Dave Mirra's Freestyle BMX Game design document for Gameboy Color

Please note that this document is only a preliminary game design document. It is brief and will not cover all aspects of the game design. This will be done in the actual game script, which would be part of milestone 1.

Also please note that whist the milestone schedule is realistic the exact contents of each milestone will be confirmed in the game design document supplied with milestone 1.

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Game specifications

This document is not a game design but a brief technical overview of what we would be capable of producing for Dave Mirra's Freestyle BMX on Color Gameboy. A full game design with complete technical specifications including sample visuals would be provided as the first milestone of the development contract.

Whilst the gameboy version is based on the PSX version, due to the major differences between the machine architecture, the screen resolution, the memory, the number of buttons available on the joypad the gameplay will differ in execution. The basic game concept will be the same, as will the overall 'feel' but the way the moves are executed, the look and the overall ambience will need to change.

This document assumes the game will be for COLOR GAMEBOY only and will be on a cartridge of no more than 8 M.

The desired viewpoint is exactly that in RockStar's Skate and Destroy game for Color Gameboy. The following four screenshots are from that game but give a great insight into the general style and look. We intend to introduce curving surfaces into DAVE MIRRA'S FREESTYLE BMX so that more control can be made on the tricks, especially on vert ramps.   Other than this most of the external jumps, unless they are large will be fixed in angle, or designed with graduated straight angles. This is due two main reasons – the ability to see minute differences and to feel the difference on a small 160*128 screen that is 2 ½ inches in size, and the available processing power to calculate correct 3 dimensional collision mathematics!
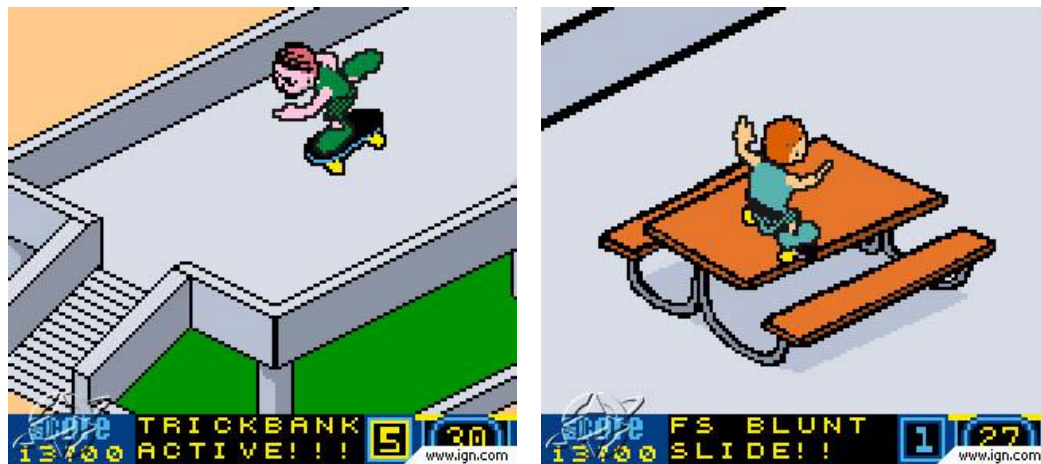
Whilst using the same viewpoint and style as the Rockstar game the visuals would be slightly more realistic taking into account the two real riders that are to endorse the game. However as it is a gameboy a cartooney with a plain floor / background look and lightly shaded objects will produce a better overall look. The view will however be very pleasing to the eye and the detail on the riders and the bikes will be high.

The game would be developed using a 33 degree isometric viewpoint but with a fully multidirectional scroll. This scroll would be a dump scroll so that we could move the screen by any pixel amount so that we can do serious stunts. We would need to be able to move the screen in more than the customary 8 directions as we need to emulate not only the left and right movement but up and down. Whilst this will be done with shadows and movement of the player and the bike, having some movement of the scroll further enhances the illusion.

The information on screen would partially be displayed on a panel and partially by overlaid sprites. Comments telling the player he has made a stupendous move would be flashed on screen (using proper cool language). The score would be displayed in large characters at the bottom. Combinations, multiples etc would all be acknowledged. Certain cool phrases or sounds could be played on completion of certain tasks using sampled sounds. Trick names would be displayed on the panel and would be stored so that a player could look at his performance after he has finished the event.

As the intention would be to have one player on screen at one time the game would use a large object for the bike and the player. The rider and the bike would need to be separate objects so that the player can use his full range of control and stunts. The probable size of the bike and player sprites would be 40*48 each. We could have a larger image (say 64 by 64) but this would necessitate having the biker and bike as one object, which would limit the moves available. We intend to experiment with a dynamic sprite system so that the bike is made up of the bars and front wheel plus an additional rear portion. This will increase the number of animations we can have (and we imagine the size of the player and bike) and the flexibility to running moves into each other. Obviously as unlike a 3D machine (such as PSX) we cannot rotate sprites (only flip images in X and Y) we need to store each and every frame.

The bike and player images would be designed as soft sprites with their image data being copied into their buffer each vertical blank to give us a huge range of movement. We would hold some compressed and would uncompress them into

RAM with the others in ROM. This would allow a large range of moves to be stored and copied in real time, without using an enormous cartridge.

As each 8*16 element that makes up the bike and player can have one of 8, 3 colour palettes attributed to it the game should be colorful.   We will be able to pulse colours and use other color effects to increase the visual impact.

The background would be designed as a double map to give us greater control over visuals (such as priority) and collisions. We want to be able to go in front and behind objects properly without glitching and we can do this by increasing the detail on the maps.   We also need to have good control over the collision data as the feel of the game when going up ramps, down banisters etc is essential. The background will be kept plain and bold in color to allow the priorities to work better. The foreground objects will all need to fit into the standard character sets as we need to keep all the vbl time for the scroll and the image copy for the biker and the bike. This however will not pose any problems.

The graphical elements used to make up scores and text to be drawn on screen will be kept in the shared area of video ram so that both the panel and on screen sprite displays can use them.

The game will have the same events as those in the PSX version. Multiplayer will work both as alternate play on the same gameboy or as linked play on two by link cable

Providing enough memory is available on the gameboy after all the animations and sounds are implemented we will implement an action replay system allowing the last few stupendous tricks to be stored in RAM. If Acclaim wish to offer battery backed ram then these will be saveable, otherwise they will be lost on power down*.*

Summary of Features

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- Full colour multidirectional scrolling
- Proper visual priorities
- Large Player images with large numbers of animation frames allowing large numbers of moves
- One player game with multiple events.
- Two player game on two linked gameboys or alternate and other competitions on one.
- Password generation system to verify the level a player has achieved.
- Speech and music incorporated including speech and sound samples.
- Huge number of moves and animations – Possible to have at least 2000 animation frames using 48*48 sprite images. Depending on compression more could be done.
- Large number of background areas to play on
- User definable controls including the possibility to design multiple, special moves that could be called up mid event.
- Full level editor allowing the player to set up tracks to play either as one player or against another player on the same gameboy or another by link. Created tracks can be sent across the link to your opponent. **NB only saveable if Acclaim wish to use battery backed ram on the cartridge.**

Cartridge

The game will be developed on an MBC5 cartiridge with 8M. No battery ram is required unless action replays etc need to be saved after switch off. This is Acclaim's decision.

Localisation support

We imagine that the game will be purely in English due to the main marketplace being the US. We would however design the text system to allow up to 6 West European languages providing Acclaim provide the translations in good time. Japanese or other non-western European languages are not in the planning and would need to be specified in good time. There would be cost and time implications for these non-western European languages.

Level editor

Dave Mirra's Freestyle BMX will include a level editor on the gameboy cartridge. Obviously any designed tracks will be lost at power down unless a battery backed cartridge is agreed by Acclaim.

The editor would allow the player to edit tracks in all styles (dirt, vert and street) using predefined building blocks. They would then be able to play these tracks both as a single player game or a two player. If they wish to play against someone on another gameboy linked by the gameboy link then the track would be downloaded to their opponents gameboy before the game starts.

This facility will allow players to design tracks that suit their riding style perfectly and to set traps for their opponents.

Full details would be supplied in the game design but as a minimum the player would be able to build tracks, populating them from pre built blocks, would be able to design the order the player must travel (if applicable), would be able to store them in the gameboy memory, and would be able to decide the level of difficulty. The levels would be transmittable to any other gameboy color (where the owner has a copy of the game) by link cable (and possibly infra red). The levels would then be playable either standalone or linked.

Concept

This would be exactly as in the PSX version. Will be completed in the actual game design.

Development Breakdown

The game will be developed according to the following schedule. A more detailed project schedule and milestone list will be delivered 3-4 weeks after project start. It will, however, basically follow this order.

Full conversion specification including detailed breakdown of game content including detailed specifications such as map sizes, animation frames etc. Incorporation of the PSX design where practical. Confirmation of what sponsorship and real life tracks, arenas, environments, names and things are to be incorporated.
Full design of code structure including memory management.
Test map for logic testing
First visual of level map and bike / player for approval
Complete animation frames for one bike (initial riding and ground based stunts)
Implementation of background scrolling routines including height and depth.
Implementation of collision routines
Implementation of priority / masking / shadowing routines
Implementation of initial bike code – riding
Implementation of initial trick routines – ground based initially
Implementation of collision on the bike/rider including shadowing and masking
Implementation of jumps, crashes and other reactionary parts for the bike
Implementation of initial menu system
First build of complete track with complete bike code and ability to ride around, jump and use all background objects (simple ones).
Implementation of multiple player code (although not yet linked)
implementation of sound routines and initial application
Implementation of level editor
Further development of front end and menu system
Completion of trick routines for all ground based and non-air tricks
First build of one player game allowing player to race and perform all tricks including air based (simple track)
Implementation of all bikes and allowing their choice from the menus (for testing)
Addition of additional tracks and environments
Finalisation of all backgrounds
First build of level completely populated and ready to test.
Further implementation of menu system etc
Completion of menu system.
Completion of all backgrounds and levels
Addition of music and final sound effects
Implementation of all options not so far implemented
Finalisation of player control / feel
Finalisation of all tricks
Finalisation of all in game aspects
Finalisation of menus
Finalisation of testing of level editor including sending user defined tracks to another gameboy.
Implementation of password entry system to allow players to continue from where they got to in the game allowing proper progression
Beta delivery, complete and tested for main Acclaim QA testing
Continued testing and tuning
Master delivery
Any Nintendo faults repaired
Nintendo acceptance
Finish and planning for follow up...

Milestone Schedule

Milestone 1 –   **End December 1999**

Delivery of Complete Game design Document
Sample Bike/ player graphics and animation
Sample level backdrop including test collision data
Sample menu visual
Full screen scroll code (version 1) – no collision, priority, jumping etc with sprites on it

Milestone 2 –   **End January 2000**

Environments completed –
          Basic dirt, street and vert tracks including collision / priority data
First bike and player completed visually including most animations
First bike control system – controllable bike including collision, priority and jumping.
Animated bike
Basic Menu system
Sound System incorporated

Milestone 3 –   **End February 2000**

Complete scroll and screen handling code
Initial bike control with collisions and reactions to background. Jumps, etc functional.
Initial Tricks implemented
Initial menu system

Milestone 4 –   **End March 2000**

Full bike control including jumps and all ground stunts
Music and sound complete
Implementation of level editor

Milestone 5 –   **End April 2000**

2 player game (one gameboy) functional
One player code for player finished
All stunts implemented and testable

Alpha –   **10 May 2000**

E3 Demo version – 1 player only including all tricks etc for 1 player
Most tracks
Incomplete menu system but fully useable
All tricks playable.

Milestone 6   End May 2000

All tracks implemented
Menu system complete
In essence a complete 1 player game
Finalisation of level editor

Milestone 7 –   End June 2000

Initial two player game functioning across link
Tuned 1 player game ready for full Acclaim testing

Beta –   20 July 2000

Game completed and tested by DC Studios QA dept. Ready for final full scale testing at
Acclaim and final game tuning.

Master –   1 August 2000

Submitted version with all problems with BETA version complete and fixed

Nintendo Acceptance

Submitted to Nintendo. Any rejections problems repaired asap.

Development Budget

The proposed budget for developing Dave Mirra's Freestyle BMX including all sound, speech (with the exception of the supply of the original speech samples and voice recordings), video, graphics, programming, internal QA testing and preparation of play-through videos, along with marketing support where necessary, supply of demo versions for shows and special cut down versions for promotion (if required), supply of Nintendo submission sheets etc. is a total of $175,000. The proposed payment schedule would be $35000 at signing, $15500 paid for milestones from end December to end June, $7500 for alpha delivery (10 May), $7500 for beta delivery 20 July, $10000 for master delivery 1 August and $6500 on Nintendo acceptance.

Royalties would be anticipated once the advance payment was cleared of $.75 per unit sold.

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