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11 UNITED STATES DISTRICT COURT
12 EASTERN DISTRICT OF WASHINGTON

13 UNITED STATES,)
14 Plaintiff,)

NO. 09-0328-FVS

15 vs.)

16 KARL F. THOMPSON, JR.,)
17)
18 Defendant.)

**UNITED STATES' MEMORANDUM
IN SUPPORT OF ADMISSIBILITY
OF COMPUTER GENERATED
ANIMATION**

19
20 The Plaintiff UNITED STATES, through James A. McDevitt, United States
21 Attorney for the Eastern District of Washington (EDWA), and Victor Boutros, Trial
22 Attorney with the United States Department of Justice (DOJ), Criminal Civil Rights
23 Division, and the undersigned Assistant United States Attorney (EDWA),
24 respectfully submits the following Memorandum in support of its Motion *In Limine*
25 seeking an order that its "to scale" computer generated animation is admissible.
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2 **I. LEGAL ANALYSIS**

3 The standard for the admissibility of computer animation depends on the
4 purpose for which it is offered. If the computer animation is offered as substantive
5 evidence, then it likely must be “*substantially similar*,” though not identical, to the
6 underlying events it depicts. *See, e.g., United States v. Birch*, 39 F.3d. 1089, (10th
7 Cir. 1994). By contrast, if the computer animation is offered only as demonstrative
8 evidence to illustrate and explain a witness’s testimony, *it need only fairly and*
9 *accurately depict what it purports to represent*. In this case, the computer animation
10 meets both standards: it is substantially similar to the underlying events and is
11 therefore admissible as substantive evidence; and, in the alternative, it is admissible
12 as demonstrative evidence to illustrate and explain the opinions of the Government’s
13 experts. T

14 The animation facilitates the jury’s ability to understand those opinions by
15 focusing the jury’s attention on the relevant action. For instance, the animation
16 highlights Thompson’s baton in a high contrast color, making it easier for the jury to
17 see. It eliminates the multicolored items for purchase on the shelving and the civilian
18 witnesses in the store so that the jury can focus on the movements of Zehm,
19 Thompson and Braun. Because the animation satisfies the predicates for admission
20 as substantive evidence and demonstrative evidence, the Government is entitled to
21 introduce it for either purpose.

22

23 **A. The computer animation is admissible as substantive evidence**
24 **because it is substantially similar to the events it represents.**

25 Evidence in the form of computer-generated animation is likely admissible as
26 substantive evidence if it is “substantially similar to the actual events” it recreates.
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1 *Hinkle v. City of Clarksburg*, 81 F.3d 416, 425 (4th Cir. 1996). See also *United States*
2 *v. McIninch*, 36 Fed.Appx. 93, 94 (4th Cir. 2002) (unpublished) (“[W]e have
3 established a requirement that videotaped evidence purporting to recreate events at
4 issue must be substantially similar to the actual events to be admissible.”), *United*
5 *States v. Birch*, 39 F.3d 1089, 1092 (10th Cir. 1994) (“[T]he party introducing the
6 evidence has a burden of demonstrating substantial similarity of conditions...so as to
7 provide a fair comparison.”), *U.S. v. Norris*, 217 F.3d 262, 270 (5th Cir. 2000)
8 (finding that the district court did not abuse its discretion in determining that the re-
9 creation was admissible because it was made under conditions substantially similar to
10 those that were the subject of the litigation); see also *Ortiz v. Yale Materials*
11 *Handling Corp.*, LEXIS 18424 at (D.N.J. 2005) (“While the Federal Rules of
12 Evidence do not have specific provisions governing the admission of computer-
13 generated simulations, reconstruction, and animation as substantive evidence, such
14 computer-generated evidence has long been accepted as an appropriate means to
15 communicate complex issues to a lay audience, so long as the expert’s testimony
16 indicates that the processes and calculations underlying the reconstruction are
17 reliable.”). The animation need not be identical to the video footage to be admissible.
18 Substantial similarity is enough, and differences often go to the weight of the
19 animation, not its admissibility. *Datskow*, 826 F. Supp. 667 at 686 (“[V]arious
20 differences between what was shown on the tape and the actual conditions...went
21 only to weight to be given to the animation, not to its admissibility.”).

22 In this case, the computer animation is substantially similar to the events it
23 depicts because it closely tracks the video footage of those events captured by four
24 cameras at the Zip Trip that night. The animation was created in two stages. During
25 the first stage, the Special Projects Unit of the Federal Bureau of Investigation based
26 in Quantico, Virginia, performed a detailed series of measurements at the Zip Trip
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1 convenience store where the incident took place, including measurements of the
2 locations of four security cameras that captured different portions of the incident. On
3 the basis of those measurements, the FBI built a virtual model of the store that was to
4 scale.

5 During the second stage, Chris Villa of Vital Distractions inserted the
6 individual frames from the Zip Trip security camera into the background and layered
7 digital versions of the three principal actors depicted in the computer animation –
8 Zehm, Thompson, and Braun – “on top” of the respective individuals they represent.
9 Using the video footage along with physical descriptions of Zehm, Thompson, and
10 Braun – including their height, weight, and clothes – Mr. Villa constructed digital
11 versions of each that closely matched their physical analogues depicted in the video
12 footage. Mr. Villa then worked through each of the four video sequences, frame by
13 frame, to try to match each individual’s movement. To demonstrate that the final
14 animation is substantially similar to the events it represents, Mr. Villa created for
15 each of the four camera angles a version of the animation that superimposes the
16 actual video footage over the animation. True and correct copies of the animation
17 files, including those with the overlay of the actual footage, are provided to the Court
18 for its review as Exhibits A-D. The Government disclosed in its September 22, 2009,
19 expert disclosures the existence of the animation. The United States informed
20 defense counsel in December 2009 that the animations and other evidence could be
21 inspected at the U.S. Attorney’s Office. Defense counsel did not elect to inspect the
22 animation and/or the physical model (3/4” to 1’ scale) of the Zip trial until February
23 26, 2010, when, pursuant to defense counsel’s request, the United States also
24 provided defense counsel with separate copies of the animation. *See Defense*
25 *Discovery Discs #125-129*. An additional copy of the animation was provided to
26 defense counsel (*see Discs #133-136*) on March 2, 2010. Because the animation is
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1 substantially similar to the events it depicts, it is admissible as substantive evidence.

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3 **B. Alternatively, Computer Animation is Admissible as Demonstrative**
4 **Evidence and/or to Illustrate the Opinions of Government's Experts.**

5 The Ninth Circuit has held that "the use of computer animations is allowed
6 when it satisfies the usual foundational requirements for demonstrative evidence."
7 *Friend v. Time Manufacturing Co.*, LEXIS 52790, *20 (D. Ariz. 2006). These
8 requirements are met as long as the animation's proponent shows that "the computer
9 simulation fairly and accurately depicts what it represents, whether through the
10 computer expert who prepared it or some other witness who is qualified so to testify,
11 and the opposing party [is] afforded an opportunity for cross-examination." *Id.* at *20
12 (citing *Bledsoe v. Salt River Valley Water Users' Assoc.*, 179 Ariz. 469 (Ct. App.
13 1994), *Byrd v. Guess*, 137 F.3d 1126, 1134 (9th Cir. 1998) (finding that the district
14 court had not erred in admitting a computer animation of a fatal shooting after the
15 trial judge had reviewed the animation outside the presence of the jury and
16 determined that it was not unduly prejudicial) (superseded by statute on other
17 grounds)).

18 The computer animation in this case satisfies both conditions. First, the
19 animation fairly and accurately depicts the opinions of the Government's experts.
20 Indeed, it facilitates the jury's ability to understand those opinions by focusing the
21 jury's attention on the relevant action. For instance, the animation highlights
22 Thompson's baton in a high contrast color, making it easier for the jury to see. It
23 eliminates the multicolored items for purchase on the shelving and the civilian
24 witnesses in the store so that the jury can focus on the movements of Zehm,
25 Thompson and Braun. Second, as in *Friend, supra*, the defendant will have the
26 opportunity to cross-examine the expert. Because the computer animation fairly and
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1 accurately depicts the opinions of the Government's experts, it should be admissible
2 as demonstrative evidence.

3 Indeed, federal courts often admit computer animations "to illustrate the
4 opinion [of] an expert." *Id.* at *21, *Datskow v. Teledyne Continental Motors Aircraft*
5 *Products*, 826 F. Supp. 667 (W.D.N.Y. 1993). In *Robinson v. Missouri Pac. R.R.*
6 *Co.*, 16 F.3d 1083, 1088 (10th Cir. 1994), a case cited by the Defendant in his motion
7 to exclude the computer animation, the Tenth Circuit affirmed the decision of the
8 district court to admit two segments of video animation evidence that demonstrated
9 an expert's theory of how an accident occurred. With regard to the first segment of
10 video, the Tenth Circuit held that the defendant's objections to certain details
11 depicted in the video did not "bear on the purpose of the exhibit, which was to
12 illustrate the expert's theory," and thus the trial judge did not err in admitting this
13 portion of the video evidence. *Id.* at 1087. With regard to the second video segment,
14 the court held that "given the limited...illustrative purpose for introducing the
15 exhibit, the cautionary instruction to the jury, and the opportunity for vigorous cross-
16 examination, we do not believe the district court abused its discretion in admitting the
17 second scenario." *Id.* at 1088. These safeguards help ensure that the jury understands
18 the purpose for which the evidence is being offered.

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20 **C. Defendant's Argument that the Animation is Wholly Based on**
21 **Unsupported Speculation is Factually Inaccurate.**

22 The Defendant asserts that the animation should be excluded from evidence
23 because it "does nothing more than offer Mr. Villa's subjective belief and/or
24 unsupported speculation."¹ Memorandum in Support of Defendant's Motion in
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27 ¹ In its Memorandum opposing the admission of the computer animation, the

1 Limine Re: Expert Witness Chris Villa's 3-D Computer Animation, at 7. The
2 Defendant nevertheless concedes that the animation "is based entirely on footage
3 acquired from the surveillance cameras at the Zip Trip where the incident occurred."
4 *Id.* Because the animation closely tracks the video footage, and footage captured by
5 the Zip Trip's four security cameras is not "Mr. Villa's subjective belief and/or
6 unsupported speculation," the Defendant's assertion appears to be factually
7 inaccurate.

8 The Defendant also claims that the video captured by the Zip Trip's security
9 cameras is two dimensional ("2D"), and the computer animation created by the
10 Government's experts is three dimensional ("3D"). The Defendant then suggests that
11 the Government's expert "would have been required to speculate, or impose his
12 subjective belief as to the information contained in the new third dimension." *Id.*
13 The Defendant's claim that the animation adds a third dimension to two dimensional
14 source material is flatly incorrect. Both the video footage and the animation are two
15 dimensional representations: each image in the series is a collection of pixels
16 displayed on a flat surface with two dimensions – height and width. As the court
17 explained in *Pierce v. State*, computer animation consists simply of "individual
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20 Defendant cites *Hall v. Baxter Healthcare* for the proposition that "[w]hen a
21 computer generated image animation is based on 'speculation and unfounded
22 assumptions...[it] decreased its probative value...to the level of a gossamer.'" *Id.*
23 (quoting *Hall v. Baxter Healthcare Corp.*, 947 F. Supp. 1387, 1407 (D. Oregon
24 1996)). *Hall*, however, did not involve computer animation at all. The "speculation
25 and unfounded assumptions" the Court attributed to the referenced expert was not
26 based on creating computer animation, but on her opinion on the epidemiology for
27 silicone gel breast implants.

1 pictures shown in a rapid sequence to indicate motion.” *Pierce v. State*, 671 So. 2d
2 186, 188 (Fla. App. 1996) (finding no error in the trial court’s admission of a
3 computer-generated animation reconstruction). Thus, contrary to the Defendant’s
4 claim, the animation does not create an added dimension not present in the source
5 material (i.e., Zip Trip physical dimensions (electronic “to scale” measurements) and
6 store security video).

7 Finally, the Defendant suggests that the jury will be confused by the animation
8 and will assign too much weight to it. Federal courts have addressed this concern in
9 the context of a video and computer-generated animation evidence by instructing the
10 jury as to the purpose of the evidence and the proper weight it should be given. *See*,
11 *e.g.*, *Hinkle*, 81 F.3d at 425 (finding no undue prejudice where “the district court
12 carefully instructed the jury” so that it “fully understood [the] animation was
13 designed merely to illustrate Appellees’ version of the shooting and to demonstrate
14 how that version was consistent with the physical evidence.”); *see also Datskow*, 826
15 F. Supp. 667 at 685 (denying the defendant’s motion for a new trial and finding that
16 computer-generated animation had been properly admitted into evidence because “the
17 cautionary instruction was more than adequate to guard against the jury giving [the
18 animation] undue weight.”). Thus, a limiting instruction to the jury regarding the use
19 and evidentiary weight of the computer animation is frequently sufficient to guard
20 against jury confusion. *Id.*

21 22 **II. CONCLUSION**

23 For the foregoing reasons, the computer animation is substantially similar to the
24 underlying events because it is a reliable and accurate depiction based on and created
25 from the video footage shot by the convenience store’s security cameras capturing
26 those events. It is therefore admissible as substantive evidence. Alternatively,
27 because the video fairly and accurately depicts the opinions of the Government’s

1 experts, it is admissible as demonstrative evidence. Accordingly, the Court should
2 grant the Government's Motion on the admissibility of its computer animation.

3 RESPECTFULLY SUBMITTED this 5th day of May 2010.

4 JAMES A. MCDEVITT
5 U.S. Attorney - EDWA

6 s/ Victor Boutros
7 VICTOR BOUTROS
8 Trial Attorney, DOJ Crim. Civ. Rts. Div.
9 TIM M. DURKIN
10 Assistant U.S. Attorney

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14 ***Certificate of ECF and/or Mailing***

15 I hereby certify that on this 5th day of May 2010, I electronically filed the
16 foregoing pleading with the Clerk of the Court using the CM/ECF System which
17 will send notification to the following CM/ECF participants:

18 Carl J. Oreskovich

19 and to the following non CM/ECF participants: n/a

20 s/ Timothy M. Durkin
21 Timothy M. Durkin
22 Assistant United States Attorney
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26
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