Initial Assessment

Submitted to Jerry Byrum, president of the

International Video Game Hall of Fame (IVGHOF)

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My purpose is not to craft a narrative that will accommodate a particular position. I am simply making observations about what I have found in testing the boardset said to have been used to play the 1,047,200 and 1,050,200 games. The only ones who can answer how the games were originally recorded are the ones claiming responsibility for their production.

Digital copies of the two aforementioned games can be found on the TG dispute thread. Portions of a VHS copy of the 1,047,200 game were played in a livestream by Jace Hall. Both games also appear on Youtube. In these videos VHS taped copies are played on a VCR while being recorded by a camcorder. The only other footage I can think of is from the *King of Kong* where excerpts of the 1,047,200 game are shown at Funspot and in the side by side comparison found in the DVD extras.

Whether we are talking about the originals or copies we need to have full disclosure on how they were made.

This means we need a detailed explanation of the process used to record the 1,047,200 and 1,050,200 games. Were the original recordings subsequently copied or edited\*, and if so, when and by who and what was the process involved in making them?

We also need the same with respect to the VHS copies found on Youtube and those responsible for uploading them.

Where did the VHS tapes come from? Were they copied or edited\*, and if so, when and by who and what was the process involved in making them?

What is the source of the digital copies now in possession of Twin Galaxies? We need to know who made them and how they were made. This means we need to have a detailed description of the process. Simply stating that a VHS tape was copied to a computer does not tell us how it was copied. What hardware or peripheral(s) were used and what kind of driver(s) and editing software were associated with the process?

Now on to my observations I have made after testing Billy Mitchell's boardset.

The first thing of note is the orientation of the screen. The orientation is 90° clockwise if looking at a standard TV/CRT. This means to view the image right side up, you would have to turn the TV on its side 90° counterclockwise. All the available footage of either the 1,047,200 or 1,050,200 games shows an orientation 90° counterclockwise, which means the TV would have to be rotated 90° clockwise.

\* Editing can simply mean a change in format (i.e., from analog to digital), color adjustment, size or aspect ratio. It does not necessarily imply a purposeful or intentional alteration or manipulation of content (i.e., adding or subtracting elements of particular frames - e.g., photoshopping). The possibility of frame modification from sources used to make the VHS tapes shown on Youtube or the digital copies that are now found online is something different.

The image produced from the boardset is 180° opposite of what is found in the *King of Kong* and the other available copies. The appeal for full disclosure at the opening of this piece is to allow those involved to provide as much evidence and detail about the processes involved in setting up and recording the games and any subsequent copies. Making assumptions about what must have happened when recording the games is fruitless. There needs to be something definitive from whoever helped set up the games and recorded them.

I was the one who pointed out the orientation of the board could be changed by moving one of the yellow booted jumpers in the upper right corner of the CPU board. The farthest one to the right would be moved one space to the left. I found this information on the Braze Technologies website (<http://www.brasington.org/arcade/tech/flip/>). I was told that nothing was done to the boardset after it was received back from Nintendo. This would have been in 2007 when the 1,050,200 game was played. The orientation was the same as that of the first game played in 2004. I had communication with Carlos Pineiro who told me he briefly tested the board used for the 1,050,200 game\*. He told me the jumpers did not appear to have been switched or de-soldered when he received it. He described it as "Mint original solder." He told me that after receiving the board he switched the jumper to run a quick test and then switched it back to the original setting before repackaging and returning it to Rob Childs, in whose shop he did his testing. The original setting did not match what is seen in the *King of Kong*. When I received the boardset I noticed the jumper was in the factory position with evidence of re-soldering. This matches what Carlos told me. If what I have been told is correct this is the only time anything was changed.

If one did not have access to the boardset said to be used for the games in question, then one could legitimately suggest the possibility the board may have been set by the manufacturer to assume a different orientation or the jumper may have been switched. However, both Carlos and I have had access to this boardset. It was stated to me by both Billy and Rob that nothing had been done to the board, which would eliminate the aforementioned suggestions as viable options.

I tested the output from the edge connector through the Two-Bit Converter as well as from the inverter through a different type of converter (CGA/EGA/RGB/YUV to VGA). After running preliminary tests, the edge connector and the aforementioned converter display the same orientation. The only change with orientation I have found is when I quickly reboot the machine. The screen briefly flips before returning to the set orientation.

 The story from the beginning was that the Two-Bit converter was used to convert the RGB signal to a compatible NTSC signal which was then run DIRECTLY to a VCR where a game would be recorded on VHS tape. Color adjustment can be made using this converter, but it does not permit orientation or position adjustment. Other converters used with arcade games may allow such modifications, but such is not the case with the Two-Bit Converter.

\*He said that he was told the boards used for the 1,047,200 game were different from those used for the 1,050,200 game. This was also my initial impression. Later I asked for clarification and was told that the same boardset was used for both games. See my comments from "Dispute-My Thoughts" --"The original machines used for these early games would need to be tested, yet the odds of finding them, in addition to confirming that all the hardware remained intact and in the same condition, would be prohibitively low." The hardware would include the power supply and circuit boards. I didn't notice any difference in output when adjusting the power supply on the machine I used. I hooked up the Two-Bit Converter to a separate switching power supply in order to check if adjusting the voltage would affect output. Once again I didn't notice a difference.

What I find a little disheartening is that from the beginning everyone was led to believe all of Billy's games (1.047, 1.050, 1.062) were recorded directly to a VCR from the Two-Bit Converter. The analysis provided by Rob Childs on February 11th only spoke of the arcade output being recorded to a VCR. No mention was made of a laptop or any other process involved with recording these games. It wasn't until Carlos Pineiro uploaded his explanation of the direct feed set up to Youtube on March 12th (<https://youtu.be/2-8EXAVcbl0>) that I first heard one of the games (i.e., 1,062,800) had been recorded from the Two-Bit Converter to a laptop using a specific A/V capture device. That recording was then subsequently sent out from the laptop and recorded on a VHS tape. I have yet to receive any information on why this was done or how it was accomplished.

I do recall that another technician by the name of Jim Anthony was said to have been involved with the early games. This was mentioned by Billy in early February. The impression that I and others got, however, was that Rob Childs was the tech responsible for setting everything up. Subsequently, I was told by Rob that the only game he was directly involved with was the 1,062,800 game that was played at Boomers on July 31, 2010. I have inquired as to how the early games were set up and how they were recorded and the answer I received is that they can't say for sure because Jim Anthony was the one responsible and no one has been able to get in touch with him. I find this troubling since the impression everyone received was that this was a simple and certain method. I was looking for details and specifics regarding the procedure, but now it seems no one really knows how everything transpired. This seems to contradict what was portrayed in Rob’s technical breakdown. My questions arose after noticing output disparity from the Two-Bit Converters I tested, one from Rob and the other from Jace Hall. I have been told there was a video of the boardset being put into the machine, which they are currently trying to locate. This, however, does nothing to address how the game was set up and recorded. Based on everything I have been told and what I have been able to test, there had to be some other process involved in making the tapes for the 1,047,200 and 1,050,200 games. This however, does not automatically mean arcade was not used. One of the reasons why all available copies (VHS and digital) need to be examined is so they can be compared with control recordings. The signal output and quality of Two-Bit direct feed recordings may have trouble transferring from VHS to digital, depending on how the transfer is accomplished. The VHS playback may also differ from one VCR to another. That is why details related to the copies need to be disclosed.

I have also been trying to find out the exact process involved with the making of the 1,062,800 tape. This is the only game that Rob Childs is said to have been directly involved. He is the only one who knows how everything was set up and recorded. I have run the Two-Bit Converter directly into my laptop using at least three different USB capture devices. Two of them will not produce a stable image at all, and although the image records in color to VHS, it shows up in black and white on the laptop with the vertical and horizontal skewed. The last capture device does record a relatively stable picture during gameplay, but the sync can be very glitchy between boards and during the credit/score and copyright screens. The color is a little problematic but does appear similar to the footage available online. This device is the same one that Carlos showed during his Two-Bit set up video (i.e., Gigaware VHS to DVD Video Converter # 25-1141). I have not been able to produce anything that would match the footage shown at the Big Bang in August of 2010. If I can't produce a stable video, it may be there is something else I should be doing to remedy this. If this is the case then Rob should be able to explain what to do or be willing to set up the process himself. There is no excuse, regardless of how inconvenient this may happen to be, not to address valid concerns and details surrounding this recording.

My assessment is that the two early games did NOT simply use a Two-Bit Converter that ran from the inverter board directly to a VCR. Some other process or processes would have to be involved in order to produce an orientation that is 180° opposite of what the actual boardset normally produces. The Two-Bit Converter with this boardset does not produce what we see. The color and stability of my recordings do not match the copies as closely as one should expect if their signals were directly run through a Two-Bit Converter to a VCR. Nothing I have tested conclusively proves whether arcade was used or not. At best, the results indicate the recordings were not made in the way that was claimed for them.

Now with respect to the issue of the rendering of the transitions, there is nothing in all of the footage I have recorded which matches the unique frames which were a part of the TG dispute. Since there have been questions raised about editing, splicing or manipulation of any kind, all available tapes should be submitted for examination including the ones which were played by Dwayne Richard and recorded to a camcorder for later upload to Youtube. I have found evidence that would suggest the VHS tapes in possession of TG may have a digital source. This does not necessarily mean the original source of the game was produced digitally (i.e., on a computer or using MAME), but that the tapes in TGs possession may have, at the very least, been copied from a digital source. It is possible digital signatures picked up in analysis of a VHS tape during a digital livestream could be produced by the stream itself, or may have been part of the original tape. To either verify or eliminate this as a possibility, there needs to be a first-hand examination of the tapes.

The original Youtube tapes and the digital copies show potential evidence of editing or frame manipulation (i.e., 1,050,200 –frames during the 964,300 transition). To eliminate this as a possibility, there needs to be a first-hand examination of the tapes with frame comparison to the digital copies. All attempts I have made to acquire the tapes for analysis have been dismissed or rebuffed.

 Rob Childs has stated both he and Billy would be willing to take a lie detector test. There may be doubt as to the efficaciousness of such an endeavor, but since it appears they are willing to participate, I strongly suggest that a polygraph examination be scheduled for each individual at different times and at different locations. A third party should choose the examiner, the questions from a pool of submissions and the proper format in which to present the questions. At no time should the test subjects have access to any material related to the exam. If possible, video and audio recordings should be made of each session. The recordings, results and the interpretation from a qualified examiner should be given only to the third party and the one in charge of the independent investigation. The results should not be disclosed to the test subjects before they are made public.

If Dwayne Richard, Tanner Fokkens, Jeremy Young, Jace Hall, Greg Erway or anyone else is willing to take a polygraph test, the same procedure set forth above would be followed.

The following is a link to an unlisted playlist on Youtube with test recordings totaling 9hrs 50min 44 sec.

<https://www.Youtube.com/playlist?list=PL9phvGHENRhZIY6zteeuOcCihEt69ZJ_2>

I have not provided detailed explanations for the videos, just quick descriptions of the process. I would be glad to answer any questions you may have.

Thank you,

David Race