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ABOUT OUR COVER

Mike Staup of Magnavox with the Magnavision player and MCA DiscoVision disc at press debut two days before system went on sale for first time in world in Atlanta. On screen is a scene from "Smokey and the Bandit" with Burt Reynolds, one of the two best-selling titles on first day of sales. Other top seller was "Jaws." (Videodisc artwork courtesy of MCA, Copyright 1978 MCA DiscoVision. All rights reserved.)

video

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First came the home videocassette recorder. Now a new form of video promises to further change the way we view television in the home. Imagine owning *The Godfather* for $16 . . . an offer you can't refuse?

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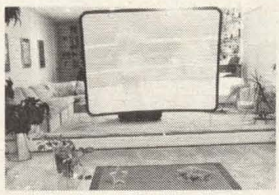
by Nigel Cawthorne

Pick up the phone, dial in to a central computer and start punching numbers on a handheld keypad that looks like a calculator. On your TV screen appears a list of movies in town, complete with review, show time, and theater name and location.



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Coming out of a notable New York background in TV production at CBS and two major video houses, cocktail lounge proprietor Bruce Lang of Providence, R.I. has found large-screen TV both a business and a pleasure.

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A new series of 14 half-hour videocassettes are designed to "bring nature back home." After a hectic day at the office, sit back, relax, and watch the waves roll in, on your TV.

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Hitachi VT-4200 VHS Videocassette Recorder
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Zenith SK-1961 Color Television

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VIDEOGRAM

Future Video from Panasonic

If you're the least bit impressed now at what the family TV set is turning into—a veritable video information center in the home—you'd hardly believe your eyes at what a Panasonic sneak preview revealed is in our video future.

Displayed by Panasonic's parent company, Matsushita Electric Co. of Japan, at a recent business exposition—the 1979 Winter Consumer Electronics Show—were products now in the prototype stage and some ready to be mass produced. Though it's not likely you'll find any in your local store for a good year or so, neither are these items science fiction imaginings. They're real, they work, and they can be made available to the general public at prices that are reasonable by current economic standards.

Not all the items demonstrated were video, but each was fascinating in its own right. Paper batteries, for instance. Allowing electronic products such as transistor radios, watches, and calculators to be freely designed without any restriction because of the battery's size and shape, these paper-thin dry-power cells are 0.03 inches thick (0.8 mm) and can be produced in any contour, making possible ultra-tiny products that fit in a pocket.

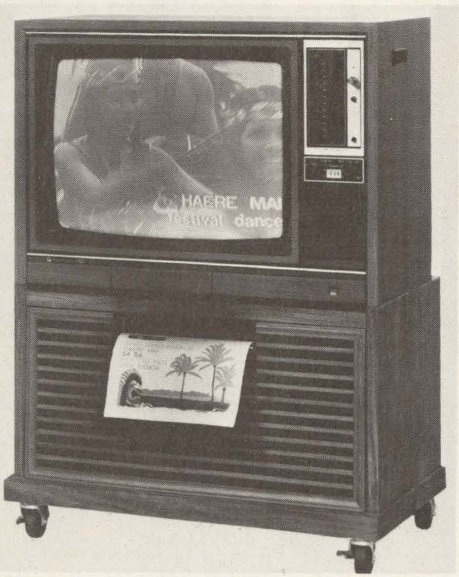
In addition to the products pictured here, on view were a high-speed duplicating system that can copy a 2- or 4-hour VHS videocassette in five minutes (as compared with the two or four hours "real time" previously required); an automatic antenna system with a special circuit that fully eliminates ghosts from your TV screen; and a high-definition TV system with remarkable resolution and color so sharp the viewer can almost sense a three-dimensional image on the screen.

Unfortunately, this last piece of future video is confined for now to closed-circuit applications. That's because its unusually sharp picture is the result of 1,125 scanning lines. American television sets are on a standard (called NTSC) that uses only 525 lines. The system produces such a clear image it can be projected on a 55-inch screen and still be superior to a conventional television's picture. (As a rule, the larger a TV picture, the lesser its resolution and sharpness.)

Other differences in the Panasonic prototype TV system is that it operates on a frequency of 30 mHz, five times the width of a normal U.S. TV station frequency, and its "aspect ratio" (relationship of width to height) is 5:3 (five units wide, three high) instead of the 4:3 ratio that standard TV screens have.

Another item still a few years away from availability but of great value to business and education professionals is a processor that in two minutes produces a fully mounted 35 mm color slide that's ready for immediate viewing. Called "Insta-Moment Panacopy Slide Processor," the system can make slides from a variety of sources, such as a chart, full color photograph, print, or illustration.

Described on this page are other video products of the not-too-distant future that Matsushita featured in its exhibit.



Mr. Gutenberg may not believe it but this "Picture Paper" TV incorporates a "printing press" device that delivers right to the viewer's hands a hard copy sheet of what appears on screen. The full color print-out emerges from a slot under the receiver. A picture signal is multiplexed over the audio wave of the TV broadcast, triggering the printing device. Printing time is two minutes. "We can see this developing into electronic home delivery of the daily newspaper in color," says a company spokesman. "The viewer can also get printed copies of weather reports, dramatic programs, texts of speeches, news background, or even recipes."

Miniature black-and-white televisions to take on trips to the beach, a picnic, in a car, boat, or on vacation are quickly gaining in popularity. Until now, though, mini color TVs have not existed. This 4.5-inch diagonal TV weighs under 10 pounds and uses a new color tube that operates off dry battery power. The bright color TV picture can be easily viewed outdoors. Using only 7 watts of power from 8 "D" batteries, it measures 5¼ x 8-3/8 x 11½ inches (h/w/d). Matsushita says it will begin production this summer, but won't say when it will be on sale in the U.S.

Home movies may be permanently put to pasture when cameras like this become widely available. With a sensitivity three times that of normal video cameras, and weighing a feathery 4.4 pounds, this handy color camera reproduces a clear, bright TV image with as little as 50 lux of light, or the equivalent of a 7.2-watt lightbulb. The pick-up tube used is a new design and is called "Newvicon." The f/1.8 lens has automatic iris.

This "fun and teach" TV machine is a two-way system that turns the TV into an electronic canvas by allowing the user to write on the screen in different colors with an electronic light pen. Basic animation, multicolored charts, and graphics are some of the video effects that can be created. A standard audiocassette tape records and stores the screen information, with 350 separate frames fitting onto a 60-minute tape. Talking back to the TV is another feature, with pre-recorded tapes stimulating two-way communication. The tape can also record audio for music soundtracks or voice narration. Color bars on a keyboard panel provide various hues from which the budding "video artist" can choose to paint an electronic masterpiece.

boosted somewhat, becoming more prominent than they were in direct reception, but there was no increase in clarity.

Ease of Operation

The placement of the controls on the Hitachi is logical, and learning to use them is easy. All are located on the front of the deck and are clearly marked.

The frequently used jacks—for audio input, video (camera) input, and remote pause control—are also on the front of the unit, right under the VHF and UHF channel selector knobs, and we found it extremely useful to have these jacks so easily accessible. The only hidden control is the little-used RF channel selector, which is found on the bottom of the deck.

All the controls performed their functions flawlessly. Our only reservation—combining the stop and eject controls on one switch.

Conclusion

Overall, the Hitachi VT-4200's picture was distinct (good in the SP mode, really quite good in LP); its audio clear and unmuffled; and its controls easy to operate and sensibly located.

A nice special feature is the freeze-frame capability during playback, though it's not without its stability problems. A common feature that's lacking on this unit, however, is audio dub.

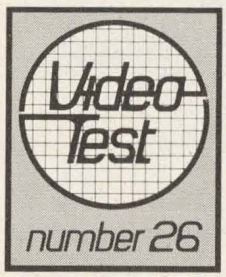
DATA

Date of test: December 1978
Model: VT-4200
Suggested retail price: $995 (including all necessary cables, remote pause control)
Function: record and playback on videotape
Tape format: VHS
Record/playback capability: up to 2 hours at SP, 4 hours at LP
Dimensions: 6⅛ x 19 x 13⅛ inches (h/w/d)
Weight: 34 pounds
Casing: simulated wood grain plastic with chrome trim
Channel selectors: clickstop VHF & UHF
Audio dub: no
Mic input: yes
Mic included: no
Pause control: yes
Remote pause control: yes
Counter & memory: yes
Auto shut-off: yes
Timer: yes
Camera input: yes
AFT: yes
AFC: no
Tracking control: yes
Skew control: no
Controls: VHF & UHF channel selectors, AFT, clock/timer settings, tape counter & memory, tape speed switch, output selector, Fast Forward, Rewind, Record, Play, Stop/Eject, tracking, power/timer
Special features: freeze frame in playback

TEST RESULTS & RATINGS

	SP	LP
Overall picture quality:	very good	good
Audio quality:	very good	good
Timer accuracy:	excellent	excellent
Rewind time:	4 minutes	4 minutes
Fast forward time:	4 minutes	4 minutes
Energy consumption:	35W	35W
Overall performance:	very good	good

COLECO TELSTAR ARCADE



THE Telstar Arcade from Coleco is a programmable game system (with all playing accessories included) that offers a fairly wide range of color games—paddle games, target games, battle games, racing games—for one, two, and occasionally four players, at a modest cost.

The console is unique because it's triangular. This gives maximum control-panel area in the smallest possible space, which allows for permanent placement of the various game accessories (steering wheel, gun in holster, etc.) right on the console, but the design is a mixed blessing since many games are played using controls located on a side not facing the players.

We received the game console and accessories, an AC adaptor, the TV/game switch box, and four game cartridges (Cartridge #1, containing tennis, Road Race, and Quick Draw, comes with purchase of the unit). We displayed the games alternately on the Zenith and Sharp TVs reviewed elsewhere in this issue.

Setting things up for play was easy; the instructions on assembly were clear and well illustrated, and things fit where they were supposed to. Most of the parts simply snapped together; only the pistol holster had to be screwed into place. Our only problem was with the game cartridges—they did not always slide into place easily on the first try, and we occasionally had to do some wiggling to get them properly seated in their triangular spot on the top of the console.

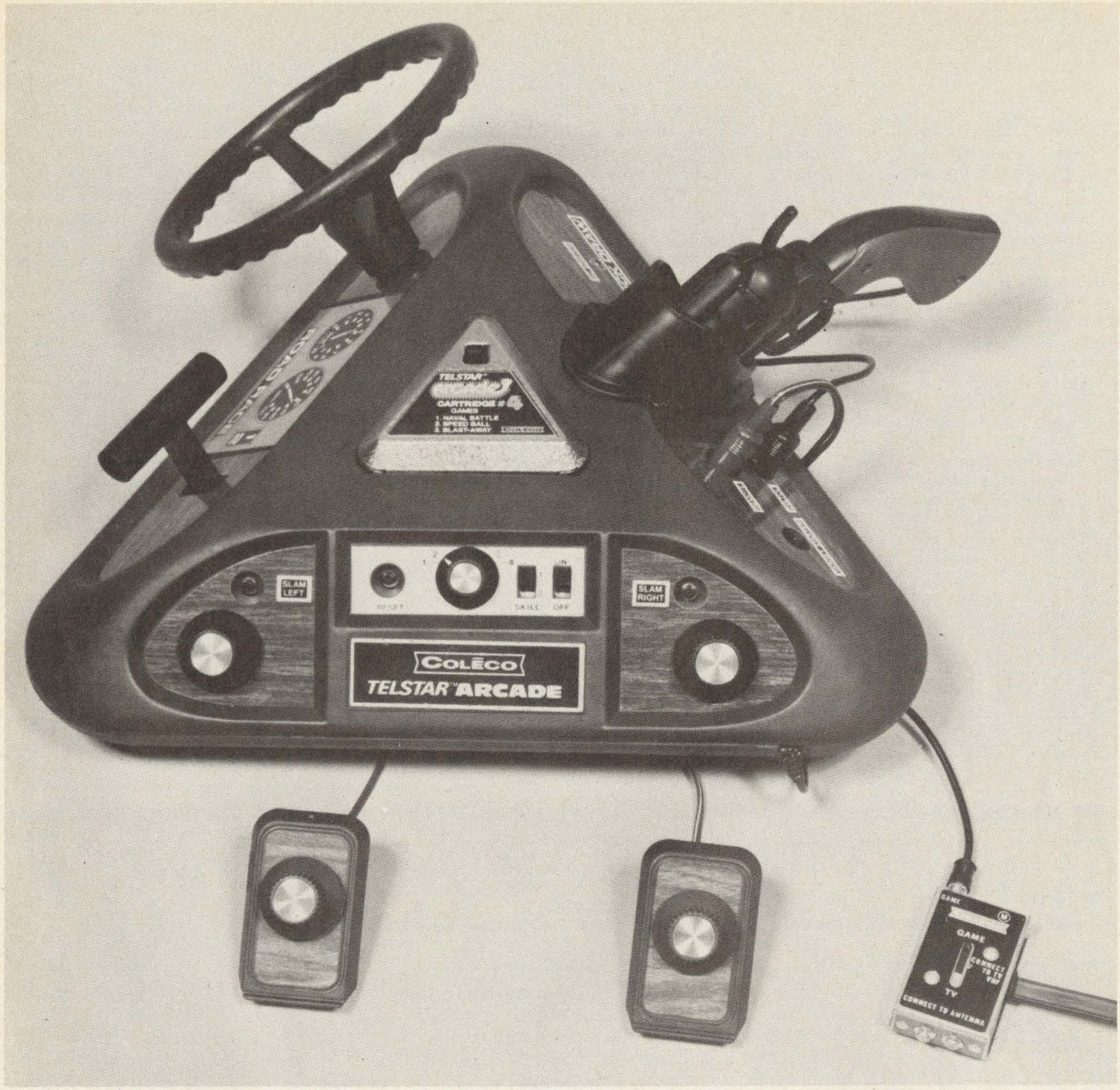
We liked the fact that the channel selector on the bottom of the console is well protected against accidental displacement; unless you move to another area where the channel selected was not vacant it would probably never need adjustment once set. As is usual with most games (and video recorder/players), it offers the choice of channel 3 or 4.

The Telstar Arcade did not seem to operate exactly on frequency, however. We used it interchangeably with other TV accessories operating on channel 3, and the game was the only one that required some TV set re-tuning; if you have a VCR or other attachment, then, you may find fine tuning a way of life.

Picture & Audio Quality

The Telstar Arcade is not a particularly sophisticated game as far as graphics are concerned. Colors are clear (though limited), however, and legends and on-screen scores are big, bright, and easy to read.

Game sound effects are also rather elementary—car crashes, beeps, gunfire, etc.—but satisfying enough. Important to note is that they come from the game unit itself, not from the TV, which means that they can't be raised or lowered in volume. It also means, however, that the volume on the TV should be turned all the way down, and this



ZENITH SK-1961 COLOR TV

Video Test number 27

THE Zenith Model SK-1961W is a 19-inch table-model color receiver in a cabinet with a cleverly tapered design that makes it look slightly more compact than it really is. In common with most table models, it has a built-in telescoping antenna—a full dipole, not a mere monopole—plus a UHF "bow-tie" that clips onto either VHF pole.

Like many current sets, this one was designed primarily for operation by remote control, and all the controls on the set itself are hidden behind a door to the right of the screen. When the door is closed, the only features visible are fourteen channel-indicator windows, an ambient-light sensor, and a light that signals when the exclusive "zoom" feature is in operation. There's no pilot light, as a channel indicator will glow whenever the set is on.

The remote control holds buttons to turn the set on and off, mute the sound (a very handy feature), and operate the zoom, plus up/down buttons for volume and channel.

The zoom is Zenith's most unusual feature: pressing a button on the remote control enlarges the central portion of the picture about 50 percent, somewhat as if the studio camera had zoomed in on it. When

eliminates the rather nasty "blank channel" noise that occurs during cartridge changes, when the power on the game unit must be turned off to avoid "blowing" a cartridge.

The Games

The four cartridges offered a total of twenty games, and each cartridge contains more than one type of game: Cartridge #2 has various paddle and target games; Cartridge #3 has pinball and target games; Cartridge #4 has paddle and target games.

Although there were numerous variations and gimmicks (action speed-ups, ball slams, ball english, disappearing targets, etc.) that spice up play, and some games (four-player hockey, for instance) were reasonably challenging, in general we found the game selection somewhat repetitive and the action a bit on the bland side.

Ease of Operation

The instruction sheets that come with the cartridges are quite clear, and working them is easy enough. But because the various knobs, buttons, and levers control different functions for different games, things can get confusing and game playing can be slowed down. For example, there are four positions on the game selector switch, so with cartridges that offer more than four games, choosing is done with additional controls—like the gear shift on the road racing panel. In other games, like pinball, the paddle knobs or the steering wheel modify the playing field. We had more fun trying to figure out what control would add a twist to the games than we did actually playing them; on a few it was possible to get the balls hung up and watch them make endless rounds of the court without our intervention or watch them go through what should have been solid sidewalls or bumpers.

Our testing lab had trouble with the cartridges: "They did not always slide into place easily on the first try."

We were glad that the game had suction feet to prevent the control panel from skidding around, but we found that having needed controls on sides of the console triangle away from the one used for the game in progress was distracting. Another nuisance, though minor, was the fact that the knob on the game selector never lined up with the numerals.

Conclusion

In summing up the Video Arcade, we have to say that for every plus there was an accompanying minus, and although some games did present playing challenges the similarity between many of them made our enthusiasm wear thin after a while.

In addition, the action was not particularly engrossing and the graphics were bland.

Its overall design, plus the fact that it packs its own gun and holster and steering wheel, might make it just right for kids.

DATA
Date of test: December 1978
Model: Telstar Arcade
Suggested retail price: $59.95 (including AC adaptor, TV/game switch box, Cartridge #1); additional cartridges—$19.95 each
Function: programmable video game
Dimensions: width—18 inches each side; height—4 inches plus projections
Weight: 4 pounds
Casing: plastic
Controls: power on/off, pro/beginner skill, game selector, reset button, left and right control knobs, left and right slam buttons, steering wheel, shift lever, target starter, pistol trigger
Games available: Cartridge #1—tennis, Road Race, Quick Draw; Cartridge #2—tennis, hockey, handball for 1, 2, 4 4 players, Jumping Target, Quick Shot; Cartridge #3—pinball for 1 or 2 players, Shooting Gallery, Shoot the Bear; Cartridge #4—Naval Battle, Speed Ball, Blast-Away

TEST RESULTS & RATINGS
Overall picture quality: fair
Computer figures: good
Computer scoring and legends: good
Overall audio quality: fair
Ease of operation: poor
Energy consumption: 9 volts
Overall performance: fair

the zoom enlarges the picture, however, picture grain, snow, and raster lines are enlarged too, so there's no real gain in picture detail. Contrast and color wash out slightly as well, and rarely is the picture's center of interest actually centered on the screen; rather, the zoom is likely to cut off a portion of whatever you're zooming in on. There's no zoom button on the set itself; if you're close enough to touch the set you wouldn't need to zoom in closer.

Most—but not all—of the Zenith's other controls are quite conventional. There are switches for master on/off, power on/off, a "Color Sentry" control (which limits the range of the color, tint, and brightness adjustment), and AFC (Automatic Frequency Control). Control knobs are also provided for volume, tint, color level, sharpness, black level, and picture; and a rocker switch gives on-the-set up/down channel selection.

Since "sharpness" and "black level" may be unfamiliar terms, and "picture" means different things on different sets, they deserve an explanation.

The "sharpness" control varies the amount of detail in the picture. At its sharpest setting, it emphasizes ghosts, complexion problems of on-screen actors, and other undesired details as well as desired ones; if you like a brutally realistic view of what passes for life on TV, you might prefer that setting. At its softest, textures turn creamy and smooth, without the faint halo effect produced in movies in which diffusion filters are used; romanticists might prefer that setting. Zenith gives this control a clickstop detent at the center of its range, and we found that setting quite satisfactory for virtually all our viewing. (For comparison, the Sharp TV set reviewed in this issue had about the same degree of picture detail as the Zenith did when set slightly to the soft side of control center.) Though we used Zenith's recommended setting most of the time, we still appreciated having the extra degree of