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David O. Carson  
General Counsel  
U.S. Copyright Office  
P.O. Box 70400  
Washington, DC 20024

Re: Docket No. RM 2011-7  
Exemptions to Prohibition on Circumvention of Technological Measures that  
Control Access to Copyrighted Works  
Proposed Classes 7 and 8

Dear Mr. Carson,

I have reviewed the screen captured *Star Trek* clip prepared by the DVD-CCA. I have also used the program Aiseesoft to “rip” that section of the Blu-ray version of the film. I have enclosed a copy of the ripped clip for your examination as well as a few frame grabs. Below I compare the screen capture and ripped clips, and then I offer some reasons why the high quality clip is important for education.

#### 1. Screen Capture v. Blu-Ray Rip

a. First, the DVD-CCA co-counsel made a number of mistakes while preparing the screen captured *Star Trek* clip. He played the film using the wrong aspect ratio, so all of the horizontal lines are compressed. The captain, for example, seems to have a long thin face in the screen captured version, when in fact he has a round face in the film (see figures 1 and 2). The fish bowl effect created by the anamorphic image makes the scene very difficult to analyze, since it is quite far from the look of the original film. The DVD-CCA co-counsel also left a news program playing on his computer while he made the clip, so we hear bleed through throughout. This is especially noticeable when the film soundtrack goes silent to capture the experience of an astronaut in space, and in place of the silence of empty space we hear news commentary saying, “domestic sales of just over 22 million...” But these are errors that could be corrected by a more experienced technician.

b. This example, however, also reveals a number of limitations of screen capture technology that cannot yet be overcome by any level of technical skill or equipment. The screen captured clip is much fuzzier and muddier. There is a significant decrease in the level of detail. Compare figures 5 and 6. In figure 5, we see the time traveling Romulan ship absorb the U.S.S. Enterprise. In the screen captured clip, the Enterprise enters a barely legible black mass. There is a cryptic, spooky feeling to the shot, which has its own series of connotations. But when we look at the ripped clip, we realize that that is not what the filmmakers intended. In fact, careful modeling of light reveals tremendous detail in the Romulan ship. It isn't the mystical black mass of the screen captured clip but a technological wonder with detailed mechanical parts and lights that suggest alien activity inside.

Similarly, if you look at images 3 and 4, you can see the discrepancy between the screen captured and ripped images. Focusing on the detail of the captain's eye, we can see how much more information is revealed in the ripped version. Among other details, we can see the light reflected in the captain's eye. Filmmakers place lights below main characters to achieve this effect, which is entirely lost in the screen captured version. The gleam in the captain's eye makes him appear alert and alive, and we respond to him. The washed out captain of the screen captured version, on the other hand, is passive, stunned by the experience rather than reacting to it, and our identification with him is hindered.

c. The fuzziness of the screen captured version also flattens the image. We lose the sense of space (more technically the depth of field) that is created by the light and detail apparent only in the ripped version. Compare figures 1 and 2 again. In the screen captured version, the captain and the background merge together, appearing almost on the same plane. In the ripped version, we realize that shot was taken using a camera setting designed to create a shallow depth of field. In the ripped version, the captain appears in crisp definition, making him pop out from the fuzzy background. This sense of depth is not only important because it is what the filmmakers intended us to see. It also helps create an immersive experience for the viewer, who feels the camera move through the deep space of the ripped clip rather than the flat space of the screen-captured clip.

2. So what? Why would students and professors need the high quality images for study and analysis? Aren't the muddy screen captured images good enough for teaching and learning?

a. We have discussed this many times, but the level of analysis rises and falls with the fidelity of the example. As I demonstrated above, the screen captured clip and the ripped clip are different representations of the same scene. The varying presentations of light, space, and detail will result in different interpretations of the scene. A student writing an essay on the screen captured version will not arrive at the same conclusions as a student watching the ripped version. They are different objects of study with very different properties. More practically, a student who relies on the unreliable screen captured version is in danger of getting it wrong, like an art history student who refuses to take off his dark sunglasses in the museum.

b. But what about a student who isn't engaged in aesthetic analysis? What about a student who is watching a clip in a history lecture or discussing a clip in a religion seminar? Does the diminished depth of field or the washed out light make a difference to her? The answer is yes, and there are two reasons why. First, the connotations created by the image affect our interpretation. Without the glint his eye, we read the captain's response to the situation differently. Without the detail in the Romulan ship, we mistake science for magic. God is in the details. And when the details are altered, as they are in the screen captured version, all analysis that follows is built on a shaky foundation.

Second, and equally important, is the affective response of the clip. I keep coming back to Mr. Carson's comments during the hearing. He said that his daughters are happy to watch movies on their phones. Well, most phones are capable of playing high definition video. Without an exemption to rip high definition images, professors and students are being asked to study images of far less quality than the ones they are accustomed to seeing in their living rooms or, indeed, on their phones. As my students have attested many times, showing historical events or important figures in high quality images brings the subjects to life. When video is shown in an educational context with the same quality as video shown for entertainment, the experience can erase the barriers of history or obscurity. And learning can take place.

Please let me know if you have any problems accessing the enclosed video clip and still images. And feel free to contact me with any additional questions.

Sincerely,



Peter Decherney  
Associate Professor and Director, Cinema Studies Program