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48-PAGE SPECIAL:
HOME IMPROVEMENT

Popular Mechanics

ARMY'S NEW A TOUGH TANK-BUSTING

APRIL 1983
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1,317,000-MILE REPORT

Chevy Camaro Owners Bought For Styling, Praise Handling, Too

PLANS: Build PM's Compact In-A-Wall Workshop

22 Window Treatments That Save Energy

How To Fix Leaks In Any Home Faucet

Giant Luxury Dirigibles Fly Again

Step-By-Step: The Fastest Way To Paint Your House—Brush Or Spray

PM Drives Ford's New Turbo T-Bird



COMPLETE PLANS INSIDE:
Build Our Classic Craftsman's Toolbox





On the cover

After more than 40 years, the historic Army jeep is being replaced—but may not be mourned for long. Its successor, a tough new breed of missile-toting tank-buster, promises to be even more awesome. Read how the Army is choosing the new super jeep from three competing designs. [Story begins on page 89.](#)

—PM painting by Ed Valigursky

Popular Mechanics®

APRIL 1983

CONTENTS

VOLUME 159 NUMBER 4

INTERNATIONAL EDITIONS: CARIBBEAN, MEXICO, SOUTHERN HEMISPHERE

Special features:

PM Owners Report: Chevrolet Camaro

Great looks and handling outweigh minor complaints.

106

Workshop in a wall

Build our clever, space-saving work center that can be either recessed or free-standing.

126

How your windows can save you money

New energy-efficient shades and shutters help keep heat in during winter, out in summer.

132

Stop faucet leaks in any fixture

A complete guide to quick and easy faucet repairs, including all the new washerless designs.

149

Dirigibles fly again

After a troubled past, giant airships now offer new vistas in cargo hauling and luxury travel.

92

Two fast, sure ways to paint your house

Whether you brush or spray, here's how to get top-quality results with either method.

115

Make your own master craftsman's toolbox

Complete plans for a classic wooden chest in the grand style for fine tools or keepsakes.

108

Automobiles and bikes

- [10 Imports and Motorsports](#)
- [22 Car Clinic](#)
- [28 Detroit Listening Post](#)
- [39 Saturday Mechanic:](#)
Troubleshooting your cooling system—Part 1
- [49 The PM Garage](#)
- [81 Firsthand Report: Driving the European Ford Sierra](#)
- [96 Firsthand Report:](#)
Driving the Ford Tempo, Topaz and all-new Thunderbird
- [100 PM Owners Report:](#)
Dodge Charger
- [105 Firsthand Report: Driving the Mercedes 190 and BMW 318i](#)
- [106 PM Owners Report:](#)
Chevrolet Camaro
- [168 How to build an engine hoist](#)

Science and engineering

- [52 Science Worldwide](#)
- [89 The Jeep is dead, long live the HMMWV!](#)
- [102 Put your own project on the Space Shuttle](#)
- [195 Not all of space is empty](#)
- [195 Go soak a bridge](#)
- [195 No more bum steers](#)
- [196 Split-second bomb snuffer](#)
- [197 Foam sweet home is completed](#)
- [198 The drill you steer](#)
- [198 Cleaning blood for transplants](#)
- [198 Breast cancer war](#)

Electronics, radio and TV

- [16 PM Electronics Monitor](#)
- [84 PM Video Monitor](#)
- [98 New video games put you in the action](#)
- [196 Electronics gone "in-seine"](#)
- [196 Testing, by Jove](#)

Aviation

- [92 Airships rise again](#)
- [197 Economy-class fighter](#)

PM'S 1983 HOME IDEAS GUIDE

- [113 Cover](#)
- [115 The right way to paint a house](#)
- [121 A pro's secrets for spray painting a house](#)
- [126 Build PM's in-the-wall workshop](#)
- [132 Energy-saving with windows](#)
- [145 Build a pantry on wheels](#)
- [149 How to stop a leaking faucet](#)
- [156 New for home improvement](#)
- [160 Energy-savers for your home](#)
- [164 Terms builders use](#)
- [166 PM looks at window security](#)

SPECIAL CAMPING SECTION

- [55 Cover](#)
- [57 10 family camping adventures](#)
- [62 New tents for better shelters](#)
- [71 Where to go—what to take](#)
- [76 New for family camping](#)

Shop and crafts

- [20, 21, 185 Hints from readers](#)
- [44 The PM Workbench](#)
- [86 PM looks at Skil's 551 Trim Saw](#)
- [108 Build our craftsman's toolbox](#)
- [112 Workshop Minicourse:](#)
Joining with dowels

Home and yard

- [26 Appliance Clinic](#)
- [37 New Now for home and shop](#)
- [50 Homeowners' Clinic](#)

Boating and outdoors

- [14 All Outdoors](#)

Photography

- [32 PM photo hints](#)

Every month

- [5 Editor's Notes](#)
- [6 Letters to the Editor](#)
- [195 Technology Update](#)

Worth writing for

Looking for more ideas and information? See page 167.

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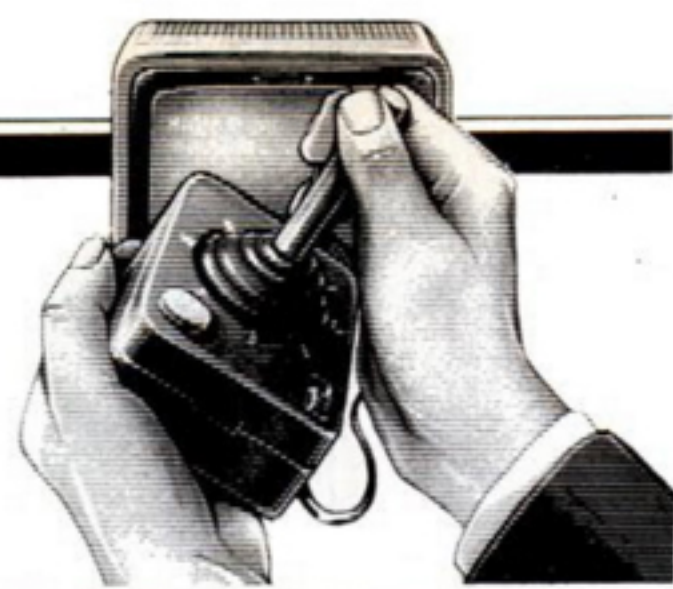
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PM VIDEO MONITOR

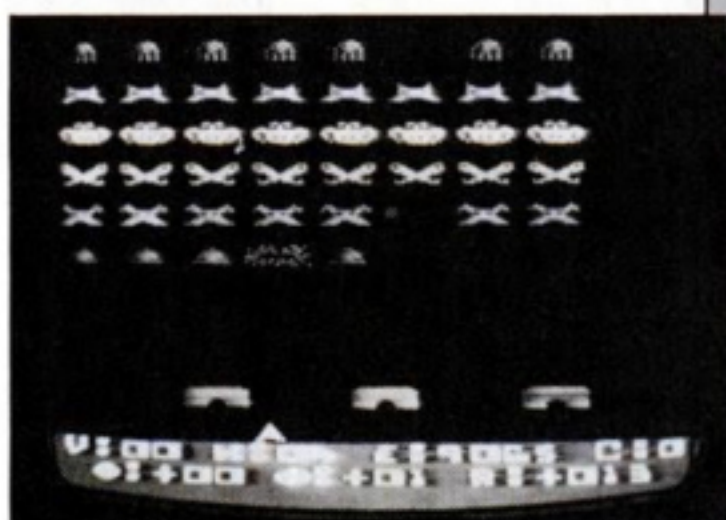


Atari 5200—first impressions

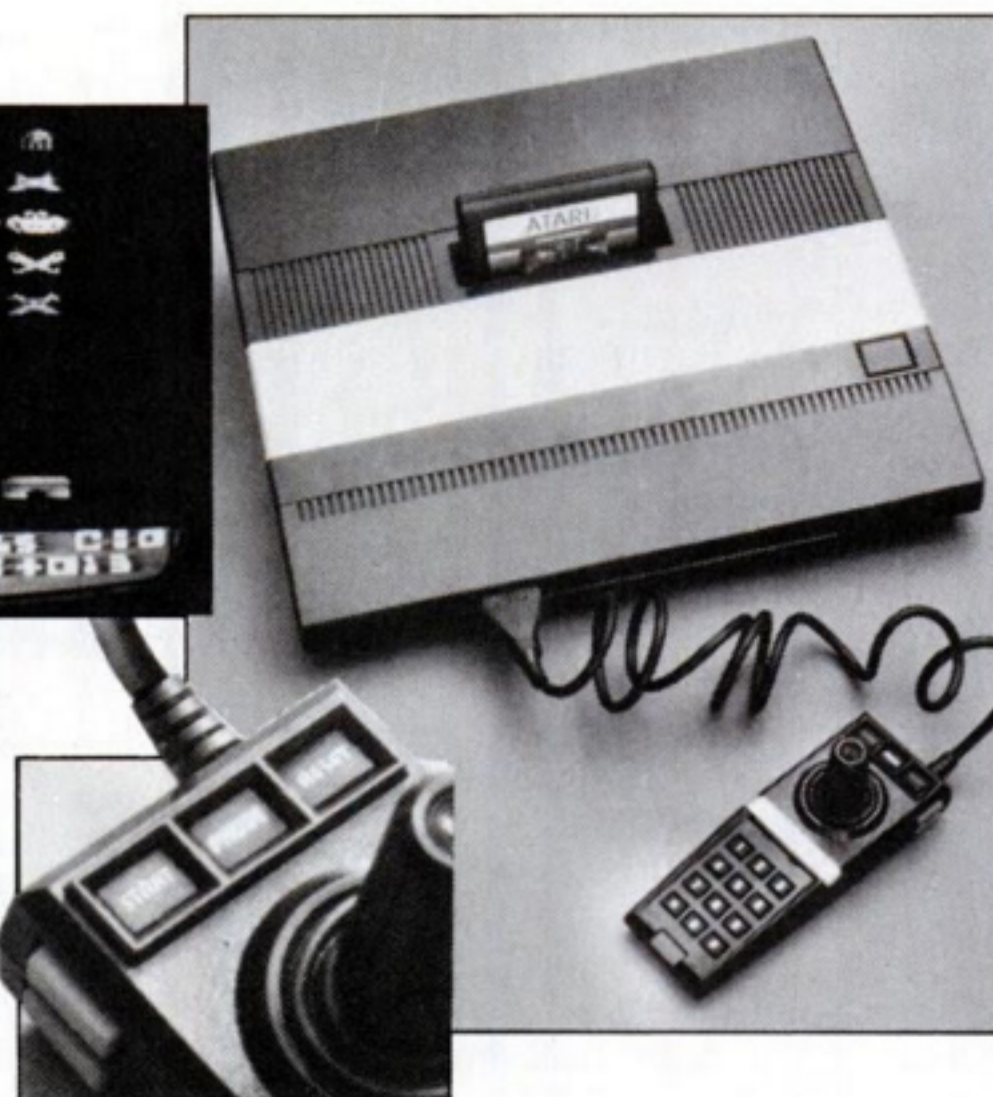
Atari's new 5200 is a bright explosion of sound and color, fast moving graphics and stunning capabilities. From the design of the slick, Lucite case to the electronic maze of a full, 64K memory inside, this 5200 is one mean, powerful gaming machine.

Many fine details all add up to a worthwhile new addition to the gamer's choice of possibilities. The joystick, for example, features new engineering techniques that make it easy to control on-screen movement. The stick itself moves in a smooth, noncentering manner that becomes second nature after a few minutes. Atop the stick on the hand controller are three buttons—START, PAUSE and RESET. The PAUSE button is great when the phone rings, just when you're about to reach that all-time high score. The keypad below the stick features real keys and the whole unit fits the hand like an electronic glove.

Cartridges include such coin-op arcade favorites as *Galaxian* (shown) and *Star Raiders*. That's right, a full version of *Star Raiders* on a gaming system!



Swarms of aliens swoop by in *Galaxian* (above) running on new Atari 5200 machine (right). Hand controllers feature a smooth joystick, as well as a full keypad of switches—even START, PAUSE and RESET buttons (inset) so you can stop the action when you want.



One of the most complex, challenging and visually exciting of all video games, *Star Raiders* was responsible for selling a lot of Atari 400 and 800 computers. Now, we predict, it'll sell even more 5200s.

While there aren't yet as many cartridges as one might hope, there's no doubt that Atari and other manufacturers will rush to support the 5200. As always, Atari is a video force to reckon with.—N.S.

Coleco's expansion modules

Colecovision has made a point of featuring games that look as close to their arcade counterparts as possible. For the most part, the company has succeeded admirably. *Zaxxon*, *Mouse Trap*, *Venture* and others feature the

same scintillating graphics and addictive play value as the arcade versions.

Now, Coleco has taken its game machine two steps further with its first two expansion modules.

Expansion Module Two features a small-size but maneuverable steering wheel and a real gas pedal. Plant the plastic pedal deep into your shag rug's pile, grip that tiny wheel and drive into the screeching world of *Turbo*. Like the coin-op game,

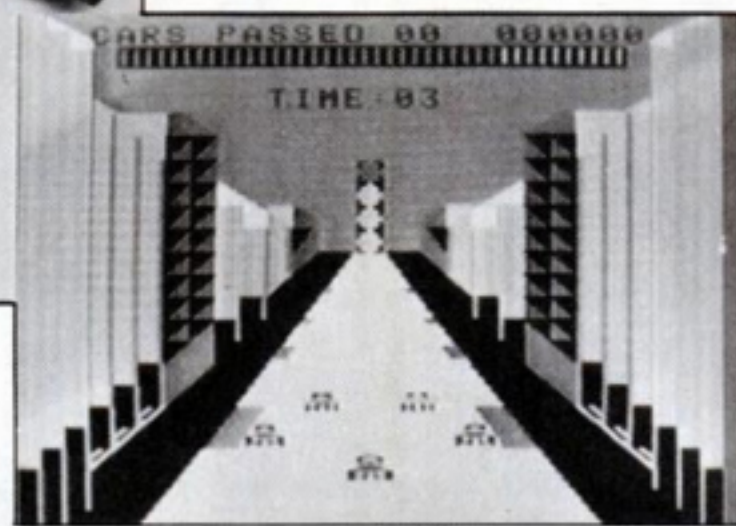
Turbo is as close to driving a souped-up race car hell-bent through city streets and around treacherous curves as most of us will ever want to come. It seems almost impossible that the three-dimensional graphics can move so fast and so convincingly on the home TV set. If you've ever doubted that any home video game could duplicate the thrill and wet-palm feeling of arcade play, try Coleco's *Turbo*.

Right now, *Turbo* is the only cartridge available for use with the steering-wheel module. But more driving games loom just around the bend.

And let's not forget Expansion Module One, which lets you use all the Atari 2600 cartridges. We've tried it out and have yet to find a cartridge it wouldn't accept. So, while Atari is less than thrilled with Coleco for doing this (it is, in fact, suing Coleco), there's no doubt of the module's consumer value. If you have a library of Atari 2600 games, Coleco wants you to use them—on Colecovision.—N.S.



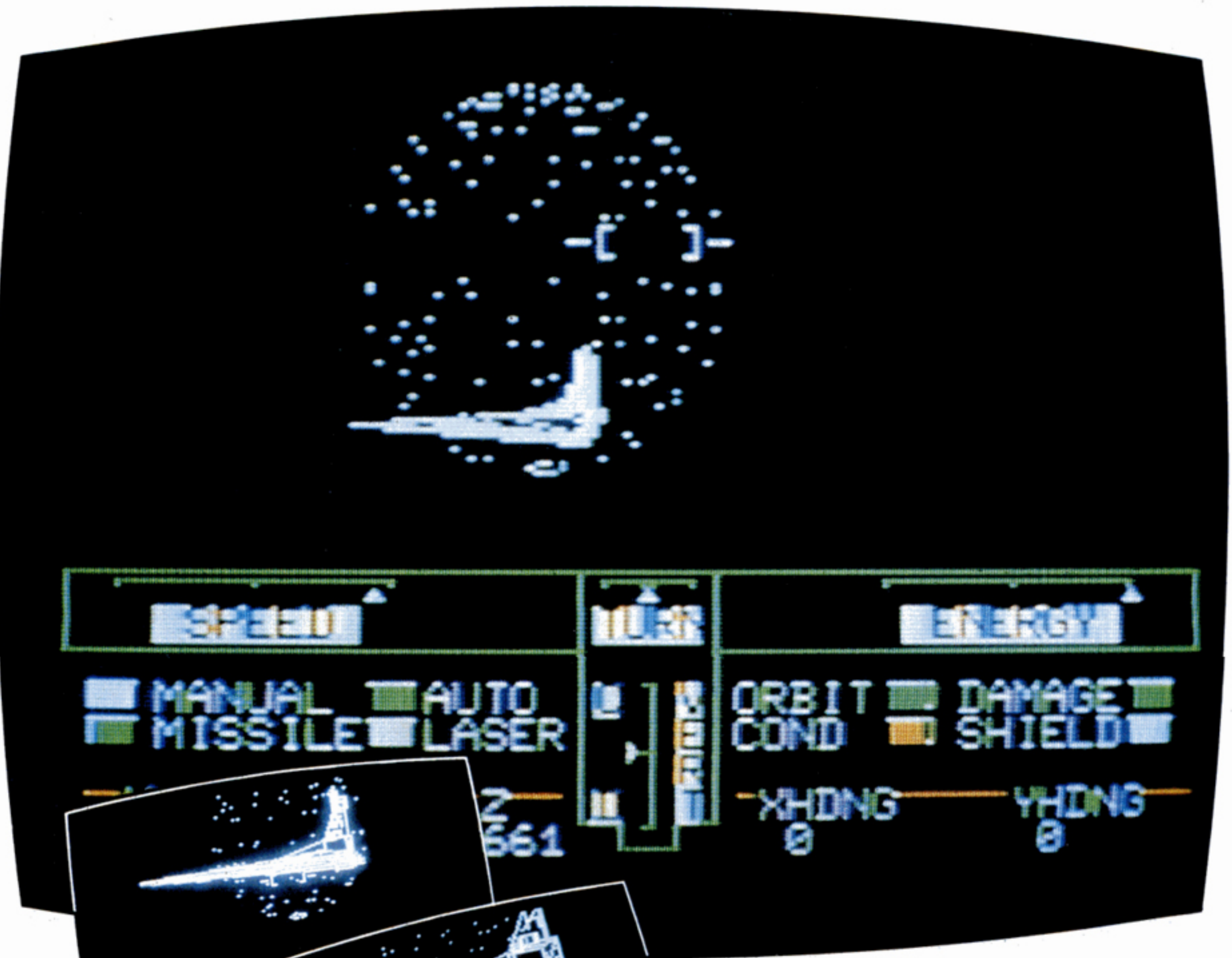
Coleco's Expansion Module Two adds a steering wheel and a plastic gas pedal (not shown) to Colecovision game. With these options, the fast-paced *Turbo* game (right) puts you in the driver's seat.



New Video Games

Now these video adventures offer three-dimensional, animated scenes of challenge and excitement.

BY NEIL SHAPIRO ELECTRONICS EDITOR



PM photos by the author

Views from bridge of your starship in Sublogic's game *Space Vikings* show animation that's so great you feel you've been transported to other worlds. Readouts below screen give overview of ship's condition. Once past planetary defenses, the pilot flies ship above a landscape grid watching for targets. Other screens (not shown) detail everything from ship status to galactic map.

Put You In The Action

New games that flash their excitement through scene after shifting scene are cropping up everywhere that there's a video screen to view them on.

A typical video game used to feature a static scene in the background; only the "players" would move. Aliens would shift back and forth above your missile-firing gun—but the animation was confined to gun and targets. Now, things have changed into a complete orchestration of animation with set-

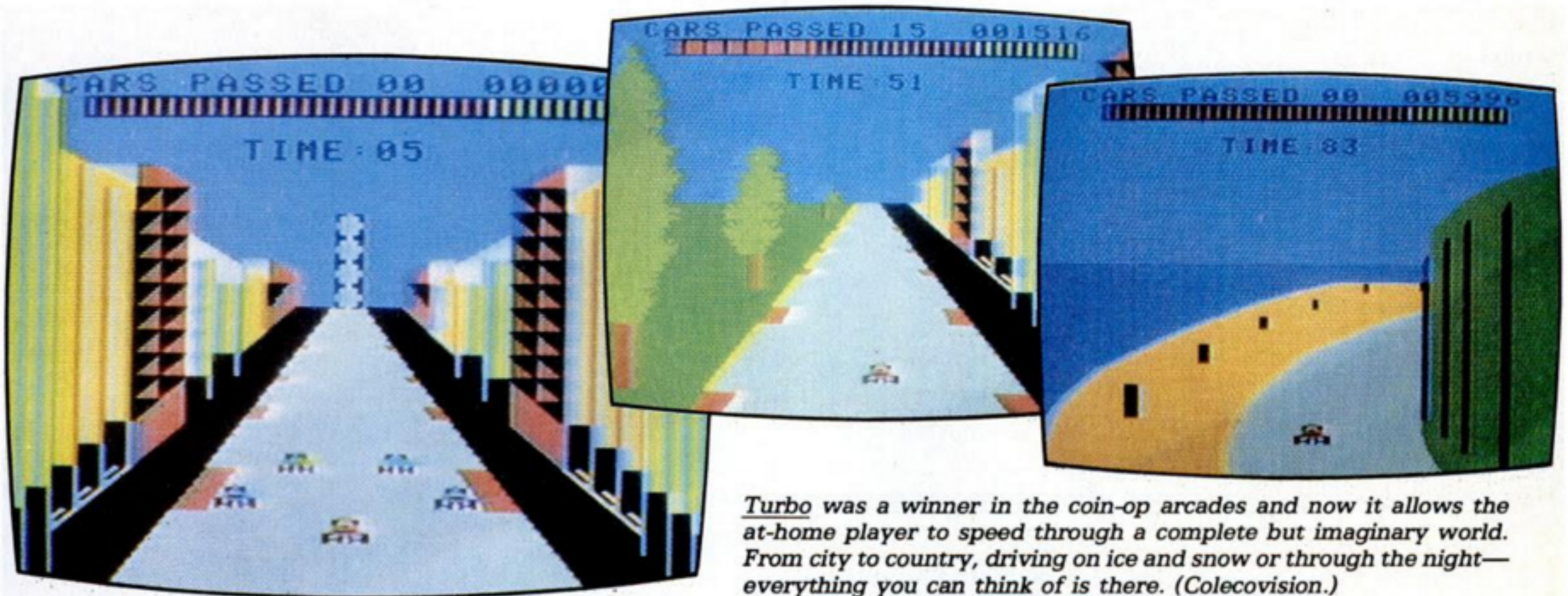
with a real feeling of "being there."

The next stage of simulating reality comes with the *Turbo* game (also arcade and Colecovision). In this one, you're seeing a completely 3-D view of the scenery rushing at you, much as you might see from the windshield of a real, speeding racer.

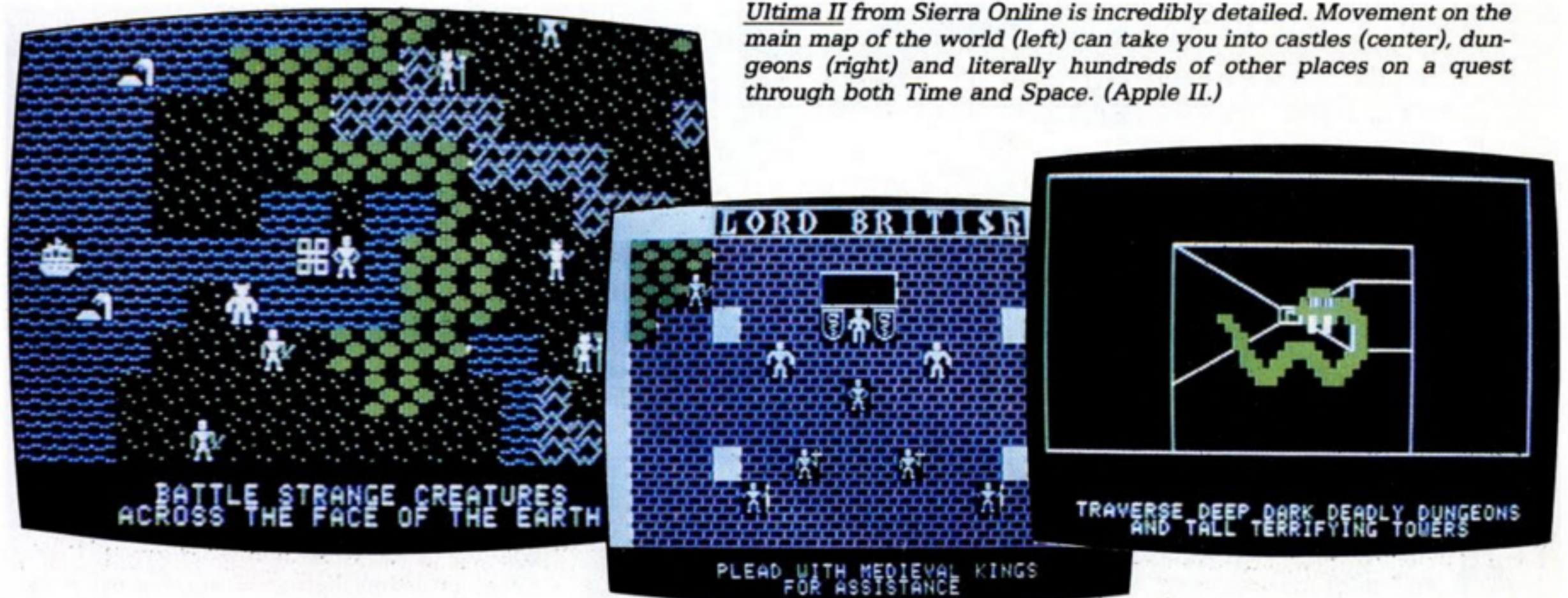
Already, games such as these are a far cry from static backgrounds and repetitive play. But the next stage of video play is now showing up in home computers and will probably be finding

ples of this new philosophy of total gaming involvement in as complete an environment as possible. They foreshadow what we think will be the next big wave in video gaming.

In *Space Vikings* the player is in complete control of a starship. The displays that he sees on screen seem to us very similar to the displays that a real starship commander might be watching. The animation is superb as you pilot your starship closer to the enemy planet. Meanwhile, you keep track of every-



Turbo was a winner in the coin-op arcades and now it allows the at-home player to speed through a complete but imaginary world. From city to country, driving on ice and snow or through the night—everything you can think of is there. (Colecovision.)



Ultima II from Sierra Online is incredibly detailed. Movement on the main map of the world (left) can take you into castles (center), dungeons (right) and literally hundreds of other places on a quest through both Time and Space. (Apple II.)

ting—the latest games resemble stage plays with complete scenery changes.

In some, such as *Zaxxon* (available both in the coin-op arcades as well as a home version for the Colecovision game) the scenery scrolls by "below" you as you fly three-dimensionally above the video landscape. These scrolling-landscape games provide you

its way into the video game cartridges soon. These new games are so complex, so detailed and so incredibly real that they boggle the imagination.

Detail upon detail

Space Vikings from Sublogic and *Ultima II* from Sierra OnLine (both for the Apple II computer) are prime exam-

thing ranging from damage control to your crew's morale via many different auxiliary screens of computer readout. The bottom line is that the game features just about as much real-life feedback as you could get without feeling the actual vibrations of the engines.

Other games, such as *Ultima II*, do
(Please turn to page 186)

NEW VIDEO GAMES

(Continued from page 99)

not capture the mind's eye with animation. Rather, they weave around the player a razzle-dazzle feeling of incredible detail.

The game begins as you move your tiny character on a colorful map of the world. You visit towns and villages, and as you enter them the world map is replaced by detailed maps of these

areas. Then you go through "time doors" which take you to yet other world maps in various areas of time—all while searching out an evil enchantress. Finally, you can get yourself a spaceship and take off to completely new worlds.

Meanwhile, you can chart your course on a real cloth tapestry of the Universe's time doors that's included with the game.

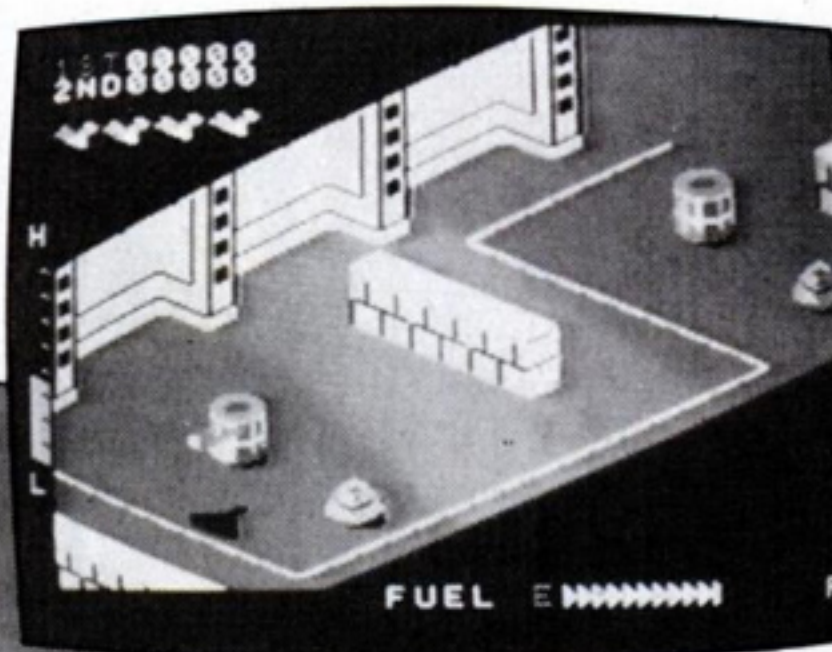
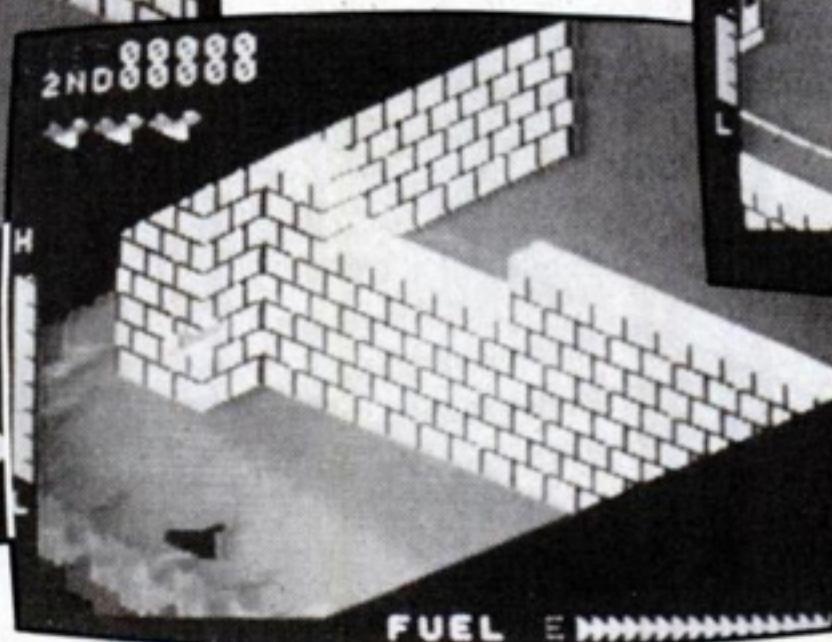
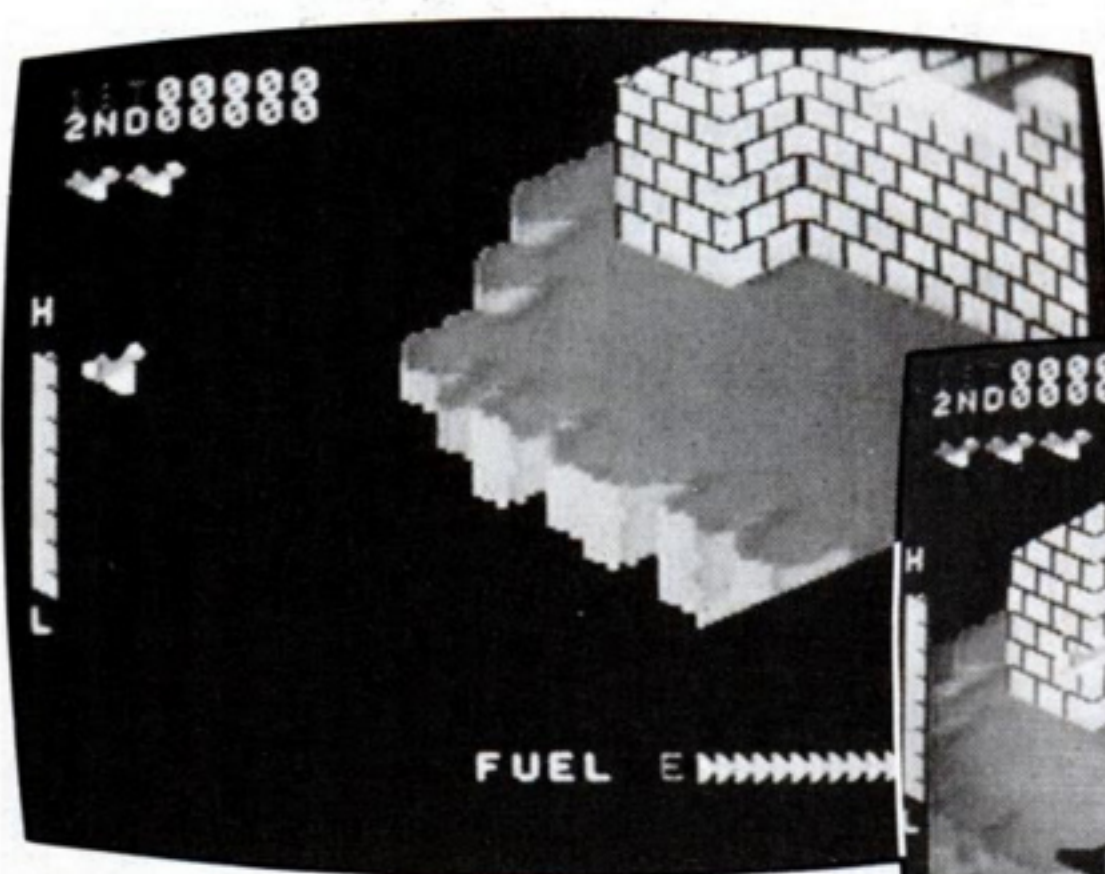
All of these games use new and rev-

olutionary techniques in video entertainment—and they are all more believable than their early counterparts. Playing them is less like playing a game on your monitor or TV set than it is experiencing a whole new world.

You're in the picture

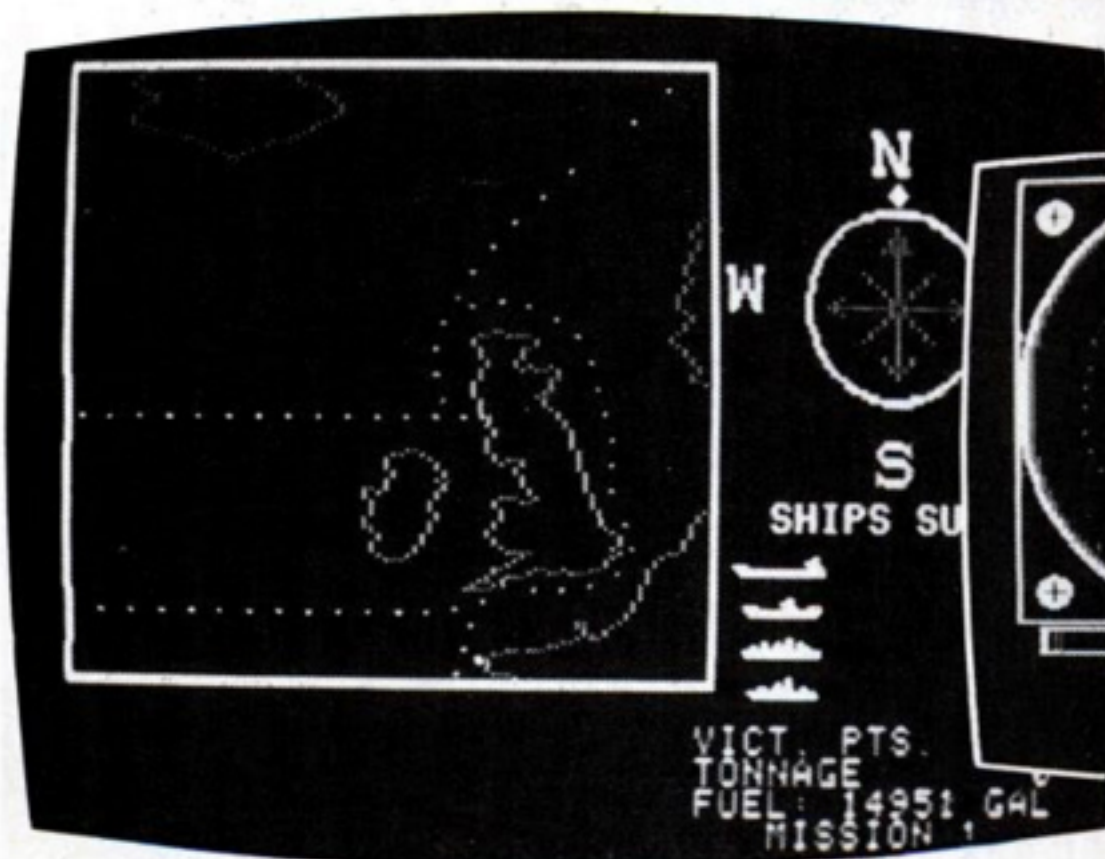
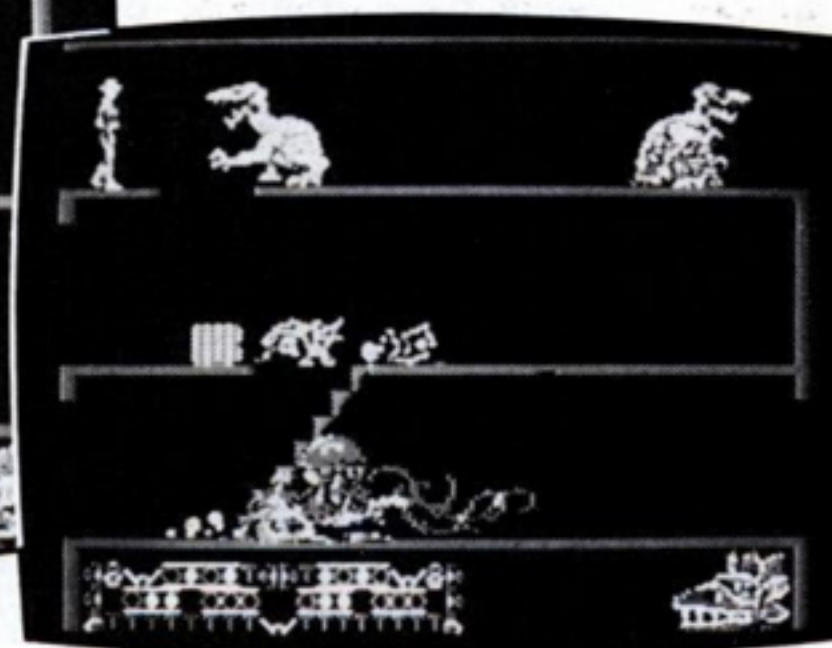
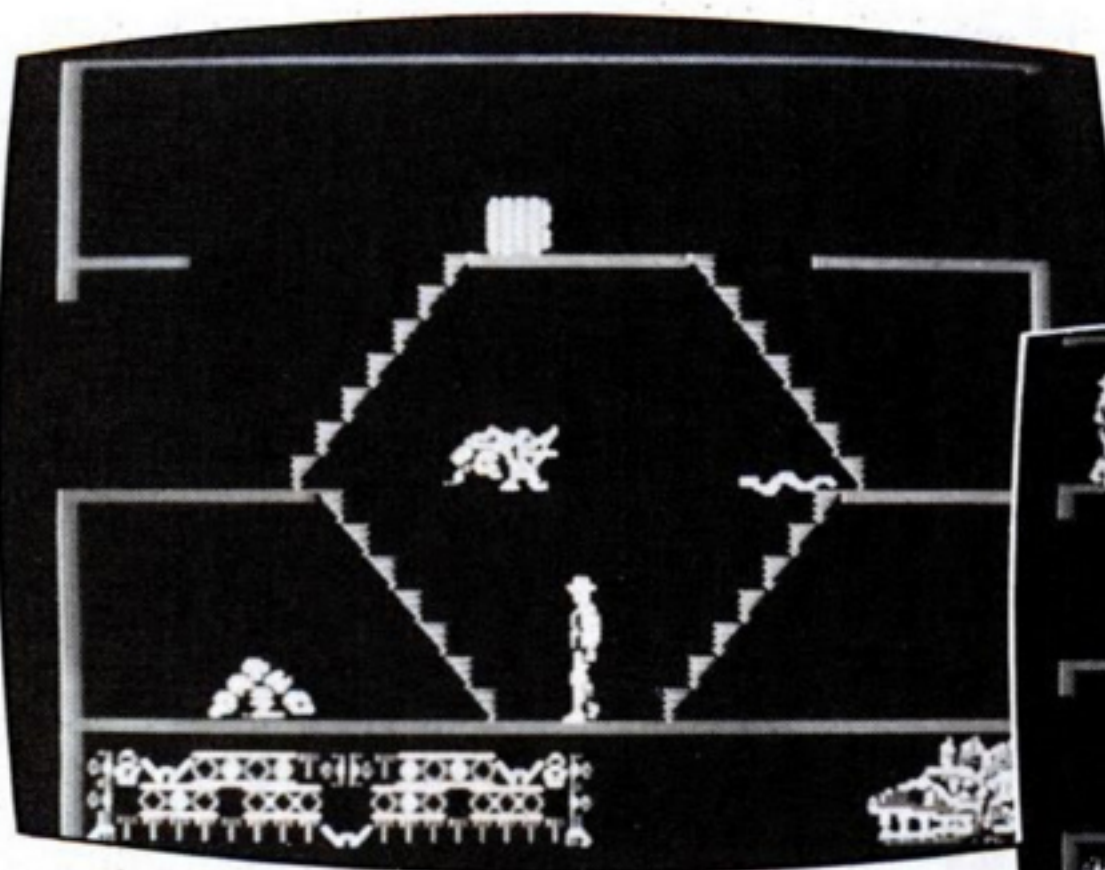
Another new style of gaming features open-ended animation where the player becomes the star of the show

(Please turn to page 188)



Zaxxon features a detailed, scrolling landscape of an incredibly hostile asteroid base somewhere in outer space. You must fly three-dimensionally above walls and weave about obstacles while constantly firing. A hit in the arcades, it's now a hot living-room sensation. (Colecovision.)

Aztec from Datamost is almost as much fun to watch as it is to play. You control the walking, climbing, ducking, fighting, altogether charming little man's movements as he searches room after room in an underground maze for a golden statue. From level to level he fights dangers in complete, convincing animation. A tour-de-force for the Apple II.



Fathoms 40 from Datasoft puts you in the position of shanghaied captain pressed into U-boat service. You plan your strategy on one screen (far left); then on tactical display (left) you aim your torpedoes, keeping in mind every variable of submarine warfare from battery level to snorkel depth as well as using your sonar. (Apple II, Atari 800.)

NEW VIDEO GAMES

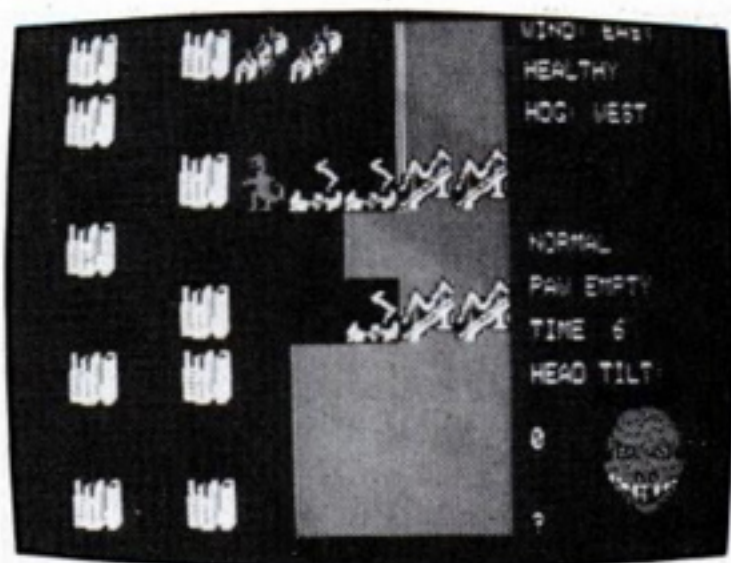
(Continued from page 186)

and controls the antics of a cartoon hero.

The game *Aztec* uses the theme of the intrepid explorer venturing into dank and frightening caverns seeking a golden statue.

Duck, fight and fire

During your trek through this multi-leveled maze of rooms, stairways and surprising traps the keyboard is used to control and guide the figure which quickly becomes your own alter-ego.



Crush, Crumble and Chomp through cities as monster of your choice. From Epyx for Apple II, Atari 800, IBM PC.

You can make the character duck, leap over fissures, fight with a machete, fire a pistol and generally try to avoid or do away with everything ranging from the creepiest and toothiest tyrannosaurs you've ever seen outside a Fifties horror film to pan-eared demons with sharp spears.

This type of game pictorially ensnares you into identifying with your on-screen representation. Once you get past learning to hit "J" for jump—and having to think about it first—you find that your reflexes and thought-processes easily transfer to the screen.

Choose your fantasy

The home video game has become, for many people, a way to enter an alternate and complete world of fantasy and challenge. While some would call this mere escapism, the popularity of such video travels cannot be denied. And, on closer examination, this popularity is hardly surprising.

In the dim past, a warrior could settle by the fireside and listen as the tribal bard spun alliterative chants of legendary deeds while the night beyond the fire made it all seem real.

Video fireside

Today's high-tech warriors, faces lighted by the flickering video fire, have their eyes fixed on their own legends—and for just a few moments can believe in worlds where anything may come true.

PM