charles Atkins counted up the instances of “irregular driving” in 174.5 hours of prime time between 1975 and 1980. Their findings suggest that the time may have arrived for the Nobel committee to start paying attention to content analysis. Among their discoveries:

- Cars on television leave the ground far more often than they do in real life.
- Fewer than 2 percent of all drivers on television are shown buckling their seat belts.
- Irregular driving acts—speeding, screeching tires, “autobatics,” etc.—occur more than seven times an hour in prime time.

What effect does all this automotive anarchy have upon the driving habits of our young? Greenberg and Atkins suggest that the heavy viewer of television is

“more likely” to accept irregular driving as the norm, to think he can get away with speeding and, perhaps worst of all, to drive this way without wearing a seatbelt.

Woe to the heavy viewer of television. No sooner did we persuade him to discard his Saturday-night special than we've taught him to make his Rabbit fly. If television really affects viewers the way content analysts assume it does, the heavy viewer is in deeper trouble than he can possibly imagine. He should be having serious nutritional problems, for example, since TV characters seldom find time for three squares. And how well are the four basic food groups represented on that kitchen table in the sitcoms?

Content analysis is a form of television criticism whose premise is that television must at all times set a good example. The

field is wide open, and the possibilities for studies are endless. Want to catch television shirking its responsibilities to society? Sit there and start counting. Not only can you get the goods on Magnum, P.I. for failing to buckle up, you can also nail him for not changing his socks, doing the dinner dishes, or making his bed. When did you ever see Mr. T flossing?

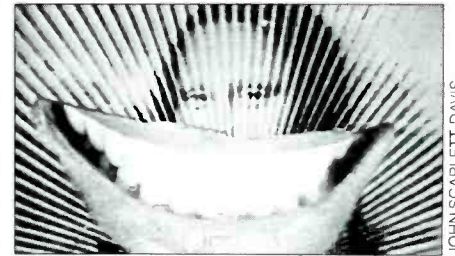
In addition to betraying a condescending view of the heavy viewer, the field of content analysis shows little respect for the ancient art of storytelling. Writers and their audiences observe unspoken pacts, one of which is to skip the boring details to get on with the drama. There simply isn't the time on television for our heroes to eat sensibly, floss after meals, or buckle up in their cars. If there were, it wouldn't be drama; it would be life. M.P.

Video Art Moves Uptown

Video art, once the exclusive preserve of the avant garde, has found its way into everyday television, not only through the rock-music videos popularized by cable but also through commercials, news, and sports. The disconnected imagery, computer graphics, and phantasmagoric effects that have been hallmarks of video art provide the high-tech look on commercial television that puts the medium in touch with today's young audience—the same young audience that rallied around MTV, Warner Amex's Music Television cable network.

MTV is programmed entirely with video pieces prepared by recording companies and promoters to help sell the music of rock artists. Many of the videos interpreting the songs are riveting creations. When Tony Basil displayed the video version of her hit song, “Mickey,” at the Museum of Modern Art in New York, she said, “I see it as an art piece, a comprehensive picture of my work. I don't mind it being used to sell records.”

USA Network's *Night Flight*, airing weekend evenings, presents along with music videos a special segment called “The Video Artist,” a showcase for pieces with no promotional purpose. *Night Flight* producer Eric Trigg considers his show “the only national vehicle for video art”—and many of its tapes have been displayed in art museums. One of these, Max Almy's “Leaving the



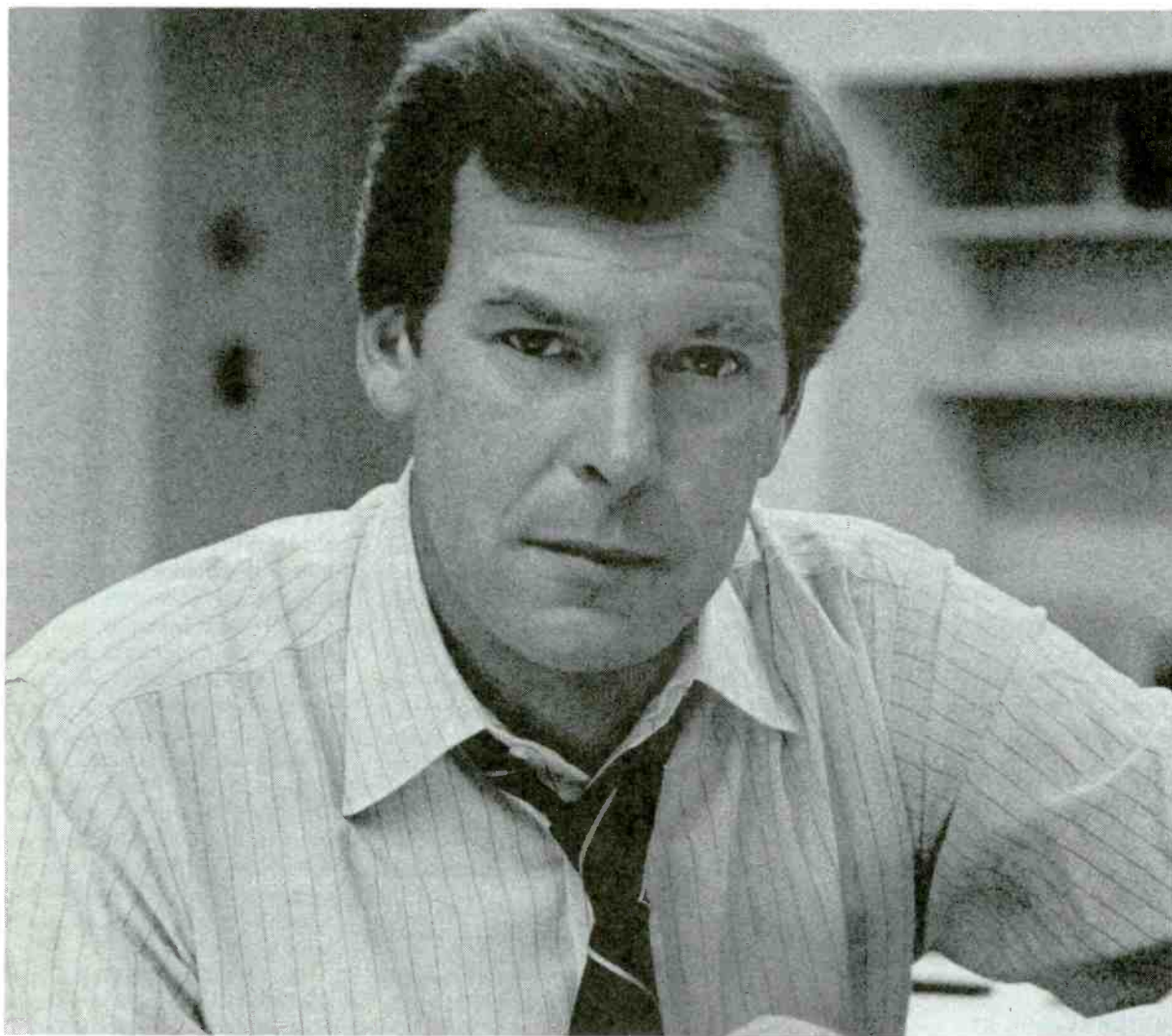
JOHN SCARLETT/DAVIS

Twentieth Century,” portrays a technologically dependent society whose every waking moment is pervaded by television news.

Almy's piece is currently part of “The Second Link: Viewpoints on Video in the '80s,” the first international touring video art exhibition. It consists of tapes by 30 artists selected by curators from six countries. That a video art show can sustain an international tour is an indication of the mainstream's growing acceptance of video as a serious art medium. The show's name, “The Second Link,” was borrowed from a turn-of-the-century society called The Linked Ring dedicated to promoting photography as an art form.

Barbara London, director of the video program at the Museum of Modern Art, where the exhibition made a stop in September, remarked that “viewers are so accustomed to the vernacular of television that they easily accept artists' innovative uses of the video medium.” For

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those still wary of the medium as art. "The Second Link" demonstrates that video amounts to more than the manipulative electronic devices seen in its commercial applications. There is some overkill with effects in the exhibition, but there are also finely edited, imaginative pieces. Mary Lucier's "Ohio to Giverny: Memory of Light" captures graceful plays of light on water, flowers, and lily pads reminiscent of Monet.

A contrasting experience is John Scarlett-Davis's "A to Z," which shows, via quick edits linking colors and lines, a nude young man painting himself with bold strokes of color, and then rolling his freshly painted limbs over a broad canvas on the floor, to the accompaniment of New Wave music.

In general, video art differs from commercial video in that it tends to be conceptual rather than representational. It aims to create moods and environments rather than plots and sharply defined sequences of images.

But the spinning boxes that flip images in the teasers for network sports presentations, or in news-feature programs such as *Entertainment Tonight*, are straight out of video art. When museum exhibitions such as "The Second Link" draw from *Night Flight* and MTV, and vice versa, there remains little doubt that video canvases are entering the mainstream, not only of American television but also of American art.

L.M.

ABC Goes for the Gold

The 1984 Olympic Games telecasts are going to knock your socks off. They will make you forget the 1980 Olympics, which made you forget the 1976 Olympics. In 1964, if you remember, the judges actually scored the figure-skating competition by holding up cards. That was about half a dozen generations ago, television-wise. ABC, which has had a virtual lock on the games since those troglodyte days, recently unveiled to the press a fully assembled space-age broadcast facility for the Olympics and wowed the reporters with the "total new look for the 1980s."

The new facility, which the network calls its "Olympic Village," is four stories high and includes 36 video recorders, 12 editing cubicles, eight ENG (electronic news-gathering) units, and 73 tele-

vision monitors. The studio weighs five tons and is designed to be dismantled after the summer games in Los Angeles so that it may be crated and reassembled for the winter games at Sarajevo.

Everything in the studio is connected to everything else by 17,000 cables. That's 150 miles worth. Other key statistics: ABC will broadcast 187½ hours of games from Los Angeles ("facility-wise," according to Jeff Ruhe, the games' coordinating producer, that translates into more than 200 cameras and 2,525 people); and Julie Barnathan, ABC's ebullient president for broadcast operations and engineering, will average about three hours of sleep a night, if he's lucky.

But that whole riot of recording, switching, and interfacing will take place off the screen. You're going to see computer graphics that will blow your mind—and afford you insights you never had, or even wanted, before. Take the "pulse watch," for example. Say two marathoners are matching one another stride for stride at the 20th mile. Will one of them falter? A machine measures their pulses and instantly transmits the data to a computer, which instantly feeds it into the Dubner character background generator, which instantly creates a pair of graphs displaying the critical pulse-rate differential. Or maybe a lot of top-flight skiers are skirting mayhem on a hazardous stretch of the downhill. What's going on? One of about 35 skilled artists has already drawn a complete model of the slope on the Dubner. Now he lifts out the appropriate cross-section, while Jim McKay, or whomever, describes the altitude, the length, and the pitch.

There will be no empty space during the XXIII Olympiad coverage. When a commentator speaks, for example, there's often a great deal of unused space between his shoulders and the top of the screen. The Quantel "paintbox" will be generating images like mad to fill in this void. If you're bored for more than 30 seconds of the 250 summer and winter hours of coverage, it's probably going to be your own fault.

ABC will also use much of the equipment, which cost the network roughly \$150 million, to cover the 1984 political conventions. It seems appropriate that technology developed for sports is to be used for politics. Who, after all, can resist the excitement and pathos of watching the candidates' pulses rise and fall as delegates post their votes? J.T.

Amateur Hours

Remember ham radio? Thousands of kids up in attics sending messages from one part of the world to another? Well, today it's ham television, and some 12,000 licensed operators in the United States are busy broadcasting everything from family get-togethers to images sent back from outer space by NASA probes.

Using assigned bandwidths (located between 28.6 and 29.7 megahertz and between 420 and 440 megahertz), ham-TV operators can communicate with anyone who has the right license and equipment. They can set up computer-to-computer links, send facsimile transmissions of photographs from one site to another—even bounce signals off the moon.

Ham television is a direct outgrowth of ham radio. Indeed, the licenses one must obtain from the Federal Communications Commission to broadcast amateur television are the same as those issued for ham-radio operators. There are five different classes—novice, technician, general, advanced, and amateur extra—and all but the novice license entitle one to transmit television signals. Each category has different regulations about what frequencies and equipment can be used, which in turn determine the quality of the broadcast.

There are two types of amateur television now in use: fast scan, which permits live action, and slow scan, which can only broadcast still images. With slow scan, it takes 8 to 16 seconds for each screen image to appear, as horizontal lines are stripped in from the top to the bottom of the screen. This is the same imaging technique used when space probes send back pictures of Mars, Venus, or the moon. The advantage of slow scan is that it operates on low frequencies, so a signal can be broadcast over very long distances. Fast scan, using higher frequencies, sends a normal television image but can only be transmitted over a radius of 50 miles.

The cost of a basic fast-scan system, including camera, antenna, and receiver, ranges from \$350 to \$900, according to Mike Stone, editor of *A5 Amateur Television* magazine. Slow-scan systems are somewhat more expensive, and a basic color system can cost up to \$2,500.

The number of ham-television operators is expected to increase over the next decade. Like ham radio before it, amateur television offers individuals an opportunity to experiment with new technology. "The big thrill," as Mike Stone puts it, "is that you're working with real TV, doing things the pros do at a fraction of the cost." **JOSH MARTIN**

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FANTASTIC WORLDS OF THE COMPUTER GAME

The new role-playing games will have a potential for brainwashing that not even George Orwell dared conceive.

by Steven Levy

THE DEBATE OVER video games is reaching fever pitch. In an updated version of "Trouble in River City," concerned mothers, surgeons general, and local TV news reporters are decrying the multibillion dollar video-game industry as a source of addictive habits, wasted quarters, and minds turned to mush. On the other side, the games' defenders (who turned out in force at a recent Atari-sponsored seminar at Harvard) wax enthusiastic over improved hand-eye coordination and first steps toward elusive "computer literacy."

But this point-counterpoint will soon be rendered irrelevant. Technology, as unstoppable as a wave of Space Invaders, waits for no debate. Those controversial arcade video games are merely the precursors of an advanced form of computer game-playing that promises to be much more powerful than any of its "corruptive" predecessors, including comic books, pinball machines, and pool tables. The coming wave of computer games will be so addicting and influential that it will force us to grapple with completely new issues. And we will be unprepared to deal with them unless we stop bickering about squandered lunch money and take a close look at the games themselves.

There is a definable ethos and morality (of a sort) to playing video games. The form is in its infancy, but just as the child is father to the man, the psychology of video games will evolve into the more

complex mind frame of computer games. (To clarify my terminology: by video games, I refer to coin-operated games in arcades and the cartridge-based games that play on machines made specifically for game-playing; by computer games I mean those games that take full advantage of the powerful memory manipulation of more sophisticated home computers, such as the Apple.)

There's a lively controversy over when the first video game was played, but it is generally agreed that years before people fed the first quarter to a video game, fun-loving computer programmers had hooked up some sort of video display to a computer in a way that enabled two players to engage in an interstellar joust. Spacewar was significant not only because it was first, but because it set a violent tone for the games that would follow. To win, you had to obliterate your opponent. And the first rule of video games was thereby established: Shoot to kill.

Not that any evil was intended. The technology just happens to be susceptible to games in which some sort of missile can be directed at an object. In Spacewar, a protocol termed "collision detection" took over. If the computer saw that the missile and the spaceship occupied the same coordinates on the monitor, it automatically chose the part of the program that displayed an explosion on the screen. It was, well, neat.

Space Invaders was the first modern video-game blockbuster. It reaffirmed the natural marriage of computers, science fiction, and war. The attackers, clearly, were non-human—and if you

paused to consider the morality of the contest, you were a goner. When the saucer appeared on top of the screen, did you think who might be in it? No! You shot at it, and that was that.

Video game-playing to date has been something of a Darwinian exercise. When someone plays video games of this genre, he buys into an instant doomsday scenario; hopelessly surrounded by mortal enemies, he must blast his way out at any cost. More importantly, once the game starts, the player is totally absorbed in the physical requirements of survival—move left to avoid missile, fire at alien—and while he might feel pressure, even dread, in his situation (and exhilaration at clearing a screen of invaders), the significance of the scenario does not fully sink in. It is possible to play Missile Command hundreds of times without once reflecting that those missiles, which you must stop from hitting your "cities" and "power bases," represent real Russian missiles in a real nuclear war.

Video games have to maintain this "no-think" pace: They make their money on the assumption that one good 25-cent adrenalin rush will deserve another, and since the success of these games will always be measured in quarters, this ethic is irreversible. The current trends in coin-op games lean away from science fiction, favoring instead cartoon-flavored scenarios like Pac-Man or Donkey-Kong (in which the player climbs girders to rescue a girl from a gorilla), but what remains constant is the temporary feeling of peril, and the possibility of relative success in dealing with that peril by getting a high

Steven Levy's book, Hackers, will be published in 1984 by Doubleday/Anchor.



score. (No one ever "wins" a video game. It just gets harder until you're wiped out.) The cartoon themes of recent games are fitting, because just as in cartoons, no one really gets killed—blasted to smithereens, perhaps, but available for duty again as soon as the next quarter is dropped. Meanwhile, who knows what, if any, long-term effects might come from the alternating streams of anxiety and exhilaration that characterize extensive game-playing?

The perils are somewhat different—and are certainly more cerebral—when the gamer leaves the arcade behind and buys a computer. Playing time is not crucial in the stay-at-home games played on an Apple, IBM, DEC, Atari, PET, or Radio Shack TRS-80; a game can last

from a few minutes to, literally, weeks. While many of the games played on home computers are knockoffs of popular arcade games, the better computer games often have more elaborate scenarios.

Home games, by and large, are products of an auteur, who may indeed be one of those "computer kids" you hear so much about—a technologically precocious but emotionally undeveloped 18-year-old. It is the technology that helps the young auteur set the format—the first thing he usually masters in game-writing is getting a spaceship on the screen and having it fire a missile. A programmer's first game is usually regarded in the software industry as a first novel is in publishing—a learning effort heavy on self-indulgence. In this case, indulgence results not in maudlin reminiscences of

The next generation of computer games will be so complex you can literally get lost in them.

adolescence, but in excessive embellishments on explosions and other macabre details. (One programmer's first effort used a substantial percentage of the program code to feed a digital representation of a death scream into the computer.)

Perhaps for this reason, taste is not one of the strong points of computer games. A game called Firebug has a prospective arsonist as protagonist. The object is to keep up a steady stream of gasoline from the arsonist to the building so that the torching goes off without a hitch. Other games litter the screen with dead aliens and people to such an extent that they make the "traditional" video-game

your persona through the castle, you encounter Nazi guards, who shout at you in German. When you kill one of them, you hear his screams through your computer's speaker. You win by escaping from the castle. (I've played for hours, and have yet to see the bright sunshine and flapping doves that supposedly accompany an escape.) The other game is Choplifter, and its object is to fly a helicopter across an enemy border in order to rescue 64 of your nation's "hostages." While dodging enemy fighters and tanks, you attempt to land, wait for the human figures to run into the copter (those who can't fit will dolefully wave goodbye), and

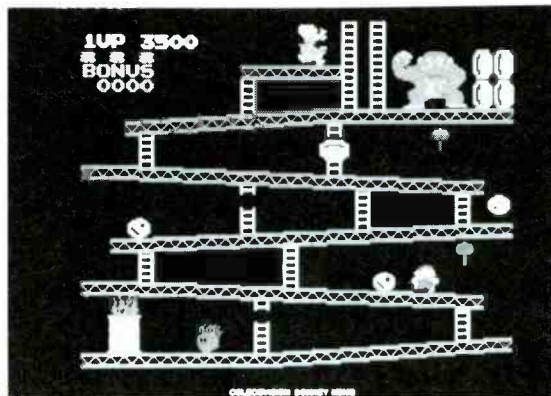
give some thought to preserving lives, although firing away at a tank will occasionally result in a stray missile blasting away a hostage or two. In fact, Choplifter's pacifist mission caused a sensation in the computer-game industry. It remains one of the very few games whose object is not to bring about some sort of digital genocide, but actually to *save* people. Encouragingly, Choplifter's success has spurred a spate of "rescue" games.

The important difference between such contemporary computer games and more visceral shoot-'em-up games is that the former require players to internalize the designer's value system and act accordingly. Obviously, these still-rudimentary arcade-style games do not call for very sophisticated decision-making. But you don't need a crystal ball, or even a consulting firm, to see the mind-blowing next step in computer games. They're here already, and they are so complex that you can literally get lost in them.

I am referring here to "role-playing" games on a computer. Though the trade defines this term more narrowly, I use it to apply to games, often text-based, in which the player assumes a computer persona and gives commands enabling the persona to move in and manipulate a fantasy environment, sometimes in extremely detailed fashion.

The first of these games was Adventure, written in the mid-'70s by two computer programmers working in the field of artificial intelligence. In playing Adventure (sometimes known as Colossal Caverns), the persona finds himself in a world full of murderous dwarfs, unbridgeable caverns, and dark passageways. There are treasures to be found, but only if the adventurer gives the proper commands to the computer, not only telling it where to move the persona ("Go south") but having the persona interact with the environment. "Kill dwarf," you might say, and the computer will respond, "With what?" Then you might say, "Use ax," and if you have picked up an ax in your travels, the computer will tell you that you have killed the dwarf. When the Ad-

If you pause to consider the morality of the game, you're a goner.



shoot-'em-ups look like kindergarten.

The best-selling computer games, though, are more likely than not written by experienced programmers in their 20s or even older, people who know that a successful game has to differentiate itself from hundreds of others and take full advantage of the computer's powers. Chief among these is the ability to create simulations so complex the participant quite easily pictures himself as a character in an exotic scenario. Until recently, this act of imagination has usually been the province of books and films. The computer goes a step beyond those media; it *interacts* with the participant as he makes decisions in character. This is tremendously compelling, and it is no wonder that for many computer owners—adults included—these games become a passion, sometimes indulged to the point that life away from the computer is neglected.

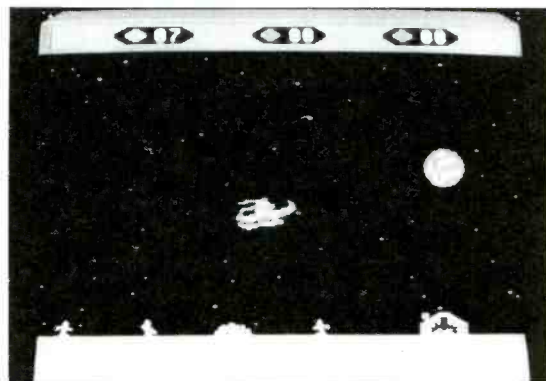
In what kinds of scenarios do computer games immerse their aficionados? Let's consider two of the most popular computer games made for the Apple. One is called Castle Wolfenstein. The game's plot is explained when you "boot" the floppy disc containing the program into your computer: You are a prisoner of the Nazis in World War II, held in an old castle. You get hold of a smuggled gun, kill the men guarding your dungeon, and go through the castle unlocking trunks and searching them for weapons, uniforms, and enemy plans. As you manipulate

head back across the border to safety. Scoring is simple: the number of hostages rescued, minus the number killed.

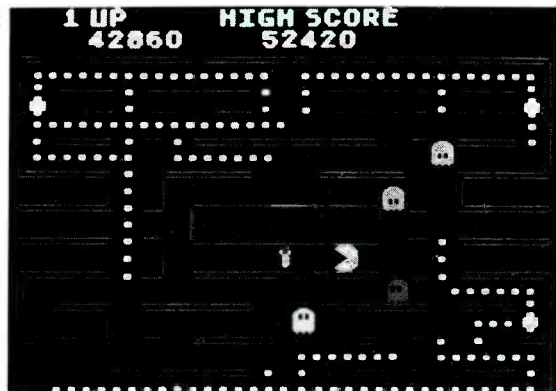
Arcade games usually require only dexterity, but these computer games call for some strategy as well—and this is where the value judgments come in. In Castle Wolfenstein, you have to anticipate the reaction of the Nazi guards. At times a guard may surrender to you, holding up his hands and calling you "Comrade." Unfortunately, as far as I can tell, dropping your gun or attempting to move away from him will merely result in your capture, so the only strategic reaction is to shoot the poor fellow while he's got his hands up. This may not be the greatest lesson for youngsters living in countries that adhere to Geneva Convention rules.

Choplifter's lesson is more humanistic. The scoring of the game compels you to

Technology, as unstoppable as a wave of Space Invaders, waits for no debate.



Even now, in their toddling stage, video games have the power to influence thinking.



venture program first appeared on the Stanford University computer, people would "enter the computer center on a Friday afternoon and not leave until Monday," according to Donald Wood, one of the game's creators.

Softporn, a best-selling adventure game for microcomputers, shows how a role-playing game can force a player into its author's way of thinking. The player's objective is to "find and seduce three girls." So naturally, when a "gorgeous blond" is encountered in a hotel lobby, the player will say anything—*anything*—to get this female into bed. Forget about your liberated view of women—you have to think like a seducer, *be* a seducer. Though this game is clearly marked "Adults Only," it illustrates a problem endemic to adventure games: Each has a value system that must be bought wholesale, and most often it's a violent one in which "kill" is an accepted, at times a required, command.

Yet adventure games can have remarkable educational value. What better way to learn about life in colonial America, for example, than to *be* a colonial American? The program for such a game could place the player in various situations, and limit acceptable responses to those that would have been appropriate in colonial times.

Hundreds of adventure-style games are now available for home computers, their scenarios ranging from a re-creation of a Greek myth to one in which the player's persona is a vacationer who has been thrown in jail, and must escape a firing squad, fight cannibals, and finally try to get a refund from the travel agency. Along with plots that become progressively more complicated, the formats of the adventures are becoming more sophisticated. Computers accept an increasingly wide range of commands, and often provide high-resolution pictures to accompany the text. The day swiftly approaches when a game-player will sit in a "media room," fully equipped with effects for all five senses, using voice commands to manipulate an adventure persona who is, for all practical purposes, indistinguishable from the player himself.

Obviously, there are dangers in games that are so totally absorbing. How can a game-player, especially a young one, get so deeply involved without having the ethics of the game bleed into his own personality? Where does the game stop and "real life" begin?

Technology is not waiting for an answer. However haphazardly, the computer-game industry is developing its own bounds, even its own law. One company caused a furor by releasing a video game called *Custer's Revenge*. Built to operate on the Atari game machine, this game has a player directing Custer to rape an Indian woman tied to a stake. Under pressure from feminist and Indian groups, some localities considered banning the game, and Atari filed a suit against its creators. The ACLU has fought such banning efforts, insisting that computer games are covered under the First Amendment. (The publisher eventually bowed to the pressure and took the game off the market.)

One video game has already been subjected to political censorship. Soon after the Argentinians invaded the Falkland Islands, a game called *Obliterate* appeared on England's Prestel teletext system. Created by a newsman in Manchester, the game urged participants to man an English submarine and sink the Argen-

tine flagship. While a few observers hoped that the playing of *Obliterate* might let off some domestic steam, others complained it fueled the jingoism then rampant in England. Finally, politicians objecting to the game's distastefulness managed to have it removed from Prestel.

Some newspapers here treated the incident as a joke. But it was no joke. Even now, in their toddling stage, video games have the power to influence thinking. As the games mature, they will accommodate more sophisticated messages, more political content, more graphic sexual content . . . and master much more hypnotic ways of enveloping the player into their tiny universes. It might come as a surprise to those—such as a recent book reviewer in *The New York Times*—who consider video games a fad as ephemeral as the Hula-Hoop, but the computer games of the future are going to have a profound effect on us.

Should we try to limit them? Absolutely not. I am thinking of another technology that has been devastatingly effective in changing modes of thought, of shaping values, of creating worlds into which people can escape. This technology has become so addicting that repeated attempts to control it have been doomed to failure; its users will always find ways to practice it. This technology, of course, is the written word, and what we now call "games" are quickly developing the same versatility and persuasive power that we have long regarded as the essence of words on paper.

I have no idea what will happen when these capabilities are wed to powerful interactive computers that can stimulate three, four, or maybe all of our senses. The potential exists for electronic James Joyces, and for brainwashing sessions that George Orwell dared not conceive.

But I'm pretty sure of one thing—sooner or later, people are going to stop referring to these creations as "games." ■



PBS's Vietnam:

How TV Caught the

Unprintable Truth

by T.D. Allman

The surprise about the series is not its discoveries about the war but its revelations about television.



ROBERT ELLISON BLACK STAR

FIFTEEN YEARS after the Tet offensive, arguably the turning point of the Vietnam war, William Westmoreland and North Vietnamese general Vo Nguyen Giap sit before PBS cameras—separately, of course—to explain the significance of the bloody struggle. It is the seventh episode of PBS's monumental 13-hour documentary, *Vietnam: A Television History*, now showing through December 20. Westmoreland argues, as he has argued since 1968, that Tet was not the stunning and humiliating defeat it

T.D. Allman covered the Indochina war for the Manchester Guardian. His book on U.S. intervention in the Third World, Unmanifest Destiny, will be published by Dial Press in 1984.

seemed to most Americans, whose television sets brought them images of Americans fighting and dying in a ravaged land. No, insists the general, the TV set was wrong. Far from being a Viet Cong victory, he says, Tet "proved that we were winning the war."

General Giap, one of the many leading North Vietnamese officials whom PBS interviewed in Hanoi, sees things quite differently. In the strict military sense, Giap concedes, the Tet offensive was a failure: American firepower forced the Viet Cong and North Vietnamese troops who overran South Vietnam to withdraw. But psychologically and politically, Giap adds, Tet was a Viet Cong victory of incalculable importance because it demonstrated that victory as Americans had understood it was simply impossible in Vietnam—indeed that military defeat it-

self could be staved off only at an immense, and unacceptable, military, political, financial, and psychological cost.

Giap of course was entirely correct. His troops held the U.S. Embassy for only a few hours, but several months later Lyndon Johnson decided to abandon the White House. The dumb, unblinking television eye had shown the American people what all the scholarly tomes and earnest editorials never had completely managed to convey in print, and what Westmoreland, even now, does not seem to grasp: The only way to "save" Vietnam was to destroy it. Never again would the American people really believe the war was a noble endeavor to confer democracy and progress on Vietnam. Up until Tet, the debate had centered on how the war might be won. Thereafter there was only one debate—on how to get out.

Vietnam: A Television History tells us

almost as much about television as about Vietnam. The narrator of the program reminds us more than once that Vietnam was the first television war. But this conventional observation turns out to mean more than one at first thinks. Throughout the series we witness television's capacity to communicate more than those in front of the camera, or even behind it, intend.

As we watch the two aging generals, we cannot help seeing beyond the facts, memories, judgments, and opinions the two are seeking to convey. Giap's appreciation of the human nature of war animates his every word and gesture. Westmoreland appears as rigid and unrelated to his surroundings as he did

during the war. His notion that it is all a matter of technology and hardware runs through even his pieties about hearts and minds.

Giap, we quickly realize, understands that we Americans are human beings, that we need to believe what his own forces never doubted—that our wars are not just winnable, but worth winning. Westmoreland, as he faces the camera, reveals an equally crucial fact about the war: Like so many of our leaders, the poor fellow never managed to grasp what Vietnam was all about.

Television's influence on the war was axiomatic. For the first time, people could see a war while it was being fought. But the enormous influence of television was largely unexplored at the time and remains misunderstood. Was television

“biased,” as the Westmorelands and the Nixons claimed, or was it “objective,” as the network executives and elite commentators countered?

Clearly it is disingenuous to argue that television was wholly objective. Yet its significant bias had to do not with the ideology of those who controlled it but with the medium itself. While print lends itself to abstraction—it is far easier for a writer to state what things “mean” than to recreate the events themselves—television craves concreteness. TV’s inherent preference for the dramatic image no doubt influenced coverage of the war as strongly as, for example, the tendency of the B-52 bomber to hit “friendly” targets influenced the American conduct of the war.

Even the most experienced students of the war eventually came to precisely the conclusion the TV camera had arrived at without having to think. By the mid-1960s, for example, Bernard Fall, perhaps the reporter respected the most by those of us who covered the war, announced he was no longer bothering to cover Saigon’s undulating intrigues and ceaseless prognostications of light at the end of the tunnel. Caligula’s horse, he remarked, could be premier of South Vietnam now, and it wouldn’t matter.

For the rest of his life Fall went around with the grunts. It had taken him decades of research and reflection to discover the single most important fact, the determinant truth of the war: All that mattered, after a while, was the American destruction. The television camera arrived at the

Watching the series, one realizes that TV was the idiot savant of Vietnam.

conclusion unconsciously. One realizes, watching this most painstaking documentary, that television was the *idiot savant* of the Vietnam War.

Time and again on *Vietnam* one sees television challenge the abstract with the concrete, and thereby gain a truth. Thus in the eighth episode, “Vietnamizing the War,” we learn that President Nixon ordered the number of troops fighting in Vietnam steadily diminished between 1969 and 1973. The goal of Vietnamization was to allow the United States to win the war while minimizing the American cost in lives—and the Administration’s in political standing.

Yet again a major North Vietnamese and Viet Cong offensive unfolded. And yet again it was ultimately turned back by a stupendous expenditure of American firepower. There in fact was only one real difference between the Tet offensive of 1968 and the Spring offensive of 1972: This time it was the South Vietnamese, not the Americans, who were dropping the bombs. This particular battle of the thirty-year Vietnam war ended when

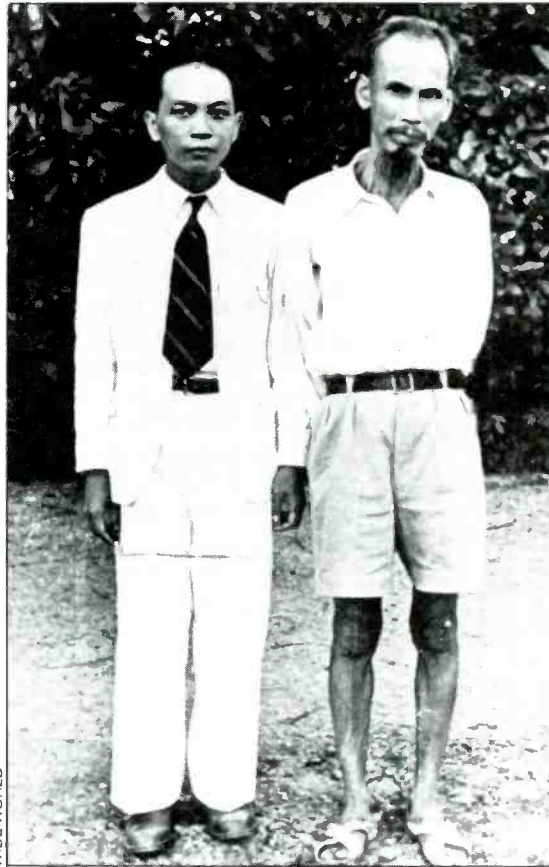
troops from Saigon retook the northern province of Quang Tri.

At the end of the episode the camera pans over Quang Tri City. The only thing moving is a South Vietnamese flag, listlessly flapping in a worn-out wind. Everything else is utter devastation. This was a “victory.” The Vietnamization program had worked. In mid-September 1972, for the first time in seven years, there were no Americans killed in battle in Vietnam. That same week 5,000 Vietnamese died in combat.

PBS’s commentary on the battle for Quang Tri is characteristically terse. We are told that “the fierce and prolonged battle for Quang Tri City provides extraordinary footage of a South Vietnamese army unit in combat, the terror of the civilian population trying to escape, and the destructive force of modern fire-
(Continued on page 86)



WIDE WORLD



WIDE WORLD

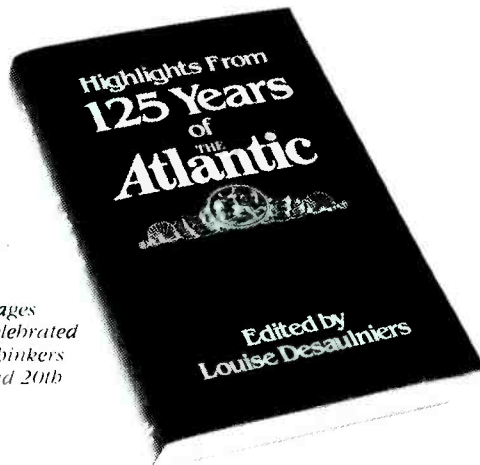
The turning point (opposite page): American troops battle North Vietnamese at Khe Sanh during 1968 Tet offensive.

The view from the north (above): Viet-minh commander Vo Nguyen Giap, seen here with Ho Chi Minh in 1945, is interviewed in the PBS series.

The First Vietnam War (left): French soldiers under siege at Dien Bien Phu in 1954.

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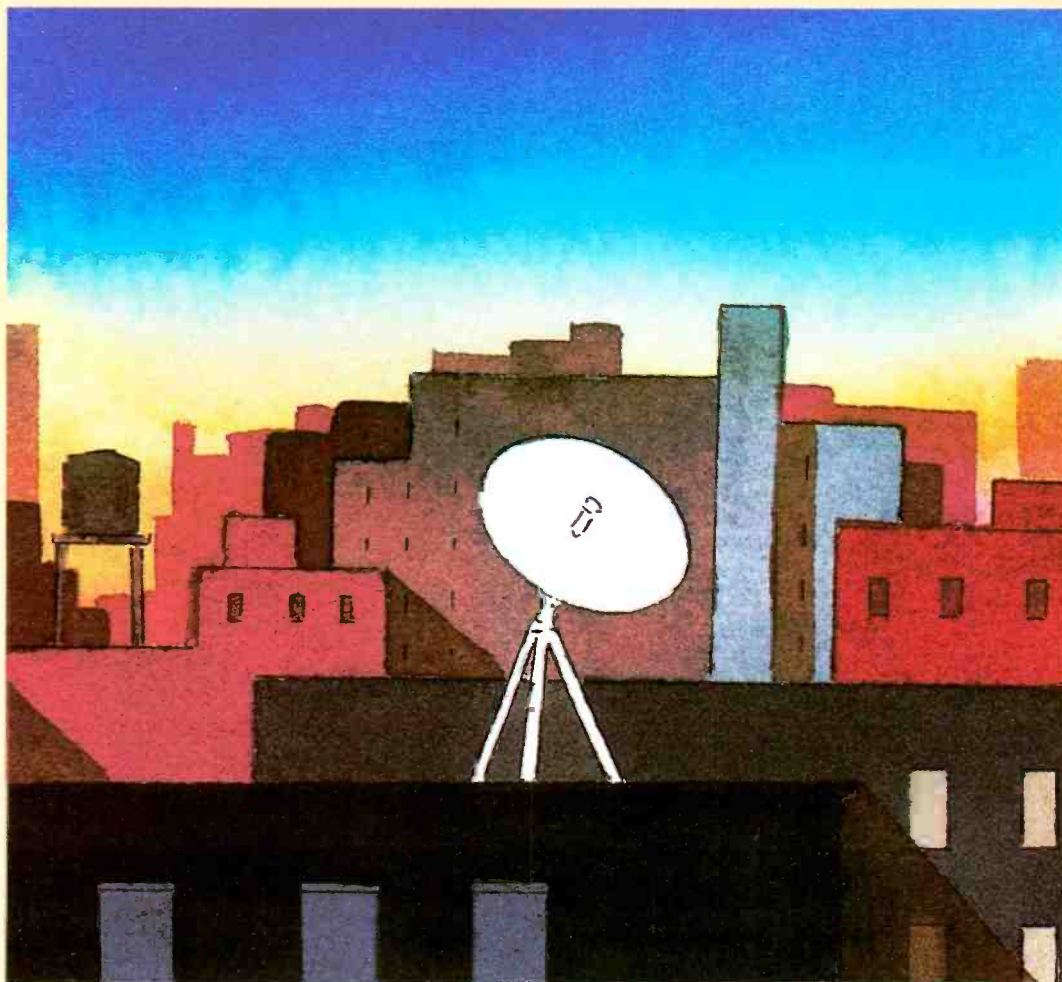
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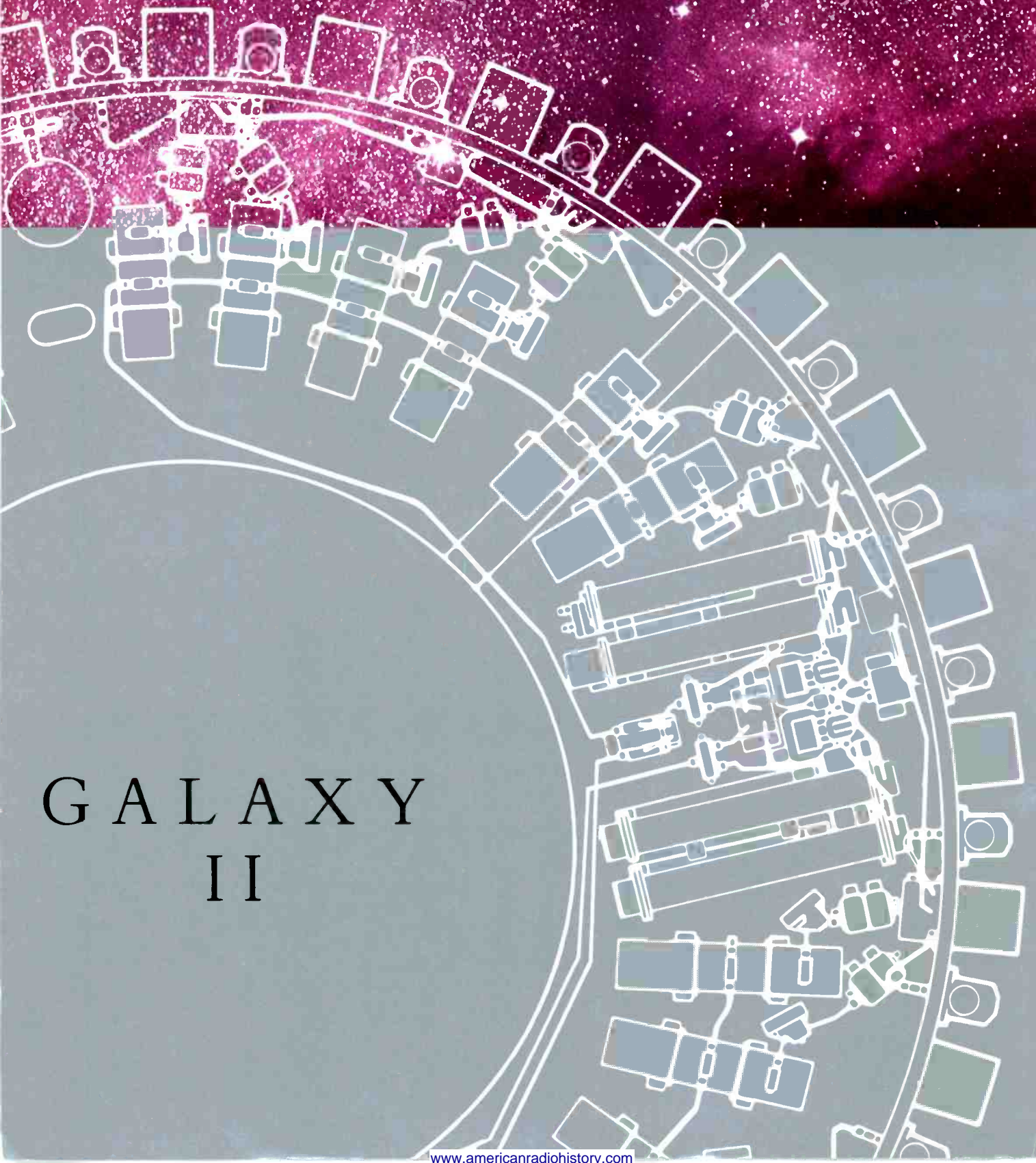


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GALAXY II



ANNOUNCING THE ADVENT OF GALAXY II

The successful June launch of Galaxy I represented a commitment fulfilled to the cable industry. Galaxy II represents a commitment to the business industry.

Both of these communications satellites are cornerstones of an advanced telecommunications network developed by Hughes Communications called The Galaxy System.

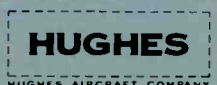
With its launch, Galaxy II joins Galaxy I, 22,300 miles above the earth, to provide specialized voice, video and data communications service to the business community. Next June Galaxy III will be launched into space, becoming the third cornerstone of The Galaxy System.

A sophisticated terrestrial network of earth stations and microwave interconnect facilities complements this space segment. By locating earth stations in major metropolitan areas throughout the country, Hughes Communications can tailor service to individual customer needs.

That's why business industry leaders such as MCI Communications Corp. and IBM Corporation have chosen to utilize the Galaxy satellites and the associated ground network. They understand that from the outset Hughes Communications works directly with its customers to design a state-of-the-art communications network to meet specific customer goals.

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MPA

INTRODUCTION:

AN ANNUAL REPORT ON THE ELECTRONIC MEDIA

Last year, *Channels* produced the first *Field Guide to the New Electronic Media*, a carefully researched and highly readable publication whose purpose was to make order out of the confusion about the new communications systems. As a primer on the media, the 1983 *Field Guide* was keyed to the metaphor of an electronic environment and, accordingly, organized the technologies in the way the flora and fauna of the natural environment are classified—by families, species, and subspecies.

The 1983 *Field Guide* was such a spectacular success—copies are still being purchased in bulk by universities for use as textbooks, as well as by media companies, investment concerns, and law firms—that it became the basis for an annual service by *Channels*.

The *Field Guide* for 1984 goes well beyond the primer, in examining not just the state of the art but the state of the market—how each of the species is managing in the prevailing economic and regulatory climate, and how each is faring against the competition. And, since this is a guide to the field of electronic media, it includes the best-established and most pervasive of them: broadcast television, commercial radio, and telephone. They still dominate electronic communications in America today, and any attempt to portray the second age of television without these powerful carry-overs of the first age would seriously distort the picture.

In its totality, this *Field Guide* shows where things stand and why. As part of its research for this survey, *Channels* interviewed the leading media analysts, on Wall Street and elsewhere; their most provocative comments appear throughout the *Field Guide*. The *Field Guide's* centerpiece this year is a graphic illustration of the electromagnetic spectrum, and how it has been developed by new technologies over the years. Past and present mingle here, as they should, against the intriguing horizon of the future.

With this second edition of the *Field Guide*, *Channels* provides what in effect is the Annual Report of the Telecommunications Industry. Because this magazine is independent and impartial, it is uniquely equipped to perform this function, not only for the business community but for all who depend on telecommunications.

L.B.

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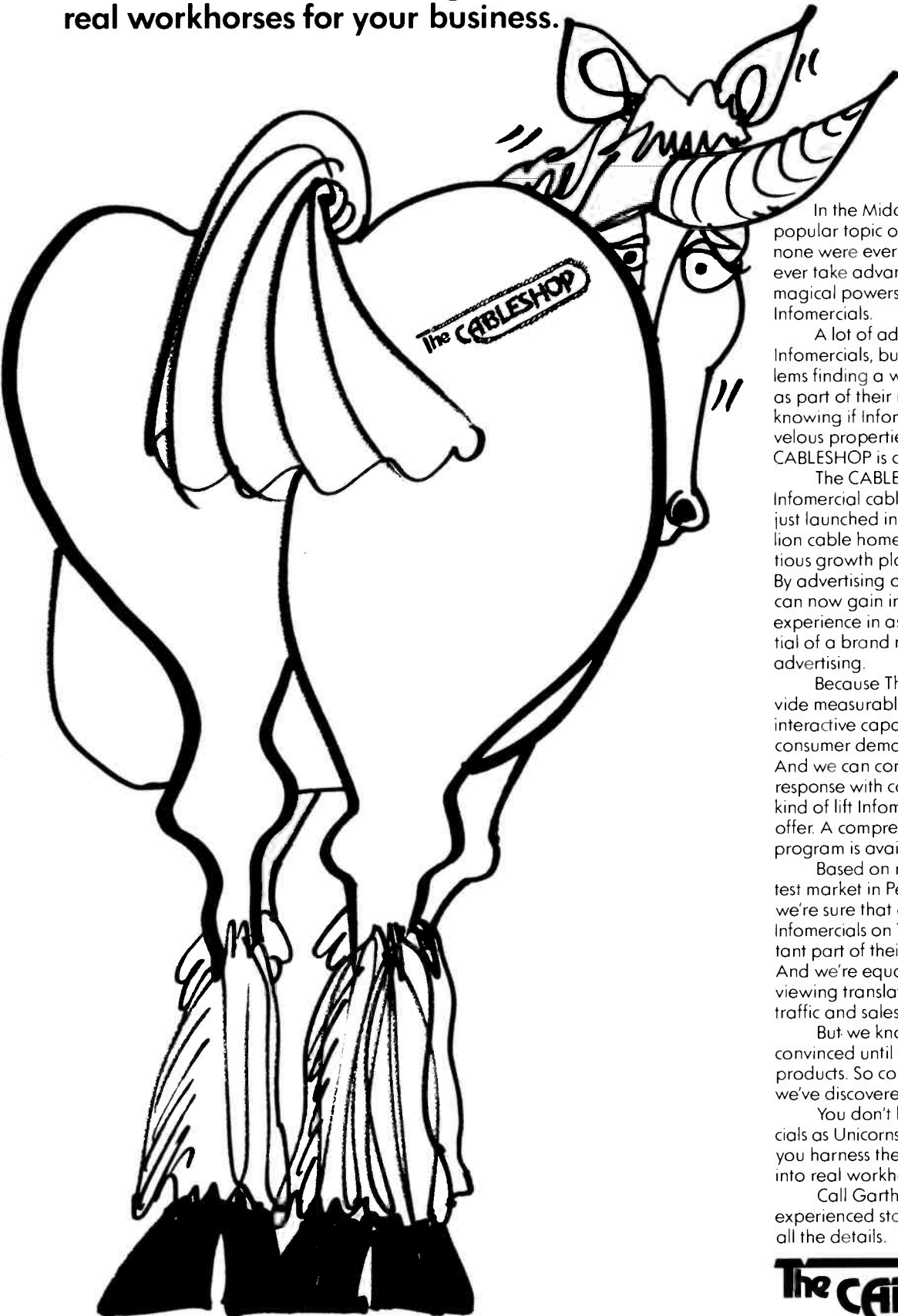
Illustrated by Anders Wenngren

Charts prepared by Lisa Moss & Richard Barbieri

Cover by Andrea Baruffi

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The CABLESHOP will change Infomercials from imaginary creatures into real workhorses for your business.



In the Middle Ages Unicorns were a popular topic of conversation. Alas, since none were ever captured, no one could ever take advantage of the Unicorn's magical powers. So it is today with Infomercials.

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PERSPECTIVE: BEYOND BOOM & BUST

BY LES BROWN

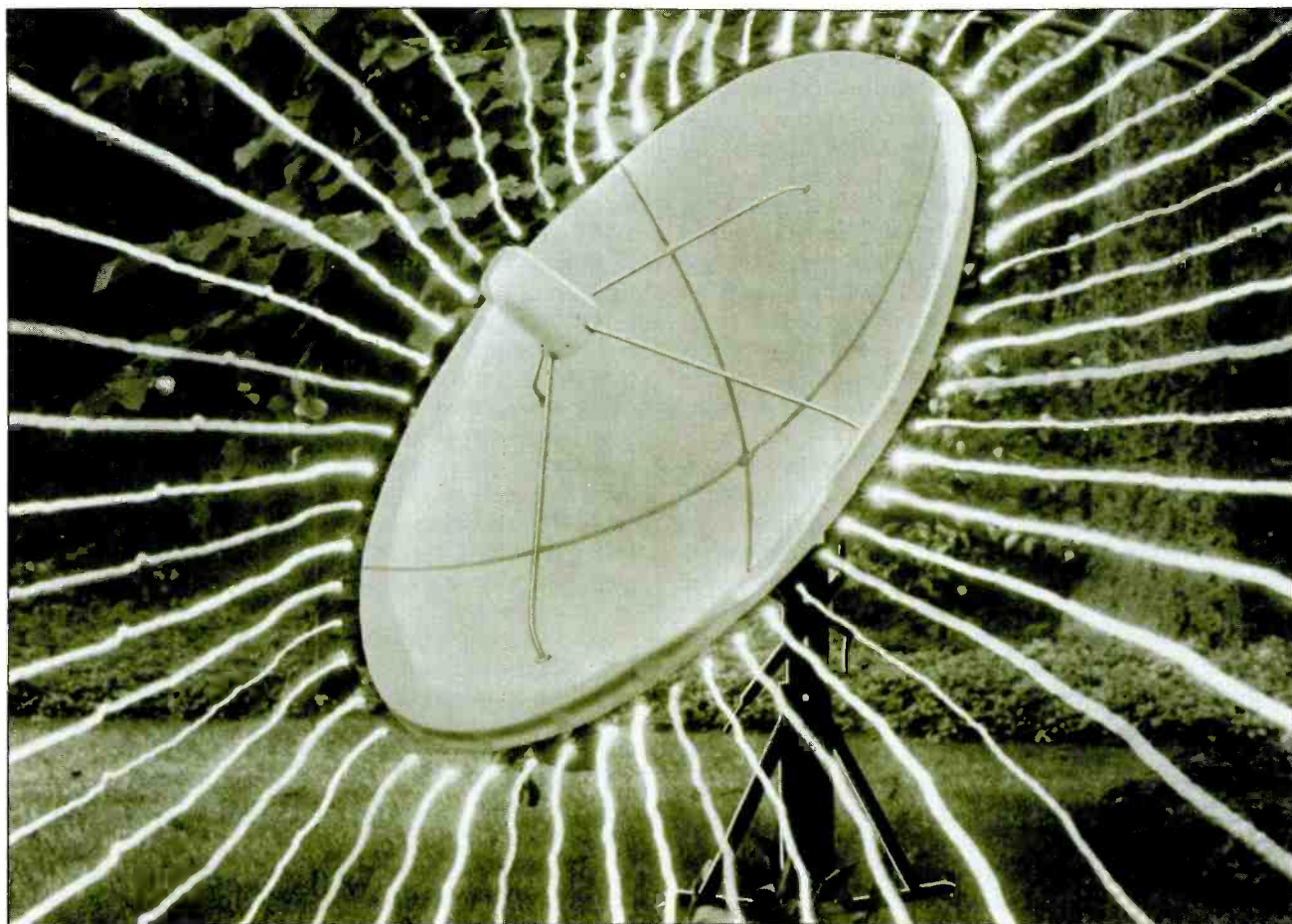
One of the odd effects of the communications revolution is that it seems to have made people less interested in today than in tomorrow. For a journalist, whose bailiwick is the present, it's somewhat disconcerting to be asked repeatedly, not "What's the latest?"—which any mortal might be competent to answer—but, "Where is all this going?" Over lunch the subject of an interview is likely to lean in and say, "Tell me, is DBS going to fly?" or, "What's it look like for cable down the road?"

No one really expects a reporter to foretell the future, of course; the questions are nothing so much as a nervous tic. People with a stake in the media are understandably on edge these days because fortunes are at risk, and they will seek out almost any educated theory on what's to come. The danger is that they may give too much credence to transitory indicators. The present is a notoriously poor guide to the future. It tends to be myopic and always on the edge of change. Anyone who had used the present as a road map in 1982 would have seen Atari as the future. A much better guide is the past, which affords some perspective and re-

minds us that we have lived through this, or something like it, before.

The present has no patience: It will celebrate whatever comes out the gate a roaring success and condemn what does not. Those given to basing long-range judgments on present signs would have placed their bets on *Mork and Mindy* when it began but not on such slow starters as *All in the Family*, *60 Minutes*, *Hill Street Blues*, and *M*A*S*H*. Gustave Hauser, the former chairman of Warner Amex Cable, remembers that only a month after the smash debut of MTV, one critic decided the widely praised rock-video network was in trouble because it was losing money.

When the present was 1939, and television made its public debut at the New York World's Fair, *The New York Times* conceded it was impressive but predicted flatly that it would never measure up to radio broadcasting. *Wonderland of Knowledge*, an off-brand encyclopedia published in 1938, summarized the views of some experts who doubted that television would ever be a medium for mass audiences. Why? Because transmissions were expensive, television



ERIC STALLER

sets complicated and in need of frequent attention, and channel frequencies too few in number to compete with radio. Too few channels, the experts said, would necessarily restrict audience size.

In light of what we know today, these misreckonings are amusing. And one wonders whether the immediate present

The sobering effects of experience have altered the face of the revolution.

(late 1983) isn't providing us with comparable intelligence. Experts who project the future from the present would have you believe the following:

- That STV (subscription television broadcast from UHF stations) can be written out of the picture, because it has gone bust in a number of key cities;
- That two-way cable isn't what it was cracked up to be, because it hasn't caught fire with subscribers in Cincinnati, Pittsburgh, or Dallas;
- That teletext may be a dead issue, because it can't seem to get started in the United States;
- That the video disc is a loser because it lacks the ability to record programs off the air, the way a VCR can;
- That pay-per-view is a fantasy because *Sophisticated Ladies* and *The Pirates of Penzance* each lost a bundle for the promoters;
- That no one in his right mind would get into the cultural or upscale television business, because didn't CBS Cable and The Entertainment Channel both go belly-up in short order?

The problem with the view from the present is that it is shallow. The past has the depth of hindsight. CB radio, for instance, looks very different to us today than it did six or seven years ago when citizens-band broadcasting was the rage. The past reminds us that color television took years to catch on, that UHF television was a frail business until cable gave it parity on the dial with VHF, and that cable itself had dim prospects for growth until less than a decade ago, when satellite-delivered programming gave the medium something to sell in the cities. What we learn from the past is that history doesn't follow a straight course. Often, unforeseen developments cause it to turn a corner.

The instructive example is FM radio, which was touted as the hot new medium even before the end of World War II. Today almost anyone would rather own an FM station than an AM. But those facts belie FM's miserable struggle in the marketplace for almost a quarter-century. Things got so bad that during the mid-'60s many large broadcasting companies gave up on FM's business prospects. NBC sold off some of its stations, and Metromedia donated a commercial FM station to a local public television organization. But a few years later FM had an explosive emergence, brought on by the coming together of stereo technology and rock-music culture. Who would ever have dreamed that so many rock enthusiasts would want to spend thousands of dollars on stereo rigs that brought the music in pure? Now the AM radio industry is scrambling for a stereo capability in hopes of recapturing some of its old audience.

The past also reminds us that not every technology takes

hold just because it exists. Bell Telephone's Picturephone has been in mothballs for decades, and 3-D movies, Cinerama, and Smellavision were only passing fads (although the 3-D fad has passed several times, and the principle of Picturephone is being rediscovered in satellite videoconferencing). Undoubtedly, some of the glamorous technologies and systems on today's frontier will exist only in our memories in the year 2000. Yet it would be a serious mistake, at this stage of the revolution, to write off any technology on the basis of its present or recent performance in the marketplace.

STV does seem at the moment the first of the big flops in the new media sweepstakes. Still, the possibility remains that some day, when competition for the advertising dollar grows fierce, the currently powerful commercial VHF stations will find over-the-air subscription television a useful option, if not their key to survival. Indeed, STV already figures in public television's contingency plans. There has been some talk at PBS of adopting a part-time STV service for live cultural events as a way to help finance the system. The idea isn't wildly popular with noncommercial broadcasters at this moment, but it could gain adherents if the financial condition of public television grew desperate. STV is a resort, even if a last one. So it is possible that rather than dying, STV is merely entering a period of dormancy.

From the vantage point of the present—at least to some eyes—cable is not in the pink of health. With possibly one or two exceptions, none of the two-score advertiser-supported cable networks saturating the satellites is making a profit as yet, though it had all seemed so promising a year or two ago. But advertising has always been scandalously slow to support new ventures (including television itself, when it was young), and a more sophisticated view of cable's comedown in 1983 is that it was mainly the natural reaction to a period of excessive hype.

In a speech to the cable industry, Herbert Granath, president of ABC Video Enterprises, predicted that by the end of the decade fewer than a dozen of the ad-supported networks on the satellites would survive. "Does this mean the cable industry itself is dying? Absolutely not," he said. Citing the case of the three television networks, which habitually cancel failures even when the advertising exists to support them, he added, "The process of winnowing out the weak from the strong is a natural one. It's more a sign of the basic health of the industry than it is a symptom of disease."

As cable enters a new phase and begins the process of growing up, other new technologies that are just about to make their debuts—direct-broadcast satellites, multichannel MDS, and cellular radio—have captured some of the enthusiasm that previously surrounded cable. But their great expectations are rooted strictly in business rather than in public service.

If the state of the telecommunications revolution is markedly different this year from last, it probably has less to do with the faltering of certain technologies in the marketplace than with the sobering effects of experience. The second age of television is old enough by now to have a past of its own, albeit a brief one. The gold-rush fever has subsided, along with the blue-sky hype, and these are surely positive developments.

It's no easier to peer into the future than it was a year ago, but we are unquestionably better equipped than we were to understand the present.

EASTMAN Film.
*There's nothing
to stop you...*



*but your
imagination.*

The Möbius strip—symbol of infinity—also symbolizes Eastman film's ability to capture your unlimited visual imagination.

THE FILM LOOK: It shows you it's better. It reveals reality. It conveys fantasy. It captures everything in between. Eastman color negative film does it—beautifully and believably. It offers the broadest range of imaging—from delicate hues, subtle contrast and controlled depth, to brilliant color, sharp contrast and bold perspectives. This is why the film look is widely preferred for original production.

PORTABILITY: Whether for moon shots, ocean shots, action shots or location shots, the motion picture camera continues to be the most portable and rugged original production equipment.

FLEXIBILITY: Film is the production medium for the future, as well as the present. Your film original can be converted faithfully to videotape for television transmission without losing image quality, because of film's unique wide latitude. The superior resolution of today's original Eastman color negative films not only satisfies all of the technical requirements of existing TV standards, it also surpasses the requirements of the proposed high-definition TV systems of tomorrow.

THE STANDARD: Film represents the standard of image excellence. And the family of Eastman color negative films represents the quality, sophisticated technology, reliability and worldwide service that will continue to help your imagination become reality.

**Eastman film—the imperative,
not the alternative.**

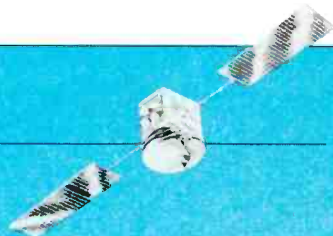
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DALLAS: 214-351-3221
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HOLLYWOOD: 213-464-6131
NEW YORK: 212-930-7500
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WASHINGTON, DC: 703-558-9220
MONTREAL: 514-761-3481
TORONTO: 416-766-8233
VANCOUVER: 604-926-7411

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SATELLITES:

THE BIRDS THAT MAKE IT ALL FLY



GALAXY (Hughes)

- 1 ■ HBO
Group W Cable
Times Mirror
★ Spanish
International
Network (SIN)
Turner Broadcasting
■ Showtime
★ C-SPAN
- 2 ☆ MCI

COMSTAR (Comsat)

- D1 ☆ AT&T
- D3 NBC Network
Wold
Communications
ABC Network
CBS Network
- D4 ■ ON TV
★ ESPN
★ Country Music TV
☆ AT&T

SATCOM (RCA Americom)

- 1 RCA
NBC-TV
- 1R Hi-Net
Communications
Network
RCA
GSA
NBC
Netcom International
Armed Forces
Satellite Network
NASA
SRM Computers
ABC
RKO
- 2 RCA
- 3R ★ ARTS
★ Nickelodeon
★ The Inspirational
Network
★ WGN Superstation
★ ESPN
★ CBN Cable
Network
★ USA Network
★ C-SPAN
■ Showtime
■ HBO
★ MTV
★ Cable News
Network
★ The Learning
Channel
■ HTN Plus
★ Cable Health
Network
★ Hearst/ABC
Daytime
★ Reuters Monitor
Service
★ Eternal World TV
Network
★ The Weather
Channel
★ Modern Satellite
Network
- 4 ■ HBO (future use)
★ SIN
★ FNN
★ SPN
ABC (future use)
■ Bravo (Rainbow)
Department of
Defense
CBS
■ The Playboy
Channel
American Business
Network (BizNet)
★ Trinity
Broadcasting
Network (TBN)
Time Video
Information
Services
■ American Network
Movies
Number One TV
★ National Christian
Network
■ Home Sports
Entertainment
Network
★ ESPN
QUBE
NBC
- 5 Learn Alaska
Network
Alaska Satellite TV
Project

KEY:

- = Pay-TV Service
- = DBS Service
- ★ = Basic Cable Service
- ☆ = Telephony & Telegraphy

WHEN THE FIRST communications satellite was lofted into space in 1962, telecommunications was suddenly liberated from the confines of the earth. Yet the moment was not, like the moon landing, merely symbolic. The revolution in communications that has

occurred over the ensuing 20 years owes a tremendous debt to the satellite. The capacity for inexpensive, instantaneous, nationwide transmission offered by the satellite has transformed cable television from a relay system into an immense industry; freed broadcast stations from much of their dependence on networks; increased the volume and efficiency of long-distance phone service; blurred the distinction between print and electronic media, and created such wholly new technologies as videoconferencing.

Three elements comprise satellite communications. A transmission station on the ground, known as an "uplink," beams signals into the sky. There the signals are received, amplified, and retransmitted by any one of a satellite's 24 transponders, each of which handles one video signal or 1,000 phone calls at a time. The signals are received back on earth by a radar dish, or "downlink." Because the satellite is locked into what is called "geosynchronous" orbit, in which it moves at the same speed as the earth, it always remains in the same position with respect to its thousands of downlinks. The whole process can link any two points on a continent in one quarter of a second.

The revolution brought about by this technology is clearly seen in its effects on the very concept of a network. This term used to be reserved almost exclusively for the three broadcast giants, apparently as solid and immutable as marble. All that's ancient history now: The last few years have

seen an explosion of satellite-linked networks. Every month brings an announcement of a new "ad hoc" network, with independent and even Big-Three affiliate stations forming a temporary unit to broadcast a show or series fed to them by satellite—*Nicholas Nickleby*, or *Entertainment Tonight*, for example. In the fall of 1981 fewer than 200 of the 800 commercial TV stations owned a receiving dish; two years later the figure had reached 550.

Satellite transmission has virtually created modern cable, almost every one of whose myriad channels carries a new network. With its 24-transponder (or channel) capacity, the satellite has fulfilled cable's promise of abundance—the

WESTAR
(Western Union & American Satellite Co.)

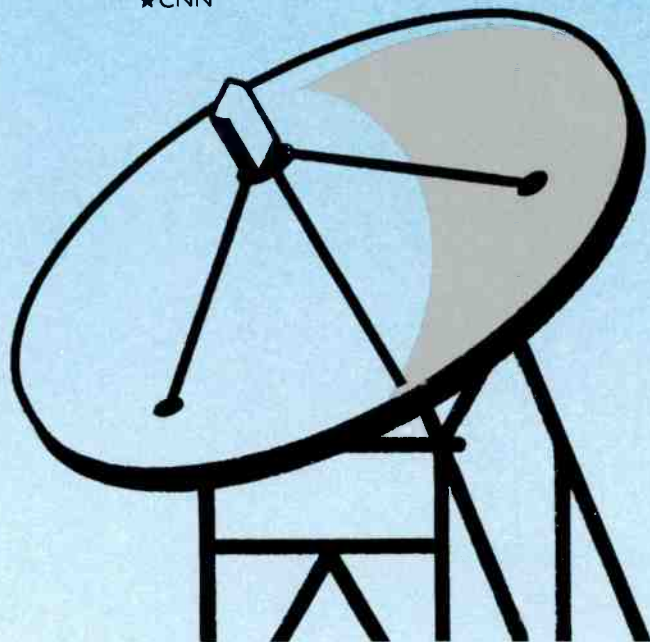
- 2 ☆ Western Union American Satellite Company
- 3 ☆ Western Union ★ Cable News Network American Satellite Company Hughes TV Network Independent Network News
- 4 ☆ Western Union Hughes TV Network National Public Radio Bonneville Satellite Corp. Catholic Telecommunications Network Wold Communications American Satellite Company Public Broadcasting Service ABC Network ★ SIN Equitorial ★ CNN
- 5 Hughes TV Network ■ Madison Square Garden Cable Network CBS ★ Superstation WOR-TV Wold Communications Dow Jones American Satellite Company ★ The Nashville Network Citicorp ■ SelecTV Group W ★ Black Entertainment Television (BET) The American Network M/A-COM DCC Inc. TCI ■ The Disney Channel ■ Spotlight West ★ ARTS & Daytime

ANIK
(Telesat Canada)

- B1 ☆ Telesat Canadian Broadcasting Company
- C2 □ USCI
- C3 Telesat ■ SuperChannel ★ Knowledge ■ First Choice □ Atlantic Satellite Network ■ STAR ■ TVEC ■ Lasette ★ TV Ontario
- D1 Canadian Broadcasting Company Cancom

SBS
(IBM, Comsat, & Aetna)

- 1 Satellite Business Systems
- 2 Satellite Business Systems Videostar
- 3 Satellite Business Systems Comsat General □ Skyband



medium's principal advantage over rival delivery systems. It has also allowed cable programmers to leapfrog the cumbersome and expensive system of land lines used by the networks.

The satellite has broken down all sorts of centralized power—one might almost call it a democratic technology. As network control has been eroded by new, satellite-fed programming choices, so AT&T's dominance in the long-distance telephone market has been challenged, if not exactly imperiled, by the ability of competitors such as MCI to offer service via satellites rather than phone lines. Individuals, too, have gained a new power. The homeowner can

now put a receiving dish in his back yard, shortcutting (perhaps illegally) the entire structure of program delivery.

Finally, the satellite has made several new technologies possible. Bankers or physicians or hotel executives all over the country can now communicate with one another instantly via satellite-delivered videoconference, which represents only one variety of the "private network" made possible by the bird. The major new development of the past year has been the direct-broadcast satellite, or DBS, a means of beaming programming right to the house, bypassing once again the traditional local delivery structures.

All of this feverish activity has made the satellite business terrifically lucrative. In June 1983 Hughes Communications, after about \$145 million in expenses, launched the Galaxy satellite. Before it even cleared the gantry, the company had sold 18 transponders—it held the other six in reserve—for \$270 million. Customers are clamoring for more transponder space. The so-called "arc of good location" for satellites has already been filled, and the FCC has allowed satellites to orbit more closely together, so more can fit. The commission has also given the satellite business a boost by allowing transponders to be sold like any other commodity, rather than leased on a first-come, first-served basis, at a uniform price, as common-carrier law requires.

Indeed, technological developments may loosen several logjams. 1984 will see the birth of a new generation of satellites operating in the "Ku" band, at a higher frequency than today's "C" band satellites do. Future satellites may carry 54 transponders. New dishes may be able to receive signals from several satellites instead of just one. And a whole new piece of the spectrum, known as the "Ka" band, may be made available for satellite transmission sometime in the next decade.

JAMES TRAUB



Review

By Robert MacKenzie



PORTRAIT OF AMERICA

When he launched this 60-part series profiling the American states and territories, Ted Turner was asked if he would present the negative as well as the positive. "No," he answered. "Anything wrong with that?"

Fair enough. Let this cable series be judged as what it means to be: an upbeat travelogue, an expensive valentine to American places and down-home values. These (usually) monthly documentaries, to be produced over a five-year period, are not investigations of the states, but picture-postcard tributes to them.

That's OK by me. *60 Minutes* will keep us posted on what's wrong with the country. And there's certainly a place on television for Turner's kind of patriotic boosterism. This is armchair traveling, with reverently filmed scenery, pithy bits of history and appreciative vignettes of life as it's lived by Georgians, Virginians, Puerto Ricans, Floridians, ...

The hour on Georgia told me a good deal I hadn't known about that state, a place I associated vaguely with peanuts, swamps, Jimmy Carter and Burt Reynolds' trucker movies. It has all those things and more—including a coastline of Caribbean-like beaches and pretty seas, rolling green mountains and stately rivers. Hal Holbrook, our host for the series, calls Georgia "modern—but primordial, too." If the world's biggest fast-food restaurant is found there (serving more than 2 miles of hot dogs a day), so are "people who've got time to sit down and talk to you. They're not in a hurry about anything," according to one satisfied resident.

In each state *Portrait of America* finds eight or 10 people whose lives typify something

about the territory. For the hour on Nevada we were introduced to a Paiute Indian, a Vegas chorus girl and a sheepherder, among others. Holbrook talked about "the power and harshness" of Nevada, as we looked at jagged purple mountains, glinting desert flats and crisp shadows stamped across arid rocks. "You can be as big as you want to be in Nevada," bragged an old-timer. Holbrook recounted a few Nevada legends—like the guy who walked into a casino with \$777,000 in cash, doubled it and left without telling his name.

The hour on Puerto Rico revealed Puerto Ricans' extravagant love of their land, and what Holbrook called "a love of life that seems to wink at obsessions with success and failure." The industrialization of this tropical isle—once as poor as Haiti—has given the energetic Puerto Ricans the highest per capita income in Latin America and the largest middle class. It's an American showplace with a salsa beat.

There are moments when the chamber-of-commerce positivism makes the series seem shallow—as when a segment dwells on the bumptious spectacle of Las Vegas without so much as a hint that there might be something wrong with the place. And the scripts could use some scrutiny; it hurts to hear Holbrook utter grammatical barbarisms, as when describing the sheepherder's pregnant ewe: "Unable to give birth herself, Pete has to assist in the delivery."

But Turner is no nit-picker. The series pictures the America he believes in: a vast, beautiful, open-ended place where people make their dreams come true. Anything wrong with that? ☺

TV GUIDE SEPTEMBER 17, 1993

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The power of posit

VARIETY

Wednesday, August 31, 1983

* **Local TV Review** *

GOOD NEWS

With Liz Wickersham, Terry Beaver, Tom White

Supplier: WTBS-TV Atlanta

Exec Producer: Robert J. Wussler

Senior Producers: Terry Turner, Bonnie Turner

Producer: Jeffrey Hewitt

Director: Tony Marshall

Mon. (22), 7:35 p.m.

WTBS-TV Atlanta

"Good News," a half hour fast-paced program consisting of just pleasant and upbeat news items, was certainly entertaining to watch and easy on the mind. It's skedded to follow the regular evening news dose.

Three smiling, handsome hosts bounced good news items back and forth with one another in this effectively-packaged program, that Ted Turner's Super Station plans to air every weekday evening.

The broadcast began with an

upbeat story about laid off auto workers returning to work at a Detroit Chrysler plant, some having been off the job for two years. The story avoided sentimentality and instead focused on how the employees' returning would have a domino effect on area businesses, such as gas stations and diners.

There was also a feature on how hotels are coping with execs who often travel alone. The report examined what provisions hotels are taking for this new breed of travel.

Even the "bumpers" (the seg preceding a commercial) were tied to good news. One "bumper" had a political cartoon, the other a man in the street interview with a New Yorker being asked "What news would make you smile?"—No war and the Yankees in first place.

A sports seg featured baseball great Willie Mays' number being retired at San Francisco's Candlestick Park.

The program was attractively packaged and one hopes for good news for "Good News."—Kev.

ive programming.

The audiences are discovering it. The critics are confirming it. For original, quality TV programming, the emerging force in the industry today is Turner Broadcasting.

TURNER BROADCASTING
The leader in telecommunications.

*In a troubled world
with its multitude of clamoring voices,
there is one satellite network
beaming its way into all fifty states
twenty-four hours a day,
offering a scarce commodity sought by everyone...*



Peace.

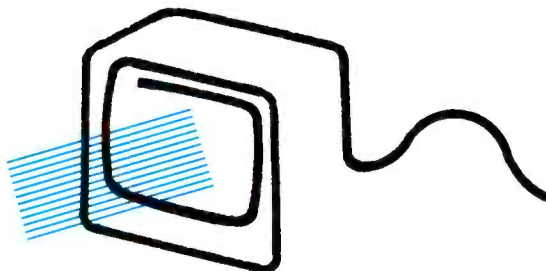
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Charlotte, NC 28279

SATELLITE NETWORKS:

THE GREAT PROGRAMMING SHAKEOUT



Hard realities broke in on the promise of cable in 1983, and about the only company to emerge unscathed was, as usual, Time Inc.'s HBO. The technology, after all, has always been elegantly simple: Programming is sent to a communications satellite, in turn beamed down to an earth station, usually a dish-shaped receiver ten or more feet wide, then relayed to the "headend," where it is sent out to homes by coaxial cable.

The economics used to be simple, too—and still are, in the case of, say, HBO. More than 12.5 million people pay \$5 to \$10 a month to watch recent films and original fare on HBO, all carried without advertising and profitable enough to make Time's Video Group the single largest contributor to the company's revenues and profits.

But for the rest of the cable services, the economics have been complicated indeed. The satellite networks in this survey are offered to the cable subscriber for a "basic" monthly fee of anywhere from \$2 to \$12. They are meant to be supported, in large part, by advertising. But the glowing promise of ad-supported cable has given way to a realization that, for the moment at least, there is no such animal. While network TV amassed almost \$6 billion in advertising revenue in 1982, only \$204 million in advertising sales went to cable channels—and two-thirds of that amount went to Ted Turner's Atlanta UHF superstation, WTBS, and his 24-hour news channels, Cable News Network and CNN Headline Network. Even assuming nearly 50 percent growth in cable advertising by 1984, to \$375 million, as does a study by Doyle Dane Bernbach, the amount will still equal only 2 percent of the total outlay for TV.

Advertisers have stayed away from the cable services in droves—primarily, they say, because the channels cannot provide the accurate audience measurement that the networks do. The result, coupled with a prolonged recession, has been dubbed the "cable shakeout"—by the same media analysts who predicted rosy futures for the satellite services a few years ago. Only 15 or so of the current crop can exist on the advertising available, they say. The number of new services on the dial has dropped dramatically—one trade reporter called this spring's Group W startup of the Nashville Network "the last of the old-time launches." And several planned launches never occurred: Satellite News Channel 2, a companion service to SNC; UTV, a New Jer-

sey-based talk channel, and others.

With advertisers slow to jump on board, many basic services have turned to a second source of support: Eight of the top ten basic services charge the cable operator a fee varying from 5 to 15 cents per subscriber a year. Even some of the fastest-growing channels, such as Warner Amex's MTV, which pioneered rock video, and ESPN, the three-year-old all-sports channel, have found it necessary to impose such fees on their cable operators. (Warner Amex also found it necessary to accept advertiser underwriting on its children's channel, Nickelodeon, this fall.)

The one hope for the beleaguered basic services has been the gradual entry of cable channels over the last two years into the elite inner circle that can show numbers to the advertisers—those services now in the Nielsen survey. WTBS, CNN, CBN, ESPN, MTV, and USA Network carefully package their monthly and quarterly reports to put their sometimes minuscule numbers in the best light, and convince agencies and sponsors to advertise on cable. But even when armed with these reports, those selling cable are frustrated by what Nielsen admits is an under-measurement of cable viewing. The company has been moving to increase the number of homes in the survey from 1,200 to as many as 2,000 by year's end, in an effort to improve cable representation. To be included in the survey, a cable channel has to have enough potential subscribers to equal 15 percent of the 83.3 homes Nielsen estimates as having television, or roughly 14 million subscribers. (The term subscribers, it must be remembered, refers to the people with the *option* of watching a service, not those in fact watching it. Subscribers to basic cable pay for all the channels in a basic tier, whether they watch them or not.)

Another illusion to bite the dust in the last several months was the idea that cable would serve the narrow audiences that networks wouldn't or couldn't. The unceremonious demise of CBS Cable, a critically acclaimed cultural basic service, and a pay cultural service, The Entertainment Channel (a joint venture of RCA and Rockefeller Center, or RCTV), drew accusations that cable was dependent on the same large audience as the networks. Many have noted, however, that the network parents themselves seemed less than committed, if not outright ambivalent, toward their cable progeny.

"Ad-supported cable programming is a very speculative, entrepreneurial business. We were all too optimistic."

John Reidy, Drexel Burnham Lambert

TeleFrance, another culturally oriented service distributed by a group of French producers, was dropped by the Satellite Program Network this fall. TeleFrance provided a lucid example of cable economics: It cost \$3.5 million a year but brought in only \$500,000 in advertising.

Narrowcasting, however, as Warner Amex Satellite Entertainment vice president Robert Pittman has pointed out, doesn't mean appealing to a small audience. It means finding a narrowly focused form of programming that appeals to a wide audience. The highly successful MTV proves that in certain instances this is something cable can do. In MTV, cable had its first original contribution to the larger entertainment scene: It used the song-length video clips that the record companies had been supplying to rock clubs and retailers, programming them on a 24-hour channel complete with VJ's, contests, rock news, and concerts. The result is very much like a radio station. This summer, NBC paid the ultimate compliment and put a video show on its late-Friday-night lineup. WTBS, HBO, Cinemax, Showtime, Black Entertainment Television, and USA Network have all placed rock videos in prominent slots in their regular schedules. Country Music Television, one of the season's few new entries, had a potential 2.1 million subscribers at birth. MTV also boosted the home video market, whose observers predicted the sale of music software would eventually be second only to that of movies.

In answer to the increased competition, Warner Amex insists that MTV is not a "show" in the traditional sense, but has promotional value because it presents songs in continuous rotation. The company continues to receive programming free from the record companies while NBC pays \$1,000 a clip. MTV was credited in 1982 and '83 with reviving the record industry, and radio programmers viewed with alarm a new music medium from which, after years of supremacy in the field, they were in effect barred.

Sports on basic cable, long a staple attraction of the leading services, was confronted with the rumblings of what may be its most significant foe: the pay regional sports network. Across the country, team owners and entrepreneurs have been putting together packages of games for their regions, to be sold by subscription to local fans. Last spring, Group W announced it would provide wraparound material for six such networks in something it called "The Sports Network," set to launch in April 1984.

On the bright side, cable proved the cornerstone of another creation—a new football league. The United States Football League, created at least in part because America's most popular sport seemed barred forever (on the professional level) from ESPN, was a strong drawing card Monday and Saturday on the cable service throughout its debut spring season. (The Sunday games were shown on ABC.) The games averaged a respectable 3.3 rating. Though bat-

tlung the inroads of regional sports networks and the swiftly escalating costs of rights, ESPN, WTBS, and USA Network continued to draw a major portion of their audience for prime-time sports, particularly baseball.

Meanwhile, the one commercial network that has stayed committed to cable, ABC, is doing so only at some cost to its balance sheet. ABC Video Enterprises (AVE) lost \$25 million in 1983 alone, and loss projections for 1984 are at \$50 million. President Herbert Granath told analysts last spring that the company was behind schedule by as much as a year. Satellite News Channel, a joint venture with Group W, bled at a projected cost of more than \$20 million in 1983, and was finally sold to Turner's rival CNN in October.

To try and stem the hemorrhage caused by its myriad ventures, AVE has been busy with a number of mergers: Daytime, a joint venture of AVE and Hearst, the publishing group, merged with Viacom's 24-hour service, Cable Health Network, early in the summer of 1983 to form Hearst/AVE/Viacom Entertainment Services. As of the autumn, exactly what this new service would look like was still a question, but it did have a new name: Lifetime. AVE also negotiated with the BBC, for programming and for rights to material The Entertainment Channel didn't use, resulting in a second new channel, Arts & Entertainment, which may be the only cultural service to survive the current doldrums. And Granath has suggested that other new partnerships may be on the way.

One potential challenge to basic cable that loomed on the horizon in 1983 turned out to be fairly innocuous. When the Copyright Royalty Tribunal decided to increase the fees imposed on cable systems' carriage of "distant signals"—i.e., the signals of superstations WTBS (Atlanta), WGN (Chicago), and WOR (New York City)—cable operators and owners, Ted Turner among them, were up in arms. The industry dubbed March 15, the day the fee increases were to be imposed, "Black Tuesday." As it turned out, however, most systems dropped nearby stations whose signals they'd been importing, or found that their superstation contracts didn't fall under the decree. Thus, the move did not deprive many viewers of the old movies and sports that are the superstations' staples. Some have suggested that the ruling even did cable a service, making room for channels such as Cable Health Network and the Nashville Network.

What follows is a breakdown of the array of basic-cable channels. Look on them as survivors. Also bear in mind that cable-programming corporations, such as Warner Communications, ABC, American Express, Viacom, and Group W, seem to go through more mating and breaking up than a year's worth of soap opera plots, and that, even as we speak, new partnerships are dancing in some cable executive's dreams. (Note: Unless otherwise indicated, all cable services are available around the clock.)

JULIE TALEN

"The basic thing that advertisers have been seeking for 100 years hasn't suddenly changed with cable. To crack into the big time of advertising dollars, you need a big-number audience, because you're always competing with other media on a cost-per-thousand basis."

Allan Gottesman, Rothschild Unterberg Towbin

ESPN ANNOUNCES NEW NUMBERS THAT CAN TURN YOUR LOCAL AD SALES INTO A SPORTING PROPOSITION.



**29% MORE ESPN
VIEWING HOUSEHOLDS
BOUGHT A CAR IN
THE PAST YEAR.**



**25% MORE HAVE
TRAVELED BY AIR
THREE OR MORE TIMES
IN THE LAST 12 MONTHS.**



**AND 48% MORE
HAVE AN IRA/KEOGH
PLAN COMPARED
TO THE U.S. AVERAGE.**

These and similar findings from ESPN's Nielsen product usage survey can make selling local ad time easier and more profitable than ever before.

Easier because the Nielsen numbers tell you specifically which businesses need to reach the ESPN audience. Like car dealers, travel agents, financial institutions—businesses dependent on reaching men. And more profitable because these numbers show that ESPN reaches men, and for a lower out of pocket cost, than any other network.

What's more, ESPN gives you over 40,000 commercial availabilities to sell each year, more than any other cable service. And that means profits for you. ESPN's staff of advertising experts will even help you get started, with professional advice on everything from staffing and pricing to the necessary equipment.

So get in on the money with ESPN. Call your regional representative and learn how ESPN can turn your ad sales into a very sporting proposition.



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SOUTHEAST
Mike Nickerson
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SOUTH CENTRAL
Shirley Rohn-Saito
817-274-1556

MIDWEST
Jim Ballard
312-938-4200

ROCKY MOUNTAIN
Charlie Mills
303-740-8940

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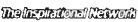



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www.americanradiohistory.com

SATELLITE CHANNELS:

A GUIDE



	NAME OWNER LAUNCH DATE	MEANS OF SUPPORT	HOMES REACHED (MILLIONS)	TARGET AUDIENCE	CONTENT
	Entertainment & Sports Programming Network (ESPN) Getty Oil Co. Sept. 1979	System pays 4c-10c per subscriber; advertising	27.5	General (esp. male)	In-depth daily sports coverage: major sports attractions, such as Davis Cup, world championship tennis, NBA basketball; college football, basketball, gymnastics; professional boxing, exclusive rights to the United States Football League (USFL) games; business news 6-8A.M. Mon-Fri
	Christian Broadcasting Network (CBN) Christian Broadcasting Advertising Network Apr. 1977	Advertising	22.2	Families	"Family programming stressing positive values": classic films; weekend golf; <i>National Geographic</i> specials; weekly series with inspirational themes
	Cable News Network (CNN) Turner Broadcasting June 1980	System pays 15c per subscriber; advertising	20.8	Upscale, general	 Continuous reporting of hard news, with live coverage of breaking stories; soft features on subjects ranging from style to cooking
	USA Network Time Inc.; Paramount Pictures MCA Inc. Sept. 1977	System pays 7c-10c per subscriber; advertising	18.5	Daytime: women, Early evening: youth, Nighttime: men	Women's self-improvement programs; prime-time sports, such as college football & basketball, Golden Gloves boxing, NHL hockey, major-league baseball; <i>Night Flight</i> (video art and music); syndicated programming; movies
	Music Television (MTV) Warner Amex Aug. 1981	System pays 10c-15c per subscriber (for new affiliates); advertising	15	12-to-23-year-olds	 Video version of rock radio: tapes of leading groups in concert; hit songs accompanied by video art; interviews; record promos (in stereo)
	Cable Satellite Public Affairs Network (C-SPAN) Nonprofit corp. governed by cable-industry Mar. 1979	System pays 3c per subscriber	14	Adults interested in public affairs; some high schools	Live coverage of U.S. House of Representatives debates, congressional hearings, National Press Club luncheon speeches; government events; call-in programming
	Cable Health Network (CHN) Viacom International Inc.; Dr. Arthur M. Ulene; Jeffrey Reiss June 1982	Advertising	13	General	"Programming devoted to health science and better living"; diet-cooking demonstrations; nature programs; fitness shows; talk shows. (Merges with Daytime Cable as "Lifetime" in 1984.)
	Nickelodeon Warner Amex Apr. 1979	System pays 10c-15c per subscriber; corporate underwriting	12.7	Children, adolescents	Children's programming, 50 percent original: concerts; foreign & domestic films; sporting events; teenage talk show; preschoolers' programming; comedy series. 8A.M.-9P.M. daily
	Alpha Repertory Television Service (ARTS) Hearst/ABC Apr. 1981	Advertising	1.8	Upscale adults	 Cultural programming: drama, documentaries on the arts & related subjects, profiles of artists, actors, playwrights, etc. 9P.M.-midnight nightly
	The Inspirational Network Heritage Village Apr. 1979	Church contributions	10	Christian families	Inspirational programming; entertainment; news; specials. (Also carried on a limited number of MDS systems.)
	The Weather Channel Landmark Communications May 1982	System pays 3c-5c per subscriber; advertising	9.8	General	The weather: weekend forecasts, season outlooks; special forecasts for pilots, boaters, etc.
	Nashville Network Group W Mar. 1983	Advertising	9.6	General	 Country-oriented entertainment: sitcoms, dance & talk shows, sports, movies



OUR AUDIENCE IS ALWAYS HOME.

At 11 AM this morning, the Rolling Stones played to an empty house. At 2 PM, Nolan Ryan pitched a no hitter to no one, and at 3, the day's news fell on deaf ears.

No doubt you need 24 hours of sports, news, weather and music.

But now what you need is 24 hours of audience.

You've always called them subscribers. But a subscriber who isn't part of an audience isn't happy. And an unhappy subscriber is a potential disconnect.

At USA, we've solved this basic problem. We've programmed every single moment of the day to appeal to the audience that's home at the time.

Like Daytime for women. We start the morning with shows like "Alive and Well" to exercise the body and follow with "Sonya" to exercise the mind.

Then mornings and afternoons after school, we feature "Calliope" and "Cartoon Express" expressly for kids.

And in prime time, we offer prime sports for men. We have exclusives on NHL hockey and Major League Baseball. All live.

Then late at night we have cult entertainment on "Night Flight" and rock and roll night club acts on USA "Hot Spots" for teens—as well as for teens at heart.





















That way, no matter what the time, we give you an audience that's changing with it.

It's an idea that's made the USA Cable Network the one network that's getting a sitting ovation. And a family audience that's applauding your programming is a family that'll keep on subscribing. Then of course, the more people you have who are happy with cable, the more new people you can sign up.



So if you think you're ready to add a 24 hour audience to your cable schedule, call us.

But please, don't rush into a decision. Take 24 hours and think about it.




USA[™]
CABLE NETWORK
WE FEATURE A 24 HOUR AUDIENCE

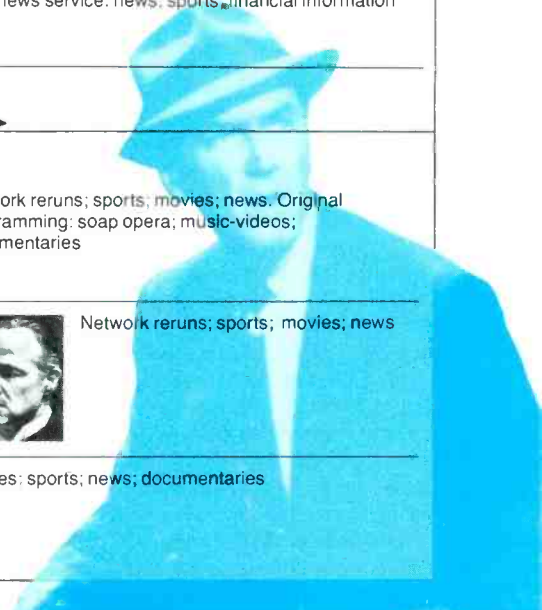
	NAME OWNER LAUNCH DATE	MEANS OF SUPPORT	HOMES REACHED (MILLIONS)	TARGET AUDIENCE	CONTENT
	Daytime Hearst/ABC Mar. 1982	Advertising	9.5	Upscale women	Self-improvement programming in a magazine format; draws on Hearst publications, such as <i>House Beautiful</i> & <i>Cosmopolitan</i> . 1-5P.M. Mon-Fri. (Merges with Cable Health Network as "Lifetime" in 1984.)
	Satellite Program Network (SPN) Satellite Program Network Inc. Jan. 1979	Advertising	8.7	Upscale general	Regular series on hobbies, business, finance, personal money-management; entertainment & health-care programs; how-to shows; classic movies; music videos; international programming
	Financial News Network Financial News Network Nov. 1981	Advertising	8.5	Upscale professionals	National business & financial news; stock market reports; talk shows; continuous stock ticker. 7A.M.-7P.M. Mon-Fri. (Also carried on some UHF stations.)
	Modern Satellite Network (MSN) Modern Talking Picture Service Inc. Jan. 1979	Program producers pay for air-time; advertising	8.2	General	Consumer information; product demonstrations: <i>The Home Shopping Show</i> , <i>BizNet</i> , <i>News Today</i> , <i>Movie Week</i> . 10A.M.-1P.M. Mon-Fri.
	Black Entertainment Television (BET) Robert L. Johnson; TeleCommunications Inc.; Taft Broadcasting Jan. 1980	System pays 3c per subscriber; advertising	4.7	Black community	Musical events; political discussions; phone-in shows: regular weekly series on health & fitness, cooking, fashion, career advice, and male-female relationships; movies. 8P.M.-2A.M. nightly 
	AP Newscable Associated Press June 1965	System pays according to no. of subscribers	4.7	General	Text news service: national & state news, sports, financial news
	CNN Headline Network Turner Broadcasting System Jan. 1982	Advertising; unless the system carries CNN it pays 5c per subscriber	4.6	General	Major headlines & hard news in 30-minute cycles. (Also carried on 140 broadcast stations during one hour in A.M., one hour in P.M.) 
	The Learning Channel Appalachian Community Service Network Oct. 1980	System pays 3c-5c per subscriber	3.8	Adults	"Telecourses" that can be taken for credit at participating colleges; how-to programs: cooking, guitar-playing, auto repair, speed-reading, small-business management, resumé-writing, career development, parenting. 6A.M.-4P.M. Mon-Fri, 6A.M.-1P.M. Sat, Sun
	The Silent Network Sheldon Altfield Jan. 1984	Advertising	3.7	Deaf & hearing-impaired	Original captioned programming: game shows, talk shows, aerobics, drama. 6-8 P.M. Thurs
	Spanish International Network (SIN) Televisa S.A.; Rene Anselmo Sept. 1979	Advertising	3.2 (Spanish-speaking homes)	Spanish-speaking community	Programs in Spanish: news, soap operas, sports, musicals, variety shows, movies, specials, live telecasts from Mexico 
	Trinity Broadcasting Network Paul F. Crouch May 1978	Donations	3.2	Families	Nondenominational religious fare: talk shows, variety shows, musicals
	Country Music Television Country Music Network Mar. 1983	Advertising	2	General	Country-music videos 
	Eternal World Television Network Mother M. Angelica Aug. 1981	Donations	1.7	Catholic community	Catholic religious programming; family entertainment. 8P.M.-midnight nightly
	Dow Jones Dow Jones Co. Inc. Apr. 1981	System pays 1c per subscriber	1.5	Upscale viewers interested in business	Text news service: financial & economic reports
	National Christian Network Ray Kassis June 1980	Fees from program producers	1.4	All denominations	Religious dramas; talk shows; children's shows
	Cableshop* Adams Russell Co. Nov. 1983	Advertising	.25	General	Long-form informational advertising



	NAME OWNER LAUNCH DATE	MEANS OF SUPPORT	HOMES REACHED (MILLIONS)	TARGET AUDIENCE	CONTENT
	Reuters News View Reuters Apr. 1971	System pays \$300- \$1,000, depending on size	N.A.	Upscale viewers	Text news service: financial news; sports
NJT	National Jewish Television Joel Levitch May 1981	Advertising	N.A.	Jewish community	Public-affairs panels; educational shows; television magazine. 1-4 P.M. Sun
	UPI Custom Cable United Press Int'l. Nov. 1982	System pays according to no. of subscribers	N.A.	General	Text news service: news; sports; financial information

★ **SUPERSTATIONS** ★

WTBS	WTBS Turner Broadcasting System Atlanta Dec. 1976	System pays 10¢ per subscriber; advertising. Carrier: Southern Satellite System	27.4	General	Network reruns; sports; movies; news. Original programming: soap opera; music-videos; documentaries
	WGN The Tribune Co. Chicago Oct. 1978	System pays 10¢ per subscriber; advertising. Carrier: United Video	10.7	General	 Network reruns; sports; movies; news
	WOR RKO General Television New York April 1978	System pays 10¢ per subscriber; advertising. Carrier: Eastern Microwave	4.1	General	Movies; sports; news; documentaries



*Cableshop is not, strictly speaking, a "satellite network": It is distributed to cable systems by video cassette.

**THE BULL
STOPS HERE!
FNN NOW ON WESTAR V
AND SATCOM IV**



FINANCIAL NEWS NETWORK

2525 Ocean Park, Santa Monica, California 90405
600 Madison Avenue, New York, New York 10022

VIDEOCONFERENCING: THE ELECTRONIC MEETING COMES TO ORDER

Late in 1982, in the wake of the Tylenol murders, hundreds of reporters in 30 cities simultaneously attended a live-via-satellite Johnson & Johnson news conference. When, afterwards, CBS's Mike Wallace dubbed the experience "the wave of the future in press conferences," he wasn't just being profound. The satellite makes possible an infinite variety of private networks, arranged according to the needs of the user. Anyone today may stage a nationwide medical symposium, news conference, or religious rally across the country using videoconference technology. It has made television networks of several hotel chains that have equipped their key locations with satellite receiving dishes and their ballrooms with large-screen projection TV units.

MARKETPLACE: Among the more remarkable videoconferences during the last year:

- A Kenneth Copeland Ministries World Communion service produced by Momentum Enterprises, which spread the word across the globe to 150 cities in 30 countries via four domestic and three international satellites, along with a system of land lines.

- A fund-raising event by International Christian Graduate University in La Jolla, California, transmitted by Momentum and Netcom Enterprises to 25 American cities, and produced by Victory Communications.

- The formation of the National University Teleconference Network, a group of 84 U.S. colleges and universities that routinely share lectures by satellite.

- The inauguration of special education networks by the Agency for International Development in Indonesia and the West Indian islands.

There are, nevertheless, many who share the view of

ENCOUNTERS OF THE VIDEO KIND

Videoconferencing could well become the main means by which communication takes the place of transportation. Instead of flying scores of executives from their far-flung branches to a single convention center, large corporations have found it advantageous to hold person-to-person meetings by satellite. Such transmission is the key to videoconferencing because it relays signals over the entire country. When local interference inhibits the transference of signals from receiving dish to meeting site, the satellite is aided by microwave transmission or coaxial land lines. Universities, government agencies, unions, and other entities are also getting in on the videoconferencing act.

Goldman Sachs analyst Ellen Berland-Gibbs, that "videoconferencing will be an interesting business, but probably more limited than its advocates have thought. There is still a very real need for face-to-face contact."

TECHNOLOGY: Unlike the audio teleconference, which uses telephone lines, the videoconference requires considerable bandwidth for satellite transmission and quality picture resolution. The price for this



bandwidth is fairly high—up to \$2,000 an hour for the rental of a satellite transponder—even before the production costs begin. Methods of compressing the bandwidth and reducing the cost are being explored, but with inevitable consequences for picture resolution. Widergren Communications Inc., which produced a prototype compression system that is now under contract to the Defense Department, claims its system will reduce transmission costs substantially. But it provides only 265 lines of resolution, compared with the 525 lines television normally provides. Nevertheless, the affordability of such compression services could make the videoconference accessible to smaller organizations than those using it now.

The latest development in videoconferencing is laser optics, which transports TV signals by a light beam and is immune to interference from electronic transmissions. J.C. Penney recently installed a laser system linking its two New York skyscrapers, about a quarter-mile apart. Conference rooms at each of the buildings are equipped with cameras, video recorders, main control panels, and sophisticated sound equipment. Penney plans to practice the art of electronic meetings between the two buildings before moving on to national satellite videoconferences. At that, the company will be following the lead of Atlantic Richfield Corp., which created its own network in 1983 by interconnecting its various branches.

In the view of companies such as J.C. Penney, the videoconferencing technology contributes to better management because it increases and improves internal communication.

LISA MOSS

CABLE TV: WIRING FOR ABUNDANCE

Cable is a video cornucopia whose gifts include: a multitude of channels (upwards of a hundred in the most up-to-date systems); an abundance of national program networks; a potential for local public access; a range of interactive services from video games to home security; a method of information retrieval from data banks; an electronic equivalent of the department store, and an ability to narrowcast to such specific audiences as physicians and investment brokers.

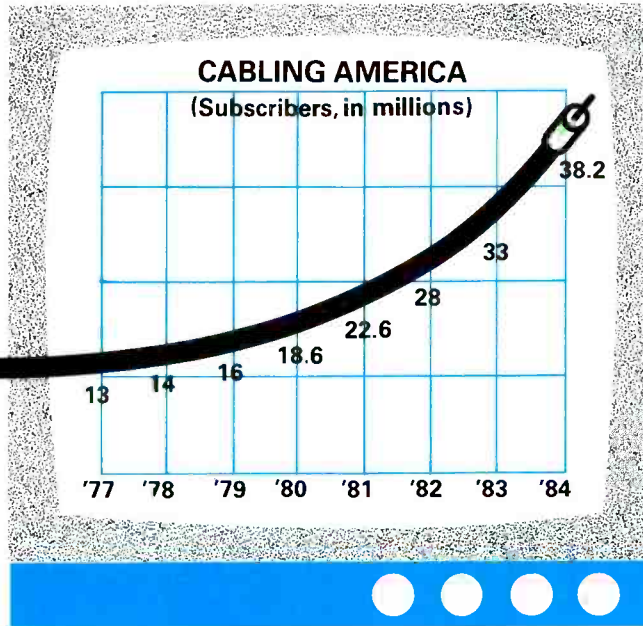
Beyond being just a television medium, it can also serve as a communications network for a municipality. Many of the new cable installations link schools, libraries, hospitals, and police and fire departments.

As a technology, cable more closely resembles telephone than it does television. In fact, its wire—a coaxial cable—is strung along telephone poles or through underground telephone ducts and is connected, as telephone is, to households paying a monthly charge for the basic service (about \$6 to \$10). With some refinements in the technology—conversion from coaxial to fiber-optic cable, for example—the wire used for telephone service could also carry cable television, and vice versa. Someday a single wire may carry all voice and video communications to and from the home.

One speaks of a *basic* cable service, because all the additional services—the channels specializing in movies and video games, the burglar- and fire-alarm systems, and videotex—call for extra fees. Indeed, from the consumer's standpoint, the hitch with cable may be that it tempts new expenditures by bringing the box office into the home. Some analysts believe that once people grow accustomed to the idea of paying for video services, their monthly bills for cable will exceed those for the telephone.

What is most unusual about cable, perhaps, is that it was not born in a laboratory as most other communications technologies were. It began in the late 1940s as CATV (community antenna TV), an ingenious solution to the TV reception problem in rural areas where the terrain interfered with broadcast signals.

It remained largely a rural medium until the mid-'70s. In 1976 Home Box Office leased a transponder on the Satcom I satellite in hopes of broadening its market. The satellite not only made HBO an instant hit, it also gave cable just what it needed for an invasion of the cities: something bigger to sell than improved TV reception and more TV signals.



There was a clear demand in the cities for pay channels that would deliver movies into the home, uncensored and without commercials. By 1980, virtually every major city was either being wired for cable or in the thick of the franchising process. Most were demanding large-capacity systems with two-way capability. This favored Warner Amex Cable, whose interactive Qube system was introduced in Columbus, Ohio in December 1977. Interest in Qube helped Warner Amex win the franchises for Pittsburgh, Dallas, Houston, Cincinnati, St. Louis, and parts of New York

City's outer boroughs.

Much of the general confusion about cable rises from its uneven penetration across the country. While some cities are still years away from being wired, others already have highly advanced systems. Moreover, the dimension of each community's system depends largely on when it was built. Cable systems dating from the early '70s have 20 channels, those of the late '70s about 36, and those of the '80s at least 50. But more than half the cable systems currently operating predate the '70s and have such limited capacity—12 or fewer channels—that they can carry only two or three of the cable-satellite services. This unevenness around the country, along with the absence of cable in several of the largest cities, has been the great impediment to the growth of successful advertiser-supported cable networks.

According to the 1983 mid-year estimates of the A.C. Nielsen Company, some 39.3 percent of American households (including those in Alaska and Hawaii) subscribe to cable. But while cable has a penetration of 77.5 percent in Santa Barbara, Cal., it enters only 16.4 percent in homes in Chicago, and 23.7 percent in Detroit.

Nevertheless, cable continues to spread rapidly across America, its growth rate in the '80s exceeding the forecasts of virtually all the experts. When this decade began, there were 4,225 cable systems serving 16 million homes. By mid-1983, there were 5,700 cable systems serving 33 million homes.

The real power of cable as a new communications medium will be felt when the biggest cities are wired and the oldest systems updated. That will allow the satellite-distributed programming to attain something approaching the uniform national coverage that has been the strength of the commercial broadcast networks all these years.

LES BROWN

CABLE INDUSTRY:

END OF THE GOLD RUSH

During the 10 years Gustave Hauser headed Warner Amex Cable, it grew to be the fifth largest cable company and was poised to become, if not the largest company of all, nothing less than the industry's pace-setter. With its remarkable two-way cable installations known as Qube, Warner Amex boasted "the most advanced communications service ever." Its experiments in interactive programming, which fascinated the press, helped Warner Amex beat out all competition for the highly prized franchises in such key cities as Pittsburgh, Dallas, Houston, St. Louis, and two of the most populous boroughs of New York, Queens and Brooklyn. Cable's promise as the superior form of television seemed embodied in Warner Amex.

But by the end of 1982, the promise began fading. Warner Amex posted a \$47 million loss for the year, and investors expressed concern that the losses for several cable systems were much larger than anticipated. Stock prices began to slip, and the choice, big-city franchises won by Warner Amex began to be viewed as high-investment burdens for the company rather than as glittering prizes. As if to close the manic, entrepreneurial era of cable, Hauser resigned from Warner Amex to pursue ventures of his own and was replaced by former Transportation Secretary Drew Lewis, who promptly tightened the company's belt and all but stopped the experimentation.

The excitement over cable that prevailed for almost a decade has simmered down with the rash of negative developments. The rising costs of equipment, labor, insurance, and maintenance have made wiring

CABLE'S TOP TEN		
	No. of Subscribers	No. of Franchises
1. TeleCommunications (TCI)	2,297,000	428
2. Time Inc. (ATC)	2,267,000	119
3. Group W Cable	1,872,000	140
4. Cox Cable	1,379,000	58
5. Warner Amex	1,340,000	146
6. Storer Communications	1,291,000	122
7. Times Mirror	858,000	67
8. Rogers/UA Columbia	776,000	22
9. Newhouse	742,000	64
10. Continental	686,000	66

Source: Cable TV Investor Newsletter

the cities disproportionately expensive. Also, in their zeal to win franchises, cable companies made extravagant promises they can't afford to keep. Then there is the growing problem of cable theft—people stealing the service—the losses from which are said to run as high as \$400 million a year. And there is the constant "churn" of subscribers canceling the service because they're dissatisfied with it.

Cable now passes some 60 percent of the 83.8 million U.S.

households with TV sets, but only about half those households subscribe. A majority of the top 20 cities remain unwired, including the four outer boroughs of New York, two sections of Los Angeles, most of Philadelphia, Boston, and Denver, and all of Baltimore, Cleveland, Chicago, Detroit, Milwaukee, Minneapolis-St. Paul, Sacramento, and St. Louis. These are vital markets from an advertiser's standpoint, and the delay in wiring them threatens

the survival of dozens of cable networks that subsist primarily on advertising sales. The delays are also causing the postponement of many enhanced, interactive cable services, especially those keyed to the urban consumer. Some analysts believe that cable's long-term success depends on its ability to derive substantial revenues from the enhanced services (home security, shopping and banking, information retrieval, etc.).

Stuck now somewhere between its blue-sky promises and the earthbound bottom line, cable has turned to public relations and political lobbying to resolve its problems. An organization called the Council for Cable Information has been formed by the industry to engineer a multi-million-dollar public-image campaign. At the same time, the industry has been working feverishly for deregulation legislation in Congress. The result was S 66, a bill the Senate passed in 1983. It prohibits cities from demanding any specific services save three government-access channels, thus relieving the cable industry of having to fulfill many of its more extravagant promises. It also removes the limits from the fees operators charge subscribers (though some markets are exempt, and existing contracts would be "grandfathered" for five years). More importantly, S. 66 limits cable companies' accountability by imposing a 5 percent ceiling on the franchise fees operators pay, while virtually guaranteeing them automatic franchise renewal. The House is likely to add requirements for commercial leased access, and possibly for public access, but will probably keep the main provisions of the bill intact.

DAVID STOLLER

"Wiring the big cities is a risky venture for cable."

Mark Kriss, The Yankee Group

TWO-WAY CABLE:

PROMISES DEFERRED

The advent of two-way cable promised an age of great convenience. With just our TV set and a keypad, and in the comfort of our living room, we were to be able to go shopping, make banking transactions, vote in public-opinion polls, rent a movie or an opera for an evening's viewing, or take an adult-education course. But, despite all the excitement about this remarkable form of television, only some 500,000 homes have two-way cable today, and the prospects are dim for its availability to most Americans anytime soon.

MARKETPLACE: Virtually every big city that awarded a cable franchise the last few years made two-way cable installation a requirement. But cable operators, faced with rising costs for construction and marketing, have been postponing interactive operations. In Denver, for example, Mile-Hi Cable has received the city's permission to delay interactive service several years.

Two-way television services in general, whether by cable or over the phone, have been progressing slowly. (See "Videotex," page 40.) The experiments of Warner Amex (Qube), Cox Cable (Indax), CBS/AT&T (Reach), Knight-Ridder/AT&T (Viewtron), and Times Mirror (Gateway), among others, have so far failed to strike a gusher. Research hasn't yet come up with a clear picture of what services Americans want badly enough to pay for, although it has found that people are not averse to the idea of paying.

Services such as home security and energy-monitoring, which require little subscriber interaction, are currently available on fewer than 50 cable systems in the United States. The lotteries and gambling activity that some analysts believe will be big moneymakers on interactive television are still in the develop-

TELEVISION IN THE ACTIVE VOICE

Two-way cable makes television interactive: It not only allows viewers to receive signals, but to send them. This is accomplished by the use of a second wire, which allows rudimentary electronic information to travel "upstream" from the subscriber's home to the cable system's headend, or transmission center.

The two-way cable subscriber typically has a hand-held console resembling a small calculator, with a variety of response buttons. By pressing these, he can answer multiple-choice questions, request pay-per-view programs, and shop at home, among other things. The cable wire is connected to a central computer that checks every few seconds to see what buttons, if any, a subscriber has punched, and acts accordingly. The computer can also keep a record of which channels the subscriber watches.



"There's only one system out there—Qube—and it hasn't made any money yet. Call me in 50 years."

Alan Gottesman, Rothschild, Unterberg, Towbin

ment phase and inevitably will face strong opposition from local governments, religious groups, and social activists.

Hybrid interactive systems that use both cable and telephone lines are considered the most commercially feasible for two-way services today, but their quick adoption is likely to be complicated by the animosities between the telephone and cable industries. Nevertheless, Warner Amex is considering such a hybrid system for both Brooklyn and Queens in New York City, a move that suggests the company is backing away from its pioneering—and expensive—Qube technology.

REGULATION: One deterrent to the wide proliferation of two-way services is the growing concern over the possible abuses of interactivity, which could lead to infringements on privacy and personal freedom. Two-way cable works with a computer that may store information on one's buying and living habits, raising the fear in some quarters of Big Brother's arrival.

Warner Amex, which operates seven Qube systems, all interconnected now in a Qube network, has issued its own privacy code, which limits release of individual information but permits the release of bulk data for developing and improving services. Warner Amex's code, the first in the industry, conforms to privacy laws already on the books in some states. In general, these laws recognize that the danger is in human misuse of the technology, rather than in the technology itself.

The rash of books, news reports, and movies dealing with computer abuses has been fueling the national debate. It is likely that the large media companies will proceed cautiously with interactive services and hold off large investments until the social issues have been resolved.

DAVID STOLLER

SMATV:

STEALING CABLE'S THUNDER

Barely four years old, the SMATV industry has had its share of hard knocks but has still managed to gain momentum. Opinions vary, however, as to how long it can defend its territory against the inevitable onslaught of cable TV.

SMATV has a lot going for it. Anyone can enter the business (even broadcast and cable companies otherwise restrained by FCC ownership rules), and the return on investment is swift. In four to six months, a 400-unit apartment complex can be outfitted with an earth station, amplification equipment, and wiring for about \$80,000, roughly one-third the cost-per-subscriber of cabling a city. Once a system is up and running, it can add new customers cheaply.

MARKETPLACE: Since 1979, when the FCC's deregulation of satellite receiving dishes opened up the skies to "private cable," SMATV installations have cropped up in Dallas, Chicago, New York, Phoenix, Atlanta—wherever there has been frustration with cable's slow progress. In some markets where franchises have been granted but wiring has been slow, TCI, ATC, Cox, Warner Amex, and other top cable firms have been forced into the SMATV business in self-defense. The best guess is that SMATV subscribers now number between 500,000 and one million—at least 3 percent of pay-TV homes.

Generally, the outlook for SMATV is considered bright. Large apartment complexes are going up faster than single-family houses. To date, SMATV has not been practical in dwellings with fewer than 200 units. But the advent of a new generation of high-power, Ku-band communications satellites will drive down the cost of earth stations, boosting SMATV profits and expanding its market to smaller apartment buildings. Yet to be

MINI-CABLE SYSTEMS

For years builders routinely equipped their new apartment complexes with master-antenna systems (MATV)—special wiring to insure good television reception for all tenants. In 1979, when the FCC deregulated satellite receiving dishes, someone hitched an MATV system to a satellite receiving dish, and what had been a residential convenience was transformed into a miniature cable system known as SMATV, satellite master-antenna television. These installations pull down signals from the satellites, including the pay channels, and provide them to tenants paying monthly subscription fees. Erected on private property, SMATV systems are exempt from all FCC rules. Moreover, if a system does not lay wire across public streets, it is exempt from municipal regulation and from obligations to pay the city a percentage of revenues. The development of SMATV (also called "private cable") has brought anguish to the cable industry, since it threatens to skim off cable's choicest residential areas before many cities are wired.

tapped fully are the nation's 27,500 large hotels and 7,500 hospitals. By 1992, according to one market-research report, SMATV could be the primary pay-TV medium in 3.3 million urban households, representing half of all the hookups in dwellings of 20 or more units.

REGULATION: The luster of SMATV's rising star is directly related to the industry's legal for-

tunes. The legality of SMATV/landlord contracts, which exclude cable companies from marketing their services to building occupants, is being tested in court. Last May, the first blow was struck when a New Jersey superior court judge ruled, in a case brought by a local cable company, that an SMATV operator could not operate without a state cable permit. The National

Satellite Cable Association, the trade group for more than 220 SMATV operators and programmers, immediately petitioned the FCC for a declaratory ruling that states had no authority over SMATV. Whatever the FCC decides, the grievances are likely to be carried over into federal court and, possibly, resolved by the Supreme Court.

In 1982, a Dallas SMATV operator found a clever way to expand circulation while still escaping municipal jurisdiction. He applied to the FCC for a cable microwave license to beam signals between buildings separated by public arteries. The FCC granted the request on the condition that he voluntarily submit to FCC cable rules. Thus a new breed of SMATV was born, one regarded as a cable system by the FCC, but which nonetheless eludes local regulation.

Cable companies and cities are not the only ones affected by SMATV's extraterritorial status. UHF and public TV stations might be shut out of SMATV buildings because, unlike cable, the systems are not required by the "must carry" rule to carry them.

An attempt by the cable industry to undermine SMATV by denying it pay-TV programming has apparently failed: Two major STV suppliers, American Subscription Television and Oak Industries, announced they would sell to SMATV, and within a few years both MDS and DBS should be major programming suppliers. But the lawsuits inspired by this attempt linger on. In Tucson and Chicago, rulings are pending in complaints filed by SMATV operators, who charge that Showtime, The Movie Channel, and other cable concerns conspired to restrain trade. If SMATV wins, then the one card missing from its deck, popular premium programming, will be added.

MEL FRIEDMAN



"SMATV is struggling for legitimacy in an environment where everyone is accusing it of unfair competition."

Anthony Hoffman, Craline & Co.

PUBLIC ACCESS:

FROM VANITY VIDEO TO OPEN FORUM

At a time when most of the cable industry—as well as virtually every new delivery system—seems bent on offering more of the same conventional programming, the public-access channels of cable systems around the country stand almost alone in reflecting the diversity and eccentricity of the American people. Public access remains TV's Speaker's Corner—a place where everything un-telegenic and un-homogenized can find a place—though current legislation may threaten this untrammeled form of free expression.

For those long accustomed to commercial television's ingenious contrivances, public access's languid atmosphere and flair for the non-event may be unsettling. Aimless talk shows, girls' high-school football, podiatric advice, and old folks' spelling bees are the standard fare of this improvised medium. Public access, says New York University professor George Stoney—the guru, godfather, and foremost authority in the field—should be “the place where the guy who picks up the trash gets up and says, ‘Look, here’s what’s happening out here on Route 6, and here are some neighbors who are helping out by separating the trash.’”

Public access is now trying to move away from its early “Look Ma, I’m on TV” giddiness without losing its commitment to raucous democracy. As cable has developed over the last few years, in big cities such as Dallas, Atlanta, and Pittsburgh, a new generation of public-access administrators and programmers have started to adapt commercial television's language and polish.

Jabari Simama, who heads up Atlanta's highly sophisticated access program, sounds like a network executive when he ex-

THE ANYBODY CHANNEL

Public access is a nonprofit form of cable programming in which a cable company offers time on one or more channels to anyone who applies for it. The company may also provide studio equipment, personnel, and expertise—most large systems do—but it exercises no direct control over the content of the programming. This independence is public access's distinguishing feature, differentiating it from local origination, the homegrown programming produced under the cable companies' control.

The FCC made public access a mandatory element of franchise agreements in 1972, but the Supreme Court voided this ruling in 1979. Still, most cable companies have made public access a routine part of the package they offer cities in franchise negotiations.

pounds his philosophy. “Viewer-ship,” he insists, “is the key thing. What does your audience want to see? Are there the elements of slick, smooth programming that people have come to expect?”

Simama hasn't kicked anyone off the channels for low ratings: Producers have a right to their air-time as long as they violate neither the franchise agreement nor the law. And anyway, nobody knows who—if anyone—watches what. But he offers an “open studio,” with equipment and personnel provided by Cable

Atlanta, to groups lacking technical expertise. Simama is especially pleased with “the polished and seasoned performers” of an anti-nuclear theater group called “Pandora's Box” and a news show called *Spotlight on Latin America*, which includes reports shot on location and offers both English- and Spanish-language segments.

No one knows just how much public-access TV is out there—a refreshing absence of pressing concern about numbers reigns in this nonprofit domain—but Sue Miller Buske, executive director

of the National Federation of Local Cable Programmers, estimates that about 800 communities receive some kind of access programming. The figure clearly is on the rise; during the cable companies' wild bidding wars of the past few years, public access was routinely promised along with everything else. But many of those promises may have been made mostly to placate city councils. Buske says that cable operators have been “renegeing” on their public-access commitments at an alarming rate in recent months. She mentions the example of Cincinnati, where Warner Amex promised to build four public-access facilities; three years later, none has been completed (though the company claims that all will be finished by an agreed-upon date in 1984).

REGULATION: Indeed, cable companies can scarcely be enthusiastic about public access, to which they must devote money and personnel with no hope of return. There are fears that S.66, the cable deregulation bill now pending in the House, may let cable off the hook on public access altogether. The bill as it passed the Senate prohibits cities from demanding a public-access channel, though the operator “may” offer this or other services. (A version of S.66 sponsored by Congressman Timothy Wirth, however, permits cities to require public access.) Even worse, according to Buske, is the bill's prescription for an almost automatic franchise renewal; this, she says, will remove a critical enforcement weapon from cities.

Yet in its decade of existence, public access has built up a constituency, certainly of programmers and perhaps of viewers; it seems unlikely that it can be harmed without a typically noisy and enthusiastic fight.

JAMES TRAUB



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PAY TV: HBO & THE ALSO-RANS

Pay television is often considered the one unqualified success of the new electronic media. Less than 10 years ago, the conventional wisdom among network executives and Wall Street analysts was that consumers would never buy TV programs. But the advent of Home Box Office changed all that. HBO proved that uncensored and uninterrupted movies, nightclub acts, and sporting events offered for a relatively low monthly fee were a powerful draw. Led by HBO, which posted a \$100 million profit in 1982, pay TV has become a multibillion-dollar business that has virtually revolutionized the time-honored traditions of Hollywood, network TV, and professional sports.

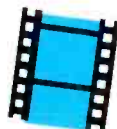
HOME DELIVERY



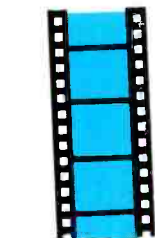
SMATV
500,000



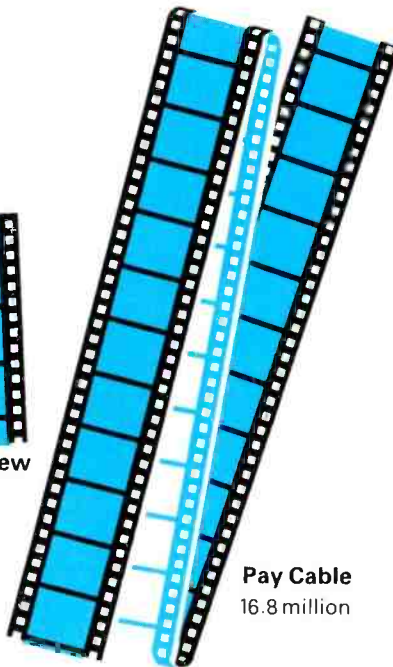
MDS
530,000



STV
1.1 million



Pay-Per-View
2.5 million



Pay Cable
16.8 million

"The rest of the technologies are peanuts compared to cable."

John Reidy, Drexel Burnham Lambert

Aside from pay cable, consumers can now choose from a variety of systems that deliver pay-TV programming, including scrambled over-the-air subscription television (STV), microwave-delivered multipoint distribution services (MDS), community "master antenna" satellite dishes (SMATV), and direct satellite-to-home receiving dishes (DBS). But though it is expanding quickly, pay TV remains a high-stakes gamble that requires not only marketing and show-business savvy, but a familiarity with government regulation and plenty of venture capital. The Entertainment Channel, a pay-TV network created by RCA and Rockefeller Center Television, folded after nine months of operation and \$80 million in losses in early 1983, when its backers realized they could not interest enough subscribers, and those who did subscribe often disconnected after only a few months. STV also has seen its fortunes wane as multichannel cable has stolen its thunder in many cities. By mid-1983, STV subscribership had slipped from a high of 1.4 million to 1.1 million.

These early casualties underscore the challenges facing such new delivery systems as multichannel MDS and DBS, which have only recently become available commercially. A formula for success in pay television is no longer a matter merely of offering people the latest films churned out by Hollywood; now blockbuster movies and "made-for-pay" series are being bought up on an exclusive basis by individual pay-TV networks. A new pay medium not only has to spend millions simply to get a clear signal into the home; that signal also has to carry original and exclusive programming.

HBO and its sister service, Cinemax, which together have

15 million of the 23 million pay-TV subscriptions in the country, set the pace when they began buying up exclusive pay-cable rights to films even before they went into production, and later took to hyping them as "HBOOnly." Then, in a series of multimillion-dollar financial maneuvers, HBO purchased the rights to much of Hollywood's future output and bankrolled several of its own made-for-pay movies.

The moves caused HBO's principal competitors and a number of movie studios to scramble for equal footing. After the Justice Department's antitrust division prevented the studios from joining in, Showtime and The Movie Channel, the second and third largest pay net-

works, merged. Meanwhile more specialized pay networks, such as the Disney Channel, have been trying to increase their visibility by acquiring original programming.

But nowhere has pay TV's new-found programming clout been better illustrated than in the homes of loyal sports fans. In most major cities, the commercial stations that traditionally broadcast local games to the masses have been outbid by pay sports networks—often started by local major-league team owners—offering the same games via regional cable systems for a price. Fans have had the luxury of seeing games on TV free for too long, says Chicago White Sox owner and regional pay-sports impresario Eddie Einhorn. And if they are true fans, he says, they'll pay.

The rising value of television "software"—the programs and games we all used to take for granted—may be paving the way for the ultimate form of pay TV. If consumers can be induced to buy monthly subscriptions, why can't they be persuaded to buy one program at a time? Pay-per-view television has already been tested with moderate results on the 2.5 million cable and STV subscribers who are able to receive programs on a one-time basis. Although still too small a sampling to yield the mega-profits that many predict, the pay-per-view audience promises to grow to as many as 10 million by 1985, when more cable systems will have the ability to turn individual channels on and off.

By then, people may be so used to paying for their television that the time when pay TV was an up-and-coming medium may seem as archaic as the days of free TV do now.

LAURENCE ZUCKERMAN

STV:

GOING, GOING . . .

A DIFFERENT KIND OF TV STATION

STV (subscription television) is the oldest of the new technologies. The FCC held it back for many years to protect commercial broadcasting. The service got going in the mid-'70s, when the FCC finally turned it loose in the marketplace. In a study at the time, the Stanford Research Institute predicted STV would beat cable because it would get in first and more efficiently.

STV is simply a channel of pay television transmitted over the air by local TV stations that have chosen to offer subscription service rather than advertiser-supported programming. STV stations, most of which are on the UHF band, send out a scrambled picture that a device attached to subscribers' TV sets can decode. The fare is similar to that on pay cable. The great difference is that pay cable comes with all that basic cable has to offer. STV has been heavily used for pay-per-view events.

Subscription television, to put it mildly, is no longer the television-delivery method of choice. The statistics at the end of 1983 are grim indeed: From a high of 1.5 million subscribers, 400,000 have been lost, and nine stations shut down. Furthermore, major STV companies have posted hefty losses: Subscription TV and Associates Resources (STAR) announced \$12 million in losses and was sued by some suppliers when it couldn't pay its bills. When lawsuits forced Oak Media to stop showing pornography in Phoenix and Dallas, the company lost so many subscribers it had to close down those systems, taking a \$14.4 million loss. United Cable, which had purchased three STV systems known as the Home Entertainment Network, wrote them off for a \$33 million loss and put the stations up for sale.

Industry authorities who had been singing STV's praises in newsletters and the trade press suddenly sound very different. Says one: "Our view of the STV business is that it's gone down

the drain."

The conclusion seems to be that STV can find a market when it's the only game in town, satisfying at least temporarily the consumer demand for uncensored movies with no advertising. But even then, the disconnection rate for STV is high. When cable does enter a market, STV disconnections can run as high as 90 percent. A single-channel service has a hard time competing with the delights of a 35-channel (or more) cable system, particularly when the charge is about the same for both.

The only solution that industry observers offer is for several STV licensees in an area to join forces and create two- or three-channel systems. Even if this is tried—and so far it hasn't been—another competitor looms on the horizon: DBS.

The STV business may be terminally ill, but the technology survives. Should some imaginative marketing and programming strategies come along, STV could make a comeback.

JULIE TALEN

"STV is bordering on comatose."

Peter Falco, Merrill Lynch

MDS:

THE NEWEST CHANNELS IN TOWN

MOVIES—AND MORE—BY MICROWAVE

MDS (multipoint distribution service) offers the subscriber many of the same programs as cable TV, without using a cable. Instead, an over-the-air, omnidirectional microwave signal transmits it all: movies, sports, scrambled programs for home videotaping, video games, computer programs, and videotex.

MDS signals travel an average of 25 miles in every direction to special rooftop antennas, which are equipped with decoders that convert the microwaves into television signals. While MDS is a cheap way to send TV programs to office buildings, apartments, hotels, and homes within its reach, it does have a shortcoming: The microwave signal can be disturbed by buildings, trees, or hills. In practice, MDS is viable only where an unbroken line of sight exists between the sending and receiving antennas.

Barely one year ago, MDS languished at the starting gate of the great telecommunications derby, unable to break free from the pack of competing technologies. Then, in September 1983, the FCC made a decision that sent MDS surging out of obscurity: Eight channels of microwave TV that had been reserved for non-profit, educational purposes (Instructional Television Fixed Service, or ITFS) can now be used for MDS programming. With that single stroke, the commissioners transformed an insignificant delivery system into one of the hottest technologies around.

REGULATION: Instead of one operational MDS channel in each market, soon there will be two four-channel MDS services, each able to offer the same sports, movies, and news channels that cable does, possibly at prices cable operators won't be able to beat. (The MDS startup cost per subscriber is about one-fifth that of cable systems.)

Sensing an opportunity, broadcasters and cable companies vied with traditional MDS car-

riers for the rights to the new systems, which will be determined by FCC lottery. Even phone companies were represented among the 30,000 proposals submitted to the FCC. CBS and ABC bid for five cities each (not coincidentally, the very cities in which they own TV stations). RCA took a bolder course, risking the wrath of NBC affiliates by applying for MDS rights in 46 of the top 50 markets.

MARKETPLACE: The first operator to explore ways of developing MDS as a programming service was Microband Corp. of America, which began sending pay-TV programs to hotels and apartment buildings in 1975. The company is currently the largest MDS operator in the country.

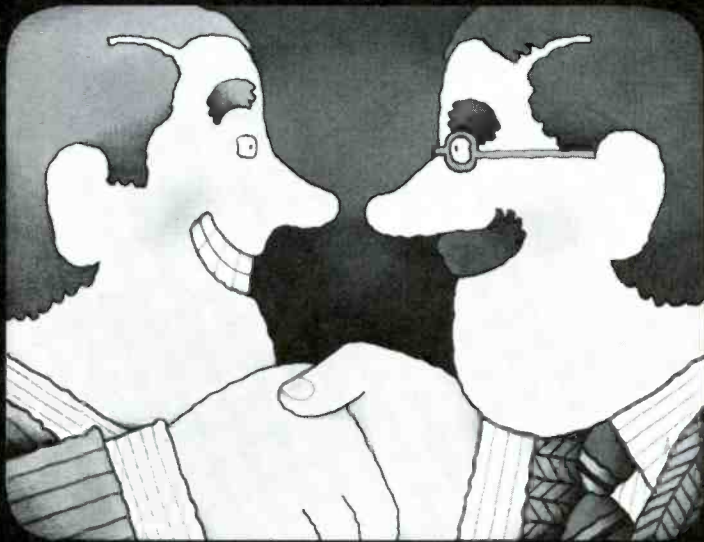
The audience from single-family homes began growing when the price of home antennas dropped. Subscribers pay approximately \$100 to \$150 for the special MDS receiving equipment, plus a monthly fee for each channel of programming they buy.

MDS could compete directly with cable, but it is more likely to

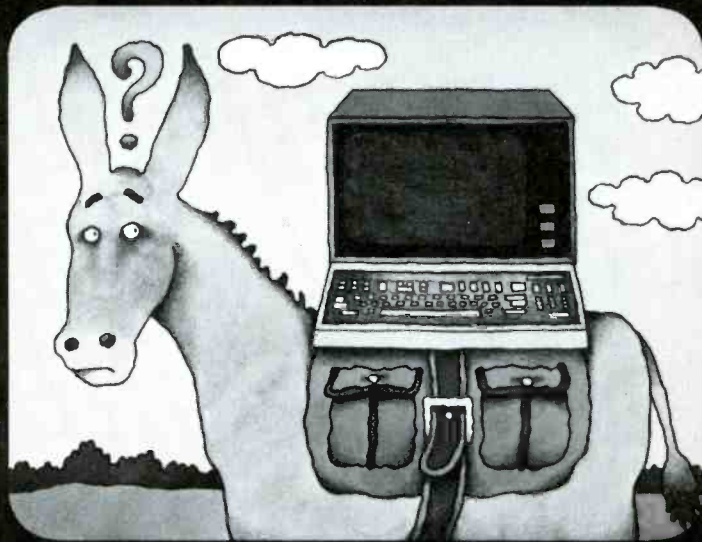
"Multichannel MDS is emerging as the most significant competitive threat to cable."

Mark Kriss, The Yankee Group

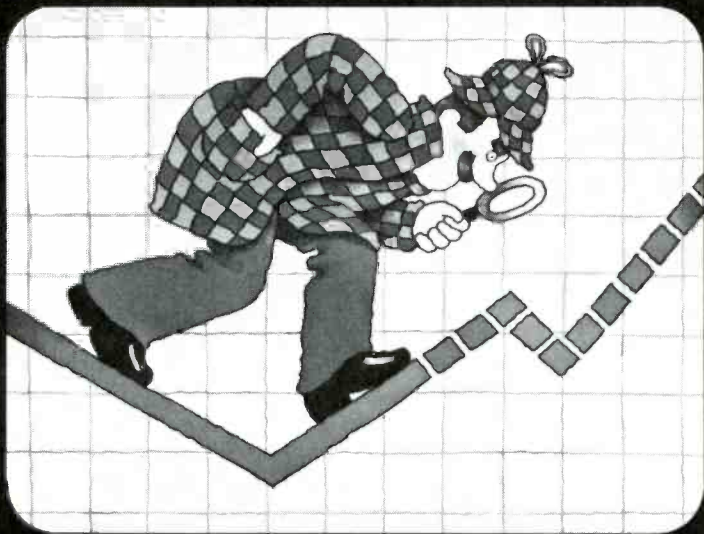
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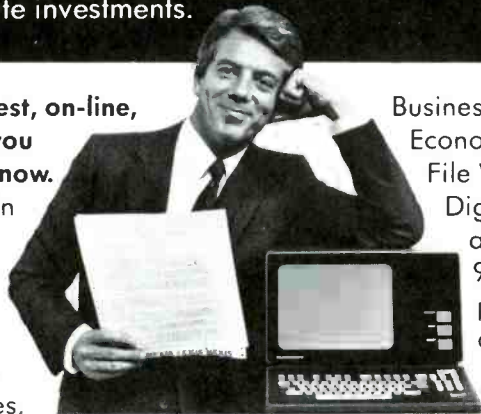
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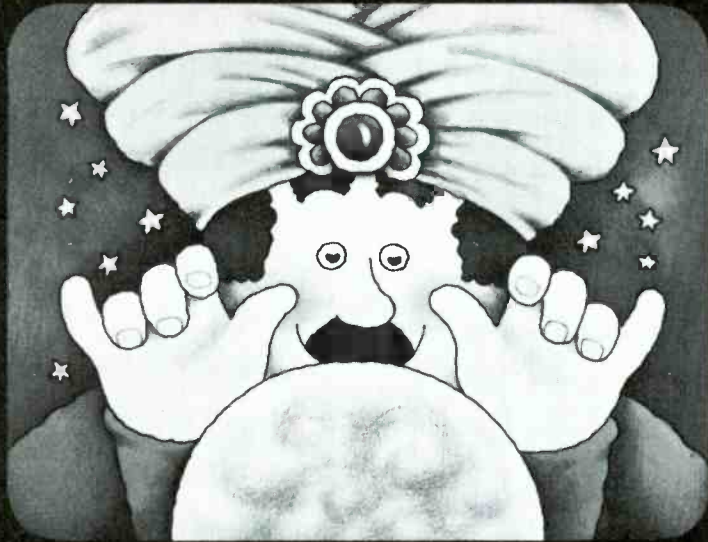


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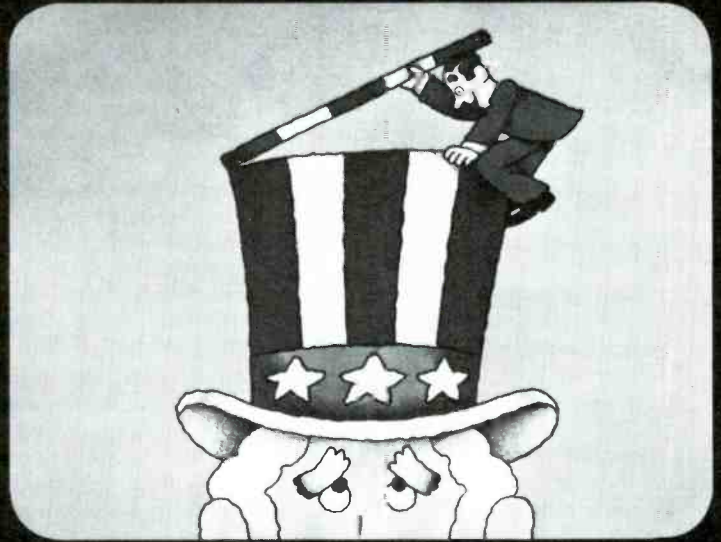
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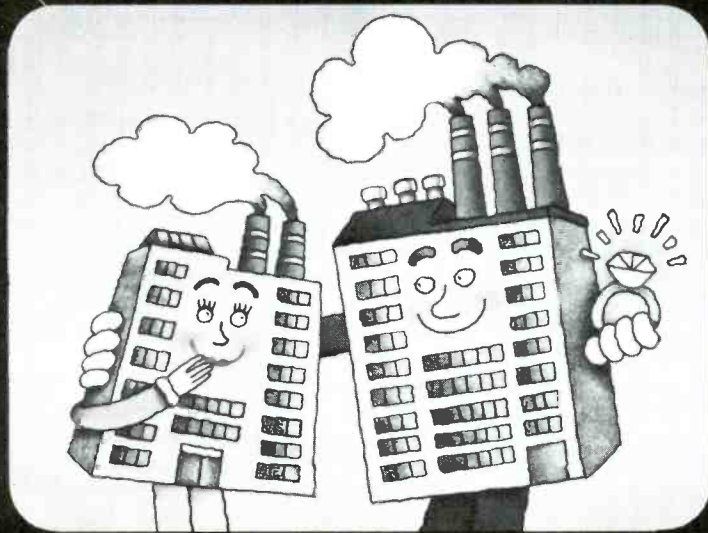
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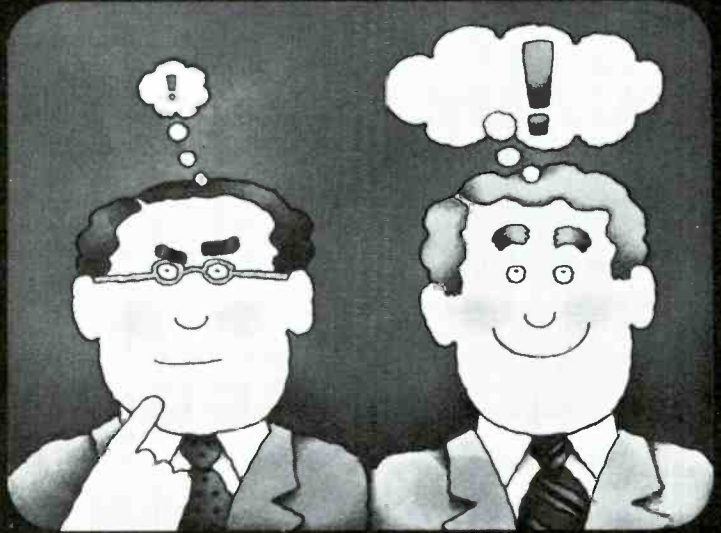
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seek out areas that are still unwired. So far, the cable industry has not been entirely hostile to this new competitor. In fact, several cable MSOs have applied for MDS licenses: The technology could relieve them of having to wire unprofitable sections of their franchise areas. For the future, the biggest question before the FCC is whether MDS should remain a common carrier—or whether, as the industry itself argues, it should be considered a private carrier, competing with other private carriers such as DBS, STV, SMATV, and cable.

TECHNOLOGY: The prototype for multichannel MDS is in Salt Lake City, where Skaggs Telecommunications Services (STS) initiated an experimental eight-channel MDS system in December 1981. Using adjacent channels on the ITFS frequency, STS's eight transmitters have been sending microwave signals from a single antenna to 135 homes in the area. Each transmitter carries one channel of audio and one of video programming; the signals can be scrambled, as well as "addressed" by the operator's headend computer, which can switch channels on and off for pay-per-view and billing purposes.

ITFS: The eight channels made available for multichannel MDS were not invented out of thin air. Until recently, they had been part of the 28 channels set aside for nonprofit ITFS use. ITFS licensees, who use the frequencies for educational programming, include hospitals, school boards, and Catholic archdioceses.

Although these groups have not yet made full use of their spectrum space, they claim to be on the verge of attaining the resources and technical expertise to do so. Expanded ITFS systems could create networks of libraries, hospitals, and work-sites for educational services. PBS has proposed that four ITFS channels in each of 102 cities be used to establish a National Narrowcast Network, to provide specialized education.

But the FCC decided that part of the ITFS spectrum would be allowed to develop commercially in the free market, though it did "grandfather" all existing ITFS assignments and applications.

MICHAEL SCHWARZ

PAY-PER-VIEW:

WHERE THERE'S A HYPE THERE'S A WAY

After much hoopla and high expectations, the new technology with the clumsy name finally became a reality in the winter of 1982. That season saw the pay-per-view debuts of the kinds of events that cause studios and booking agents to salivate: film premieres, major fights, rock concerts. Reserved Seats Video Productions (RSVP), a joint venture of ABC Video Enterprises and Getty Oil, made its bow with a heavyweight boxing championship. MCA/Universal opened *The Pirates of Penzance* for its pay-per-view audience the same night the film premiered in New York City. And Twentieth Century-Fox sponsored The Who in a live concert.

But the results did not fulfill the promise. Viewership, predicted for the cable and STV universes to include a third or more of all subscribers, hovered instead at 10 percent or less. At that, the total universe of addressable cable systems and STV stations combined was not much more than two million viewers.

As time went on, fewer of those responsible for pay-per-view events made great claims for them. After The Who concert's dismal showing, Twentieth Century-Fox dropped out of the pay-per-view arena. When the *Pirates* premiere bombed, one California cable operator said glumly, "It'll be a long time before we take untested product again." And the championship boxing match cost RSVP more than \$3 million.

By the end of 1983, too few of the nearly 40 million cable homes were equipped to take advantage of pay-per-view offerings, and events being offered were too few to entice cable operators to upgrade their systems with addressability. The movie studios are still reluctant to release first-run films as pay-per-view events; both sports and movies continue to do best in the

OPENING NIGHTS AT HOME

Pay-per-view is so-called because subscribers pay for only those programs they choose to watch. The majority of the programs are one-time, special events sent out on a scrambled signal, which the viewer's TV set must be able to decode. For the viewer plugged into two-way, or interactive, cable systems, the procedure is simple and automatic: He can order a program merely by pushing a button. The cable company's computer will then transmit an unscrambled signal to that subscriber and add the charge to the monthly bill. The viewer having one-way, addressable cable is equipped to receive decoded signals, but has to request the program by phone or mail. Non-addressable systems can be made to decode pay-per-view events with "disposable traps." These small boxes are ordinarily designed to decode only one event, and are disposed of afterward. The subscriber must buy and attach one, or wait for the cable operator to install it.

traditional media of theater, pay cable, or network TV. Pay-per-view successes have been few: *Star Wars* reached nearly a third of the potential audience, as did the Holmes/Cooney boxing match in the fall of 1982.

Pay-per-view also comes by another route, one that industry observers think could eventually prove successful. In the handful of interactive cable systems, where a subscriber can make a request and have it instantly register at the cable system's main computer, entire channels have been dedicated to pay-per-view. Films not yet available to HBO or Showtime can be bought on a one-time basis for \$3 to \$5. The customer who watches only two or three films in six months has all the advantages of pay television without having to be a full-time subscriber.

When all the major population centers are wired for two-way cable, the market will be ripe for a steady flow of PPV events.

For cable operators, last year's experimentation was disappointing. The demands of movie studios and fight promoters for "guarantees"—as much as two-thirds of the ticket price, if 30 percent of subscribers bought the show—proved unrealistic for them. A group of the largest cable system owners, banding together in a consortium called EventTelevision, has dispensed with guarantees and is trying to structure the economics of the pay-per-view offerings so that cable operators can make a profit. Its first event, a fight last fall, drew only 5 to 6 percent of a potential addressable-cable audience of 1.2 million, "but the operators made money on it," according to EventTelevision president Sid Amirra. More such experimentation by groups and sponsors seems likely in the several years before technological developments make pay-per-view live up to its promise.

JULIE TALEN

"The prospects for pay-per-view keep retreating."

Peter Falco, Merrill Lynch

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THE PAY SERVICES:

A GUIDE



NAME	OWNER	LAUNCH DATE	DELIVERY SYSTEMS	NO. OF SUBS.	CONTENT
	Home Box Office Time Inc.	Sept. 1975	Cable, MDS	12.5 Million	Movies; specials; sports
	Showtime* Viacom International Inc.; Warner Communications; Warner Amex	July 1976	Cable, SMATV in non-franchised areas	4.5 Million	 Movies; original series; Broadway shows; live concerts; comedy; children's shows; documentaries
	The Movie Channel* Warner Amex; Warner Communications; Viacom	Jan. 1980	Cable, MDS, SMATV	2.5 Million	Feature films
	Cinemax Time Inc.	August 1980	Cable, MDS	2.5 Million	Movies: 10 A.M.-3 P.M., aimed at female audience; 3 P.M.-8 P.M., youth & family films; 8 P.M.-10 A.M., family & adult features; music features; SCTV comedy network
	Spotlight Times Mirror; TCI; Cox; Storer	May 1981	Cable	765,000	 Movies
	The Playboy Channel Daniels & Associates; Cox Cable Communications Inc.; Cable Vision Systems Development Co.; Rainbow Programming; Playboy Corp.	Dec. 1980	Cable, STV, SMATV, video cassettes	535,000	Soft-core adult films; 50 percent original programming; interviews, game shows, specials. 8 P.M.-6 A.M. daily
	ON TV Oak Industries	April 1977	STV, LPTV, SMATV, MDS (DBS projected)	500,000	Movies; variety; original & local programming
	The Disney Channel Walt Disney Productions	April 1983	Cable	300,000	Original productions & Disney films catering to children under 12. 7 A.M.-11 P.M. daily
	Home Theater Network Group W Communications	Sept. 1978	Cable, SMATV	225,000	G and PG movies; travel films. 4 P.M.-4 A.M. daily
	Bravo Daniels & Associates; Cox Cable Communications Inc.; Cable Vision Systems Development Co.	Dec. 1980	Cable	165,000	65 percent American & foreign films, 35 percent performing arts specials. 8 P.M.-6 A.M. Mon-Fri, 5 P.M.-6 A.M. Sat, Sun
	GalaVision Spanish International Network (SIN)	Oct. 1979	Cable, SMATV	120,000	Spanish-language films; weekly dramatic series; sports; musical & comedy specials in Spanish. 3:45 P.M.-4 A.M. Mon-Fri 11 A.M.-3 A.M. Sat, Sun

*Showtime and The Movie Channel merged in 1983, but continue to operate separately.
Note: 24-hour programming, unless otherwise indicated.

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VIDEOTEX GOES ON-LINE

VIDEOTEX VENTURES

Name & Owner	Location	No. of Subscribers	Services
California Grassroots (Viewcom)	California	1984 startup	Agribusiness information, news, weather
CompuServe (H&R Block)	Nationwide	72,000	News, local newspapers, shopping, games
Delphi (General Videotext Corp.)	International	650	News
Dow Jones News Retrieval (Dow Jones)	Nationwide	90,000	Business news & information, sports, weather, home shopping
Gateway (Times Mirror Videotex)	Southern California	1984 startup	Home banking & shopping, news, electronic mail
GeneSystem (Macrotel, Empire of America Bank)	Buffalo	230	Home banking & shopping, news, weather
Harris Electronic News (Harris Enterprises)	Kansas	180	Agribusiness information, news, weather
Instant Update (Pro Farmer)	U.S. & Canada	1,000 plus	Agribusiness information, news, weather
Keyfax Interactive Information Service (Keycom)	Chicago	1984 startup	Home banking & shopping, news, advertising, electronic mail
Pronto (Chemical Bank & franchises)	Nationwide	5,000 (projected)	Home banking, electronic mail
The Source (Readers Digest)	Nationwide	41,000	News, shopping information, stock prices, electronic mail
Star Text (Ft. Worth Star Telegram)	Dallas, Fort Worth	700	News
Viewtron (Knight-Ridder)	Florida	5,000 (projected)	Home banking & shopping, local news, electronic mail

Source: Arlen Communications Inc.

After years of field trials and market research, videotex finally made its commercial debut in 1983 when Knight-Ridder's Viewtron service flashed onto television screens in Miami.

But Miamians won't be the only Americans using their TV sets to shop, bank, play games, and send electronic messages. By mid-1984, Times Mirror plans to start its Gateway videotex system in Orange County, California, and Keyfax Interactive Information System will go on-line in suburban Chicago. Several other companies that have been testing videotex, including CBS (in partnership with AT&T) and J.C. Penney, are also expected to inaugurate commercial services in the next year.

MARKETPLACE: So far, Knight-Ridder and Times Mirror are furthest along in plans for a national videotex service. Both companies hope to establish coast-to-coast networks by 1985

or '86, and are signing up local newspaper publishers as videotex affiliates across the country. Knight-Ridder has made deals with *The Boston Globe*, *Baltimore Sun*, *Kansas City Star*, and *Fort Worth Star-Telegram*, as well as with the Newhouse and Scripps-Howard chains.

Through its subsidiary, Videotex America (which is a joint venture with Infomart of Canada), Times Mirror has signed *The Washington Post*, *San Francisco Chronicle*, *Minneapolis Star-Tribune*, and others as affiliates for its Gateway service. For all these newspapers, getting a jump on videotex represents a preemptive strike, since the technology could be used to beat them at their own game—delivering classified ads.

Knight-Ridder and Times Mirror will each supply national news and advertising, and the newspapers will supplement these with local information. The two will split revenues with their

local affiliates.

Just how much subscribers will be willing to pay is one of the most important questions facing videotex. Now that a technical standard has been widely accepted, manufacturers are striving to make an inexpensive terminal capable of picking up that signal. AT&T has introduced its Sceptre terminal at \$900, though Miami residents will be offered an introductory price of \$600. Eventually, the terminal's price should come down to about \$200, but there are indications that the next generation of personal computers will be designed to accept videotex signals, making a separate terminal unnecessary.

All the pioneering systems operate on the assumption that customers will pay between \$25 and \$30 a month, split between a subscription fee and the cost of telephone time. The telephone charge could turn into a problem for the videotex industry, since it

Teletext and videotex are truly the most radical of the new technologies. By bringing the powers of the computer to the home TV set, they transform an entertainment medium into an information-age appliance.

Videotex uses a telephone line, or a two-way cable, to connect the home TV set to a central computer, and thus is interactive. A popular and simplified version of on-line computer time-sharing, videotex allows thousands of individuals to communicate with a single computer in order to retrieve information or conduct transactions. For a monthly subscription fee plus telephone charges, the videotex subscriber uses a small keyboard to bank, shop, play games, do research, and conduct a variety of other transactions.

Teletext is a one-way technology that delivers textual and graphic in-

is bound to increase sharply as the newly created telephone companies raise local rates.

Tele-shopping—an electronic descendant of the burgeoning direct-mail/catalogue sales business—is expected to be a mainstay of videotex, but no one has yet mastered the techniques. Conventional advertising is of limited value on videotex, and Madison Avenue is uncomfortable with any medium for reaching customers that can't be measured in terms of "cost per thousand."

TECHNOLOGY: Since the rising cost of telephone connections is seen as one of the industry's greatest problems, technical innovations have focused on ways to get around Ma Bell. One way would be to deliver videotex via two-way cable lines, but the universe of two-way cable homes is small and not expected to grow quickly. Another approach is predicated on the fact that, during a typical 20-minute videotex session of banking or shopping, only about one minute is spent in actual two-way transactions. The rest of the time is spent reviewing the information needed to make a decision. If all the information a viewer might need were swiftly "downloaded" into a home terminal, it could then be manipulated without the expense of a lengthy phone connection.

GARY ARLEN

formation to TV sets as part of the standard broadcast signal. Digital data are "inserted" into a few lines of the TV picture called the "vertical blanking interval." (The VBI is that heavy black bar that bobs up on the screen when the vertical hold needs adjusting.)

The information is presented on "pages," which the viewer can call up on his screen by punching a number on a decoder. Most teletext "magazines" contain about 100 pages of information, typically including news headlines, weather reports, sports scores, video games, and stock prices. Teletext is generally supported by advertising (frames might carry a legend such as "The Miller Scoreboard"), and is free to anyone who buys a decoder. Thus teletext promises to be more widely available than videotex, even though it can't do as much.

Turning the home TV set into an information-age appliance

At the end of 1983, two of the Big Three networks began broadcasting teletext to millions of American households, yet hardly anyone outside the industry knew it. NBC and CBS, as well as several local stations and cable TV services, are now transmitting extensive "magazines" via teletext. But few decoders are available to unscramble the signals; it will probably be another year or two before the millions whose TV sets can now receive teletext will actually see it.

A classic Catch-22 plagues teletext's development: Viewers cannot decide if they want to buy a decoder until they see what teletext looks like, and they can't see what it looks like without a decoder. The broadcasters' decision to launch teletext in 1983 was an attempt to resolve this dilemma by encouraging manufacturers to start building decoders for the mass market.

MARKETPLACE: Although there are notable exceptions

(such as ABC), major broadcasting, cable, and publishing companies are taking the plunge on the new service. At Time Inc., the same group that developed the mega-profitable HBO has experimented with a full-channel cable-teletext service.

Group W Cable will start a sophisticated, two-way teletext service in 1984. Keycom Electronic Publishing (a joint venture of Honeywell, Centel, and Field Enterprises) is transmitting Keyfax National Teletext Magazine to cable subscribers, "piggybacking" the service on the signal of Superstation WTBS. Low-power and DBS operators are also exploring ways to incorporate teletext services into their transmissions.

Yet technical standards continue to stymie teletext's development. Two incompatible formats—now generally known as World System Teletext (based on the British Ceefax technology) and North American Broadcast Teletext Specification (adapted from French and Canadian teletext systems)—are being pitched to TV and cable. Both NBC and CBS have adopted the NABTS format. But proponents of the WST format have found a willing ally in Zenith, which has agreed to sell teletext decoders in any city where at least one TV station commits to broadcasting in WST for at least five years. In

July 1983, Zenith began selling its \$300 teletext decoder in the Cincinnati area, where Taft's WKRC is using the WST format to transmit its Electra teletext service. Meanwhile Panasonic, Sony, and others hint that they will offer NABTS decoders this year for about \$1,000. (Equipment prices should drop in a few years as manufacturers realize economies of scale.)

Zenith's local deals underscore the rift teletext is creating between the networks and their local affiliates. The networks envision a hybrid, national/local teletext service: They would transmit national news, business reports, games, etc., while the local affiliates would insert weather reports, supermarket sales information, and classified ads. But it may not work out that way: Already many CBS and NBC affiliates are deleting the network teletext signals; they may choose to keep the teletext business all to themselves.

Most broadcast teletext operators plan to support their services with advertising, but there is no consensus yet on how best to do so. To complicate matters further, Madison Avenue has yet to indicate support for the new medium.

Teletext on cable, however, will probably end up as a pay service. For instance, Keyfax is charging viewers \$20 a month

for its service, and Time Inc. plans to market its teletext as it would any pay-cable service, charging the subscriber a monthly fee and splitting the proceeds with the cable operator.

REGULATION: In authorizing teletext in 1983, the FCC declined to place the service under the "must carry" rule. In other words, a cable operator carrying a given broadcast station is free to delete that station's teletext signal. Cable operators have sufficient motive to do this: Like network affiliates, they may want to use the vertical blanking interval (VBI) for services of their own, or to protect a pay teletext service, such as Time's, from competition. Broadcast teletext's loss of audience in cabled areas could become a significant problem for ad-supported services, and broadcasters have protested bitterly over the FCC's decision.

TECHNOLOGY: Even before teletext has emerged as a business, new applications and improvements are being planned. Several firms intend to use the VBI to deliver computer software. And teletext services of the future may also offer audio, which can be inserted into the teletext signal, allowing brief narration or music to accompany the teletext frames.

GARY ARLEN

TELETEXT: TELETEXT TAKES TO THE AIR

TELETEXT VENTURES

Name & Owner	Location	Decoders in Use	Services
Electra (WKRC-TV)	Cincinnati	50	News, sports, weather, advertising
ExtraVision (CBS)	Nationwide	None currently available	News, travel information & schedules, advertising
Keyfax National Teletext (SSS, Keycom)	Nationwide	350	100 pages of news, sports, advertising
NBC Teletext (NBC)	Nationwide	None currently available	News, sports, weather, advertising
SFSU (San Francisco State Univ., Viacom Cable)	San Francisco	53,000	News, sports, weather, advertising, educational information
TeleCaption (National Captioning Institute, Sears)	Nationwide	72,000	News, captioning for the hearing impaired

Source: Arlen Communications Inc.

HOME VIDEO:

HOME IS WHERE THE ACTION IS

During the past year, Americans have bought video equipment as if there were no tomorrow—or, at least, as if tomorrow will be on tape.

In January 1983, the Electronic Industries Association's consumer electronics division revealed its long-awaited consensus forecasts for home-video products. The association's manufacturer-marketer members predicted sales of 2.5 million video-cassette recorders (VCRs), an increase of 25 percent over the two million sold in 1982. As it turned out, the 2.5 million mark was passed in the first nine months of 1983, even before the consumer electronics industry's big fourth-quarter selling season.

VIDEO-CASSETTE RECORDERS:

In the first three-quarters of 1983, sales of VCRs ran more than double 1982's pace, and full-year sales almost certainly will exceed four million units, which will bring VCR penetration to at least 8.3 million, or 10 percent of American homes, by year's end.

The VCR is following the classic growth curve of innovative home products in the "catch-on" phase, and its first eight years of sales parallel the growth years of color TV (1959-1966) almost unit for unit. The major force at work in both cases appears to have been the snowball effect, in which potential buyers are introduced to the new product in their friends' homes.

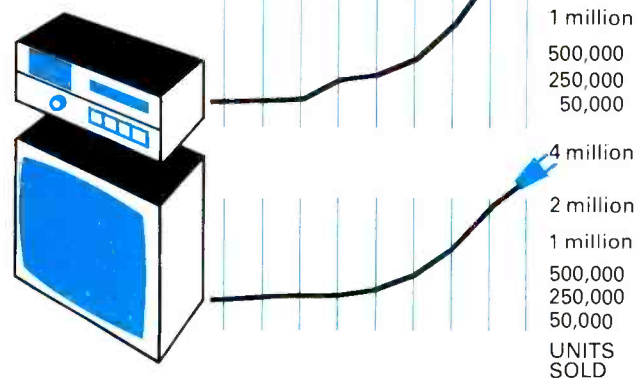
The VCR boom has been fed by declining prices and added features that increase the instrument's versatility. Even the very cheapest models, which often sell for less than \$400, now usually have the all-important "scan" feature, permitting the user to view the picture at high speed in order to find his place or skip over commercials.

VCR sales are still divided about 75-25 between two incompatible home systems—VHS and Beta. A major new feature in higher-priced models of both systems is high-fidelity stereo sound.

Determined to avoid a repetition of the incompatibility problem in the next generation of VCRs, the Japanese (who manufacture virtually all of the VCRs sold in the United

CATCHING FIRE

"The VCR's growth is following the pattern set by color TV"



"American homes are being equipped with VCRs at a very rapid rate—over four million will be sold in 1984. The VCR is an extremely important appliance."

Anthony Hoffman, Craline & Co.

States) established a Standardization Conference, which included some companies from the U.S. and Europe among its 122 members. In April 1983, the conference released its recommendations for a new tape standard—a cartridge containing tape eight millimeters wide (the tape in current use is half an inch wide). At the last minute, however, French participants proposed a new, more advanced system which, if adopted, could delay the introduction of the eight-millimeter format.

But as systems are now selling at an unexpectedly breakneck pace, manufacturers aren't very interested in upsetting the market with a new format. Those who had planned to introduce eight-

millimeter video systems in 1984 are one by one becoming more equivocal about it.

One of the widely touted advantages of the eight-millimeter format is its adaptability to a lightweight, single-piece camera/recorder that could replace home-movie equipment. But this advantage now has been blunted somewhat by the development of one-piece "camcorders" for both the Beta and VHS formats: Sony and other members of the Beta group are now offering the one-piece "Betamovie," which weighs about 6.5 pounds including battery and cassette; next year, JVC and others are expected to have a competitive VHS unit weighing nearly two pounds less.

VIDEO CASSETTES: While only about 10 percent of VCR purchasers buy cameras—indicating that out-of-home use is relatively small—surveys show that more than 80 percent of owners buy or rent prerecorded programs, mostly movies. An estimated 10 million prerecorded video cassettes will be sold this year (of which about 20 percent will be pornographic). For every video-cassette sale, there are about 10 tape rentals, bringing that total for 1983 to 100 million. Sales have shot up, as movie studios have lowered prices in an attempt to combat the spreading of rentals. Movie tapes are generally available at \$39.95, sometimes as low as \$29.95.

The increase in rental trade has spurred a major effort by



movie studios to get a piece of the action, and the Motion Picture Association of America is lobbying for a bill to modify the "first-sale doctrine" (which prohibits suppliers from controlling the prices of products after the first sale) so studios can get a cut of rental revenues.

The most significant use of VCRs continues to be in recording programs for later viewing. At press time, the Supreme Court had not decided whether or not home video-taping constitutes copyright infringement. Whatever the decision, Congress will consider bills to impose fees on VCR and video-tape sales to compensate copyright owners.

VIDEO DISCS: The video disc, once perceived as the shining star of video, continues to eke out an unremarkable sales record; the public is expected to buy about 350,000 players in 1984. Players for the Laservision optical-disc standard are marketed by Pioneer and by North American Philips, the latter under its Magnavox and Sylvania brands. The competing CED format is sold principally by RCA.

The disc player's main problem is price: Despite cuts made in the last few years, VCR prices have dropped even faster. And prerecorded cassettes, which once hovered around \$60 to \$80, are now competitive with video discs, which cost \$20 to \$30. Nevertheless, owners of video-disc players are a loyal lot, each buying up to 30 discs a year, and virtually all movie makers consider the business good enough to justify releasing their product in this medium.

Last summer, RCA introduced an interactive, random-access version of its CED player, which makes it possible to locate any segment of the disc immediately, play segments in any sequence and, with special discs, hold a still picture on the screen. Thus the RCA system now can do virtually anything the "more sophisticated" Laservision system can, and proponents of both systems are trying to figure out applications for such interactive players. One just being inaugurated in video arcades is the combination of video discs and games, allowing realistic live and cartoon action. Home versions are almost certain to follow.

VIDEO GAMES: The fastest growing—and most chaotic—part of the home-video

environment is in games. As some 30 million U.S. homes are now equipped with programmable video games, and prices are dropping virtually weekly, it would be difficult to find any games manufacturer making a profit. The home-computer field, populated by many of the same firms, is becoming equally hectic. The game/computer growing pains are expected to continue for at least another year, as the public continues to gobble up these largely profitless items.

THE "HOME VIDEO TERMINAL": All of these "peripheral" products have created new demands on the TV set, or "home video terminal," as it's fashionably described today. Every manufacturer has made its products more hospitable to the multiplicity of video accessories, adding special input and output jacks for video devices, higher-resolution tubes and circuitry to accommodate computers and teletext, and built-in tuners that substitute for cable-TV converter boxes.

The surging sales of all types of video devices is strongly reflected in the current unprecedented demand for television receivers. Color-TV sales set an all-time record of 11.4 million units last year—and this year they're headed for an astounding 14 million, meaning that more than one out of every six households will add a new color set this year.

Sales of giant-screen-projection TV systems now are running at a record pace. New rear-projection systems have improved picture quality, and prices have become somewhat more sensible. Projection TV sets are almost always used in combination with VCRs or video-disc players.

Today's typical super-high-end TV set has a panoply of new features: multiple video input and output jacks; a 135-channel tuner to facilitate cable reception; a remote control that switches between TV and video; a system to adapt the pay-TV converter box to remote control; an RGB (red-green-blue) input for clearer computer or videotex graphics; a

stereo amplifier and speakers; audio jacks for home stereo systems, and internal circuitry that makes the set more "friendly" to home video. Plain, vanilla-flavor TV sets are still available, but they're likely to become rare in the age of the home video terminal.

DAVID LACHENBRUCH

"The laser disc's possibilities are infinite. But you can't get the consumer to buy it because, for him, the alternatives are so much more inexpensive and logical."

Barbara Dalton Russell, Prudential-Bache

PERSONAL COMPUTERS:

SOME WENT DATA WAY

The 'information revolution' that futurists have long predicted has arrived," declared *Time* magazine last year when it named the computer "Machine of the Year." More than 17 million Americans now own personal computers—a product that did not exist 10 years ago—and seven million more were expected to join the revolution before the end of 1983. No longer the esoteric toy of high-tech hobbyists, the personal computer has achieved mass consumer acceptance with astonishing speed. And its word-of-mouth popularity has been supplemented by increased consumer confidence since the arrival of IBM, the computer industry's Goliath, in the PC marketplace. IBM's personal computer captured a quarter of the market in less than two years, virtually becoming the industry's standard; it reassured potential buyers that the home computer is no flash in the pan.

MARKETPLACE: Explosive demand has drawn some 200 American companies into the PC market. But if the potential rewards are enormous, so are the risks. In the frenetic business of personal computers, everything happens in microseconds—including, it sometimes seems, the journey from boom to bust. In the same year that Adam Kay, the founder of Kaypro, earned nearly a quarter of a billion dollars from his company's first stock offering, such industry pioneers as Atari and Texas Instruments suffered equally astonishing losses. And Osborne grew from nothing to \$100 million in annual sales in 18 months—only to go bankrupt in 1983.

The intense competition in personal computers is forcing the industry to shift its emphasis from research and development to marketing. Computer-savvy chief executives are rapidly being replaced by consumer-product specialists: The new head of Apple came from Pepsi; Atari's new chief came from Philip Mor-

BRINGING THE INFORMATION AGE HOME

The personal computer (PC) is a multipurpose machine that endows homes and small businesses with the power of computing. This "microcomputer" is controlled by a small, complex web of circuits on a silicon chip. Every other part of the computer—the keyboard, the TV monitor, the disc drives, and the printer—receives and/or sends information through that chip, called a microprocessor. Taken together, all these components are called the computer's hardware, and they are useless unless told what to do by software, or computer programs.

There are virtually no limits to what software can make a computer do. The designers of the first microcomputers had only the haziest idea that their "itty bitty machines" would soon be running word processors, sophisticated accounting and modeling systems, vividly animated games, and even advanced medical testing equipment. The microcomputer is a divine blank slate, waiting for software artists to extend their capabilities.

It is also a powerful communications medium when connected to sources of information outside the home. Using a telephone and a modem—a device that translates the audio signals of a telephone into the digital signals of a computer—the PC user can tap into computer databases or communicate with other PC users anywhere in the world.

ris. One certain impact of this new emphasis will be the introduction of more "user friendly" machines at low prices. Some critics fear that this trend will shift the industry's focus from developing innovative products to perfecting soothingly safe machines that can be marketed like

toasters.

Such an approach would probably only intensify the shakeout already underway, since it was the price-cutting war among the makers of low-cost PCs that started all the red ink flowing. (The only manufacturer to slice its wholesale price successfully

was Commodore, whose Com-64 still made a profit at its post-rebate \$200 price.)

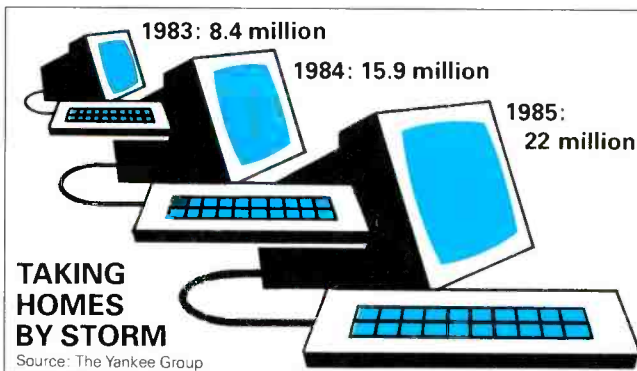
Ironically, it was the makers of the elite PCs (costing more than \$1,000), led by IBM, who were the big winners last year. A late-comer to small machines, IBM was smart enough to encourage outsiders to make software and peripheral products (such as printers) compatible with its machine. As a result, IBM's PC has emerged as the industry's de facto standard, and the company cannot make machines fast enough to keep up with demand.

TECHNOLOGY: The most significant new PC to be introduced in 1983 was Apple's Lisa, with which a hand-held device called a "mouse" is used to move things around on the screen. The Lisa features a new "windowing" process that makes changing programs as easy as changing channels on a TV set. At \$6,900, this PC will never penetrate the mass market, but its innovations are bound to be imitated in less expensive machines.

IBM threatened to turn the industry upside-down yet again at the end of 1983, when it introduced its first product aimed specifically at the home market. Called the PC Junior, it offers a 64K memory, can run some of the same software that its big brother can, and sells for well under \$1,000. Along with Coleco's much-touted Adam, the PC Junior is bound to foment even greater competition at the low end of the market, which will soon see new products from such companies as Digital, Wang, NCR and, perhaps most ominously, AT&T, the unregulated child of Ma Bell.

All this competition may be bad news for the makers of personal computers, but it can only be good news for the consumer. Prices should continue to drop as rapidly as the capabilities of the machines increase, putting more and more computer power at the fingertips of users at home.

STEVEN LEVY

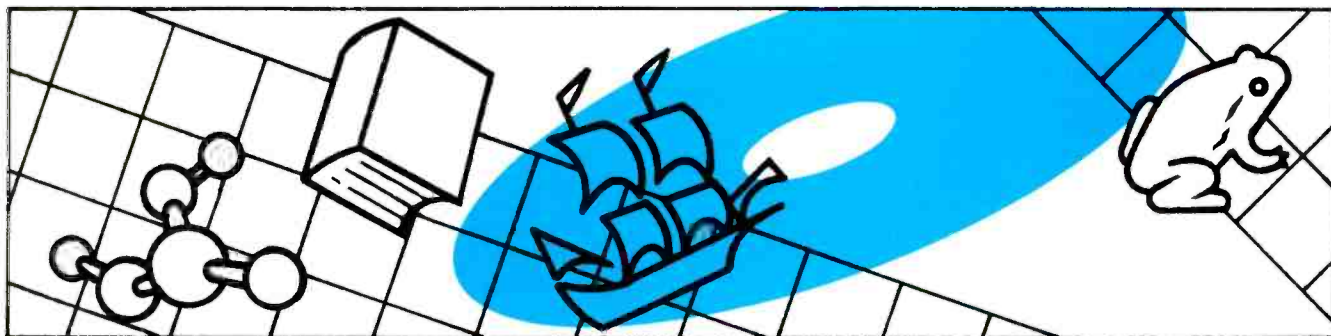


"A lot of people jumped in, and the more players there are, the less money there is to be made."

John Reidy, Drexel Burnham Lambert

OPTICAL DISC:

A TECHNOLOGY IN SEARCH OF A NICHE



You've just walked into the Library of Congress and you've got 10 minutes to find a particular document. You're nervous, since you don't know where it's located, how to find it, or even what it's called. You have visions of an intimidating librarian vaguely pointing off to a catalogue room in which drawers full of little cards stretch all the way to Virginia.

By mid-1984, the library will have a computerized video-disc system so extensively cross-indexed that it will almost be able to read your mind. Make a mistake; the system will correct you. Make another; the system will soothe you with images of waves crashing against the shore and strains of classical music. Eventually it will take you, ever so gently, back to the task at hand.

Want to know how to fix your car's transmission? The Architecture Machine Group at MIT has produced a new disc that will show you how. Don't loosen the bolts in the sump pan too quickly, though, or the video disc will reward you with the sight of someone being doused with a panful of dirty transmission fluid.

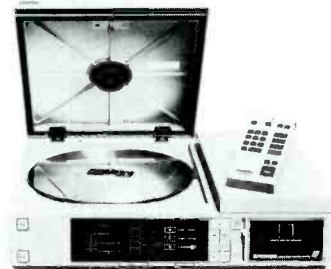
There are video-disc programs that can teach you how to fly a plane, search out and destroy an enemy submarine, or program a computer using Bell Labs' new computer language, UNIX. And when you've finished work, you can go to your local video arcade and play a video-disc game, rescuing a damsel in distress from a fate worse than death. Give yourself time though. The lines for Dragon's Lair are often 10

THE AMAZING VIDEO MACHINE

The laser optical video disc is the closest thing yet to an ideal visual-information storage medium. Whole shelves full of video tapes, films, and slide trays can be compressed onto a single disc no larger than a standard LP record. Up to 108,000 individual pictures on a disc can be combined with text, graphics, and animation, forming a visual "encyclopedia" in which any page can be found instantly.

The images are encoded in microscopic "pits," which are embedded in the disc's surface and protected by a hard coating. A low-power laser beam is reflected onto those pits, and then interpreted, to produce a video image. The disc rotates at 1,800 revolutions per minute, producing 54,000 images per side. The laser provides an extremely high-quality image, and never wears the disc down, as a stylus would, by direct contact. Properly cared for, a video disc can last virtually forever.

Since any individual frame can be found at will, either through the machine's built-in circuitry or an external microcomputer, you can "enhance" the information you receive by recalling data, graphs, and animation from other parts of the disc. To do this you might touch a screen, manipulate a joy-stick, a mannequin, or a push-button phone. Soon, you will be able to talk to the player, or even instruct it with body language. The optical video disc could become the teacher you've always fantasized about: If you yawn, it will show you something else.



"In the consumer market, the optical disc is questionable. But it's really taking off in the commercial market."

Joan de Regt, International Resource Development

deep.

MARKETPLACE: Why is the video disc, despite all its wonderful uses, catching on so slowly? Because it was developed for the general public—a market with too many competitors for its time and money. As a consumer product, the disc must compete against the video-cassette recorder. Not only is it more expensive than the VCR, but it lacks the ability to record. However, it can do so many other, marvelous things, that the disc is now, after many false starts, finding its own highly specialized niche.

The laser video disc is used efficiently to teach large numbers of people complex and detailed tasks. But the corporate community and the military are among the few entities large enough—and wealthy enough—to design and implement such training on a wide-scale basis.

The disc's value is mainly commercial, and it will only be ready for widespread commercial use when it evolves into a computer "peripheral," no more capable of standing alone in the marketplace than a matrix-dot printer or a modem. A video-disc player combined with an interactive computer system—specifically a videotex system—could be used efficiently in law, medicine, education, and business-to-business communication.

The future of this marvelous piece of technological wizardry has been a long time coming, due to a fundamental misperception. Its uses are specialized, but vital nonetheless.

PAUL MARETH

VIDEO GAMES:

SHOOT-OUT IN SILICON VALLEY

Americans already spend more on video games—a diversion only a few years old—than they do on movies and records. Yet the industry's spectacular wave of growth appears to have crested, and the video game itself is now in the midst of a sea-change.

Already it is possible to speak of the golden age of video games. This had two aspects: In the arcade, monster hits such as Space Invaders and Pac-Man swallowed millions of quarters, while at home Atari's 2600 Video Computer System (VCS) made that company one of American industry's great success stories. Millions of these machines were installed, creating a marketplace in which best-selling cartridges routinely sold hundreds of thousands of copies.

MARKETPLACE: Today, confusion reigns in much of the industry. The arcades, which had been the driving force of the video-game craze, are seeing fewer customers as the games' novelty fades. On the home front, the introduction of advanced game machines by Mattel and Coleco (which Atari matched with its deluxe 5200 machine) has split the market, leaving more companies hustling for the same dollar. This intense competition contributed to the stunning losses suffered by Atari in 1983. To make things even more complicated, many enthusiasts are migrating to the more sophisticated—and not necessarily more expensive—games that are played on true computers. A Commodore 64 computer, for example, can be purchased for a little more than a Colecovision or Intellivision VCS—and it can do much more than play games.

As a result, the larger companies are edging away from the cartridge trade and moving into computer games, once the preserve of a group of idealistic companies that grew up at the same time computers did. These

THE SUGAR-COATED COMPUTERS

Video games come in three main types: coin-ops, home cartridge systems, and computer games. Although all are driven by a microcomputer, they differ in amount of computer power and memory (which determines the elaborateness of the games and their special effects), as well as in the method of controlling the machine (with a joystick, or a standard computer keyboard).

- **Coin-Operated Video Games:** the kind seen in arcades. Because the arcade machines have relatively powerful microcomputers (compared to the home cartridge systems), their graphic and sound capabilities can be spectacular.

- **Home Cartridge Systems:** mass-market game-playing machines for the home—such as the Atari 2600, Colecovision, and Intellivision. The hardware, called a VCS (for Video Computer System), is driven by cartridges containing a chip on which the video-game program is encoded. Almost all of these cartridges consist of games similar to those played on coin-op machines.

- **Computer Games:** games designed for the multi-purpose home computer, such as the Atari 1200 or the IBM Personal Computer. The games are sold in the form of computer programs stored on "floppy discs." While the graphics and sound may not be sophisticated, the added memory of the computer allows for more complicated and cerebral games.

relatively small companies (such as Sierra On-Line, Datasoft, Broderbund, Sirius, and Sir-Tech), must now compete with major drives by Atari, Activision, Parker Brothers, and Paramount—as well as by heavily backed new startups. Where once new

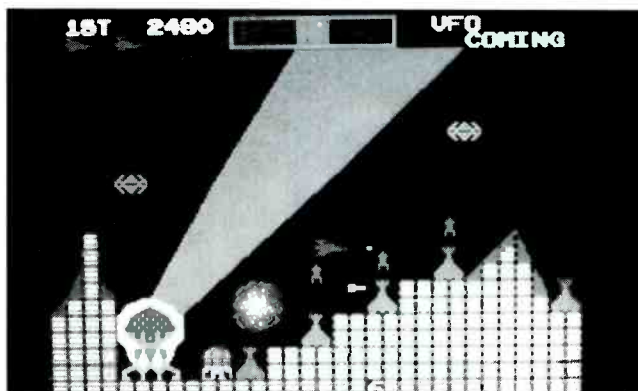
games were usually compatible with only one computer (often the Apple) and were translated to other formats only if they became hits, today's games must start out compatible with several machines simultaneously—at great expense to their manufac-

turers—in order to appeal to the broadest possible market.

TECHNOLOGY: Games are largely a junkie culture. A best-seller is one that keeps a player coming back for more. Once inured to a given game, the player will seek a more vivid or absorbing challenge, and the technology must constantly be stretched to meet this need.

The game industry is doing this on two fronts. One is the introduction of new media, most notably the laser video disc. The arcades have recently been repopulated by an interactive video-disc game called Dragon's Lair, in which the player uses a joystick to control a cartoon character (drawn and animated, incidentally, by a former Disney artist). Followups abound, and laser-disc games will eventually hit the home market: Coleco, for instance, is designing a low-priced laser-disc machine that will play Dragon's Lair. (The company paid \$2 million for the right to sell Dragon's Lair in the home market.)

Advances are also being made in computer games. The newer computers will have greater capabilities for graphics and sound, but the real advances will come in compelling new approaches to game design. Role-playing games, in which the player responds as a character in an elaborate, self-contained world simulated by the computer, are becoming more intricate and absorbing, allowing for a greater and more creative range of responses from the player. These games will require a greater investment of time and mental energy than previous ones, and many players will still prefer the mind-numbing shoot-'em-ups—among the hottest floppy discs in 1983 were the computer versions of the coin-op games Frogger and Zaxxon—but the still-evolving computer game has the potential to create new audiences, as it comes into its own as an entirely original medium of entertainment.



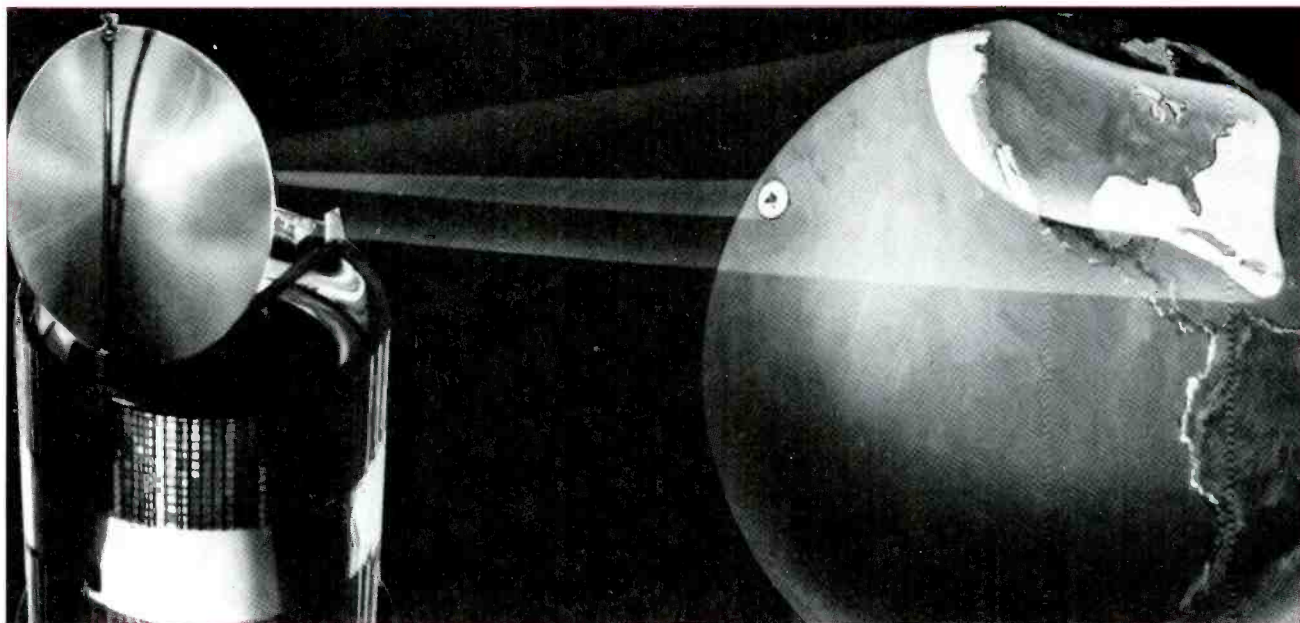
"The price war is making it very difficult to make money in the video-game business."

Joan de Regt, International Resource Development

STEVEN LEVY

A FIELD GUIDE TO THE AIRWAVES

STRIKING UP THE BANDS



BY DAVID LACHENBRUCH

Most of us first came across the spectrum in connection with colors—red, orange, yellow, green, blue, indigo, violet. We were taught to remember the sequence by means of an acronymic character, Roy G. Biv. Roy actually has a very small part in the electromagnetic spectrum, but his is the only part we can see—the light spectrum. Beyond the visible part of the spectrum are other forms of radiation, such as ultraviolet rays, x-rays, and gamma rays. Below it are the infrared frequencies and what we regard as the radio spectrum, covering all forms of wireless communications, from CB radio and cordless telephones to satellite telemetry.

Although most of the spectrum is invisible, it is a finite—and vital—natural resource. It can be mapped and charted, as is the radio frequency portion of it on the following two pages. Sound and light, as we know, consist of energy radiated in the form of waves. All such waves, including radio waves, are disturbances that travel through space. These harmonic waves are like the ripples created in a still pond when a pebble is tossed in. The distance from crest to crest is the wavelength; the number of these crests—or cycles—occurring per second at any given point is the frequency.

The portion of the electromagnetic spectrum allocated to wireless communications begins at a frequency of 10,000 cycles per second, or 10 kilohertz (KHz). At this frequency the wavelength is nearly 15 miles long. The upper limit is a frequency of 300 billion cycles per second (300 gigahertz or

GHz), which has a wavelength of one millimeter. Near the top of the explored electromagnetic spectrum are gamma rays, less than 10 millionths of a meter in length.

All electromagnetic waves travel at the speed of light—186,282 miles per second—and are generated by the oscillation of electrical charges. In the case of radio communications, these completely regular waves are “modulated” in order to transmit intelligence: By slightly varying their frequency or amplitude (size), one can superimpose information on them. This information can be the simple dots and dashes of morse code, AM or FM pulses representing voice and music, or the complex electronic wave forms of television or data transmission.

The spectrum frequency to which a radio or TV station is assigned is often referred to as a “carrier” frequency—and that’s exactly what it is, the carrier of electrically encoded intelligence from a transmitter to a receiver. The transmitter of a Channel 4 TV station, for example, radiates electromagnetic energy in its own band of frequencies from 66 to 72 million cycles per second (megahertz, or MHz). When a viewer with a TV antenna designed to resonate at the approximate wavelength of the TV band tunes to the channel, his set’s tuner selects the Channel 4 frequencies, keeping the others out, and absorbs a tiny fraction of the energy that has been radiated by the transmitter. The TV set’s circuits strip the modulated TV signal from the carrier wave, process it, and convert it to intelligence—picture, color, sound, syn-



AM Radio



VHF Television



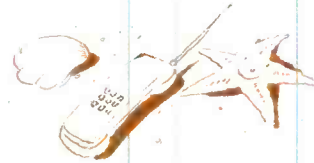
▼ Space Research



Military Allocation



▼ Police Radio

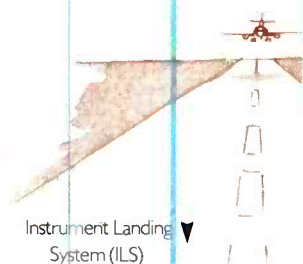


▼ Cordless Telephones

▼ Electronic Garage Doors

Remote-Control
▼ Model Airplanes & Boats

▼ Air-Traffic Control



Instrument Landing System (ILS)

Taxicabs



Ham Radio



FM Radio



▼ Aircraft Emergency

VHF Channels 2-6



VHF Channels 7-13



The Airwaves

A Portrait of the Electromagnetic Spectrum

← Sonar

Fish
← Sounds

Audible
← Sound

AC
← Electric

Aircraft & Ship
Communications



Ship-to-Shore



Aircraft & Ship
Navigation



Voice of America
Broadcasts



Short-Wave Radio



Radio Astronomy



▼ International Distress Signals

Military Radar



535 Kilohertz

1605

2500

30 Megahertz

50

54

88

108

174

216

300 Megahertz

High Frequency

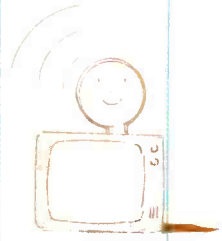
Very High Frequency

▼ Citizens Band Radio



Communications Satellites

Direct-Broadcast Satellites (DBS)



UHF Television
(Channels 14-69)



Multipoint Distribution
(MDS)



High-Definition Television
(HDTV)

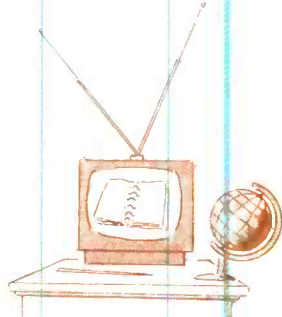
▼ Weather Balloons



Proposed Land Mobile
Satellite Service (LMSS)

Microwave Telephone Relay

TV Studio-to-
Transmitter Links



Instructional Television
Fixed Service (ITFS)

Weather Satellites

Future Broadcast
Satellites

▼ Electronic News-
Gathering (ENG)

▼ Mobile Phones

Microwave Ovens

Police Radar



Cellular Radio

C-Band
Satellites
(Satcom, Galaxy,
Westar)



Space Shuttle
Communications

▼ Radio Astronomy

Weather Satellites

Remote-Sensing Satellites
(for earth exploration)



▼ Military Early Warning System

470

806

1710

2500

4

6

12

14

20

3 Gighertz

30 Gighertz

C Band

Ku Band

Ka Band

Infrared →

Visible Light →

Ultraviolet →

X-Ray →

Gamma
Ray →

Cosmic
Ray →

Ultra-High Frequency

Super-High Frequency

chronization, and so forth.

The radio frequency spectrum is divided, somewhat arbitrarily, into "bands" assigned to different wireless services, or to groups of services on a shared basis. Because radio waves don't respect national boundaries, the allocation of bands, and of frequencies within bands, becomes a complex techno-political process involving international treaties. The principal international body for allocating positions in the spectrum and setting technical standards is the International Telecommunications Union (ITU), a United Nations organization. Within the United States, the FCC is responsible for allocating and managing the portions of the spectrum earmarked for all users except the federal government, whose frequency needs are handled by the office of the President, delegated to the Department of Commerce.

Within the various bands, allocations of spectrum space are made in different ways. In AM radio, an applicant for a station must find a frequency and a location, and then prove that the proposed outlet won't interfere with any existing operation. In the case of television, a nationwide table of allocations was developed with the aim of providing multi-channel service to all locations; channels were assigned to specific communities, and separations between channel locations were fixed to avoid interference. In the citizens band, anarchy prevails: When a user wants to communicate by CB radio, it's up to him to find an unoccupied channel among the 40 allocated to that service.

Characteristics of the frequency assignments vary widely in different bands and among different services. An FM station occupies 20 times as much spectrum space as an AM station, while a single TV channel needs a parcel of frequencies about six times larger than the entire AM band.

In the history of telecommunications, use of the spectrum generally has progressed from the lower to the higher frequencies. AM radio occupies 535 to 1,605 KHz, while FM is at 88 to 108 MHz, and the TV band starts below FM (which it surrounds) and goes as high as 806 MHz. Generally, this progression from lower frequencies to higher ones was dictated by the state of the art. In the days when AM radio was getting its start, the VHF and UHF spectra were virtually unexplored, and devices capable of generating the high power and rapid oscillation needed for transmitting in the higher bands hadn't been developed. Indeed, what was (and still is) called "short wave" radio now seems very long-waved indeed, as it operates below 20 MHz.

Even as recently as the late 1940s and early '50s, when VHF TV stations were already operating, the prospect of opening up the UHF band to television was controversial, because no equipment was available to operate at these "high" frequencies.

Although all electromagnetic waves travel at the same speed, their behavior (or propagation characteristics) differs depending on their frequency. At relatively low frequencies, such as those occupied by AM radio, the waves tend to follow the curvature of the earth—which is why a powerful clear-channel station in Ohio can easily be received in New York under favorable circumstances—and, of course, some short-wave stations are capable of covering nearly half the globe.

But as frequency increases, the waves begin acting more like light waves and travel in straight lines. Instead of following the earth, the waves disappear over the horizon into outer space. Transmissions in such relatively high bands as those assigned to TV generally are called "line of sight": Their coverage depends not only on transmitter power but on the height of the tower from which the transmissions originate. A space satellite in geosynchronous orbit is, in effect, a "tower" 22,300 miles high and therefore is in line of sight with about one-third of the globe.

Aren't we going to run out of spectrum space? Since it's a finite natural resource, like forest land, oil, or water, that's certainly a possibility—but not a near-term probability, given efficient spectrum management. The radio spectrum isn't completely filled yet. There's a vast chunk of about 100 billion hertz available in the relatively underutilized area of 200-300 GHz—when we learn how to use it.

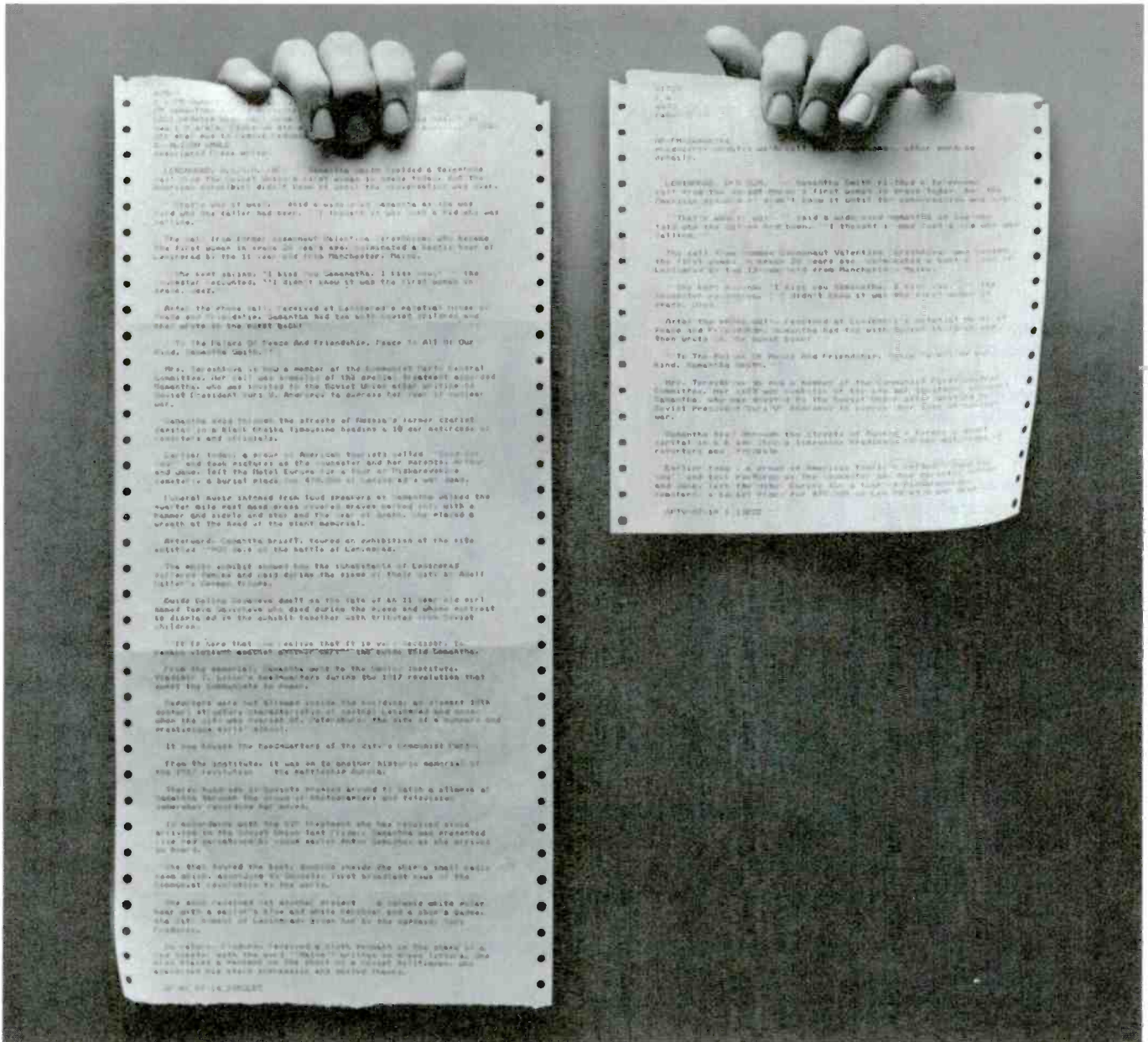
The most logical approach to efficient use of the spectrum, as with other resources, involves conservation and substitution. The principle dictating that we seek ways to increase gasoline mileage and develop alternative fuels also governs spectrum management.

Underutilized portions of the spectrum can be, and are being, reassigned to users in more dire need than their present occupants. A good example: the recent reassignment of the top 14 UHF TV channels (70 through 83) to land mobile communications.

In some cases, communications services may be switched out of the radio spectrum either partially or entirely, as new developments make it possible to bypass space as a medium for transmission. In an indirect way, the growth of cable TV—which uses no spectrum space since its signals are enclosed in a coaxial cable—probably was responsible for freeing the 80 million hertz reassigned from UHF TV to land mobile communications. Fiber optics is another promising technology that uses no spectrum: Modulated light is used to carry vast amounts of intelligence through hair-thin glass or plastic tubes—way up in Roy G. Biv territory.

The big challenge continues to be in finding ways to use precious spectrum space more efficiently, so increasing demand can be met. New techniques can vastly increase the amount of information transmitted over given bandwidths. One of these is multiplexing, the system of folding several signals onto the same frequencies by encoding them. This technique has enabled a single FM station to broadcast several different signals simultaneously for different services.

Today's TV transmissions constitute one of the most shameful wastes of spectrum space. Each TV station sends out 30 complete and almost identical pictures per second. With advances in computer technology and the rapidly declining cost of chip memories, it's becoming increasingly obvious that this frequency-guzzling can be sharply curtailed by having TV transmitters send out only the *changes* from picture to picture, while the home TV set, equipped with a low-cost, solid-state memory, retains such unchanging aspects of the picture as the background. Such techniques should forestall, for many years to come, the day we exhaust this precious resource.



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BROADCAST TV: WINNER—AND STILL CHAMPION

Something better than old-fashioned, conventional TV may have come along somewhere out there in the telecommunications revolution, but if so it hasn't yet made its run for the money. Just plain television—commercial broadcast television—has managed exceedingly well at holding its turf in the rapidly changing electronic environment. In 1982 it grew to a \$12 billion business, with about half the total revenues going to the three networks and the other half to the 800-odd local stations. For 1983, the estimated figures are about 15 percent higher.

Moreover, new broadcast stations continue to be built in the relatively few markets where full-power frequencies are still available. But nothing better attests to the robust health of commercial television than the fact that record prices continue to be set for the sale of established TV stations. Not long after Metro-media paid a record \$220 million for Boston's WCVB in 1982, a group of investors topped it with the \$245 million purchase of KTLA Los Angeles.

MARKETPLACE: As a medium that has been part of the American social fabric for 35 years, broadcast television clearly has a leading role to play in the futuristic second age of television. Were it invented today, broadcast television would amaze us as a technology because, alone among the electronic media, it can be received two ways: either over the air by rabbit ears, or on the cable. Every new technology entering the market must reckon with the fact that broadcast television is entrenched in 83.8 million households in the United States, or very nearly 100 percent of the country, and that watching TV on broadcast stations is a deeply ingrained national habit. All other competing technologies combined barely achieve half of



"The diminishing efficiency of TV as an advertising medium is not being met by the rising efficiency of other media."

Allan Gottesman, Rothschild, Unterberg, Towbin

broadcast television's penetration, and no so-called "national" cable network can yet reach even a third of the total possible audience.

Yet if new technology has not exactly laid broadcast low, it has begun to pose a serious threat. The principal challenge comes not so much from a new programming source as from the satellite, which has made nationwide program delivery far cheaper and swifter for both cable and independent broadcast stations. Inroads on the networks' share of viewers, widely reported in the press during 1983, came not only from HBO and other pay-television services, but also from independent and public stations carried on cable. Satellite transmission has created instant networks among the independents. Indeed, satellites are rapidly turning the entire program-syndication field into a

form of networking, which could eventually erode the affiliate structure that supports the three majors. During the 1960s, radio stations found it economically advantageous to disaffiliate from the networks, except for hourly news; and TV stations in this decade may well decide to go it alone should the satellite make it more profitable to do so.

As if to forestall such a development, NBC-TV became the first commercial network to announce that it would deliver programming via satellite rather than land lines. The network plans to buy and install dishes for its affiliates, thus insuring some measure of control over what they receive.

Meanwhile all three networks, as well as their affiliates, are hedging their bets by branching out into the new video technologies. ABC, CBS, and NBC's parent, RCA, have submitted appli-

cations to the FCC for multichannel MDS systems. CBS has received permission to operate a three-channel direct-broadcast satellite system. CBS, RCA, and ABC have offered "cultural channels" on cable. (The first two efforts have already failed.) And CBS and NBC have launched teletext services. (CBS is also experimenting with videotex.) ABC is involved in numerous new ventures, one of which, TeleFirst, would use home video recorders for pay TV.

REGULATION: Although commercial TV stations have scarcely felt the presence of the new media and have continued to prosper, they have created the perception in Washington that they are being battered by their new electronic rivals. Therefore, the reasoning goes, they ought to be freed from regulations hampering their ability to compete. The Reagan Administration, joining this rationale to the argument that a wide-open market for the electronic media now exists, has moved rapidly to deregulate broadcasting. After Congress extended TV licenses from three years to five, the FCC proceeded to strip away many of the requirements for broadcasters that served the needs of citizen-activist groups. The commission effectively discarded the public-trustee concept for broadcasting in favor of regulation by market forces, and late in 1983 it undertook to deregulate television as comprehensively as radio had been deregulated in 1981. The FCC was clearly headed toward repealing the Fairness Doctrine, which is the cornerstone of regulation.

The commission also pressed in 1983 for repeal of the financial-interest and syndication rules, which bar the networks from owning the programs they air, and from competing in the lucrative syndication market.

LES BROWN

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RATINGS

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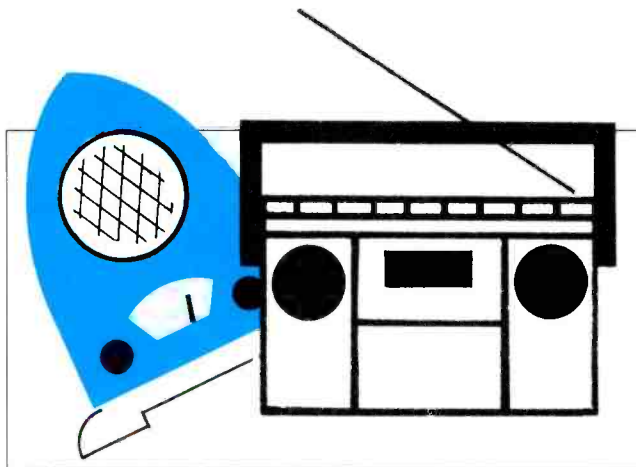
RADIO:

AN OLD DOG LEARNS SOME NEW TRICKS

Ever since commercial television was born in the late 1940s, so-called experts have been predicting the demise of radio. Television would eliminate any need for people to listen to the radio, they said. It didn't. Cable's diverse offerings and ability to cater to the interests of narrow audiences would make radio's public evaporate. Wrong again. In fact, radio is so well-entrenched in our society that, like the Bill of Rights and the air we breathe, it is often taken for granted. According to the National Association of Broadcasters, 99 percent of the 80 million households in the U.S. have at least one working radio and the average household has more than five.

MARKETPLACE: Today radio is the most competitive of the electronic media. There are more than 9,000 AM and FM stations in the country, and at any one time between a third and a half of them are losing money. In a frantic search for the winning programming formula, stations switch formats as if they were fashions. Country rock gives way to disco, which in turn becomes beautiful music, only to be changed to Top 40. In the late 1970s a sleepy New York station, WKTU, switched its format from soft rock to disco and became the Number One station in the nation's largest market. Such examples further inspire programmers to seek out new formats. For instance in 1982, WJOK in Gaithersburg, Md. became the country's first all-comedy radio station. Not surprisingly, a second all-comedy station cropped up in Salt Lake City shortly afterward.

TECHNOLOGY: Despite its somewhat dowdy image, radio has continually been redefined by advances in telecommunications. Less than 10 years ago, AM was the bulwark of commer-



cial radio. Today a more sophisticated audience prefers the fidelity of FM, and industry observers offhandedly discuss the likelihood of AM's "survival." But technological innovation is a double-edged sword: While it is rendering old standards obsolete, it is creating new opportunities. More than 200 AM stations now broadcast in stereo, which many claim will lead to a revival of AM listening. (But because the FCC refused to designate a standard system, listeners must wait while four manufacturers vie to make theirs the industry's staple for AM stereo.)

Cable TV has also brought unexpected and positive changes for radio. Just as cable advanced from its humble beginnings as a practical way to receive better TV signals, cable radio—in which sound is transmitted by cable rather than airwaves or phone lines—is beginning to be recognized as a new and separate medium. According to *New Radio*, a newsletter for users of this new form, both HBO and Group W are studying the possibility of starting cable radio networks.

An even greater influence on radio, however, has been the advent of satellite transmission.

Until the 1950s, radio networks played much the same role as the TV networks do today, providing entertainment, sports, and news to a national audience. But the rise of television and the increasing number of radio stations weakened network radio. Throughout the 1960s and '70s, radio networks waned as individual stations found it more profitable to serve listeners by adopting specialized, local formats such as all news, country, or rock. Now, satellites allow networks to broadcast programming for several different groups of stations for less than it cost to distribute a single one via land lines. Rather than *broadcast*, networks now *narrowcast*, hooking specific audiences with programs that speak their own idiom. This year all five major radio networks—ABC, CBS, NBC, Mutual, and RKO—will be sending their programs via satellite. The number of receiving networks has grown from eight in 1978 to 20.

Ironically, the financially ailing National Public Radio proved the new vitality of satellite-delivered network programming with the success of its 90-minute news show, *All Things Considered*.

NPR's satellites may ultimately make it self-supporting, by allowing it to operate such ancillary businesses as its proposed national radio paging service.

The networks to jump on the satellite bandwagon most recently—the Big Three and RKO—are beaming up signals that have been produced by a digital computer. The state-of-the-art digital systems work by encoding sound in computer language. Professional digital players now available to radio stations read music from a coded disc with a laser beam, eliminating the static common to traditional vinyl records. Although it will be some time before radio stations start transmitting digitally, the improved sound quality offered by the disc players, along with advances in home stereo receivers, is already changing listeners' standards of fidelity.

REGULATION: Such advances will grow in importance as radio competition becomes even more intense. Already the medium has undergone almost complete deregulation. A 1981 FCC rulemaking eliminated all guidelines for news and public-affairs programming, ended the requirement that each station ascertain the programming needs of its audience, abolished limits on the number of commercial advertisements a station can broadcast, and extended the length of a broadcast license from three to seven years. The decision withstood a court challenge, and the FCC may gratify the industry with further deregulation. This year the commission will decide whether or not to free broadcasters from possible license-renewal challenges, and may loosen the limit on the number of stations a single corporation can own.

Whatever the outcome, it is unlikely that anyone will be predicting radio's demise.

LAURENCE ZUCKERMAN

"No one's ever going to watch TV in a car."

Barbara Dalton Russell, Prudential-Bache

LPTV: THE SLEEPING DWARF

Low-power TV arrived with great fanfare as a font of democracy and diversity—the virtues of the small scale. Yet right now there is doubt as to whether LPTV can fulfill this initial mission, and even doubt about LPTV's financial survival.

REGULATION: When the FCC invited applications for LPTV in 1981, it was deluged, and it still hasn't gotten above water. Right now at least 12,000 applications are on file for 4,000 licenses. So far the commission has granted only about 30 permits in the continental United States, with preference going to rural areas. The hearing procedure for licensing that the FCC originally established moved so slowly that Congress mandated a lottery, which began in September and is to be held monthly. (The old Selective Service drum is being used to pick the winners.) Minorities—blacks and Hispanics—as well as applicants who own no other broadcast facilities, will still receive preference.

Yet many applications have come not from the enterprising individuals LPTV was supposed to attract, but from large corporations. ABC, NBC, Federal Express, and Sears have each put in numerous bids; the number of stations one licensee can own hasn't been restricted by the commission. As it stands now, in fact, LPTV will be virtually unregulated. There are no rules affecting non-entertainment programming, access for the public, or even the amount of advertising a station can carry.

A major obstacle for LPTV is its exclusion from the "must carry" rule. The FCC stipulates that cable services must carry all local stations with a significant viewership within a 35-mile radius—but not LPTV. Cable subscribers, therefore, will not have access to LPTV unless the cable companies carry it voluntarily, which is unlikely. Though LPTV advocates talk about "behind-the-scenes negotiations" in Con-

BROADCASTING IN A MINOR KEY

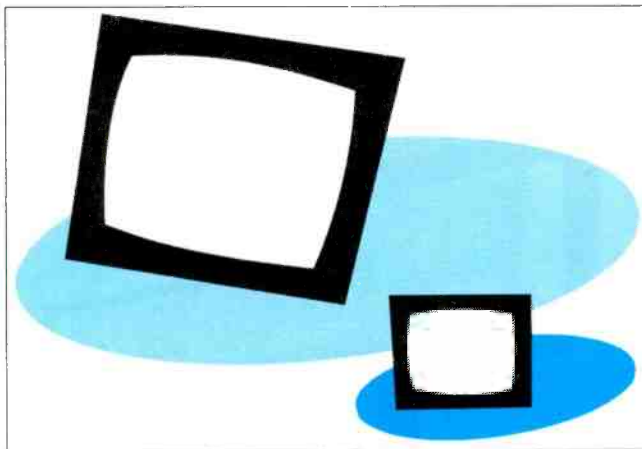
Low-power TV is a new kind of television station, licensed to broadcast over a geographic area between 10 and 15 miles in radius. (A full-power station covers about 80 miles.) Low-power stations are inserted on the VHF and UHF spectra, but emit so weak a signal that they do not interfere with full-power stations on the same channels in nearby cities. Before low power, for instance, Providence, Rhode Island couldn't use Channel 7, which is allocated to Boston. Now a broadcaster in Providence can send out a low-power signal over Channel 7 without impinging on the larger station's signal.

Low-power stations are modeled on the "translator" or repeater stations used for some time in rural areas to pick up and rebroadcast remote signals. Translator operators were forbidden to originate their own material until 1981, when the FCC, under Charles Ferris, lifted the restriction.

gress on the must-carry rule, there's been little encouraging news to date. Financial analysts such as John Reidy of Drexel Burnham Lambert, who feel that LPTV has no business potential, point to the must-carry rule as a major impediment.

MARKETPLACE: To survive financially in the localized form for which LPTV was intended, a station has to air a relatively high volume of ads. For instance,

Davy Doss's low-power Channel 7 in Bruce, Mississippi has only 18,000 viewers, but averages 50 commercials a day. A 30-second spot costs as little as \$15, but generating the ads can still be difficult. The nation's first LPTV station, Channel 26 in Bemidji, Minnesota, began by making sample ads for sales representatives to take on their calls, and then produced and broadcast each client's first ad free.



"Low-power TV is a cruel hoax. The FCC is using it to discharge its obligations to minorities."

Anthony Hoffman, Craline & Co.

Even such imaginative tactics may not be enough. Channel 26, which has been a model for successful LPTV, last year cast doubt on the profit potential for the novel technology by applying for a high-power license. Low power may only be able to succeed by relying heavily on network programming. ABC has applied for stations in New York, Chicago, Detroit, Los Angeles, and San Francisco and has encouraged its urban affiliates to apply as well. ABC plans to join the stations by satellite and offer special-interest programming aimed primarily at ethnic and racial minorities. Then there's the Number 1 TV Network, which plans to service low-power stations with game-show reruns *The Dating Game*, *The Newlywed Game*, and *The Gong Show* will top Number 1's list.

What could be further from the inaugural spirit of LPTV than *Redd Foxx* and *The Dating Game*? Yet many business analysts think that localized LPTV was, financially speaking, a farce from the beginning. Anthony Hoffman of Craline & Co. feels that "the FCC is using LPTV as a way of discharging its obligations to minorities." LPTV is a "cruel hoax," he says; on a local level it simply cannot survive, especially given the competition an LPTV station would get from cable systems in the cities. "Whatever LPTV can do," Hoffman says, "cable can do far better."

The future of LPTV, if it has one at all, is probably with the large networks and consortiums. Though the Carter Administration intended LPTV to be owned and operated by persons from minority groups, the current Administration has other ideas. "I think it is good to allow people to accumulate many stations so that they can set up competing networks," FCC chairman Mark Fowler has said. The high-powered world may yet find a way to convert low power to its own purposes.

MARK EDMUNDSON

HDTV:

RESOLUTION FOR THE '90s

We may be in the midst of a revolution in the nature of TV, but one dreary fact seems immutable: The picture on the set is lousy. Indeed, since the 1950s the TV picture has remained substantially unchanged. We have the same 525-line picture standard we had then. European nations have long since adopted a 625-line standard, and thus enjoy distinctly superior picture quality. Now the American TV industry, which passed up the 625-line standard, has the opportunity to upgrade the screen image radically; that opportunity lies in the 1,125-line picture of high-definition TV.

MARKETPLACE: Technological marvel though it is, HDTV will have to overcome enormous obstacles to establish itself as the standard for the home. The most significant of these is that the 525-line TV sets in almost every American home won't receive HDTV. New, 1,125-line sets are expected to cost substantially more than the most expensive sets on the market today. For HDTV to become widely available, film studios and TV stations would have to purchase expensive new cameras, monitors, video recorders, and editing equipment.

Beyond that hurdle lies another: The HDTV signal requires about five times as much bandwidth on the broadcast spectrum as an ordinary TV signal. With broadcast frequencies at a premium, HDTV is likely to have a tough time finding room for itself. HDTV could be beamed by satellite to cable systems, but it would still take up as much space as four or five ordinary cable channels. This wouldn't be much to ask on a 104-channel cable system, but the majority of America's cable systems still have 12 or fewer channels.

Yet the virtues of high-defini-

GETTING THE PICTURE PERFECT

The fuzzy TV image we watch today consists of 525 lines of information; high-definition TV promises a far sharper picture by raising that figure to 1,125. An HDTV image looks as good as, or better than, 35-millimeter film. Its clarity and color resolution surpass anything on TV before now. HDTV also uses a different "aspect ratio"—i.e., the proportion of the width of a picture to its height. The HDTV screen, wider than those of today's TV sets, more closely resembles a wide screen in a movie theater. And this fledgling technology will add to a splendid picture a capacity for stereophonic sound, making it TV's most sophisticated attempt yet to create an illusion of reality.

tion TV may prove hard to resist. Programming that fills the screen with action, such as theatrical movies or sports, will be transformed by HDTV. And the new technology's potential to change non-entertainment programming may be even greater. HDTV's improved picture quality, for instance, provides the best medium yet discovered for displaying large blocks of print. One of HDTV's first uses, according

to Sony (a pioneer in its development), will be for electronic transmission of printed matter, such as newspapers.

Even if home use of HDTV is still distant, there is every reason to expect that electronic cinematography by satellite will hasten HDTV's debut in movie theaters. Movies made electronically could be distributed by satellite to HDTV-equipped cinemas, saving distributors the cost of mak-

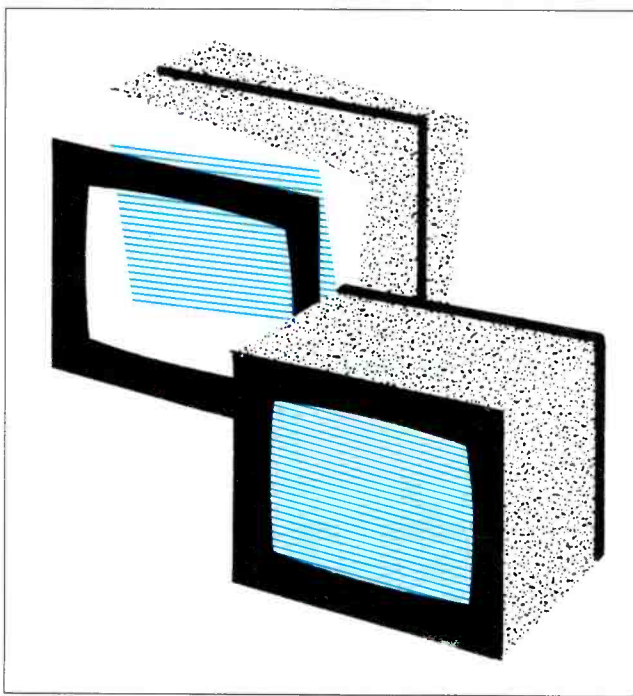
ing a separate print for each establishment. And cinema owners could use HDTV to schedule special live events that would look better than ever before.

TECHNOLOGY: While technology for HDTV has been demonstrated by Sony, CBS, Panasonic, and Ikegami, no one predicts a large-scale advent of HDTV before 1990. Sony's system could be in commercial production within five years, and other systems are likely to be in operation by the next decade.

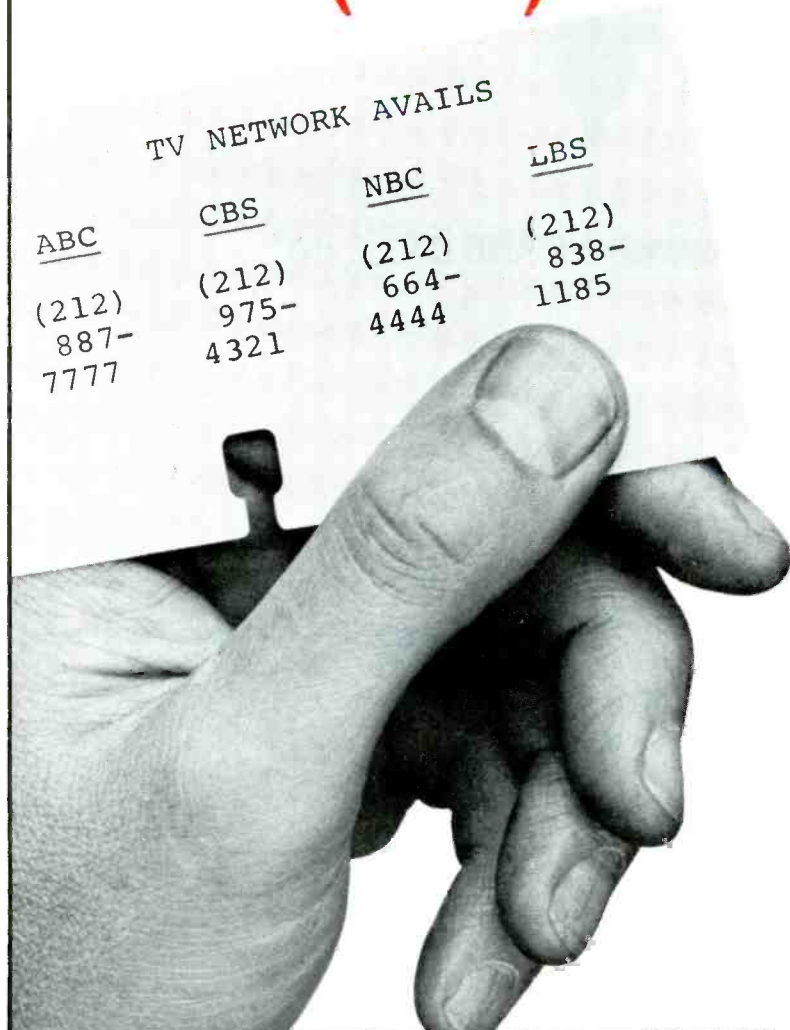
In a development that may ease HDTV's path into the home, Philips, the Dutch communications giant, has made a new receiver containing a microchip that vastly improves the set's signal-processing capacities. Such chips could reduce the amount of broadcast spectrum space HDTV requires. Also, CBS is developing an HDTV system that uses two 525-line signals to solve the compatibility problem: Conventional sets would receive the first signal, and new, 1,050-line sets would combine the two signals to produce a high-definition picture.

Meanwhile, in Germany and France as well as the United States, progress has been made on "higher resolution" TV systems, which make possible substantially improved pictures on conventional TV sets. While these systems may become an alternative to HDTV—especially in Europe, where spectrum space is scarce—they might also acquaint viewers with the delights of a good picture and thus hasten the changeover to true high-definition systems. It is possible that different countries will adopt different high-definition standards. But if all of these nations switch to 1,125-line HDTV, the new standard will bring about, at last, worldwide broadcast compatibility.

MICHAEL SCHWARZ



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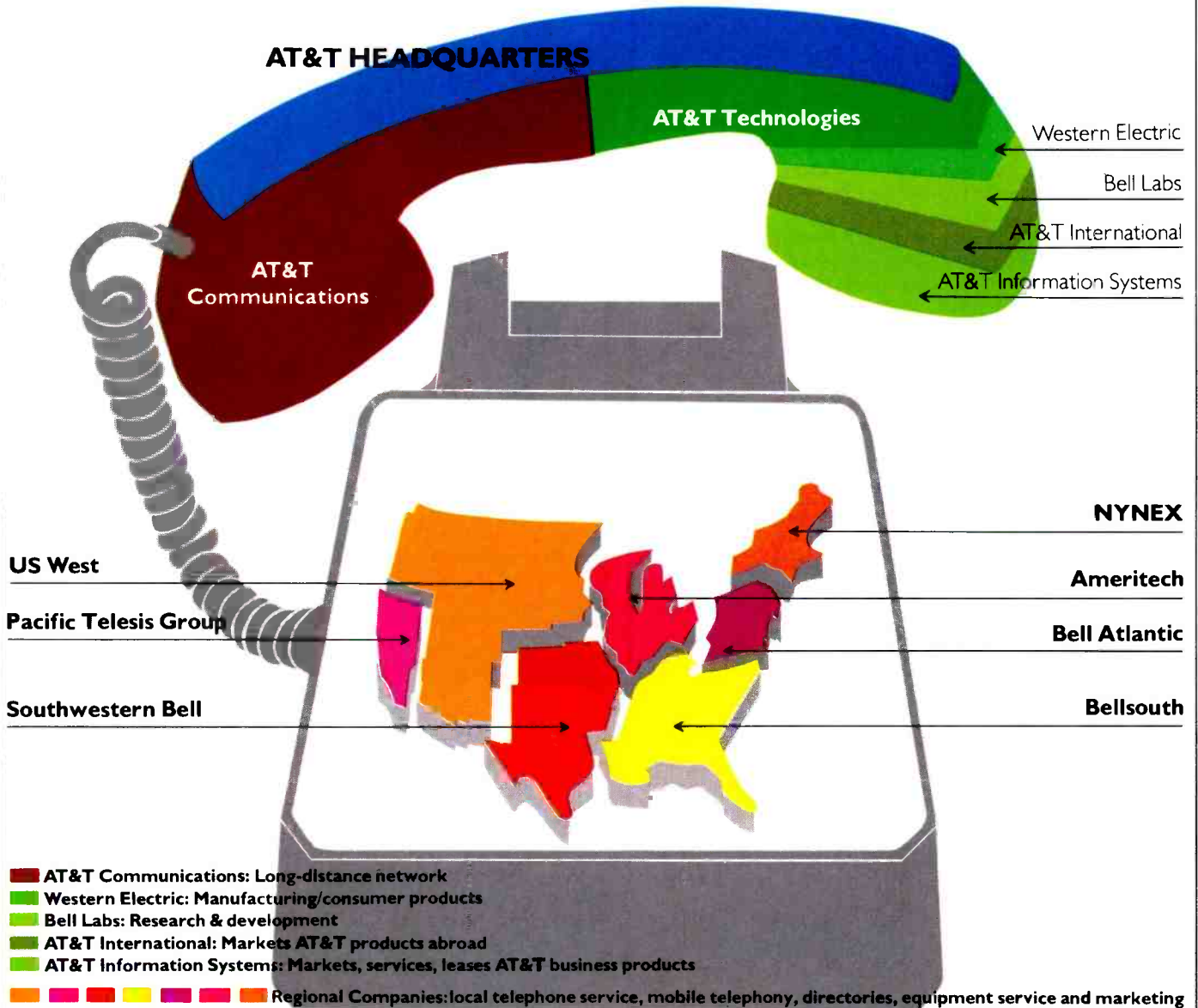
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TELEPHONE: ALL BELL BREAKS LOOSE



Nineteen eighty-four, it is safe to say, will be remembered as an historic year in telecommunications—and January 1, 1984, an historic day. That day marks the end of AT&T's reign as the world's largest corporation, and the beginning of a new era in telecommunications.

If the advocates of the Bell breakup are correct, competition will replace monopoly, and new phone-based technologies will thrive as the telephone and the telephone company are freed to enter the information age. If they are wrong—and it is easy to find even advocates of the breakup having second thoughts—then phone rates will skyrocket, and what is probably the world's most comprehensive and efficient phone system will suffer.

MARKETPLACE: The slimmed-down AT&T (stripped by court order of its famous Bell logo and name) will still be

immensely formidable. It retains its long-distance network, Western Electric manufacturing arm, Bell Laboratories (which performs research and development), and its consumer- and business-products marketing organizations.

The Bell system's 22 local phone companies will form seven regional firms, each taking on a fancy Madison Avenue moniker such as NYNEX or Ameritech. Those seven companies will primarily be in the business of providing consumers with dial tones and equipment. They will also be free to offer a host of other services, ranging from videotex to cable TV.

Neither the local companies nor the new AT&T will have it easy. In many instances, local phone companies will find themselves in competition with their former parent. AT&T, meanwhile, must make the difficult transition from regulated monopoly to player in an intensely competitive market-

TELEPHONE

place. Foreign and domestic manufacturers are making major inroads in the telephone-equipment field. And increasingly, businesses are circumventing the phone company by moving to other forms of communications, such as private networks that use satellites and fiber-optic cable.

For the telephone user, virtually every step, from ordering phone service to making and paying for local and long distance calls, will change in 1984. All users will have to select a long-distance carrier—either AT&T, one of its major rivals (such as MCI or



Sprint), or one of the smaller concerns that lease, repackage, and sell the long-distance services of other companies. For the first time, AT&T and its competitors will have equal access to local phone systems. Eventually, a consumer will be able to connect to any long-distance carrier simply by dialing or pressing a single number. Consumers will get two phone bills: one for local service, the other for long-distance calls.

TECHNOLOGY: One side effect of the breakup will be the accelerating convergence of computer services and communications, as AT&T and the regional phone companies enter new businesses. In 1984, Southern Bell will join with Knight-Ridder in the first commercial effort to market videotex services. Beginning in south Florida, the project, called Viewtron, will offer consumers everything from recipes and ball scores to instant shopping and banking. In addition to paying for the use of the phone lines, subscribers will

have to purchase a terminal called the Sceptre, which is manufactured by AT&T.

Increasingly, the new AT&T will be selling "smart" phones that incorporate computer capabilities, making possible automatic dialing, home security and fire-protection services, and videotex. The phone of the not-so-distant future may well double as a microcomputer.

REGULATION: The blooming of all this technology will not happen without costs. The arcane subsidy system, under which long-distance and other profitable services helped maintain relatively low local phone rates, is gone. As a result, sharp increases in local rates are now pending before virtually every state regulatory commission. The FCC has approved a new access charge to cover the cost of hooking into the long-distance networks, which will appear on telephone bills beginning in 1984 unless Congress decides to intervene.

Fear that an abrupt increase in rates could jeopardize universal phone service—a right enshrined in the 1934 Communications Act—has galvanized Congress. A number of bills to replace the subsidy have been introduced, most involving some sort of "Universal Service Fund" for the poor and those in rural areas, where the rate hike will be the steepest.

The telephone industry, which has turned its formidable lobbying machinery against any legislation, argues that the rate increase will be too small to jeopardize universal service. AT&T requested a 10.5 percent decrease in long-distance rates, thus partially offsetting the rise in local rates. But universal service has become a rallying cry, 1984 is an election year, and Congress may prove more responsive to worried constituents than to the phone company.

MERRILL BROWN

"The Bell breakup has an awful lot of repercussions for the consumer—and they're not very favorable."

Anthony Hoffman, Craline & Co.

FIBER OPTICS:
SPLENDOR IN THE GLASS

It is quite possible that within 10 years all of the media in American households will enter through a single wire, a fiber-optic cable. Telephone, radio, conventional TV and cable, home computers, video games, teletext, and interactive services can all be conveyed more cheaply, at a higher standard of quality, through a cable made of flexible glass. Fiber-optic technology, like the satellite, is one of the great unifying elements of the telecommunications revolution. It also represents an untapped market of staggering proportions.

Fiber optics is a technology that converts electronic images and sounds to light pulses, which are then beamed through almost perfectly translucent glass threads. The light pulses originate in a laser about the size of a pinhead. Each time the laser

switches off or on, a "bit" of information moves through the glass thread (which has about the thickness and pliability of a fishing line). Because the signal originates in the light spectrum rather than in the radio frequency, a thin bundle of optical fiber can carry as much data as a thick coaxial cable. A fiber-optic cable the diameter of an index finger can carry 40,000 phone calls; in contrast, two conventional copper cables the width of a wrist can transmit only half that number. The laser can also transmit images and sound far more accurately than coaxial cable.

The industry is still in its infancy. In 1983, AT&T began laying fiber-optic trunk lines for phone communication between major cities, but at the moment coaxial cable is cheaper for most uses. A number of nations in Europe, where telecommunica-



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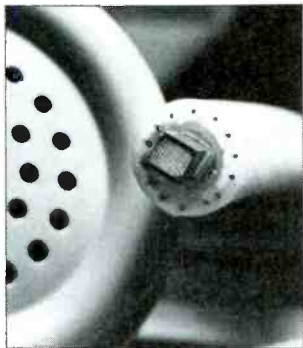
After all, who else but you has 19½ hours of a teenager's undivided attention every week?

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FIBER OPTICS

tions policy is generally coordinated by the state, have formulated plans for comprehensive fiber-optic systems; the French national phone company has already started laying the glass cable.

Fiber-optics technology has AT&T excited and American cable companies worried. The only thing to which cable companies object more loudly than government regulation is the immense economic power of AT&T. The cable industry recognizes the inherent superiority of fiber-optics transmission capability over that of coaxial cable or conventional phone lines. But cable companies cannot muster the billions of dollars needed to switch from coaxial to fiber optics; AT&T can, and will. And it isn't only businesses that fear AT&T's domination. Civil libertarians and telecommunications experts have voiced uneasiness over the prospect of one company controlling the whole range of information



services.

Meanwhile, this miraculous technology is growing even more advanced. AT&T's Bell Labs, as well as such competitors as Corning, are working on a new halide glass even clearer than the current silicon-based glass (which is already 1,000 times clearer than a window). Halide may prove the key to fiber optics' cost-effectiveness.

The Pentagon is keeping an eye on these research-and-development efforts. Military planners believe that fiber optics, unlike copper cable, would remain intact after a nuclear strike. What other technology can claim that it will outlast the Apocalypse?

MARK EDMUNDSON

MOBILE TELEPHONY:

CALLING ALL CARS

It was in 1967 that the FCC first held a hearing to decide what should be done to alleviate the congestion on mobile telephone channels. The answer then was to allocate some more channels, and also to allow AT&T to begin experimenting with a new technology called cellular radio. Sixteen years later businessmen are still shaking their fists at their car phones as they get yet another busy signal, but cellular radio seems ready to end their frustration. This year the industry should begin serving some of the 1.5 million customers that one industry analyst projects as cellular's potential market. General Motors has even started offering a \$3,000 mobile phone as an option in some 1984-model Buicks.

Cellular radio involves neither radio nor cells; it is in fact a new form of mobile telephony that simply revises an old one called MTS, which is used by about 160,000 Americans today. Another 50,000 are on waiting lists for MTS because there are still not enough channels to accommodate everyone who wants a mobile phone, nor are there even enough channels for those who already have one. In New York City, for example, only 12 people can place calls simultaneously from their mobile phones. With cellular radio the number could rise to 10,000 or more.

MTS uses only one high-power tower to transmit and receive the mobile phone calls in a given city. Cellular radio differs in using several low-power towers that do not interfere with the conversations on the same frequency a few miles away. A city served by cellular radio is divided into regions, called cells, each with its own transmitter/receiver. The 40 megahertz of radio spectrum that the FCC has allocated to cellular radio makes each transmitter capable of receiving 666 two-way channels at



once. As users travel throughout a city, a central switching computer hands over calls from one cell to the next. The switch is instantaneous and not noticeable.

Cellular radio is no panacea for mobile telephony, however. The service will be expensive: Monthly bills will run as high as \$200 or \$300. Security is another obstacle; people with the proper equipment can easily listen in on cellular calls.

Since it first began accepting proposals for cellular radio service in June 1982, the FCC has received almost 1,500 applications for the top 90 markets. Two franchises will be awarded in each city, one of them to a phone company. The reason for this arrangement was that since AT&T developed the technology and was in the best position to provide national service, the FCC felt it should be assured a prominent role; yet the commission also wanted to prevent AT&T from owning the whole business. Because of the giant's virtual monopoly on telephone wires, most of the phone com-

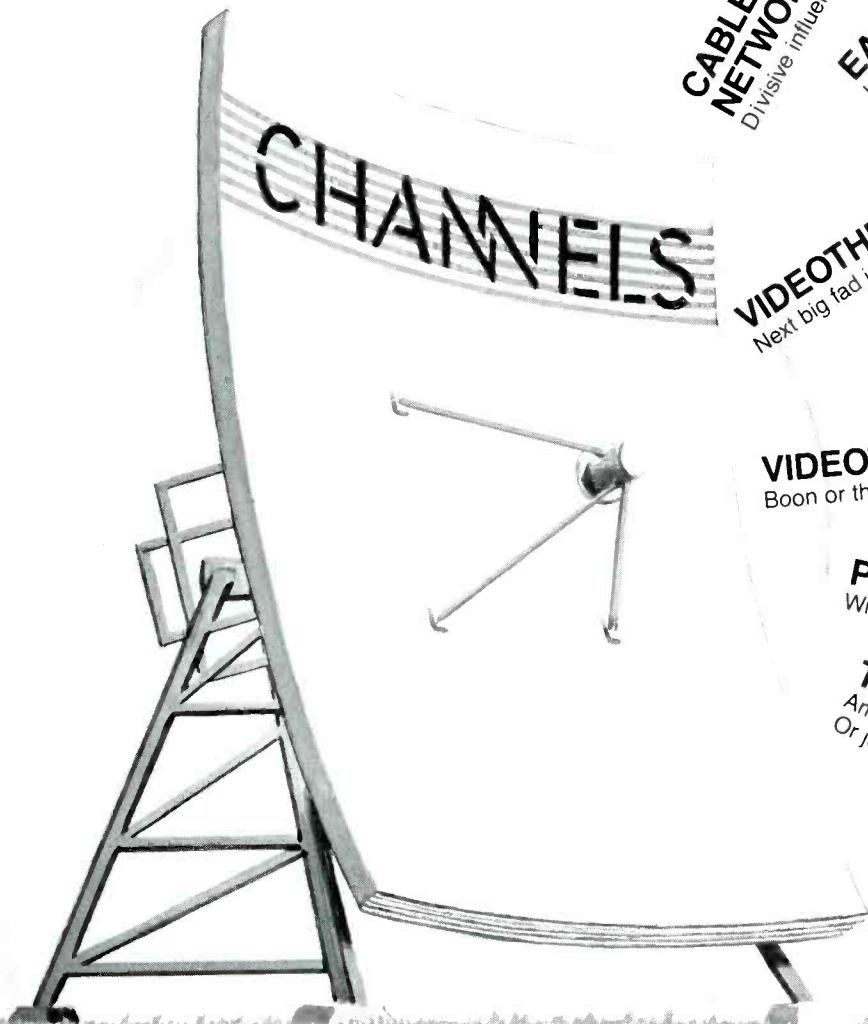
pany franchises will go to the 22 holding companies that will become the seven regional Bell systems once the breakup is completed. The other franchises will be operated mostly by radio common carriers, which for almost 40 years have operated most of the MTS systems.

In keeping with the character of the new media environment, cellular radio will soon have competition. The number of people now using personal pagers, or beepers—about 1.5 million—will increase substantially as satellites are used to turn what was once a one-way medium into an international network capable of transmitting short two-way messages. The satellites, in other words, will perform the receiving/transmitting function performed by towers in cellular radio. Satellites will also be used in a new form of mobile telephony called land mobile satellite service (LMSS), which is requesting space on the radio spectrum alongside cellular radio's allocation.

RICHARD BARBIERI

"Cellular radio is the next major investment area in communications."

Anthony Hoffman, Craline & Co.



CABLE-SATELLITE NETWORKS
 Divisive influence on society?

EARTH STATIONS
 Is it really a crime to "steal" pay TV shows? After all, whose backyard is it anyway?

VIDEO SPORTS
 Is "free" sports going down the tube? What does it say about society when a club owner refers to his team as software?

VIDEOTHERAPY
 Next big fad in TV programming?

TV COMMERCIALS
 With more "buttons" to push, will anyone watch them?

MUSIC VIDEO
 Pop wave of the future... or just another "space trip"?

VIDEOTEX
 Boon or threat to our libraries?

COMPUTERS
 Why can't Johnny (or his teacher) program?

PUBLIC TV
 Will its satellite be its salvation?

TALK SHOWS
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VIDEO RELIGION
 Can prime-time preachers save the churches?

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PLAYERS: POWERS THAT BE

Although hundreds of companies are actively involved with the new communications technologies, most of the prospecting on the electronic frontier is being done by a relative handful—the familiar media conglomerates in broadcasting, publishing, and motion pictures. With their huge financial resources and mass-media expertise, these companies range all over the field, many of them involved with the ownership of delivery systems as well as with programming.

Increasingly these companies form partnerships with each other, or merge their existing ventures, to share the capital investment and the risk. Thus, in 1983 two pay-cable services, Viacom's Showtime and Warner Amex's The Movie Channel, joined forces, as did Hearst/ABC's Daytime channel and Viacom's Cable Health Network to form Lifetime. Meanwhile, CBS, Columbia Pictures, and HBO joined in the creation of a new movie company, Tri-Star.

The companies listed here are the big players dominating the ever-expanding field of electronic communications. Not included are the large and powerful companies that have confined themselves to a single industry, as TCI and Cablevision have done in cable, IBM in computers, and Metromedia in broadcasting.

†Total revenues in millions. Companies are listed in order of the scope of their involvement in video.

*Co-ventures. (Tri-Star: CBS, HBO, and Columbia; ARTS: ABC and Hearst; Daytime: ABC and Hearst; RSVP: ABC and Getty; First Ticket: ABC and Cox; USA Network: Time, Paramount, and MCA; Showtime/The Movie Channel: Warner Communications, Warner Amex, and Viacom; Venture One: CBS and AT&T; Spotlight: Cox, Times Mirror, TCI, and Storer; TKR Cable: Knight-Ridder and TCI; Warner Amex: Warner Communications and American Express.)

#Daytime and Cable Health Network merged in 1983. The service's new name will be Lifetime.

†TeleFirst, beginning in 1984, will broadcast pay-TV programs to subscribers' VCRs late at night, using the signal of participating ABC affiliates.

	ABC	CBS	Time Inc.	RCA	Warner Communications
	560		560		3,980
TV NETWORKS	ABC	CBS		NBC	
BASIC CABLE SERVICES	ARTS* Daytime*#		USA Network*		Warner Amex* Nickelodeon MTV
PAY TV SERVICES	First Ticket* & RSVP* (pay-per-view)		Home Box Office Cinemax		Showtime* The Movie* Channel
TV/FILM PROGRAM PRODUCTION	ABC ABC Motion Pictures	CBS CBS Theatrical Films Tri-Star*	Orion Pictures (part interest) Tri-Star*	NBC	Warner Bros. Warner Bros. TV
VIDEOCASSETTE/ DISC PROGRAMMING	ABC Video Enterprises	CBS/Fox Home Video CBS Video Enterprises	Time-Life Video	Selecta-Vision discs NBC Int'l RCA/Columbia Int'l Video	Warner Home Video
INTERACTIVE CABLE/VIDEOTEX/ TELETEXT		Venture One* (videotex) Extravision (teletext)	cable teletext	NBC teletext	Warner Amex: Qube
VIDEO GAMES		Gabriel Toys			Atari
PROGRAM SYNDICATION					Warner Bros. TV
RADIO NETWORKS	6 ABC networks	2 CBS networks		2 NBC networks	
TV STATION OWNERSHIP	ABC 5 VHF	CBS 5 VHF		NBC 5 VHF	
STV STATIONS	TeleFirst†		review		
MDS SYSTEMS	Applications filed	Applications filed	ATC (3 systems)	Applications filed	Applications filed
CABLE SYSTEM OWNERSHIP		Black Hawk Cable (1 system)	ATC (119 systems)		Warner Amex Cable (146 systems)
LOW-POWER TV	Applications				
SATELLITE TRANSPONDERS	Satcom III R, Westar V	Westar V	atcom III R, IV, Galaxy I	Satcom IV	Satcom III R, IV
HARDWARE				TV sets, disc players, VCRs	Atari home computers and video games
RADIO STATIONS	6 AM, 7 FM	7 AM, 7 FM		AM, 4 FM	

Times Mirror	Westinghouse	Cox Communications	Columbia Pictures	Storer Communications	Viacom	Oak Industries	Taft Broadcasting Co.	Tribune Co.	Turner Broadcasting Co.
2,210	9,745						358		165
	Nashville Network				Cable Health Network*		Black Entertainment Television	Superstation WGN	CNN CNN Headline News Superstation WTBS
Spotlight*	Home Theatre Network	Spotlight* First Ticket*		Spotlight*	Showtime* The Movie Channel*	ONTV			
	Group W Productions		Tri-Star* Columbia Pictures		Viacom Productions	Oak Media Development	The Taft Entertainment Co. Taft-TCI Programs	Tribune Entertainment Co.	WTBS
			Columbia Pictures Home Entertainment RCA Columbia Int'l Video		Viacom Enterprises		Worldvision Enterprises		Turner Program Services
Videotex America		Index (videotex)		Cable Protection Systems, teletext, 3 two-way systems	Viacom Worldwide (interactive cable)		Electra (teletext)	teletext	
			D. Gottlieb & Co.				Taft Merchandising		
	Television Syndication Center		Columbia Pictures TV Distribution		Viacom Enterprises		Worldvision Enterprises	Tribune Entertainment Co.	Turner Program Services CNN Radio Network
5VHF, 2UHF	Group W 5VHF, 1UHF	5VHF, 1UH		VHF, 2UHF	2VHF, 1UH	3UHF ONTV	5VHF, 2UHF	3VHF	1UHF
	Applications filed	Applications filed					Applications filed		
Times Mirror Cable (67 systems)	Group W Cable (140 systems)	Cox Cable (56 systems)		Storer Cable (103 systems)	Viacom Cable (19 systems)	Oak CATV of Oxnard (1 system)	Taft Cablevision (14 systems)	Tribune Cable Inc. (17 systems)	
							*Applications	pplications	
Satcom III R, Galaxy I	Westar V, VI				Satcom III R, IV, Galaxy I	Comstar D	Westar V		Satcom III R, Galaxy 1, Westar 3 & 4
						Decoders and converters			
	AM, 5FM	5AM, 7FM			3AM, 5FM		5AM, 6FM	3AM, 2FM	

PROGRAMMING AND INFORMATION SERVICES

DISTRIBUTION SYSTEMS

WHAT'S WHAT

GLOSSARY OF TECHNICAL TERMS & INITIALS



Addressable Converter: TV attachment that allows a system operator (cable, STV, DBS, etc.) to turn on and off a subscriber's service automatically, thus facilitating pay-per-view programs.

Alphanumeric: referring to letters and numerals projected on a TV screen, as in teletext and videotex.

Analog/Digital: two opposite kinds of communications signals. In analog, information is transmitted by means of modulations of a continuous signal, such as a radio wave. The signal itself is "analogous" to the information it carries, so that an increase in a TV picture's brightness, for example, would be conveyed by an increase in the signal's voltage. Most radio signals today are analog. Digital, the communications method of the future, is based on a binary code in which the picture (or audio) information is sent as a series of "on" and "off" signals. Since this system ignores everything but the "on" or "off" signal, it is more precise and less subject to interference than analog.

Arc of Good Location: the portion of the geosynchronous satellite orbit (22,300 miles above the equator) that provides optimum coverage of the United States.

Basic Cable: the minimum cable service subscribers

receive for a monthly fee.

Beta: one of two incompatible video-cassette recorder (VCR) formats. The other, more popular, format is called VHS.

Bird: slang for a communications satellite.

Bit: short for "binary digit," the smallest unit of information in a computer ("0" or "1").

Broadband Communications: a communications system, using wire or cable, that can accommodate video signals. Cable is broadband; telephone is not.

Byte: a unit of computer memory typically consisting of eight bits. 64K means that a computer has 64 thousand bytes, or 64 kilobytes.

Cable TV: the technology of transmitting programs to subscribers through coaxial cable rather than over the air.

CATV: Community Antenna TV, once a common name for cable.

C-Band: the range of frequencies, from 4 to 6 gigahertz, on which most communications satellites receive and transmit signals.

CCTV: Closed-Circuit Television, wherein the signal is transmitted by wire to a limited number of receivers.

CED: Capacitance Electronic Disc system—RCA's version of the video disc, in which a diamond stylus travels over a grooved disc to play back prerecorded material.

Churn: industry jargon for the rate at which subscribers cancel a service, such as basic or pay cable.

Common Carrier: a communications service, regulated by the FCC, in which ownership of the medium is divorced from control of the messages it carries. Telephone is a common carrier; broadcast TV is not.

CRT: Cathode Ray Tube, used for display of television pictures or computer information.

Cycles per Second: the number of complete performances of a vibration, electric oscillation, current alternation, or periodic process. Radio frequencies are measured in cycles per second. See "Hertz."

DBS: Direct-Broadcast Satellite—a means of delivering programming directly from satellites to small receiving dishes (four feet in diameter or less), leased or purchased by subscribers.

Decoder: TV attachment that converts scrambled signals into a viewable picture, and allows a standard TV set to receive and display teletext signals.

Dish: slang for "earth station," the umbrella-shaped antenna that sends or receives satellite signals.

Distant Signals: the signals of out-of-town TV stations imported into an area, usually by

microwave, and retransmitted by cable operators to subscribers.

Downlink: industry jargon for a satellite receiving dish, or for the process of beaming signals from satellites down to earth stations.

Earth Station: an antenna that sends or receives satellite signals.

Electronic Banking: conducting financial transactions at home via videotex or an on-line personal computer.

Electronic Mail: messages sent to and from computer or videotex terminals linked by telephone lines.

Fiber Optics: a technology that transmits voice, video, and data by sending digital pulses of light through hair-thin strands of flexible glass.

Footprint: the geographic area on the globe in which a given satellite's signal can be received.

Geosynchronous Orbit: the altitude 22,300 miles above the equator at which a satellite's orbit is synchronized with the earth's rotation, making the satellite appear stationary.

Hardware: electronic equipment, such as computers, dishes, satellites, cameras.

HDTV: High-Definition Television, which creates a far sharper TV image than the current standard by doubling the number of lines in the broadcast signal.

Headend: a cable system's central location, where it receives, amplifies, and converts incoming signals before redistributing them to subscribers.

Hertz (Hz): a measure of radio frequency that represents one cycle, or complete wave, per second. (Kilohertz, or KHz, represents 1,000 cycles per second; megahertz, or MHz, represents 1 million cycles per second; gigahertz, or GHz, represents 1 billion cycles per second.)

Interactive: those television technologies that permit viewer participation, such as two-way cable, videotex, or the optical video disc.

ITFS: Instructional Television Fixed Service—a group of TV channels, in the ultra-high frequency range, set aside for educational use. ITFS is technically identical to Multipoint Distribution Service (MDS).

Ku Band: the range of frequencies, from 11 to 14 gigahertz, on which the next generation of communications satellites—including direct-broadcast satellites—will receive and transmit signals.

Land Mobile: FCC designation for a class of radio-spectrum users, such as mobile phones or taxicabs, that broadcast from a fixed location to a mobile vehicle on land, or between two mobile vehicles.

Laser: acronym for Light Amplification by Stimulated Emission of Radiation—a highly focused beam of light, or the device that creates such a beam. The laser is used in fiber optics and in the optical video disc.

Laser Disc: A disc used on a laser video-disc player. See "Optical Video Disc."

LPTV: Low-Power Television—authorized by the FCC for broadcasting to a small geographic area. Because a weak signal is used, LPTV stations can be "squeezed" between existing channels without creating interference.

MATV: Master-Antenna Television—antenna and wiring shared by several TV sets, typ-

ically in an apartment building.

MDS: Multipoint Distribution Service—a pay-TV delivery service broadcast by microwave to small dish antennas. Authorized now to provide four channels of television, it is sometimes called "over-the-air cable."

Microprocessor: the heart of a computer, a silicon chip that processes data and controls a computer's components, including the memory, keyboard, display, and disc drives.

Microwave: a high-frequency radio wave (above 500 megahertz) that can be used for the transmission of TV signals (as in MDS). Microwaves are easily disturbed by trees or buildings in their path.

Modem: contraction of "Modulator-Demodulator," a device that facilitates telephone communications between two or more computers.

MSO: Multiple System Operator, a cable company that owns several systems.

Must-Carry Rule: an FCC requirement that a cable system must transmit to subscribers all local TV stations that are "significantly" viewed in its immediate area, or that are located within 35 miles of the cable transmission center.

Narrowcasting: aiming programming at a specific audience.

O&O Stations: TV stations owned and operated by a national network (ABC, CBS, NBC).

On-Line: to be in direct communication with a computer.

Optical Video Disc (Laser Disc): a video playback system in which a low-power laser beam is reflected against a disc's microscopic pits to retrieve frames of prerecorded information. A disc contains as many as 54,000 frames of information, any one of which can be located and displayed instantly.

Page: the portion of a teletext "magazine" of information that fills a screen at one time.

Pay Cable: those channels offered in addition to a system's basic cable service, for more

money.

Pay-Per-View (PPV): so-called because cable and STV subscribers pay only for those programs they choose to watch.

Pay Television (PTV): Program services delivered to subscribers for a fee, by cable, SMATV, MDS, STV, or DBS.

Qube: Warner Amex's two-way interactive cable system, introduced in 1977 in Columbus, Ohio, and offered in cities where Warner Amex has won franchises.

Random Access: the ability to retrieve pictures, sound, and information from a recording system randomly, as with the optical video disc.

Scrambler: a device that alters a picture so that it cannot be viewed on a home screen without a decoder.

Signal: the detectable impulse by which sound, images, and data are conveyed electronically or optically, either through the air or by wire.

Signal Piracy: unauthorized reception of TV signals, usually those of a pay-TV network such as HBO.

SMATV: Satellite Master-Antenna Television—a pay-TV service delivered to roof-top earth stations located on multi-dwelling units, and then distributed to individual apartments by coaxial cable. Also called "private cable."

Software: programs, procedures, and related documentation associated with a computer system; sometimes used to refer to TV programming.

Spectrum: the range of frequencies of electromagnetic waves.

STV: Subscription Television—an over-the-air program service that broadcasts scrambled signals to homes equipped with decoders.

Superstation: a broadcast station whose signal is made available to cable systems nationwide by satellite.

Teletext: a one-way technology in which textual and graphic information are broadcast to TV sets equipped with decoders.

Tiers: cable program services

packaged and sold to subscribers for fees over and above the basic-cable subscription price.

Translator: a low-power transmitter that retransmits distant broadcast signals to areas with poor TV reception.

Transponder: the device on a satellite that receives, amplifies, and retransmits audio and video signals from earth. Most satellites have 24 transponders, each of which can handle a single TV channel.

UHF: Ultra-High-Frequency—TV channels 14 through 69.

Uplink: the beaming of signals from the earth to a satellite.

Upstream/Downstream: cable industry jargon indicating whether a signal is traveling from the "headend" of a two-way cable system to the subscriber (downstream) or in the opposite direction.

VBI: Vertical Blanking Interval—21 unused lines in the TV signal, which appear as a heavy black line when the horizontal hold slips. Some of these lines are used to transmit teletext, others to transmit closed captioning for the hearing-impaired.

VHF: Very-High-Frequency—TV channels 2 through 13.

VHS: Video Home System, the more popular of the two types of video-cassette recorders.

Video-Cassette Recorder (VCR): a TV attachment that can record programs off the air for later viewing, and play prerecorded video cassettes.

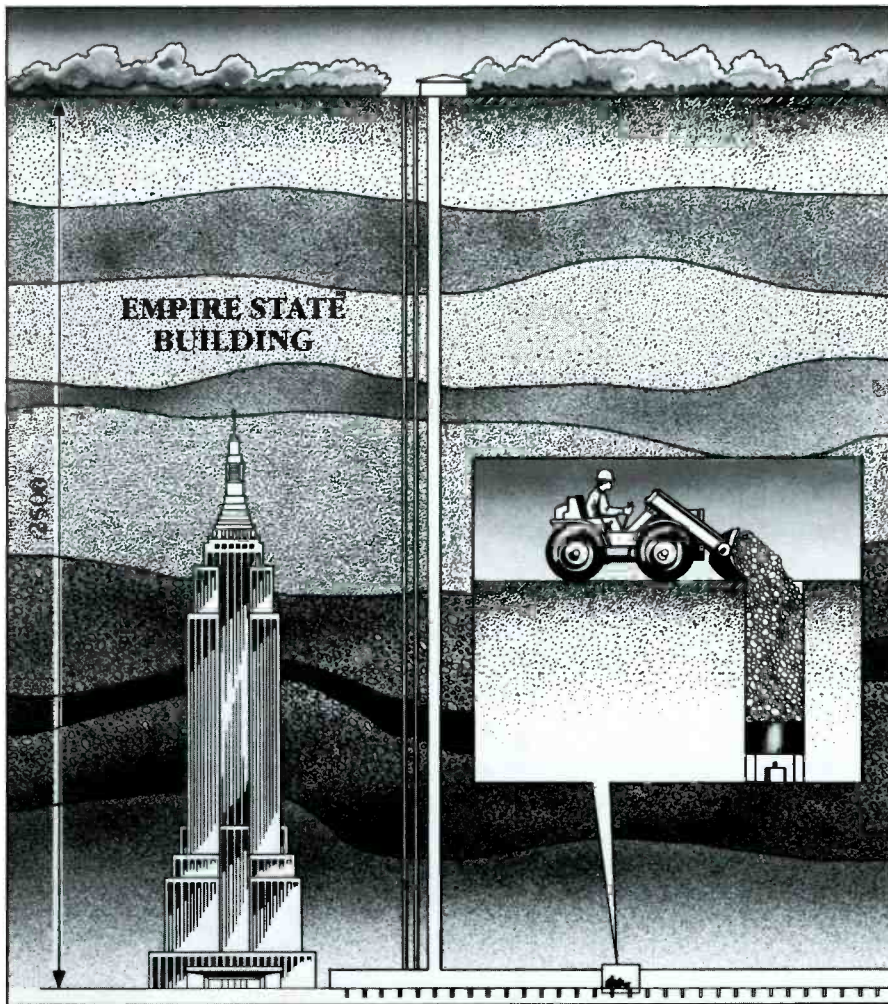
Videconference: a temporary private TV network in which large-screen TV sets, cameras, and satellite uplinks and downlinks are used to join numerous remote locations, for anything from a business meeting to an entertainment event.

Videotex: an interactive technology that uses a telephone line or a two-way cable to connect the TV set to a central computer. The user retrieves information or transacts business using a small keypad or computer keyboard.

Viewdata: Synonymous with "Videotex." □

NUCLEAR WASTE DISPOSAL

Progress Report



The permanent repositories will be mined in half-mile-deep formations that have been geologically stable for millions of years. That's nearly twice as deep as the Empire State Building is high. The wastes are completely inert. They cannot explode, implode, or burn. Enlarged inset at right shows how each disposal hole is "backfilled" with more protective material.

A Congressionally mandated program, signed into law last January, has started the process for disposal of high-level radioactive waste from nuclear power plants. What follows is background information to help understand the significance of the new law.

The first installment of this series covered some of the basics of nuclear waste. Now we move to the issue of disposal, focusing on the waste from nuclear power plants, not from defense or medical uses.

Remember that two kinds of waste are produced by nuclear

power plants in the generation of electricity: 1) high-level waste, which is trapped in the used or spent uranium fuel, making it highly radioactive for a time; and 2) low-level waste, such as used rags, plastic gloves, and water filters. This discussion is limited to high-level waste, which requires the most thorough isolation.

What form will the waste be in when it is disposed of?

If the spent fuel were chemically "reprocessed" to recover still-

usable uranium and plutonium, then the remaining liquid waste would be fused into an insoluble, solid, glass-like material.

But since the future of commercial reprocessing is uncertain in this country, we will examine the alternative waste form: solid spent fuel rods, removed from the reactor core and placed in metal canisters.

How much spent fuel are we talking about?

All the spent fuel collected from commercial plants since 1957 now totals about 9,000 tons. It could fill a football field 2 feet deep.

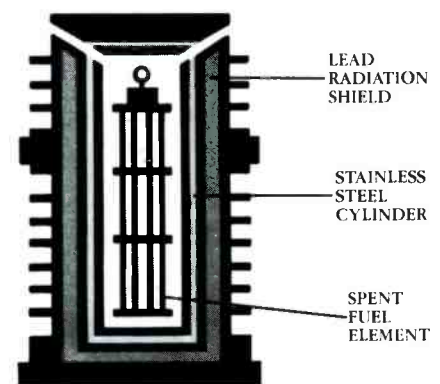
Department of Energy projections put the total amount at about 65,000 tons by the turn of the century.

For perspective, consider how the volume of waste from nuclear plants compares with the waste from other industries. American industry produces over ten thousand times more toxic wastes annually than the nuclear industry has since it started.

Where is spent fuel stored right now?

Spent fuel is now stored temporarily in steel-lined water pools at com-

SHIPPING CASK



The radioactive waste within these stout casks stays safely confined in transit to the permanent repositories. Cutaway shows the stainless steel inner cylinder, the lead radiation shield, and the tough outer jacket of stainless steel.

mercial reactor sites. Within six months of removal from the reactor core, more than 90 percent of the spent fuel's radioactivity dissipates in the form of heat.

What disposal method is favored the most?

To date, the disposal method generally favored by experts is the deep geologic "multiple barrier" system. Variations of it have been studied by many countries and scientific bodies for over 25 years. The National Academy of Sciences first recommended such disposal in 1957.

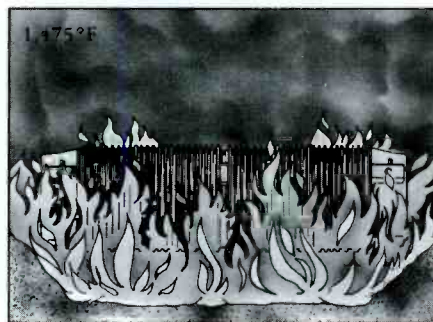
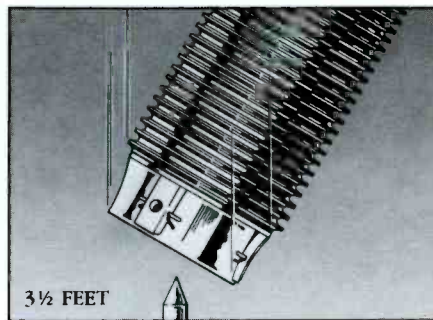
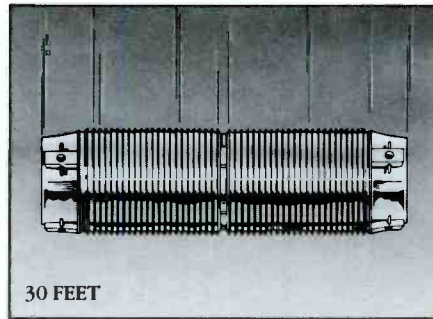
The DOE has developed a specific "reference design" plan for geologic disposal: 1) The solid spent fuel will be sealed in metal or ceramic corrosion-resistant canisters, 1 foot in diameter and 16 feet long. These canisters will in turn be enclosed in an "overpack" of absorbent clay. 2) The canisters will be lowered about 2500 feet below the ground, down to repositories mined within specially selected geologic formations of salt, volcanic tuff, or basalt, which have been stable and relatively water-free for millions of years. 3) Finally, the canisters will be deposited in drilled holes plugged with a highly absorbent material like bentonite clay.

Another element of the Federal government's waste plan is the option of storing spent fuel at or near the earth's surface in monitored retrievable storage (MRS) facilities. These would allow for further radioactive decay and cooling, and thus provide more waste-management flexibility. At MRS facilities, the spent fuel would be monitored and stored for eventual reprocessing or final geologic disposal.

How safe is this deep burial system?

Governments and scientific bodies from the U.S., the U.K., Sweden, Germany, France, and other countries say that it is the safest and most flexible disposal system science has devised.

Even in the most unlikely event of groundwater's eventually seeping into the long-dry repositories and coming into contact with the spent fuel, the waste will have decayed to harmless levels of radioactivity long before any of it could reach our environment.



The steel and lead transportation casks must pass a sequence of four torture tests: 1) a 30-foot free fall onto concrete, 2) a 3 1/2-foot drop onto a sharp steel shaft, 3) exposure to a 1,475°F fire, followed by 4) immediate immersion in 3 feet of water (not shown). Each cask design must be licensed by the Federal government before it can be used.

How long must the waste be kept sequestered?

The waste must be carefully controlled for several thousand years, because some of its radioactivity decays slowly. But after being buried for about 1000 years, the waste is less toxic than uranium ore in its natural state. After about 4000 years, it is less toxic than mercury, chromium, cadmium, and silver ores, minerals found in nature with *no* barriers from the environment.

How will spent fuel be transported to the disposal sites?

The spent fuel will be shipped within sealed casks made of steel

and lead. A typical spent fuel cask is 5 feet in diameter and 16 feet long.

To date, over 5,000 spent fuel assemblies have been safely shipped from on-site storage pools to other storage locations. There has never been an accident involving spent fuel that has released radioactivity.

By Federal regulation, the casks must be designed to withstand a sequence of four torture tests without leaking before they can be licensed.

Note: nuclear wastes are *not* explosive at any time.

What will the new law on nuclear waste accomplish?

With the enactment of the Nuclear Waste Policy Act of 1982, the Department of Energy is moving ahead with a procedure and timetable leading to the permanent disposal of high-level radioactive waste from nuclear power plants. Both the President and Congress are scheduled to consider the first disposal site in 1987.

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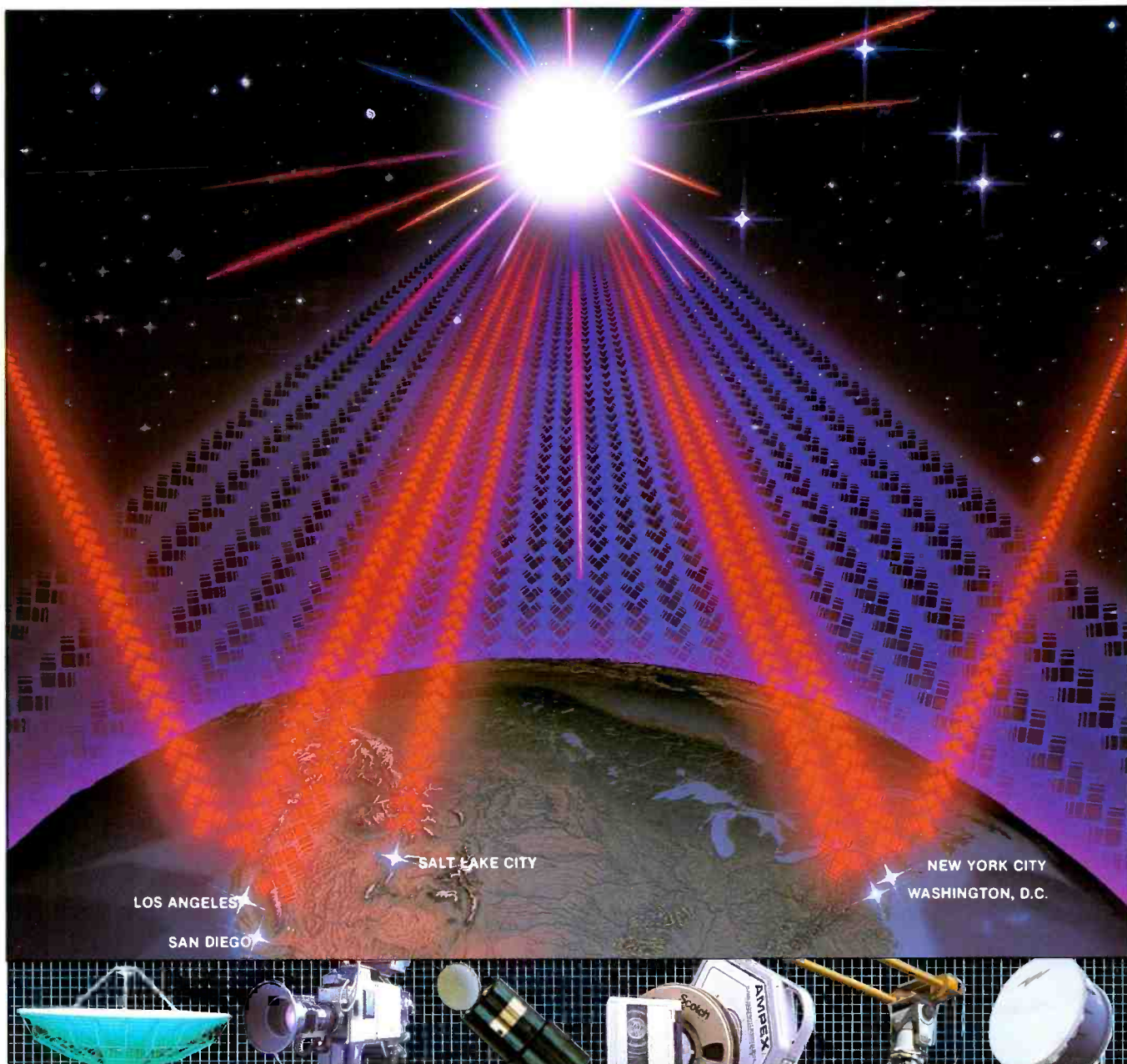
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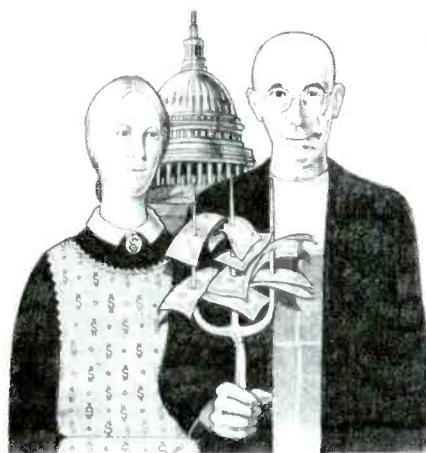
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PBS's Vietnam

(Continued from page 11)

power." The sparseness of *Vietnam's* narrative, its trust in imagery, is one of its strengths. Its calm is a worthy counterpoint to the shrill commentary that surrounded the war itself. Yet what would happen if this modesty were carried to its logical extreme—and one watched these films of Vietnam with no sound at all?

The force of the images, in fact, simply outstrips any attempt to impose narrative significance on them. Commentary often seems completely superfluous. At the end of the eighth segment, the camera pans across yet another landscape of desolation. This time the ruins are not of a city, but of an abandoned American PX. Air-conditioners and refrigerators litter the scene like archaeological artifacts. Fans, unconnected to electrical outlets, turn listlessly in the wind.

The most explicit tributes to the power



LARRY BURROWS

of television on *Vietnam* come not from the stunning images themselves, but from the high-ranking American officials who planned and ran the war. Former presidents, vice presidents, generals, and cabinet members who once believed that nothing was beyond their power—not even conjuring up a viable South Vietnam with the aid of bullets and bombs—now argue that they failed because the TV camera is mightier than the B-52.

We all remember Spiro Agnew's attacks on the media. But perhaps the most revealing vignette of the PBS series involves Hubert Humphrey—supposedly Agnew's liberal antithesis. Humphrey is trying to defend the war, in a speech during the 1968 Presidential campaign, when a group of anti-war protestors starts to heckle him. But Humphrey doesn't turn on his tormentors. Instead he lashes out at the TV crews filming the confrontation. If "you fellows" weren't always broadcasting the protests, he exclaims, protestors wouldn't be on the attack.

Despite Humphrey's accusation, the question of television's influence on the war is not difficult to answer. That the outcome would have been the same, TV

or no, is abundantly clear from those parts of *Vietnam* focusing on what the war did to the Americans who fought in it. The GI's didn't need television to show them the truth about Vietnam. It was all around them. In the fifth episode, "America Takes Charge," an ex-Marine talks about convincing his parents to let him join up, and then about finally arriving in Vietnam to fight for freedom. It took him about a month, he recounts, to discover what it took people like Fall years to discover, and what people like Westmoreland never discovered at all: "What was going on here was nuts." He and other former American soldiers discuss the endless killing and destruction. "She was running away from the Americans who were going to kill her," the Marine says of an old, unarmed Vietnamese woman, "and I killed her, and I didn't think twice about it at the time."

The Marine is crying now and the camera tactfully cuts to some shots of Vietnam. We hear the anguish in his voice; we do not see his face, and it is one of those stunning, terrible Vietnam moments when television, even in looking away, reveals another of the great truths of the war—which was that even the killers were victims.

What were the military implications for the United States of a war that consumed men's souls with the same abandon it used up napalm? The interviews with Vietnam veterans help call attention to one of the most important facts about the war: After a certain point—1970 at the latest—the debate on Vietnam at home became as irrelevant to the actual course of the war as the talk about light at the end of the tunnel in Saigon had become. President Nixon had no choice but to "bring the boys home," because the conduct of the war had so thoroughly demoralized the U.S. ground troops that they had become a military liability.

For a lot of U.S. soldiers, the war was not the great crisis of conscience it turned out to be for others. But if gunning down old women didn't get to the GI's, marijuana and heroin and VD and the pervasive reality that the war had no purpose did. By the early 1970s hundreds of American officers were being attacked or killed by their own troops.

In Indochina the TV images seldom flowed in both directions. People in the United States saw Vietnam every night on television, but those of us in Saigon seldom watched the nightly news, even when that was possible. Perhaps that was why the most arresting visual image of

the entire series, so far as I was concerned, did not emanate from the devastation of Vietnam, but from the quite different devastation that simultaneously unfolded in the United States. The 11th episode, "Homefront USA," offers a well-known scene—of Vietnam veterans throwing their medals away on the steps of the Capitol in Washington. But it haunted me when I saw it, and it still haunts me, for it involved a degree of repudiation of America's actions in Vietnam that one never saw in Vietnam itself. It is not until the following segment, "The End of the Tunnel," that the U.S. Embassy in Saigon is at last abandoned. But, as the camera shows us those veterans jettisoning their medals the way the helicopters are later jettisoned into the sea, we feel the war might as well be over.

Even a victory in Indochina would not have prevented us from inflicting a terrible defeat on ourselves at home.

Dean Rusk was never one of the Vietnam war's more perceptive participants, and he is no trove of insight even now. Yet in the course of the PBS series, he raises a valid question.

If the TV cameras had been around in the 1940s, the former secretary of state wonders, and Americans could have seen the carnage then, would the United States also have abandoned the quest for victory during World War II?

Most Americans agree, to an extent they never were able to agree about Vietnam, that World War II was a clear-cut conflict between the forces of good and evil. Yet what if, instead of Movietone News clips of soldiers cheerfully waving as they waded ashore, we had watched, day after day, instantly transmitted footage of the hideous bloodshed at Bataan or Corregidor or the Ardennes? What if we had had, not the universally accepted self-censorship of yesterday's wars, but today's insistence on "objectivity"—an insistence largely brought about by the operation of television in Vietnam?

What really appalled Americans about the images from Vietnam was that they revealed the violence there as pointless, utterly unrelated to any worthwhile goal. The suffering of World War II, on the other hand, could have been accepted because it occurred within a context of shared values and objectives. We would have seen beyond the bloodshed to its purpose. Televising a just war might well increase the national will to fight it.

An even less speculative question remains: Would the Vietnam war have been won had there been no TV cameras? Did television affect, perhaps even determine, the outcome of the war?

The answer, once again, seems clear. No television cameras recorded Lyndon

Johnson's clandestine bombing of Laos. Nor did television pay much attention to the gruesome war in Cambodia, provoked first by Richard Nixon's secret bombing of that country, and then by his highly publicized invasion. The two wars were very much the kind that President Nixon had hoped to fight and win in Vietnam. Very few Americans fought, and even fewer died, in either country. Television coverage and congressional oversight of the two conflicts were sporadic. These wars, as Nixon once said of Cambodia, were "the Nixon Doctrine in its purest form." As in Vietnamization, surrogate forces were left to fight the ground war while American planes were given free reign in the skies. Nearly as many tons of bombs were dropped on Laos alone as the United States dropped during the whole of World War II.

But the United States was as utterly defeated in Laos and Cambodia without

Had TV been around in World War II, would it have shaken our resolve?

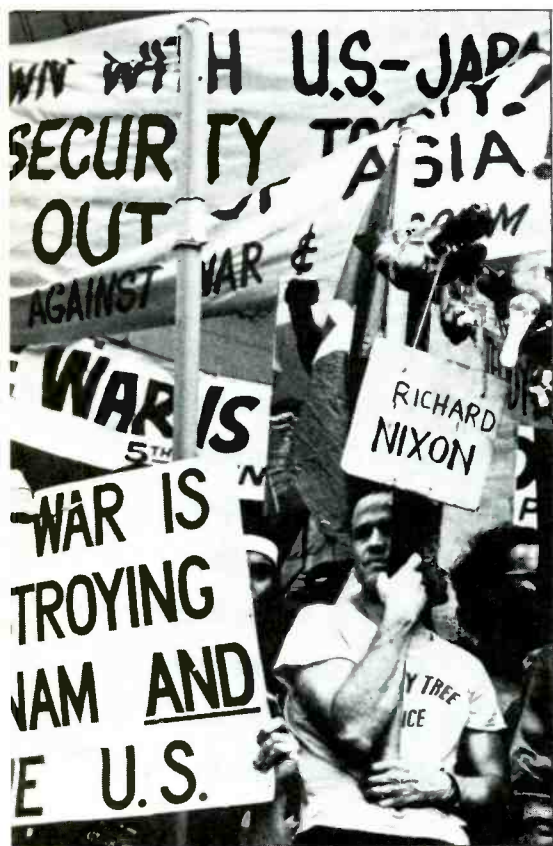
television as it was in Vietnam with television. Even when the adversary was as truly loathsome as the Khmer Rouge, all that American money and firepower still failed to instill any real fighting spirit in the anti-communist forces. In the end, though the Khmer Rouge knew no television cameras would be awaiting them, they actually overran Phnom Penh before the North Vietnamese and the Viet Cong took Saigon.

In the PBS series, "Cambodia and Laos," the ninth segment, is without doubt the least compelling in the entire production. Laos and Cambodia do not make good television now because they were not televised then. The absence of TV did not "save" Cambodia; in the end it did not save Richard Nixon either. The secret bombing of Cambodia was the military action in Indochina that, more than any other, undid Nixon. The bombing was recorded in the articles of impeachment, along with the Watergate burglary.

Vietnam: A Television History says little explicitly about the interrelationship of the greatest foreign crisis and the greatest domestic crisis of recent American history. Yet as its images cut between Washington and Saigon, the two great melodramas seem only different episodes in the same long-running TV show.

The debates about Vietnam will never end. But *Vietnam* suggests, at least to me, a definitive conclusion to the debate about television and the war. Like the Watergate tapes, the footage from Vietnam allowed Americans to hear what they otherwise might not have heard, to see what they otherwise might not have seen. That is all, immense as it is.

We—like General Westmoreland and President Nixon—have to take responsibility for what we did, and did not do, once we had heard and seen.



LBJ Goes to War (opposite page): U.S. Marines landing at Da Nang in 1965.

The Home Front (above): "Inflicting a terrible defeat on ourselves at home."

Peace at Hand (above right): North Vietnamese negotiator Le Duc Tho with Henry Kissinger at the Paris Peace Talks.

The End of the Tunnel (right): Refugees battle to board the last plane out of Nha Trang in 1975.

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The Last, Best Hope for the TV Documentary



WGBH's David Fanning is fighting on the front lines to breathe new life into a dying form.

by Philip Weiss

ALL THE EVIDENCE you need of the bleak life of the documentary on television, but also of the fresh hope for it, is to be found around David Fanning's desk, between the paper spike crammed with pink phone messages and the 11-year-old black-and-white photograph tossed in a side drawer. Impaled on the spike are the ambitions of scores of independent documentary makers. That ragged, four-inch column is what Fanning, executive producer of the *Frontline* documentary series on PBS, calls a "monument" to the narrow opportunity people have to practice the form.

The photograph is not so downbeat. Here on some English street is another independent filmmaker, but this one has a self-satisfied air. Look a little closer and you see that this is David Edward Fan-

ning himself, 11 short years ago—leaner, hungrier, hairier, but with the same pied-piperish-no-worries-picaresque smile.

To chart Fanning's personal transformation of the television documentary, it is best to begin with that photograph. It was taken in the first few months of his "journey," as he describes it: hopping around the globe with a suitcase under one arm and a film can under the other, "finding" himself here and there, as if propelled by Zennish serendipity.

The man in the photograph was then 25 years old—handsome, twinkling-eyed, a little slack-jawed—and had just made a powerful discovery. While cutting his second film, he had heard the pleasing "buzz" of his alarmed colleagues at the editing-room door, a buzz that convinced him film could be more powerful than any words he had written. David Fanning liked that, and before long he bid goodbye

to his land of South Africa—"that small, parochial country at the end of Africa"—and set out wandering: England; Ireland; an airline ticket to Hong Kong that he says somehow led instead to Southern California. And that winter when heavy rains made the California desert bloom, Fanning discovered something else—the power of artifice, of manipulation. He cadged 1,000 feet of film from the local public television station and a close-up lens from a dental school to make a film about the sands coming to life: flowers blossoming, lizards blinking awake. But the lizards were not cooperative, so Fanning stuck them in the refrigerator; when it came time to film, they warmed up appropriately on camera.

Today David Fanning, cadger/manipulator extraordinaire, finds himself the closely watched steward of the precious tradition of the television documentary. While commercial television has virtually abandoned the documentary, Fan-

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"Abortion Clinic"

Fanning with Frontline anchor Jessica Savitch



ning has been entrusted with *Frontline*, public television's \$6 million weekly prime-time commitment to the form.

Fanning represents the latest, best hope for the documentary on television, and there are scores of documentarians around dying to tell him how to do it. Many of them have. In its first season last spring, *Frontline* won praise for its diversity and occasional excellence from critics and public television officials, but it also ignited a heated argument about what a documentary ought to do. Should it be an authoritative, journalistic look at the most important public-affairs issues of our time? Or should it, as Fanning believes, be a more personal and idiosyncratic vision of virtually anything with general significance? So far, Fanning has made the films he wants, but he may not be able to much longer.

THE DOCUMENTARY BUSINESS on television today, Peter S. McGhee says saltily, is "sort of like the maritime industry in the '50s: They wait around for a ship; they may get one ship a year." McGhee is biased—he is the program manager at WGBH in Boston who oversees *Frontline*—and yet the documentary on commercial television is clearly suffering. "Dying," says Richard Salant, former president of CBS News and now head of the National News Council.

ABC, said by many to offer network television's most enterprising documentaries, has done only 13 in the last year. A spokesman says NBC has budgeted 14 to 15 hours for documentaries in 1983. And CBS, once famous for its documentaries, is down to a mere 10, although executives, counting the half-hour pieces by Bill Moyers and Charles Kuralt last summer, call it 20. (These shows will be expanded to one hour and reinstated under *The American Parade* umbrella starting this spring.)

There is a familiar litany of reasons for this gradual demise. While a documentary is relatively inexpensive to produce (usually not more than \$300,000 for an hour, compared to two or three times that for entertainment), it exposes the advertiser to small audiences (the ratings rarely make the top 10) and the network to denunciations and lawsuits (last summer there were 17 suits pending against CBS's news division). The climate established

by the Federal Communications Commission has surely made the networks less sensitive to social responsibilities. And then, too, there have been budget cuts.

At the networks, all but a sentimental piety for the form seems to have been shrugged off. Robert Chandler, the CBS senior vice president in charge of docu-

Documentaries expose the advertiser to small audiences and the network to lawsuits.

mentaries, points out that there's a self-fulfilling nature to the prediction that the documentary will die. "They are generally offered up as sacrifices, in terrible time periods," he says—in the summer or at Christmas or opposite a hit on the competition. Robert "Shad" Northshield, executive producer of CBS's *Sunday Morning*, argues that a lot of the subjects the networks used to do in one hour *should* be handled in 18 minutes. Meanwhile, the hours have in the main been abandoned to subjects so broad or far from home—McCarthyism, pleasure drugs, the banking crisis worldwide—that they are, as Richard Salant characterizes them, "forgettable." HHST is the term Peter McGhee picked up from a friend in commercial television: hard-hitting at soft targets.

If there is an overfed cynicism about documentaries at the networks, there is scrabbling panic among independent filmmakers. "Are we passive victims of history and culture . . . and no one cares about us out there?" wailed Julie Gustafson, director of New York's Global Village production company, at a conference on the "possible extinction" of the documentary. Gustafson and others argue that the finest documentaries emerge

from the clamor and diversity of the independent community.

It is not the documentary doldrums on the networks that distress the independents, though, but the apparent evaporation of government funding, their most reliable money source in previous years. The national endowments have cut back, and the Corporation for Public Broadcasting has proved a vexing patron. Even though Congress has stipulated that a substantial portion of what it gives to the CPB must be turned over to independents—some say as much as half—in recent years the CPB has cut back on independent projects: It has lessened its contribution to WNET's *Non-Fiction Television* and killed two anthology programs, *Crisis to Crisis* and *Matters of Life and Death*. And while Ron Hull, the director of the CPB's program fund, has expanded the fund for unsolicited proposals this year from \$2 million to \$6 million, independents will have to compete with PBS stations for that money.

The CPB has generally had two problems when it comes to independents: finding the talent, and getting it on the air. The talent hunt has been so bureaucratized—by the mandate to give every filmmaker equal access—that good work has apparently been getting lost in the shuffle. Frederick Wiseman, the Boston filmmaker famous for his fly-on-the-wall examinations of American institutions, complained to the CPB that the system made judges "queen for a day," and that their decisions had too little to do with the quality of the work.

But even after the CPB has assembled the talent, it has been unable to dictate program choices to PBS stations; CPB offerings have frequently aired at poor times or not at all.

Lewis Freedman, former director of the CPB's program fund, sought to short-circuit these problems with the "superseries," which would grant a group of public stations control over a large block of money, circumventing the CPB board. For the documentary series he began planning in 1981, he also wanted an executive producer who had the backing of that group and an eye for talent; someone, in the words of WGBH's McGhee, to tell "the flyspecks from the pepper."

Freedman found this someone in a certain British citizen, a producer who liked to spend his time fishing dreamily and drinking beer in a dinghy floating in Marblehead Harbor north of Boston.

For David Fanning had demonstrated a keen ability to land a rich assortment of documentaries on television. His own films were not especially distinguished, Fanning says: He used the usual Vivaldi for his desert documentary, and he is too dilettantish, too "untrammelled by ob-

sessive ego," to marshal the devotion that excellent documentary requires.

But he had learned his craft, working on terribly tight budgets as a cinematographer/producer at KOCE, the public station in Huntington Beach, California. In 1977, Peter McGhee of WGBH had been struck by Fanning's daring and excitement over ideas, and had given him his first big break, hiring him to be executive producer of a WGBH documentary series called *World* at the age of 31.

The 50 documentaries Fanning produced in five years of *World* were an eclectic group of sometimes brilliant, generally left-leaning international stories. Fanning ended up in two rancorous arguments over his editing of films, but independents were generally impressed by the diversity of the series. *World* was a serious effort to tell Americans about other places. Both of Fanning's parents were teachers, and the films reminded him of the evenings he had spent reading books with his mother in their home in a middle-class suburb of Port Elizabeth—and especially of those choice passages read aloud from British travel books. (Fanning did not even see television until he was 18, he says.)

But there was another significant influence on Fanning's development: His grandmother was a grande dame of the theater in England and then South Africa. David Fanning has always sought to entertain. In fact three years ago he wrote a screenplay, which now gathers dust at Twentieth Century-Fox, and these days he threatens to quit public television to do films along the lines of, say, Costa Gavras's work.

This combination of seriousness and showmanship was a rare one for public television. Nowhere was it more apparent than in "Death of a Princess," the 1980 *World* docudrama investigating the execution of a Saudi princess for adultery. It set off a dispute between Great Britain and Saudi Arabia, alienated the American oil industry (the Houston PBS station did not air the show), and got Fanning sued for billions by West Coast lawyers acting on behalf of "the world's Muslims." "Princess" also got a 13.8 rating, making it the fifth highest-rated program in PBS history.

That tension in Fanning's work between the orthodox and the daring is most evident in "Princess" and "Frank Terpil: Confessions of a Dangerous Man," which aired two years later and is perhaps his finest documentary. Fanning made both films with Antony Thomas, who once, at the start of a *World* documentary, offered a manifesto of their method: "Many people feel that the documentary must be strictly objective. I think this is impossible. Every choice of



"Death of a Princess"



"Yulya's Diary"

camera angle, every cut in editing, imposes a point of view, maybe subconsciously."

Both "Princess" and "Terpil" pretend to be "objective" journalism, for instance, by employing a furrow-browed reporter as narrator. But in each case the "reporter" becomes much more—a key figure, perhaps the central figure, whose

A showman, Fanning has sometimes seemed only too willing to toy with journalistic conventions.

opinions are offered to us as truth. The reporter of "Princess" cannot in the end nail down the facts, but this does not matter. What matters, we learn—in a stupendous inversion of the importance of subject and narrator—is that the poor girl's death enabled the reporter, "Christopher Ryder," to go on a "journey through the private center of the Arab world." (Ryder? *Rider? Traveler?* Where'd they get that name? "We made it up—obviously," Fanning says with a grin.)

Similarly, at the end of "Terpil," which concerns an arms dealer who equipped tyrants and terrorists, the reporter is seen walking along a sea-wall and saying he is "convinced" that Terpil was a "cog" in the machinations of Western governments. Presented to the viewer as "news," replete with an anchorman's authoritative opening and closing, "Terpil" (which won an Emmy in October) also departs from the established facts to get at an author's personal sense of the truth. "The truthfulness of a program cannot be assured by any rules that can be written down, because within the rules you can be a crook," Fanning's boss Peter McGhee explains. "David knows that, and because his commitment is to that pursuit of a truthful account of things,

he's much more willing to rely on a director's artifice, his ability to manipulate."

There are other views of Fanning's true interest—one of them being the somewhat stuffy thought that if there were no such thing as television, David Fanning would be running not a newspaper but a circus. And so when *Frontline* appeared, there was, inevitably, a buzz.

NOT UTTERLY SHAVEN, clad in a flannel shirt and corduroy pants and cracked cowboy boots, David Fanning is staying late in the *Frontline* offices. He is working distractedly at a script. Raw, silent footage plays on a nearby monitor. Two staffers are in a nearby studio working on a rough cut. Fanning won't stick his nose in until they are finished.

About him on the walls are reproductions of Turner paintings, the two Emmys and two Peabody awards he has won, a coupon for Zen massage, and photographs of two striking women who have appeared in his productions. On the door is a print of a colorful old poster: "Stage Magic Extravaganza. Le Grand David."

Fanning is 37 and appears to lead a happy life: His face has a ruddy, pleased look. He is restoring an old house by the ocean, and entertains friends there around a big table with cheap red wine. Married for seven years, he is recently divorced, with no children. He makes \$55,000 a year. He windsurfs; he drives a silver sports car fast.

He is tremendously winning, brimming with an energy that seems personal, sincere. "Half gypsy, half college professor," one of his critics says.

Members of Fanning's editorial advisory committee warn that he fends off scrutiny of his ongoing work with his gift for gab. This means that when you ask him tough questions, you will get either "whipped cream" (Member A) or "a Chinese menu" (Member B). Indeed, a question about Jessica Savitch, *Frontline's* anchorwoman, is met with several columns of creamy praise ("Jessica is courageous . . . she writes for herself well . . . you don't hang around her world without knowing the stations of the cross"), which seem audacious considering the observations of others close to *Frontline* production: that Savitch has sometimes proven to be a poor interviewer, so diffi-



"Daisy"

"An Unauthorized History of the NFL"



cult to work with, as one insider says, that Fanning "can hardly even bear to be in her presence." (Savitch says this is simply not true: If there have been disagreements, they have been productive ones, often reflecting the conflict between her mainstream journalistic values and Fanning's "cinematic" ones.)

Clearly, Fanning lacks the "spleen," as he puts it, for disputation. Then why all the controversy? It's his irrepressible curiosity always getting him into sensitive matters, he says—that swift and slippery progression from "What? Huh? That sounds interesting," to "Oh shit!"

But then Fanning has always produced films not so much to change the world as to get attention. "David likes to make a scene," another producer says. Fanning defends the first year of *Frontline*, citing, above all, the interest it has aroused.

He is right: *Frontline* averaged a 3.5 rating for the first 15 episodes, which is healthy for its 8 P.M. Monday slot. The series has also drawn fire. Melvin Belli, the "king of torts," sued *Frontline* and a source for suggesting that Belli might have violated a code of professional conduct. The suggestion came in one of the strongest investigative shows, *Air Crash*, on the litigious aftermath of a Boeing 727 crash outside New Orleans in July 1982, which killed 153 people.

Criticism has also come from the independent producers. They have virtually accused Fanning of selling out by taking on a project with what they see as *Frontline's* mainstream homogeneity. "Why did you do it, David?" challenged Marian Marzynski, an independent who had worked fruitfully with Fanning on *World*. "By sitting Jessica Savitch in her chair and using her voice and her narration and doing all the editorial work, unconsciously, [you are] killing independents." Marzynski made his comments last spring at an American Film Institute conference on the independent documentary, at which Fanning showed up joking that he was wearing a flak jacket.

MUCH AS FANNING has had to fear from independents, though, his real challenge has been in reconciling what might be called the television establishment to his unorthodox "language" of the documentary—his style, his personal aesthetic.

This, in large part, is his dedication to presenting an author's view instead of a view claiming to be authoritative. Stylistically, it is his dedication to exploiting film in all its variety of imagery and sound. It is using film to evoke, not just to tell. Fanning's aesthetic follows the tradition often thought of as European. The

Fanning defends *Frontline's* first season by citing all the controversy it aroused.

television establishment maintains a far narrower view of the form, as a piece of journalism that conveys authoritative statements on a pressing matter—a transcript enlivened with images.

Observers of *Frontline* have tended to characterize this conflict as one between film and journalism. In any case, it has been played out on two levels: One is the journalism question, Fanning's alleged nonchalance toward journalistic methods when treating newsy subjects; the other is the values question, his predilection for personal films on non-newsy subjects.

Fanning the showman has sometimes seemed only too willing to toy with journalistic conventions. The chief example of this is his heavily hyped stab at an investigative blockbuster, the first *Frontline* episode last January. "An Unauthorized History of the NFL," which won an 8.2 rating. It came under attack from newspaper critics and the show's editorial advisory committee because three sources had been paid (\$1,000, \$1,500, and—to a source's wife—\$10,000) and had asserted, among other things, that NFL games had been fixed about 15 years ago and that Carroll Rosenbloom, the Los Angeles Rams owner who drowned in the Pacific in 1979, had been

"more or less murdered." These statements were aired without much supporting evidence. "The game plan behind this documentary seems to be that if enough balls are tossed into play, somebody may score a goal," wrote Walter Goodman in *The New York Times*.

William Cran, the program's writer and producer, says that if he had it to do over, he would hold off on a couple of assertions. And yet Ned Schnurman, executive producer of PBS's *Inside Story*, commented that it was the only film about the NFL he had seen that did not seem as though it had been done "by a public-relations man for the NFL."

One thing to emerge from the controversy was a set of staff guidelines, 13 pages on "journalistic standards and practices." The editorial advisory committee pressed for absolute proscription of checkbook journalism (paying sources), as well as such artifice as the recreation or staging of events. But the *Frontline* staff convincingly argued that special circumstances may justify such practices, so some of the guidelines have the ring of being mere lip service ("Avoid paying for testimony").

Neither do the guidelines keep Fanning from making another play for attention that some consider journalistically lightweight: using Jessica Savitch. For in spite of what *TV Guide* has certified to be the NBC star's high believability, critics say she has not distinguished herself as a journalist on *Frontline*. Maynard E. Orme, the general manager of San Jose's KTEH and a member of CPB's *Frontline* evaluation committee, assails Savitch's theatrical intensity: "Every issue is important, every thing is a matter of life and death." Says Martin Carr, executive producer of WETA's *Smithsonian World* and also an evaluation committee member, "She doesn't have the gravity. She's very mannered, very Barbie doll."

In part because Savitch is considering leaving NBC or at least renegotiating her contract, her future at *Frontline* is unclear. But Fanning and the show's management board have stuck by her, apparently because she is thought to bring a loyal following to *Frontline*.

The show's staff had considered Daniel Schorr and Charles Kuralt, among others, as possible anchors for the series. Ask Fanning today whom the editorial advisors want as host and he snorts: "Edward R. Murrow . . . God, if we could clone him."

The legacy of Edward R. Murrow is at the root of the values question—the deeper criticism of *Frontline*, for not treating serious enough subjects. *Frontline*, says Richard Salant of the editorial advisory committee, must "tell me something I didn't know, about something im-

portant." *Frontline*, said John Corry in the *Times*, raising an eyebrow over a film about a Harlem man who had adopted a score of disabled children, "is the only weekly documentary series on either public or commercial television, and it is supposed to be exploring the great issues of our time." *Frontline*, says a member of the CPB's evaluation committee, "has all this freedom to do whatever they want to do—why the fluff?"

"Everybody has their own opinion of what a *Frontline* is," Fanning says. "I was guilty of selling a news-slash-current-affairs documentary series." William Cran, the producer, agrees that there is an "awful orthodoxy" these days over how a documentary should be made.

The issue has arisen most sharply in connection with two films in which the camera spent most of the hour probing individual and highly personal decisions: "Abortion Clinic" and "Daisy: The Story of a Facelift." Traditionalists came away from both asking, "What was the point?"

The first was an emotionally wrenching vérité film about a clinic in Chester, Pennsylvania, featuring graphic shots of two women undergoing abortions. The film contained minimal narration and no authoritative interpretation, but it communicated as a raw experience, in a way that is difficult to put into words, just what an abortion involves and why a woman might choose it. It may even have satisfied Savitch's pronouncement at the start, and left "no viewer's feelings about abortion unchanged." Yet journalists who sought a clear message were disappointed; Salant was "puzzled."

"Daisy," in turn, seemed almost frothy, with its pop music and the amiable, sometimes flirtatious presence of its distinguished author, Michael Rubbo, in intimate range of his subject, a Canadian woman deciding to have a facelift. "I didn't like it at all," Salant said. WNET's Jerome Toobin, an editorial advisory committee member, wondered "what the



"The Search for Sandra Laing"



"Chachaji: My Poor Relation"

hell it was doing on this series," although he did marvel at its demonstration of the power of the youth cult. No, "Daisy" was not explicitly about public affairs, but it treated a social question of universal significance in an extraordinarily penetrating and often ironic style.

Moreover, "Daisy" and "Abortion Clinic" apparently played well in the

a third season in 1984-1985, but the committee made clear that *Frontline* should be "more investigative," says Ron Hull, director of the Program Fund. One of the evaluation committee's members, who asked not to be identified, says the series has lacked "any kind of political fire, any kind of political center." *Frontline*'s own editorial advisory committee has pushed Fanning to do harder, more analytical stories. "[Fanning] realizes it's been uneven," says Toobin, the committee chairman, "[but] I'm very dubious of how deep his editorial sense goes."

What they would wring from Fanning is a guiding intelligence for *Frontline*, a critical vision of public affairs that would be evident in each show of the series.

But such serious analysis is probably not where David Fanning's prodigious talents lie. He does not produce pieces that people *ought* to watch, but stories they will *want* to watch. He does not read *The New York Times* every morning; he does read fiction.

What Fanning does best is to get filmmakers excited about ideas, and then get others to watch their films. "You just have to *do* things," he explains. "Shake a tree and see what falls out."

And so even at the end of a long day in the *Frontline* offices, he is still shaking trees, strewing ideas and images about. There is the piece of "gonzo journalism" he wanted from Mexico. There is what he calls the ultimate "Graham Greene documentary," about someone "trapped in some skein of time, wriggling in the web." There is the rock and roll documentary he has got to make. And there is the secret wealth of untapped programming all around the globe—shouldn't Americans have a chance to see the 11 o'clock Nairobi news once in a while?

But all that can wait. For in another office someone has turned on Fanning's Terpil film, and he slips in to watch. Old deeds of alchemy flash past: the hotel elevator filmed from inside its shaft, the abrupt cut from an obscene shout on a police tape to the tinkling of a piano, the keening Eastern music as we are suddenly swept to far-off, bombed-out Beirut. David Fanning's shoes tap against one another excitedly, his eyes light up, a self-satisfied smile plays across his face. Turn to him and ask him a question in the middle of this and he gives a little jerk of the chin back towards the screen. *Don't talk*, he is saying. *Watch.* ■

His challenge has been reconciling the TV establishment to his unorthodox language of the documentary.

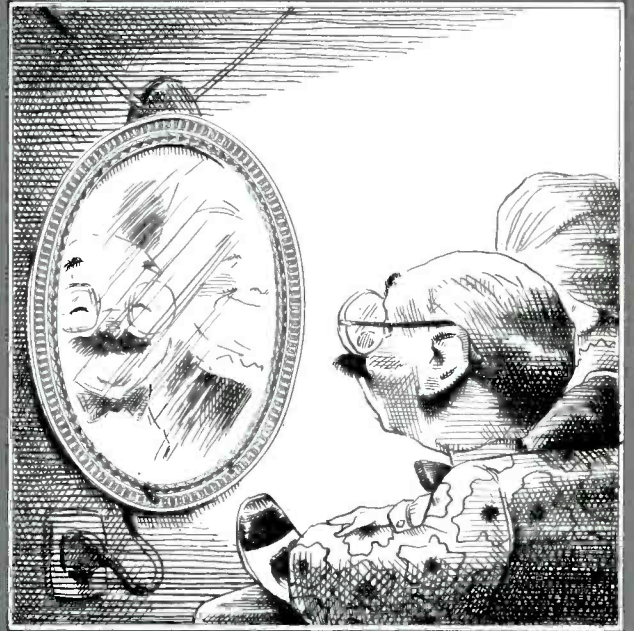
heartland. Barry O. Chase, PBS director of news and public affairs, feels that the stations trust *Frontline*. "They were busy buying it [a \$2 million commitment by the stations for the second season] even while the shit was hitting the fan over the football show," he says.

And yet the burden of Edward R. Murrow is still there. The CPB, *Frontline*'s principal funder, has pledged \$4 million for the second season, and its evaluation committee has recommended that it fund



We've Got It Made: NBC Stoops to Conquer

by William A. Henry III



TELEVISION SHOWS are the very flotsam of modern life, manufactured to fit around ads for soap and toilet paper, distributed via the electronic hocus-pocus of satellites or telephone lines, and often consigned to oblivion after a brief hour or two in the sun. Yet routine police dramas and sitcoms arouse the intense public passions that earlier generations reserved for religious heresies and calls for revolution. Nearly every group organized to pursue a grudge speaks vehemently about TV. Why? Because TV is the Great Legitimator, the arbiter of what is true about America. If a social trend or philosophical posture is reflected in television entertainment, it is perforce part of the mainstream. The producer of an amusement has much the same power as the chief officer of a news program: to render judgments about the nature of the nation.

This duty is carried out through the symbiotic processes of conditioning an audience as to what to expect, and then sampling it, often daily, about what it believes or likes. Television thus becomes a two-way mirror, in which the few behind the wall of glass look out upon the many, and the many in their living rooms look upon a reflection of what they take to be themselves. Some "media professionals," notably those who work in politics, speak of this exchange as "two-way communication." That seems a dubiously egalitarian metaphor for an essentially elitist activity, but it conveys a home truth about a marketplace society: A mass medium is unlikely to survive unless its world view comports with what people already believe.

Several years ago there was a dust-up among the three principal networks about the nature of their moral obligations in mirroring society. An executive of ABC, whose core constituency for more than a decade has been young urbanites, said that he wanted his network to be one step ahead of the country as a whole. A panjandrum for CBS, which appeals to older and probably stuffer types—both rural conservatives and educated suburbanites—said he would prefer to see his network stay a step behind, so as not to offend the sensibilities of traditionalists. Both networks' remarks plainly fit their demographic strategies. An executive for NBC, which has been unable to shape a corporate personality, said all too predictably that his network would

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like to be exactly in step with the average man.

All three networks have juggled managements to varying extents since those self-definitions were offered, but in the inertial fashion of large institutions, the Big Three have retained much the same character. One glimmer of change was, however, evident in the weeks just preceding the fall season: NBC, in the

**Like a news executive,
an entertainment producer has
the power to render judgments
on the nature of the nation.**

course of promoting its new programs, committed the heretofore unpardonable sin of saying, on air, that its new entries were meant to kill off some of America's most beloved programs ("Rousters gonna sink *The Love Boat*").

NBC did not bring this new-found aggression to the selling of at least one program, however, apparently because it judged the show a likely winner on its own merits. The fair-haired child (apt, for a show that features a breathy blond bombshell doing a Marilyn Monroe rip-off) is *We've Got It Made*, a comedy produced by the most celebrated network programming executive in American television history, Fred Silverman. The show's premiere was hyped by diligent display of the central attraction, Terri Copley, in short ads fittingly called "teasers" and on such NBC showcases as *The Tonight Show*. The initial marketing worked: In its debut, the show comfortably won its time period. (In subsequent weeks, the ratings slipped, though not severely.)

What makes *We've Got It Made* interesting, however, is what it tells us about NBC's perceptions of relations between men and women in our post-feminist society, and perhaps about the soci-

Michael Witte

93%

**OF ALL
AMERICANS
EXPRESS
A RELIGIOUS
PREFERENCE***

*RELIGION IN AMERICA, 1982,
Princeton Religion Research Center and Gallup International

76%

**OF ALL
AMERICANS
WANT TO SEE
RELIGION PLAY A
GREATER ROLE
IN SOCIETY***

*RELIGION IN AMERICA, 1982,
Princeton Religion Research Center and Gallup International

\$25

**BILLION DOLLARS
ARE SPENT ANNUALLY
BY AMERICANS IN
THEIR PURSUIT
OF RELIGION***

*RELIGION IN AMERICA, 1982,
Princeton Religion Research Center and Gallup International



**THE
INSPIRATIONAL
NETWORK**

RCA SATCOM 3R, TRANSPONDER 2

93% 76% \$25 BILLION

**BIG NUMBERS IN
ANYBODY'S LANGUAGE***

*RELIGION IN AMERICA, 1982,
Princeton Religion Research Center and Gallup International

**SOME NETWORKS SEEM TO BE
FORGETTING THIS FACT**

WE HAVEN'T

CALL 704/542-6000, EXT. 2123

AND DISCOVER:

- LAUNCH SUPPORT
- ADVERTISING SUPPORT
- AFFILIATE RELATIONS

ety itself. The situation of this situation comedy is a thinly clad sexual fantasy: Two young men, whose apartment is so disheveled that it resembles downtown Beirut, decide, upon urging from their respective girlfriends, to hire a housekeeper; the first candidate to arrive is a homeless waif who looks like a centerfold, gushes like a voice on Dial-a-Porn, and pours out the sad story of her life like a drunken hooker in a bar just before closing time. *Mirabile dictu*, she not only wants the job (at \$75 a week), she wants to move in. The young men practically devour her. The girlfriends, uneasy at the competition, want her dismissed. But after repeated tearful recitals of the woes of her childhood (attempted incest, sexual harrassment, repeated abandonment, some of this somehow accompanied by a laugh track), the four-some decide to let her stay. Thus the two young men are assured at least the hope of having "a little on the side," and all in the convenience of their own home.

The most distasteful aspect of *We've Got It Made* is that, with three young female characters to represent our supposedly liberated society, the show reduces womanhood to three stereotypes—sex kitten, frump, and sophisticated bitch. (The story line does only a little better for the men, who are slotted as a puckish slob and a slicked-down go-getter.) The sex kitten is dopey, domestic, and undemanding; presumably NBC believes that this utter lack of self-assertion is as much a part of her appeal as her heaving chest and golden nimbus of hair. The frump has the expected mousy-brown curls, boyish physique, and timorous manner; she is all but incapable of standing up for her rights and pathetically grateful that she has a boyfriend, however inattentive or even cruel. The sophisticated bitch is so high-strung that she storms out on first meeting the maid, then later retreats to the terrace to scream out her frustrations at the threat to her possessiveness. She is artsy and expects her man to go to the theatre ("ugh" is his reaction and, it is presumed, ours). She is obviously educated and wealthy, and does not need a man to shelter (or dominate) her. She is overtly sexual and makes plain that she feels entitled to be satisfied—often. The underlying message seems to be that men long for the submissive women of the (perhaps imaginary) past, and that with any luck they can find just what they are seeking, though probably not with their wives or sweethearts.

Implicit in the show's portrait of men and women is the presumption that all worthwhile relationships are based on sexual

attraction, and that the unattractive are allowed in the door on sufferance, if at all. The opening episode made that point, rather repulsively, by means of a highly unlikely plot contrivance: The young men's ad for a maid brought a stream of applicants. (Really, my dear, we all know how *hard* it is to find good help these days.) All were greeted at the door by the puckish young man, who was meant to be the more winsome of the two—rumped, tousled, slightly manic, the perennial life of the frat-party. After the sex kitten showed up, and he practically dragged her in, the next to arrive was a formidably competent-looking and rather homely middle-aged woman; he took one quick look and said,

We've Got It Made reduces womanhood to three stereotypes: sex kitten, frump, and sophisticated bitch.

"Beat it." The next time he answered the door, three women had arrived at once. The first said, "I do windows." The second topped that with the claim, "I work weekends." The third reached for the skies: "I was a maid at Buckingham Palace." That trio did not even get a word of dismissal; our hero just slammed the door in their faces. His attitude drew no punishment from the god of justice, nor an iota of disapproval from any other character. Later, he abused his girlfriend, the frump, in a series of half-intentional practical jokes. He even found occasion to do what drunken teenagers talk about doing with available but less than appetizing women: He put a paper bag over her head.

We've Got It Made is shot through with other lamentable assumptions. Jealousy is treated as a central part of any woman's romantic involvement; deception, rather than compliant fidelity, is portrayed as the normal man's response. (How did the poem go? *Higamous, hogamous, woman's monogamous; hogamous, higamous, man is polygamous.*) Ambition and career success, in both men and women, are equated with a glossy, unapproachable manner and an evident lack of compassion. Sex is detached from affection: Although the young men and their girlfriends appear to know each other in every sense of the verb, they scarcely hug or cuddle. (Why these couples are not living together, after a two-year relationship in at least one case, is left unexplained; there is no plausible explanation except that the concept of the show demands it.)

It may be unreasonable to look for logic or humanity in a show that based a running gag, in its first episode, on a musical toilet seat that played, "Here comes the bride." But the everyday reality of television comedy is more in shows like *We've Got It Made* than *All in the Family*, *M*A*S*H*, or *Barney Miller*. If we believe that society is mirrored on the screen, then we must accept the initial success of Fred Silverman's erotic daydream as a reflection of something real about men and women, who by the millions are clinging to the way we used to be.



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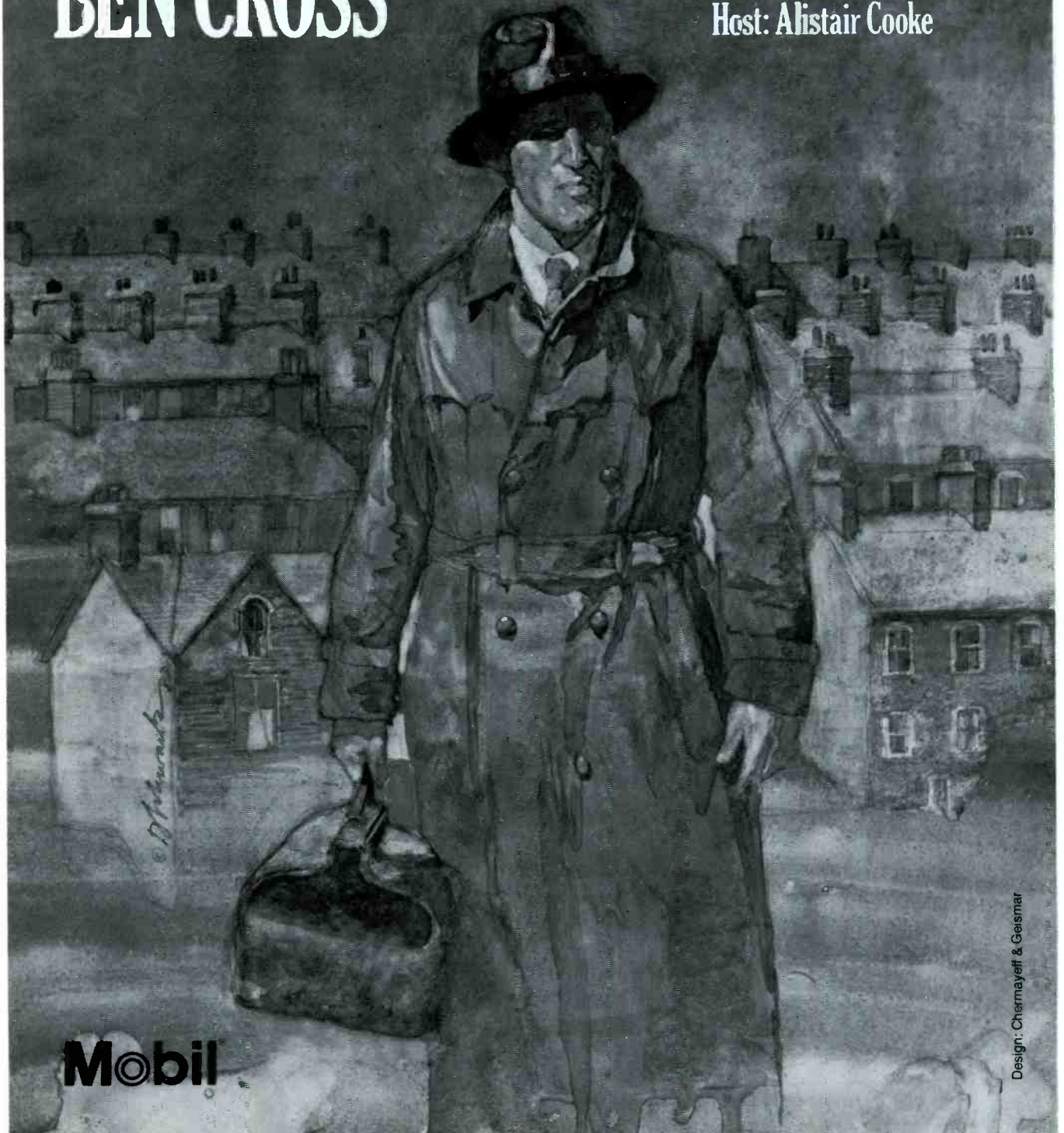
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