

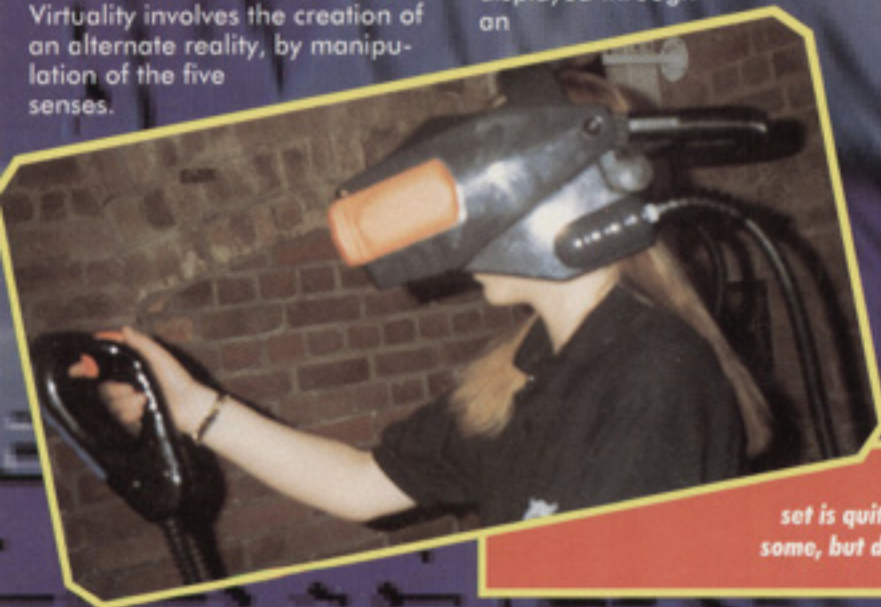
CYBERPUNK — OR BUCK-ETHEAD?

Virtual Reality — it has the potential to be the biggest innovation since Television; or the biggest crap fad since breakdancing or body-popping. In fact, it's much more likely to be the former, since most people that come into contact with VR think it's the best thing since sliced bread. This feature intends to be a fool's crib-sheet to VR. So learn! About headsets, cyberpunks, teledildonics and Sega VR; the first home Virtuality system — for the Megadrive! — to be launched this year.



WHAT IS VIRTUALITY?

If you're standing with a bucket on your head playing Dactyl Nightmare, it's pretty easy to realise you're in Virtual Reality. However, finding a written definition is harder, since Virtuality has spawned all sorts of fringe things in the realm of video and film. Virtuality involves the creation of an alternate reality, by manipulation of the five senses.



The Virtuality headset is quite heavy and cumbersome, but does work pretty well.

Ideally you should see, hear and touch this false world by the aid of computers. 'Virtual Reality' at present is this alternate world displayed through a visual head-set with stereo sound, and controlled through a glove or trigger.

The wider term 'Virtuality' covers a broader field than that, where technology attempts to create a believable other world, be might display it on a normal television or film screen (eg. Sega's Virtua Racing, The Lawnmower Man).



Virtual Worlds, a collection of the aged Freescape games Incentive Software developed primarily for the 8-bit systems.

VIRTUAL HISTORY

1967

Prof. Ivan Sutherland of the University of North Carolina demonstrates apparatus that involves computer images being displayed through an

mod-els of projects with Virtual ones.

1985

NASA unveil first real virtuality engine. Their system is cheap — made by customising two mini-TVs an run on a normal PC. This is the start of commercial interest in VR.

1986-

VIRTUAL ARRIVES AT HOME

enclosed headset. First primitive VR engine.

1970s

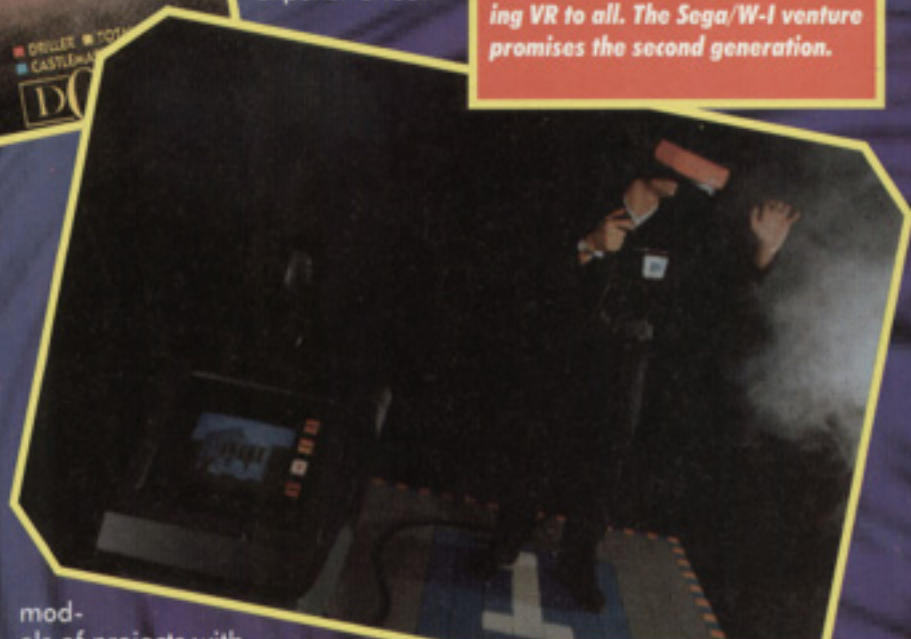
Development of CAD (Computer Aided Design) in engineering and Architecture, using 3D computer models. Replaces expensive real

Software developers experiment with virtual worlds. For home computers, concepts like 'Freescape' are invented — a slow-moving polygon field with moveable virtual objects.

1991

W-Industries launch an arcade VR system. A 32-bit processor runs sit-down or standing virtual units.

Virtuality: the first step for bringing VR to all. The Sega/W-I venture promises the second generation.



THE
MEAN
MACHINES
ARCHIVE

REALITY

First experience of VR for most people.

JUNE 1993

Sega show their home virtuality unit for Megadrive at Summer CES. Launch date is set for November, priced around \$200.

BRAVE NEW WORLD

True VR



involves three vital components that go to create the virtual world, or 'Cyberspace'. The more advanced each of these becomes, the more realistic and absorbing Cyberspace becomes.

THE ENGINE

The program that controls the virtual environment. A good engine relies on two things: a powerful processor, and a well-written program. W-Industries machines are controlled by a 32-bit processor based around Amiga technology. The speed is needed to deal with the interaction of up to three other play-

ers. Sega's home VR uses the Megadrive's standard 16-bit processor, so multi-player games are unlikely. A good engine will use detailed polygon graphics and fast update.

LEGEND QUEST. Virtual Role-playing, a bit like the *Knighmare* TV show. The game is set in a mediaeval castle.



THE INTERFACE

Nice graphics are useless unless your control is responsive. Two important features of the interface is the delay between your movements in the real world, and the reaction in the virtual world. Feature two is the measure of response; does the interface accurately reflect your

move-ments from reality into virtuality?

THE VIEWER

The headset offers the sights and sound of the virtual world. The headset should consist of two separate LCD screens, showing slightly different pictures, the difference allowing you to see in 3D (stereoptics). Colour and con-

DACTYL NIGHTMARE. The 'dactyl's view of the play area. He swoops to attack players.



trast are affected by the quality of the TVs, and definition is limited by the amount of pixels. As the headset has a tracking sensor for your head movements, it acts as part of the interface.

W-INDUSTRIES

W-Industries' arcade Virtuality machines are found in larger amusement centres. There are two versions; one with the player standing in a ring with a headset and trigger. The other is a sit-down cabinet, the player's interface is a steering wheel and floor pedals.

The headset displays a surprisingly good picture, but as it has to fit all sizes of heads it may appear slightly out of focus. The headset is light, but your eyes get sore



Flying Aces: one of the first Virtuality games to be released in the arcades. The game's a sort of tongue-in-cheek World War One simulator. Poor graphics and a poor game, by all accounts.

after even short periods of play. The helmets have excellent (but very loud!) surround sound using quadraphonics (four speakers) inside the headset. A maximum of four players may interact in a single game. Games costs around £2 for 5 minutes.

THE GAMES

HEAVY METAL

Like Battletech, this is a hunt-to-kill tank game set in a futuristic maze. Battlezone for the 90s and very good fun.

DACTYL NIGHTMARE

The original virtuality game. Exploration on a chessboard landscape linked by stairs, and patrolled by a pterdactyl. Eerie atmosphere but not much action.



Heavy Metal: one of the latest Virtuality games in the arcade. Very similar in concept to Battletech and almost as much fun!

VR SEGA STYLE

Sega was unveiled to third party publishers at the recent Chicago CES show. However MEAN MACHINES was the only European magazine invited to test the new hardware. Sega's VR system uses the Megadrive as an engine, ordinary joystick as interface and a custom-built viewer with stereoptics and sound. Sega VR, initially won't use polygons to generate graphics, relying on proven sprite technology (used in most video games) to create the virtual world. However, VR games combined with the new DSP chip (as seen in Megadrive Virtua Racing) should be able to create worlds comparable with the

BATTLESPHERE

Ambitious space battle game, in the Starblade vein. Unfortunately the interface and view are not responsive enough to make it playable.

FLYING ACES

Spoof WW1 dogfight game with four bi-planes. The view is fuzzy, and the game not much fun.



48 MM SEGA

An arcade shot of Virtua Racing, not strictly a real virtual reality game, but it does successfully render a stunningly realistic virtual world.

RAIDMASTERS

Futuresport played in a massive stadium where bouncing robots blast hell out each other. Simple gameplay, but exciting while it lasts.



Virtuality

arcade games. The Sega VR headset is high quality, with good LCD screens and a decent speaker system. Unfortunately, it suffers from

some of the drawbacks of Virtuality headsets; "fuzziness" and initial double vision (owing to the two screens). But people adjust quickly and the motion detection system works a treat. Sega are having problems converting VR to run on our power system, so expect to see the hardware on sale sometime next Easter for around £200 with games retailing at £50 to £70.

THE GAMES

NUCLEAR RUSH

The launch game, packed with the system. A frantic shoot 'em up set in a blasted waste, with enemy hovercraft and 'Nuclear Pirates'.



MATRIX RUNNER

An Adventure inspired by the 'Neuromancer' (see glossary). Your hacker 'jacks into the grid', and explores networks. A potentially ground-breaking console game.



A Legend Quest goblin. You fight him in virtual combat. The trigger has a sensor which marks your dagger strokes. Lunge to attack!

CAD

Computer Aided Design: an industrial tool for viewing computer models of engineering.

CYBERSPACE

The virtual environment: not just what you see, but what your imagination adds to the simple graphics.

FIELD

The area of Cyberspace in your vision at any one time.

FRACTALS

Mathematics used to create chaotic-looking patterns. Good for fast, believable virtual graphics.

THE GRID

Sci-fi concept of a virtual world of many users linked by fibre-optic telecommunications.

INTERFACE

Device used to relay your commands to the virtual world

NEUROMANCER

Sci-fi novel by William Gibson, describing a future world dominated by VR, the 'Virtual Drug' everyone escapes on.

NTSC

US and Japanese TV system, for which Sega VR has been developed.

PAL

British TV system running at 50Hz. Presently incompatible with Sega VR.

POLYGONS

Graphics system taking solid geometric shapes and linking them to create a virtual world.

STEREOPTICS

Viewing the same seen from two different angles to create an effect of three dimensional vision.

SURROUND SOUND

Realistic audio system, where sound comes from specific directions around the head.

UPDATE

The time it takes the engine to 'redraw' the virtual world after you have made a movement. Each redraw is a frame. Update is measured as a number of frames per second.

W-INDUSTRIES

British VR company. The first and only company to produce a commercial VR machine for the arcade (see box).

STOP PRESS!

Sega and W-Industries have announced a joint venture, producing new VR machines for Sega's arcade theme parks. The first opens in Bournemouth this Summer.

THANKS TO:

W-INDUSTRIES, VIRTUAL QUEST AT TOWER HILL TERRACE, LONDON.