The Real Experience of the VB in a Magazine with Marvelous Stereoscopic Images!

3D VIRTUAL BOY Magazine

Translated into English by Benjamin Stevens

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Usage Notice

The Virtual Boy contains a screen for the right eye and a screen for the left eye. These are arranged in such a way that images appear to be three-dimensional when looking at them with both eyes. The screenshots appearing in this supplement have been taken with a camera and video printer. Therefore, we shot the screens for the right eye as well as the left eye. Consequently, please note that the Virtual Boy screens appearing in this supplement differ from the actual screens (Nintendo's software screen converts image data to video signal once, and then it's taken with a video printer).

Also, all pictures shown in this supplement are of screens that are still under development. Please understand that the composition and contents of the screens may differ from the final versions.

THE VB: WHAT IT IS

Quickly Learn About the Virtual Boy in 3 Pages!

Latest VB Information & Secrets of 3D Images

Finally, the VB's launch date is only about 2 months away! We deliver you the hottest, most up-to-date information and how it works.

When you look into the goggles, you see red and black 3D objects.

The Virtual Boy (hereinafter VB) is a game machine that lets you enjoy three-dimensional space. Although its body is slightly larger than the Game Boy's, the amount of data that the CPU (the central part of the computer) can process at one time is the same as a next-generation 32-bit console. The launch date is July 21st. The price will be 15000 yen (excluding tax), and even if we go overboard, we are happy with the price to get it in our hands.

The 32-bit Machine Launches on July 21st

VB Peripherals List	
Shoulder Mount	By removing the VB's standard support and securing the main unit at your shoulders with this, you'll be able to play with a free posture.
AC Adapter	The AC adapter portion of the plug will come in a separate box and is the same as for the Famicom and Super Famicom. Thus, this will be unnecessary for those who already have one.
AC Adapter Tap	This connects the AC adapter to the controller. Those who already have an AC adapter will still need to buy this.

The link cable, rechargeable battery pack, and rechargeable battery pack set, which were scheduled for launch, have been suspended. This means that you won't be able to play together with your friends. Even if there will be no battery pack connection, you'll still be able to play with batteries outdoors.

Some of the Peripherals for Launch Have Been Suspended

An Auto Pause Screen has been reached. By the way, it seems that Nintendo will be issuing 1 piece of software per month.

It seems that the sizes of VB software will be larger than those for the GB, but the prices will be comparable to the GB's. The participating manufacturers, from whom we've collected data this time, have all said around 5000 yen for each.

As an aside, a prompt to take a break, called "Auto Pause," will be included in each software. This will notify the player that a certain amount of time has passed since starting the game. This period of time is set by taking into consideration the characteristics of each game. This can be set to ON or OFF at the beginning of each game.

The Software Prices Will Be as Good as for the Game Boy

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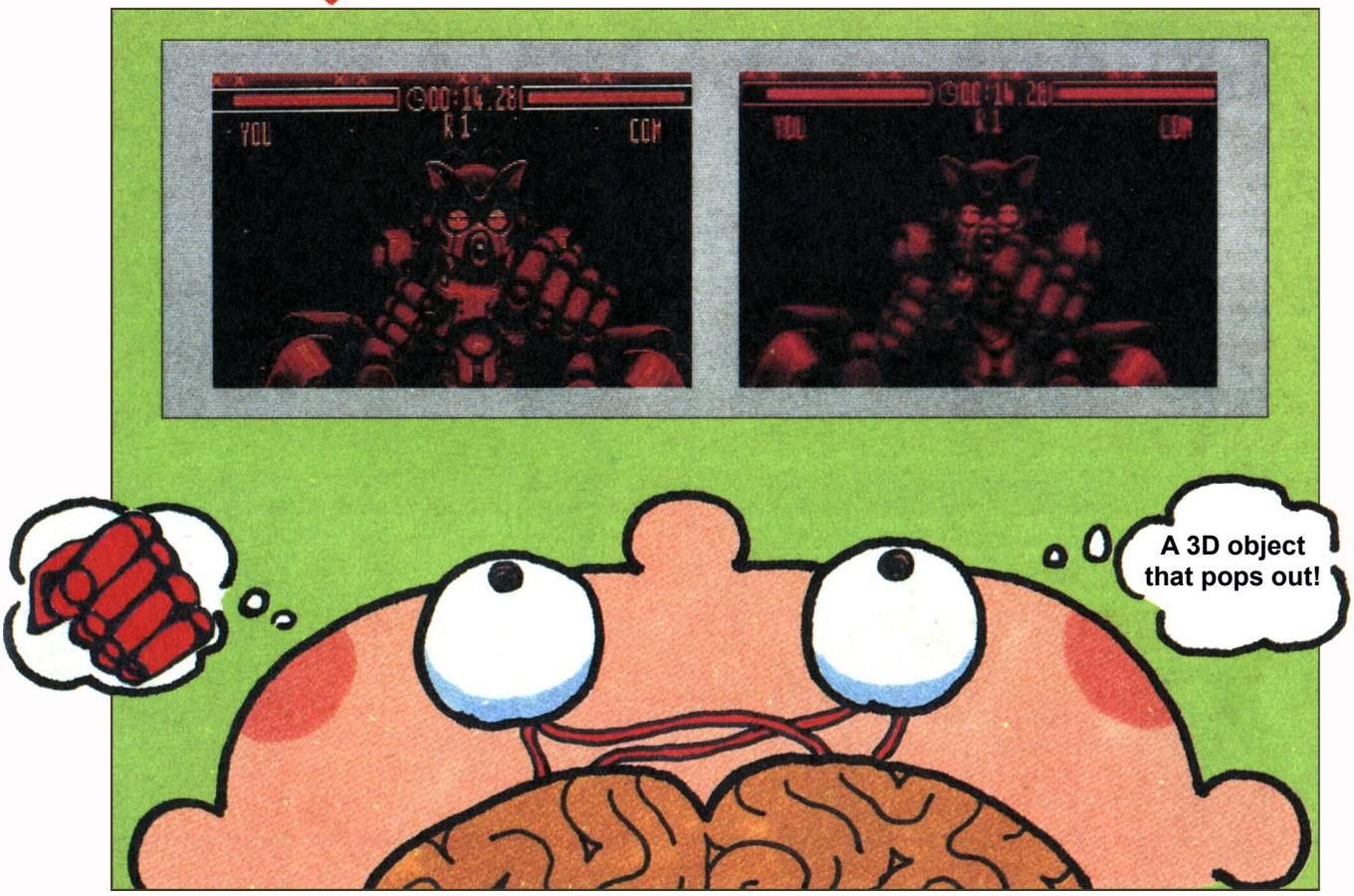
How the VB Works and the Secrets of Stereo-scopic Images

There are two screens in the back. Given that there is a partition, the effect cannot be seen by only one eye.

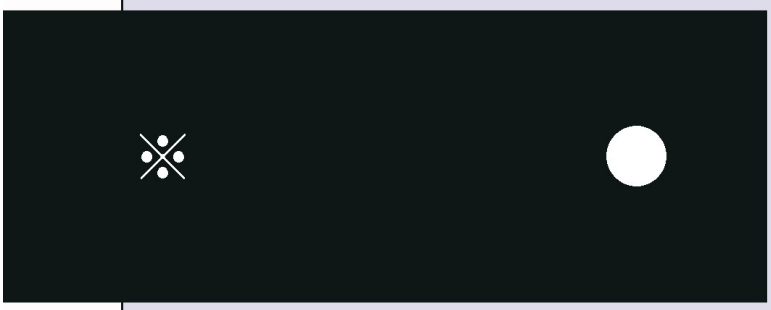
Why the VB looks three-dimensional is that there are secrets in the two screens at the back of the goggles. These two screens are made using parallax, and the position of an object depicted on each screen is slightly different.

When comparing the two screens below, it is clear that the displacement of the position of the hand is greater than the displacement of the position of the face.



The greater the width of the gap between an object's position on the left screen and its position on the right screen, the closer it appears. Conversely, the smaller the gap, the farther it appears.

A Game Using Your Eyes

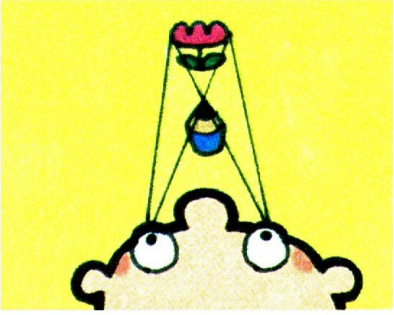


Conversely, when using your left eye on the ◯, the place where the ※ disappears is a blind spot.

With your left eye closed and the ※ directly in front of your right eye, look at the ※ while keeping notice of the ◯. Now, when you move this book away from or closer to you, there will be a place where the ◯ disappears. That place is called a blind spot. This is because there are no cells that detect images in the part where the optic nerve and the retina are in contact.

©Nintendo

Objects Look Different from the Left Eye than the Right



Can you see that the left eye sees more of the left side of an object, while the right eye sees more of the right side?

If you take a look at your face in a mirror, you'll notice that with your two eyes on your face, there is a space between the left one and the right. Because of this, when you look at an object, your right eye and your left eye see it differently. This is called "parallax." By taking advantage of this, the VB displays screens, which utilize parallax, to one's left eye and right eye from the beginning. That's why objects in the VB appear to be three-dimensional!

Let's Experiment

This is too close, so be further away.

For those who still don't quite understand parallax, let's do an experiment. While being at some distance in front of a TV monitor, hold a pencil right in front of your nose, and now compare the scene with each eye, one at a time. The monitor will appear to shift its position a little bit, whereas the nearby pencil will appear to shift much more!

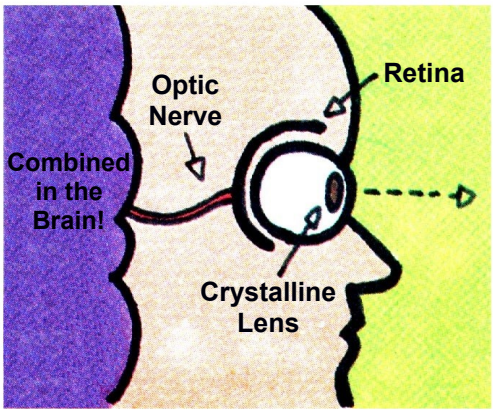
The apparent shifting of something to the left or right like this is called "parallax." In order to display something three-dimensionally, the VB displays two images with such a parallax relationship.

This is the So-Called Parallax!

The monitor's position doesn't change very much, but the pencil moves to the right!

With your right eye, the pencil is on the left side of the monitor. Next, try your left eye!

The VB and the Brain



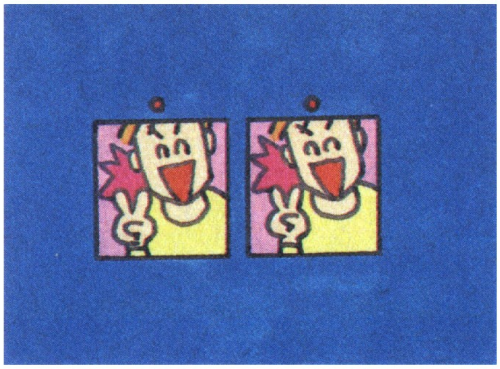
Did you know that the VB is a machine that shows pseudo-three-dimensional objects by simultaneously displaying a screen for the right eye and a screen for the left eye? The screens of the VB are projected into the eyes and, after that, are divided into two sets of data of light and color in the retina and are then transmitted to the brain by the optic nerve. Then, many brain cells in the brain check the data subdivision and ultimately make the left-eye data and the right-eye data into a single stereoscopic image in the brain.

VIEWING THE VB!

Experience VB Screens by Way of Stereo Pairs!

Stereoscopic Virtual Boy Gallery

Here's a corner that lets you see VB screens in three dimensions! Please carefully read how to view stereoscopically.



A stereo pair where two similar designs are arranged side by side.

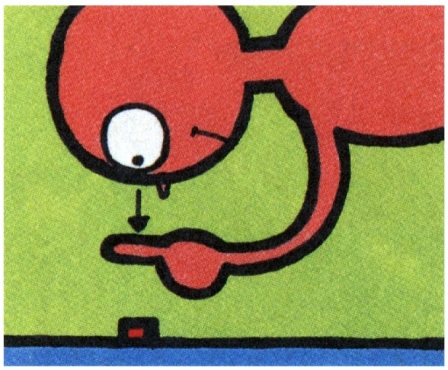
Learning the Trick for Viewing Stereo-scopic Screens

Let's learn methods for viewing the VB's stereoscopic screens by means of stereo pairs! There are two types of methods, the intersection method and the parallel method. The VB utilizes the parallel method, but this time, we've ventured to post the intersection method. Let's try both first and find out which one is the easiest to see for yourself. It's surprisingly easy once you learn the trick. Then, enjoy the stereoscopic VB screens on your own!

The Inter-section Method: Using Your Finger

The intersection method is, in short, a means of viewing something while cross-eyed. You can think of it as similar to what happens with your eyes when you look at the tip of your nose.

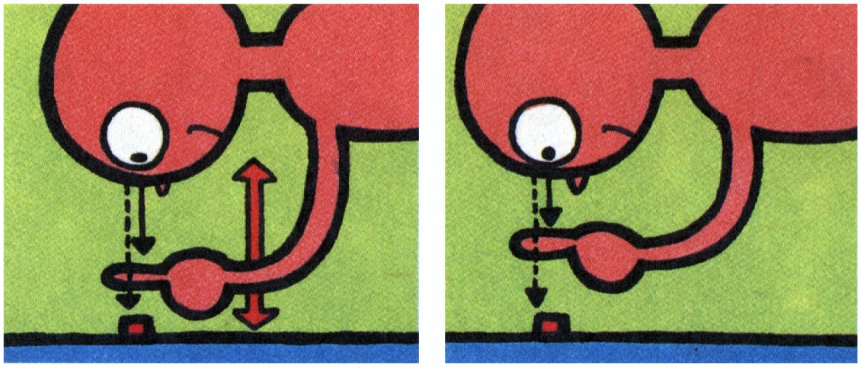
1. Look at the Tip of Your Finger



The trick is to hold your finger about 30 cm above.

Hold one finger about 30 cm above the middle of the two marks (.) in the top picture. Now, stare at your finger and bring your face so close that the tip of your nose almost touches your finger.

2. Make Three Marks



While staring at your finger, also notice the marks. Move your finger up and down, and there will be a place where the marks become 3 in number.

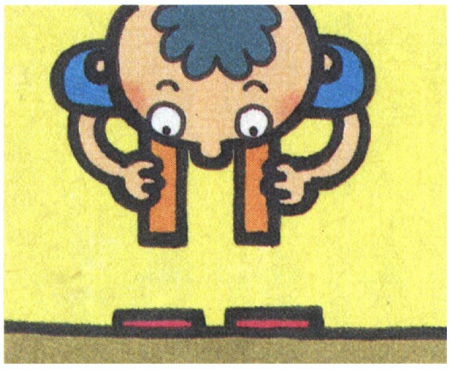
Next, notice the marks while keeping focus on your finger. Now, with the position of your face remaining fixed, move your finger back and forth, and there will be a place where the image appears to be three-dimensional and where it looks like there are 3 marks.

The Parallel Method: Using Tubes

The parallel method is a means of viewing something nearby while keeping your eyes on something farther away. It is similar to what happens with your eyes when they are dazed and/or tired.

1. Provide Yourself 2 Tubes

First, provide yourself 2 tubes, which can be the unneeded cores of plastic wrap and/or aluminum foil. Then, put the tubes against both your eyes and look directly at the two previous pictures.

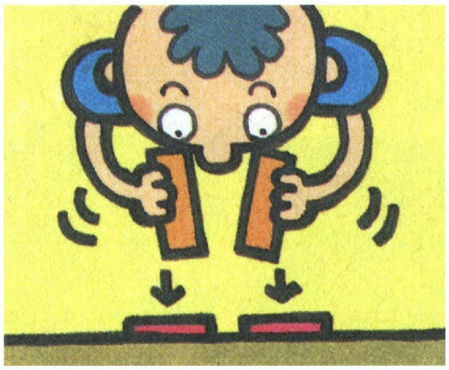


Use the tubes after getting your family's permission.

2. Find a Fixed Position

Next, seek out the position where the left picture appears in the center of the left tube when viewing with just your left eye and where the right picture appears in the center of the right tube when viewing with just your right eye.

By the way, many of those in the editorial department were of the view that it's easier to see if you position the tubes toward the inside a little.



It seems to be better to have the tubes a little to the inside.

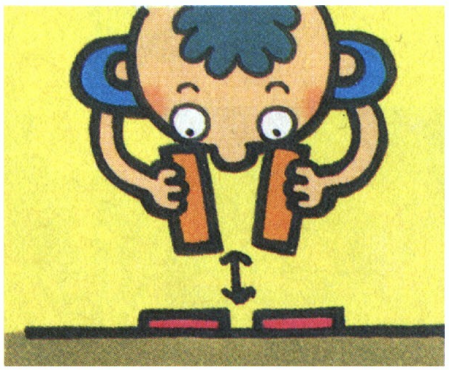
Peeking at a Picture

Position each where the picture comes into the middle when peeking with one eye!

3. Look with Both Eyes

Next, look at the pictures with both eyes and with the sense of viewing something farther away. Then, find the place where the two circles become one by increasing or decreasing the distance between the pictures and the tubes and yourself. Now, when you try to look at something farther away, you will see a picture in three dimensions!

We've introduced this method using tools, but these are not necessary. It will work just for "eyes that are looking farther away." By the way, if you look at the same thing with both the parallel and the intersection methods, the unevenness will look reversed.

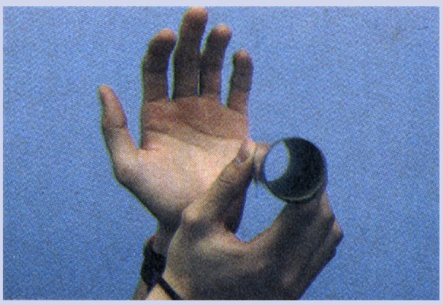


Find the place where it looks three-dimensional by moving toward or away.

A Game Using Your Eyes

First, you need to provide yourself one tube from either plastic wrap or aluminum foil. At this time, ask those in the household if it's okay. If you use one without permission, some may get angry.

Once you're ready, put the tube next to the palm of your hand. Then, while looking through the tube with your right eye, try looking at something farther away with both eyes, as if with dazed or tired eyes. You should then see what looks like an open hole in the center of your palm! This little game is one of the games where the parallel method is applied.



Place your palm against near the end of the tube.

The Process of Making Something Appear to be Three-Dimensional!

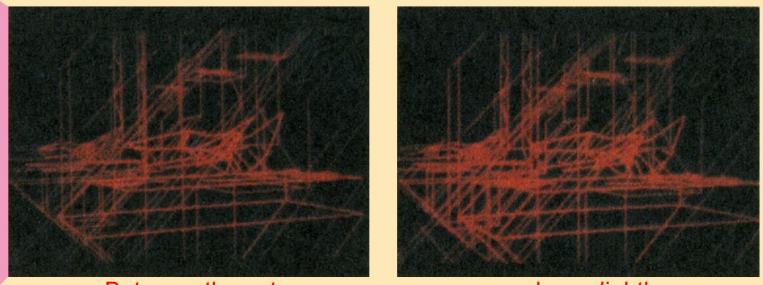
The process of making something appear to be three-dimensional, with the two methods relating to this being introduced on pages 6 and 7, is as shown below.

Since the process of viewing with either of the two methods is almost the same, you may not always know what you should be seeing. Therefore, above each of the stereo pairs on the following pages, we've written about what each should look like. If you see something different than what it should look like, please try again by switching to the other method for viewing the screen.

For those who still don't see it, please refer to the section on page 15 titled "Before You Think It's Impossible to See!" Once you know the trick and can see it even once, you'll be able to see what appears to be three-dimensional for each pair of VB screens one after another.

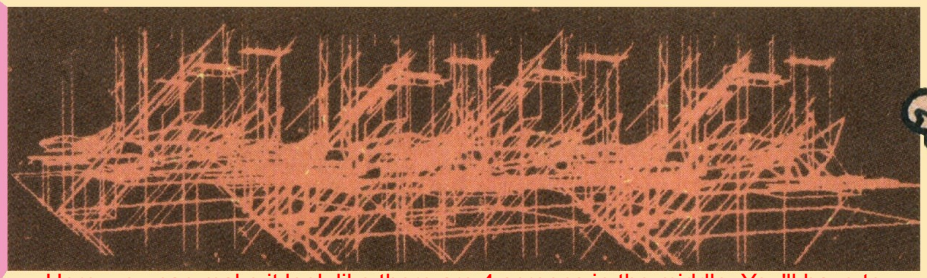
The Intersection Method and Parallel Method for Viewing are Similar

A Good Start!

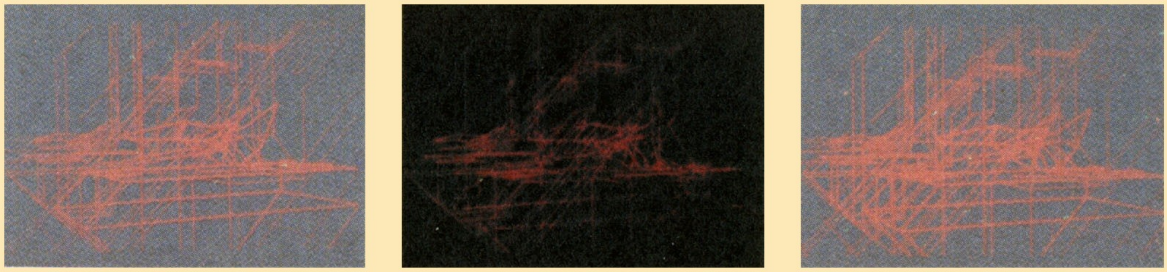


Between these two screens, you can make a slightly different rectangular screen appear.

A Little More!



Here, you can make it look like there are 4 screens in the middle. You'll have to try harder this time to make what appears to be three-dimensional.



Finally, 3 screens are visible. This time, just look closely at the middle one. The middle one has only what is to appear three-dimensional.

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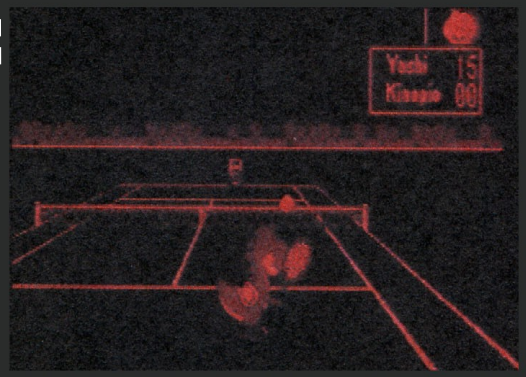
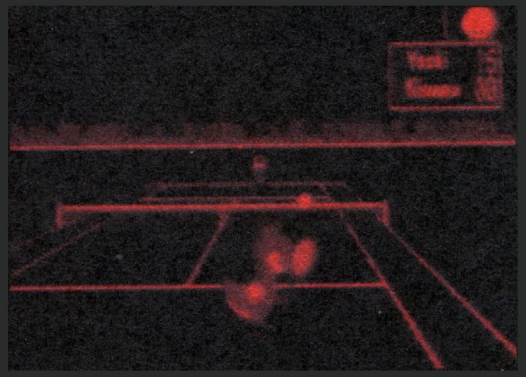
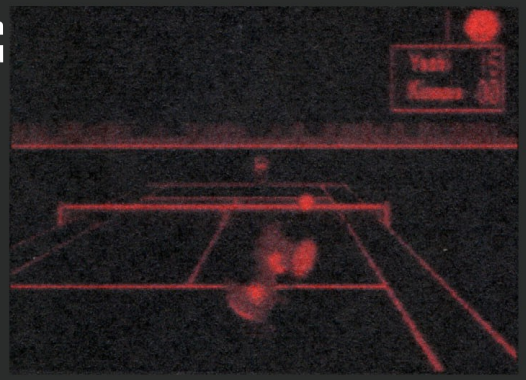
1) Mario's VB Tennis - The scoreboard and Lakitu in the upper right corner are floating in the foreground. The whole tennis court looks three-dimensional towards the back.

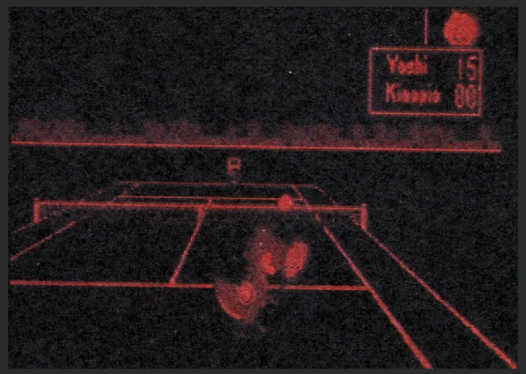
Parallel Method





Intersection Method



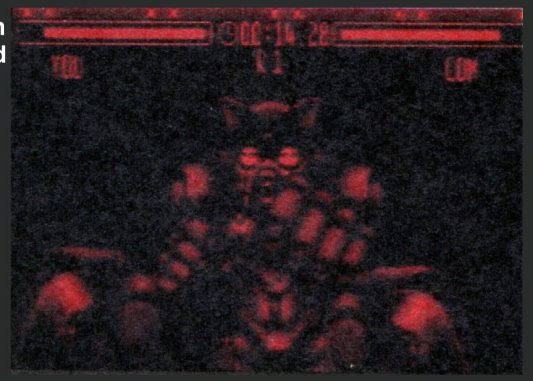


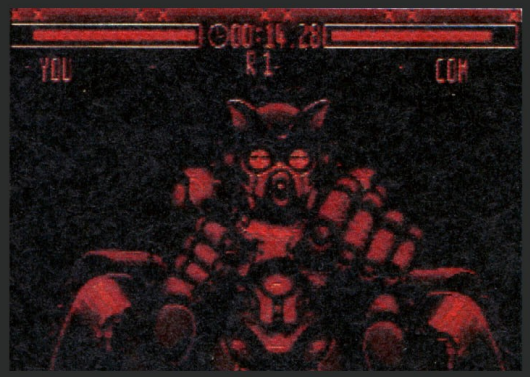
©Nintendo

2) Teleroboxer - The enemy's left hand (right side of the screen) pops out. The hands of the player's character at both ends of the bottom of the screen are at the front.

Parallel Method

Intersection Method



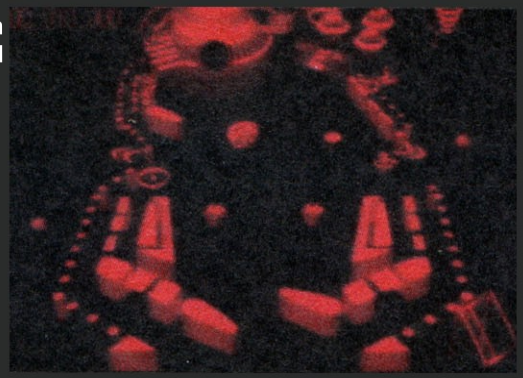


©Nintendo

3) Galactic Pinball - The table is leaning from the front (screen bottom) to the back (screen top) at a similar angle as it would on an actual stand.

Parallel Method

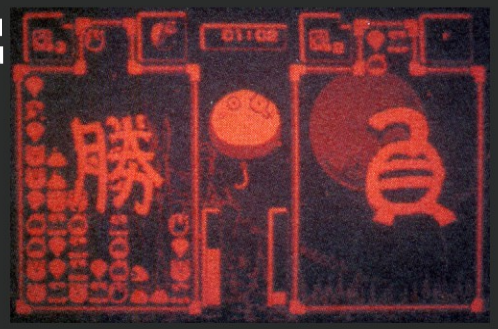
Intersection Method

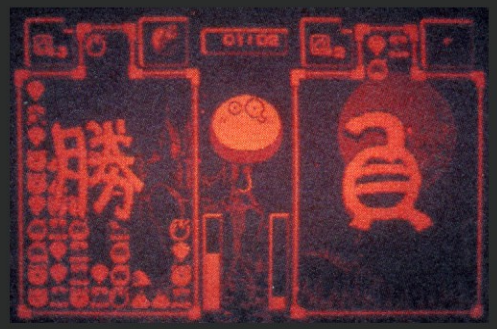


©Nintendo

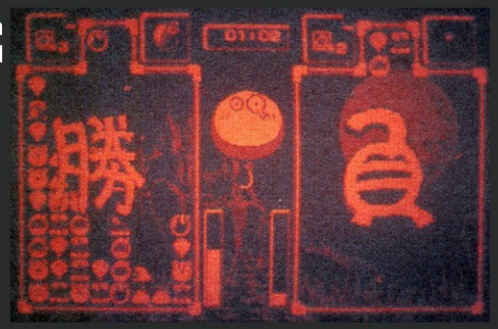
4) Pop-Out! Panic Bomber - The moon is floating at the very back, while "WON" and "LOST" appear to pop out. The center character is at the same place as the frames.

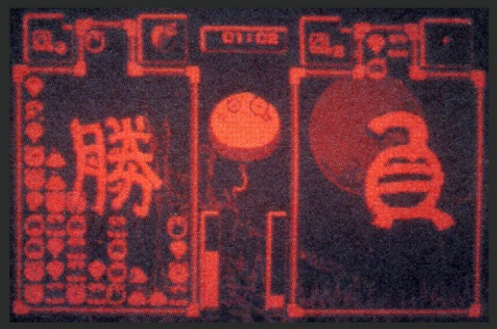
Parallel Method





Intersection Method





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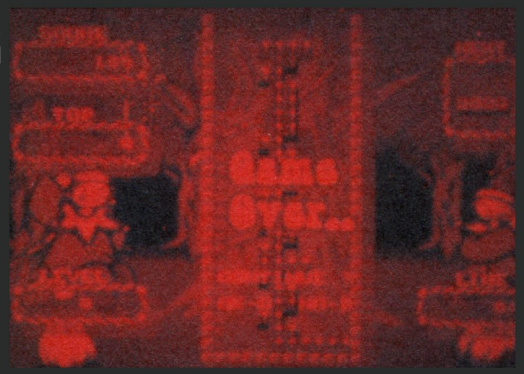
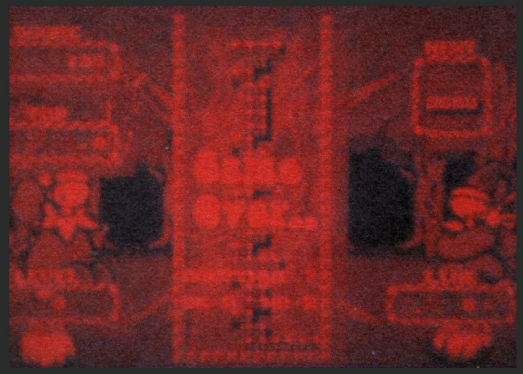
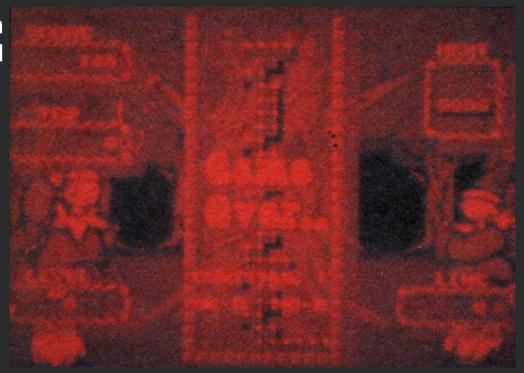
5) V-Tetris - The trees are the farthest back, and the people are in the middle, between the front and back. The gauges and frames and "Game Over" are at the front.

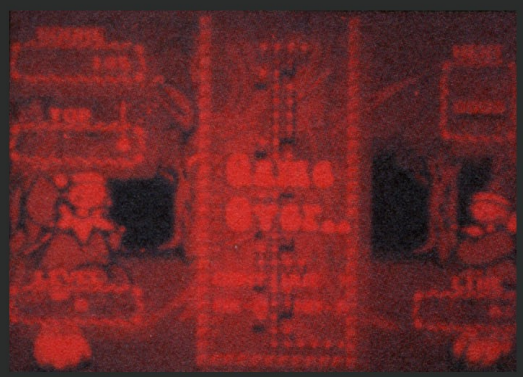
Parallel Method





Intersection Method





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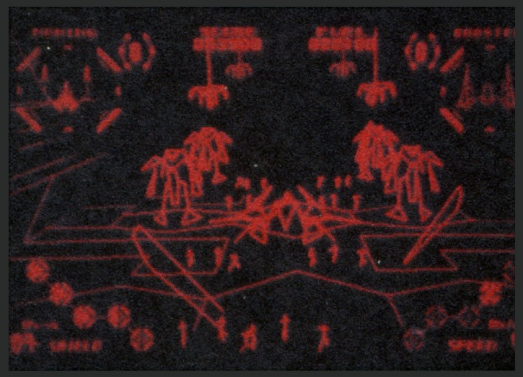
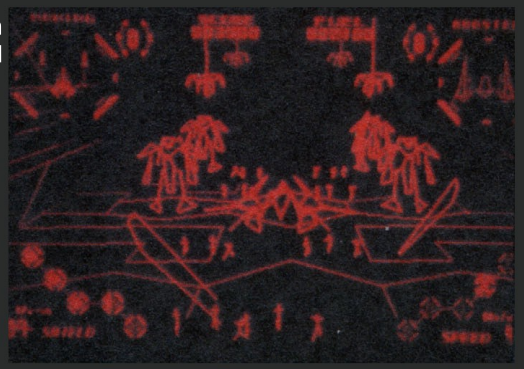
Original concept by Alexey Pajitnov.

6) Red Alarm - The enemy lasers are passing behind the player's fighter and are at the front. The enemies are still on the other side of the fighter.

Parallel Method



Intersection Method



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Before You Think It's Impossible to See!

Once you know the trick, it will surely appear to be three-dimensional to you. It'll be like when you thought, "That was so easy!", the first time you could ride a bicycle. Try reading pages 6 and 7 again, or try the next section.

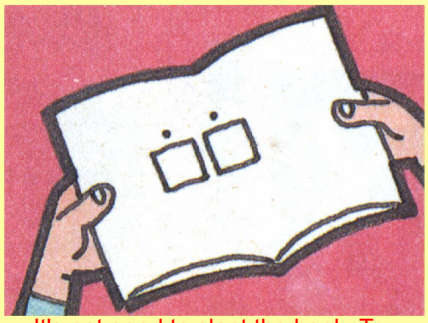
Vary Your Distance

It's important for viewing to vary your distance when using both the intersection method and the parallel method. When altering the distance, be sure to do so slowly. If it moves toward or away in relation to you too fast, your eyes won't catch up, so you'll miss finding the right position.

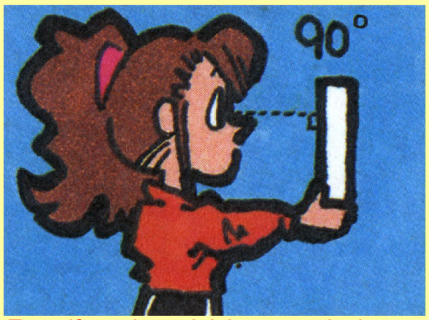
The proper distance varies depending on the person, but it doesn't vary significantly. Thus, it's also a good idea to observe how much distance is kept by those who can see this book in three dimensions.

Move from Parallel to Perpendicular

Can you not view the book properly while its tilted upward or downward or while it's set down on its back? Try facing the book straightforward, making the images level with your eyes, and then try again!



It's not good to slant the book. Try making it level. You may not be able to view it properly if you look at it in just any position.



Even if you have it lying on a desk, are you facing squarely toward the book?

If It's Still Not Working...

For anyone who still doesn't see it, it would be best to have someone who can see it in three dimensions next to you, who can teach you.

If you then still don't understand it and don't see it, you can resort to a specialized book from a library or book store. It also seems that it will be hard for one to see if one thinks that it cannot be seen or that it's impossible to see.

Clean Up Your Surroundings

If you're one who has this book on a desk and is viewing it, is the area around you neat and tidy? If you're not yet used to it, it may be hard to view when your eyes notice extra things around you.

Take Off Your Glasses

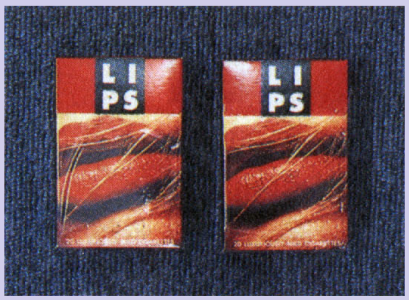
It also seems to be good to take off your glasses and then view. However, there was an opinion in the editorial department that it's easier to see while wearing glasses, so try both!

A Game Using Your Eyes

If you stereoscopically view a stereogram from the original(s) with the intersection method, it looks like a strange object different from reality.

For example, let's take two cigarette boxes and arrange them side-by-side in a parallel manner. When viewed stereoscopically with the intersection method, it looks like a deformed trapezoid with the bottom being swollen.

Even if cigarette boxes aren't used, any two of the same thing will look strange. For larger things, it's a good idea to view them from farther away. It might be amusing to have them lined up side-by-side as identical twins and view them from afar.



Try arranging two items like this.

End of Part 1