

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO
Judge William J. Martínez**

Civil Action No. 08-cv-00491-WJM-MEH

AMY BULLOCK, as an individual, as the next of kin and personal representative of JEFFREY BULLOCK, deceased, and as parent and next friend of ADAM BULLOCK, CHELSEA BULLOCK, and MELISSA BULLOCK,

Plaintiffs,

v.

DAIMLER TRUCKS NORTH AMERICA, LLC, formerly known as Freightliner, LLC,

Defendant.

OPINION AND ORDER

This matter is before the Court on Defendant's Motion for Early Pretrial Evaluation and Ruling on Admissibility of Computer Animation of Accident. (ECF No. 317.) The motion is fully briefed and ripe for disposition. The Court has putative subject matter jurisdiction over this action pursuant to 28 U.S.C. § 1332 based on diversity jurisdiction. For the following reasons, Defendant's Motion for Early Pretrial Evaluation and Ruling on Admissibility of Computer Animation of Accident is GRANTED in part and DENIED in part.

I. BACKGROUND

A. FACTUAL BACKGROUND

This is an action brought by Jeffrey Bullock's surviving spouse and children, alleging that Defendant Daimler Trucks North America, LLC, wrongfully caused Bullock's death. (ECF No. 226, at ¶¶ 2, 8-9.) On the morning of August 15, 2006,

Bullock and Donald Green were riding in a tractor-trailer truck traveling west on Highway 50 in Gunnison County, Colorado. (*Id.* at ¶¶ 14, 16-18; ECF No. 231, at ¶¶ 14, 16-18.) Defendant manufactured the tractor in which Bullock and Green were riding. (ECF No. 226, at ¶ 16; ECF No. 231, at ¶ 16.) Just before 7 am, Green lost control of the vehicle in a left hand curve. (ECF No. 226, at ¶ 18; ECF No. 231, at ¶ 18.) The tractor-trailer left the roadway, rolled, and came to rest at the bottom of an embankment. (ECF No. 226, at ¶ 19; ECF No. 231, at ¶ 19.) Bullock was killed as a result of the accident; Green was not. (ECF No. 226, at ¶¶ 20-21; ECF No. 231, at ¶¶ 20-21.)

B. PROCEDURAL BACKGROUND

Plaintiffs filed this action on March 10, 2008. (ECF No. 1.) They bring product liability claims against Defendant based on negligence and strict liability. (ECF No. 226, at 10-12.) Specifically, Plaintiffs allege that the tractor manufactured by Defendant was defective and unreasonably dangerous because the tractor was not crashworthy, the sleeper compartment was not crashworthy, and the sleeper compartment contained an inadequate restraint system. (*Id.*; ECF No. 244, at 4-5.)

On November 20, 2009, Plaintiffs filed a Rule 702 Motion & Brief to Preclude Testimony of James Chinni. (ECF No. 173.) Attached as an exhibit to Plaintiffs' motion was Defendant's Third Supplemental Disclosure Statement, which identified Mr. Chinni and stated that, under Mr. Chinni's direction, "the IMMI Center for Advanced Product Evaluation has performed a MADYMO modeling analysis illustrating the movements of Messrs. Bullock and Green during the subject rollover event with vehicle dynamics data provided by Robert J. Butler, Ph.D., P.E., and Harry Smith, Ph.D., M.D." (*Id.*, Ex. 2, at 1.) In their motion, Plaintiffs argued that Mr. Chinni's proposed testimony fell within the

scope of Federal Rule of Evidence 702, but that Mr. Chinni had not been disclosed as an expert by Defendant. (See ECF No. 173.) Defendant opposed the motion on December 23, 2009, arguing that Mr. Chinni was not a designated expert, but instead was properly endorsed as a fact witness to explain the use of the MADYMO software and to authenticate the MADYMO modeling analysis. (See ECF No. 211.) Plaintiffs filed a reply brief on January 14, 2010. (ECF No. 215.)

On September 30, 2010, Judge Philip A. Brimmer, to whom this action was previously assigned, granted the motion to preclude Mr. Chinni's testimony under Federal Rule of Evidence 702. (ECF No. 268.) The Court based its decision on the fact that Defendant had disavowed any intention to have Mr. Chinni offer testimony falling within the ambit of Rule 702. (See *id.* at 2, 3-4.) As for Defendant's position that Mr. Chinni would testify as a fact witness to explain the use of MADYMO software and authenticate the MADYMO modeling analysis, the Court stated,

The Court, however, cannot determine at this stage of the litigation whether and to what extent Mr. Chinni might be able to testify as a fact witness regarding . . . the modeling analysis conducted in this case. . . . Similarly, Daimler's claim that Mr. Chinni should be permitted to authenticate the modeling analysis is not properly before the Court. If and when the question of the admissibility of the modeling analysis is presented at trial, Mr. Chinni's ability to describe the procedure used to enter data provided by others might be relevant to authentication of the demonstrative exhibit. What Daimler's response makes equally clear, however, is that Mr. Chinni will not be offering an opinion that the events in this case, about which he does not have personal knowledge, occurred in any particular way based on his own analysis of the available data. . . . Mr. Chinni asserts [in his affidavit] that the modeling program used in this case 'is the worldwide standard for visual illustration of crash worthiness and occupant safety analysis.' [citation omitted] This testimony will not aid in the authentication of the particular modeling analysis conducted in this case and, therefore, will not be permitted for the purpose for which Daimler offers Mr. Chinni as a witness.

Id. at 2-3 & n.1.

On January 27, 2011, Defendant filed the pending Motion for Early Pretrial Evaluation and Ruling on Admissibility of Computer Animation of Accident. (ECF No. 317.) In the motion, Defendant seeks a pretrial ruling on the admissibility of the MADYMO modeling analysis. (*Id.* at 1, 4, 8.) Defendant explains that Mr. Chinni will testify as a fact witness to authenticate the MADYMO modeling analysis by explaining how the MADYMO analysis was created and what data was used to create it. (*Id.* at 2, 6, 7-8.) The declaration of Mr. Chinni submitted in support of the pending motion is the same declaration that was submitted in opposition to Plaintiffs' Rule 702 motion. (See ECF No. 211, Ex. A; ECF No. 317, Ex. A.)

On March 16, 2011, Plaintiffs filed a Response, arguing that Mr. Chinni's proposed testimony would amount to that of an expert under Rule 702, testimony that this Court has already barred. (See ECF No. 324.) Plaintiffs also argued that there is no indication whether Defendant has disclosed all of the data that was used to create the MADYMO modeling analysis. (See *id.* at 4, 9.) On April 5, 2011, Defendant filed a reply brief. (ECF No. 327.)

On February 9, 2011, this action was reassigned to the undersigned. (ECF No. 320.) Trial is set for October 17, 2011. (See ECF No. 313.)

II. STANDARD OF REVIEW AND APPLICABLE LAW

"The admissibility of evidence in diversity cases in federal court is generally governed by federal law." *Blanke v. Alexander*, 152 F.3d 1224, 1231 (10th Cir. 1998).

“The admission or exclusion of evidence lies within the sound discretion of the trial court” *Robinson v. Mo. Pac. R.R. Co.*, 16 F.3d 1083, 1086 (10th Cir. 1994). See also *United States v. Golden*, 671 F.2d 369, 371 (10th Cir. 1982) (“Trial judges have discretion to decide whether an adequate foundation has been laid for the admission of evidence.”).

Video animation adds a new and powerful evidentiary tool to the trial scene. McCormick's work on evidence observes that with respect to one party's staged reproduction of facts 'not only is the danger that the jury may confuse art with reality particularly great, but the impressions generated by the evidence may prove particularly difficult to limit . . .' 2 McCormick on Evidence 19 (4th ed. 1992) (footnote omitted). Because of its dramatic power, trial judges should carefully and meticulously examine proposed animation evidence for proper foundation, relevancy and the potential for undue prejudice.

Id. at 1088. District courts should “carefully and meticulously make an early pretrial evaluation of issues of admissibility, particularly of scientific expert opinions and films or animations illustrative of such opinions.” *Id.* at 1089.

Federal Rule of Evidence 702 provides, “If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.”

“The requirement of authentication or identification as a condition precedent to admissibility is satisfied by evidence sufficient to support a finding that the matter in question is what its proponent claims.” Fed. R. Evid. 901(a).

III. ANALYSIS

Given that discovery in this action has closed and trial is approaching, the Court finds it appropriate to make an early pretrial ruling regarding the admissibility of the MADYMO modeling analysis at issue, and therefore grants Defendant's motion to that extent.

In order for the MADYMO modeling analysis to be admissible, Defendant must lay an adequate foundation for the MADYMO's introduction into evidence. See Fed. R. Evid. 901. The Court concludes that Defendant has not done so. The record is inadequate for the Court to determine how the MADYMO program actually works. See *Novartis Corp. v. Ben Venue Labs., Inc.*, 271 F.3d 1043, 1054 (Fed. Cir. 2001) ("Without knowing the[] foundations [underlying a computer simulation], a court cannot evaluate whether the simulation is probative . . ."). Given this, the Court is not in a position to evaluate properly Mr. Chinni's representations that the MADYMO modeling analysis is merely an illustration – an animation – of the expert opinions of Defendant's designated experts Drs. Harry Smith and Robert Butler. (See ECF No. 317, Ex. A, ¶¶ 19, 28.) The record is unclear to what extent, if any, the MADYMO program, using data provided by the experts, actually generated its own "opinions" regarding the movements of Mr. Bullock and Mr. Green during the accident in question.

The rapid advances in computer technology have made possible a dramatic new type of demonstrative evidence in the form of on-screen computer animations or simulations. Animations are visual depictions that serve to illustrate or clarify such things as . . . an expert's opinion as to what occurred Animations, therefore, are usually offered as illustrative evidence.

Simulations, on the other hand, are created by entering known data into a computer program, which analyzes those data according to the rules by which the program operates (e.g., the laws of physics or

mathematics) to draw conclusions about what happened and to recreate an event at issue. The program itself, rather than witness testimony, is the source of the visual images depicted and may actually serve as the basis for opinion testimony. Simulations are therefore usually classified as substantive evidence. . . .

Because animations are typically used to illustrate witness testimony, if a computer-generated animation is offered into evidence, usually the only foundation necessary is that required of other forms of demonstrative evidence—the testimony of a knowledgeable witness that the animation fairly and accurately depicts what its proponent claims. . . . [A] limiting instruction should be given telling the jury the purpose for which the animation is admitted and that it is not to be considered as substantive evidence. Usually illustrative evidence is not sent to the jury room

A simulation designed to recreate an event at issue is normally offered as substantive evidence and requires a much more rigorous foundation, because the jury is being asked to accept the simulation, which may go beyond anything a witness observed, as evidence of what actually happened. . . . A simulation normally must be authenticated by showing: (1) the qualifications of the expert who prepared the simulation; (2) the capability and reliability of the computer hardware and software used; (3) the calculations and processing of data were done on the basis of principles meeting the standards for scientific evidence under Fed. R. Evid. 702; (4) the data used to make the calculations were reliable, relevant, complete, and properly inputted; and (5) the process produced an accurate result. Simulations which are not properly authenticated are excluded.

5 Federal Evidence § 9:26 (3d ed. 2010) (citations omitted).

In this case, if the MADYMO program was used to generate an independent “opinion” regarding the events in question based on the underlying data of Drs. Smith and Butler, expert testimony – likely from Mr. Chinni, who oversaw the creation of the modeling analysis – would be necessary to establish the reliability of the MADYMO program. *See Ortiz v. Yale Materials Handling Corp.*, 2005 WL 2044923 (D. N.J. Aug. 24, 2005) (“While the Federal Rules of Evidence do not have specific provisions governing the admission of computer-generated simulations, reconstruction and animation as substantive evidence, such computer-generated evidence has long been

accepted as an appropriate means to communicate complex issues to a lay audience, *so long as the expert's testimony indicates that the processes and calculations underlying the reconstruction or simulation are reliable.*") (emphasis added); 57 Am. Jur. Proof of Facts 3d 455, § 12 (2005) ("In order to have a computer animation or simulation admitted into evidence, the proponent of that evidence generally must acquire and have an expert in computer reconstruction or animation testify at trial."); 2 McCormick On Evidence § 218 (6th ed. 2009) ("The computer-generated 'opinion' is determined by the scientific principles that an expert has programmed into the computer. Thus the simulation must be authenticated as an accurate result of a system or process, pursuant to Federal Rule of Evidence 901(b) . . . [R]eliability is the 'watchword' in determining the admissibility of computer-generated evidence."). However, as Defendant concedes, Mr. Chinni has not been designated as an expert in this action, and he therefore cannot provide the testimony that would be necessary regarding the scientific reliability of the MADYMO program.

Further, at this late stage of the proceedings, Defendant will not be allowed to supplement its disclosures in an attempt to lay an adequate foundation for the MADYMO modeling analysis. Defendant has repeatedly conceded throughout the litigation that Mr. Chinni has not been designated as an expert in the case. (See, e.g., ECF Nos. 211, 317.) Mr. Chinni's declaration has gone unchanged between December 2009 and the present. (See ECF No. 211, Ex. A; ECF No. 317, Ex. A.) In terms of Dr. Smith's involvement with the MADYMO modeling analysis, Dr. Smith's expert report makes no mention of the MADYMO analysis. (See No. 175, Ex. 1.) In a supplemental declaration filed with this motion on January 27, 2011, Dr. Smith provides information

about the MADYMO program similar to that previously provided by Mr. Chinni. (See ECF No. 317, Ex. 2, ¶¶ 29-37.) However, that information also does not provide sufficient detail for the Court to make an informed decision regarding how the MADYMO program works. The MADYMO modeling analysis at issue will not be admissible as substantive evidence at the trial of this action.

The decision in *Salome-Torres v. Integrand Assurance Co.*, 2008 WL 5516485 (D. P.R. Dec. 2, 2008), upon which Defendant relies, is to be distinguished. There is no indication in that opinion that the defendant was seeking to introduce a MADYMO modeling analysis as substantive evidence at trial. Instead, at issue in that case was whether a MADYMO technician would be allowed to testify about how the MADYMO was prepared where Defendant had disclosed that its primary expert witness had relied on the MADYMO modeling analysis to form his expert opinions. Thus, it does not appear that *Salome-Torres* involved the policy concern regarding a jury viewing a video animation and potentially confusing “art with reality.” *Robinson*, 16 F.3d at 1088. Further, here, it does not appear that Dr. Smith used the MADYMO modeling analysis to help form his expert opinions; nowhere in his expert report does he mention MADYMO or James Chinni. (See ECF No. 175, Ex. 1.) It appears, instead, that the MADYMO modeling analysis merely illustrates his expert opinions. (ECF No. 317, Ex. B, ¶ 37 (stating that the MADYMO modeling analysis “is an accurate illustration of the principles I employed in rendering the opinions I have in this case, and will in my opinion, be helpful to the jury in understanding my testimony”).

An out-of-court experiment may be offered by an expert at trial in order to illustrate or demonstrate principles used to form an expert opinion. See *Pandit v.*

American Honda Motor Co., Inc., 82 F.3d 376, 381-82 (10th Cir. 1996). Here, Dr. Smith has declared that the MADYMO modeling analysis at issue “is an accurate illustration of the principles I employed in rendering the opinions I have in this case, and will in my opinion, be helpful to the jury in understanding my testimony.” (ECF No. 317, Ex. B, ¶ 37.) The Court will allow Dr. Smith to show the MADYMO modeling analysis to the jury during his testimony at trial in order to illustrate the principles Dr. Smith employed in rendering his opinions.¹ However, the MADYMO modeling analysis will not be admitted into evidence, and the jury will only be allowed to view the MADYMO modeling analysis during the course of Dr. Smith’s testimony. See *United States v. Downen*, 496 F.2d 314, 321 (10th Cir. 1974) (“[T]he submission of [demonstrative or illustrative exhibits], whether or not admitted in evidence, to the jury for view during trial or jury deliberations, accompanied by careful cautionary instructions as to their use and limited significance, is within the discretion accorded the Trial Court in order that it may guide and assist the jury in understanding and judging the factual controversy.”). Further, Dr. Smith shall be precluded from providing testimony at trial that seeks to bolster the reliability of the MADYMO program itself. As a precaution to prevent such bolstering, Dr. Smith shall be precluded during his testimony from referring to the program’s name, MADYMO, or referring to Mr. Chinni, Indiana Mills and Manufacturing, Inc. (“IMMI”), or TNO Automotive Safety Solution BV (“TASS,” the creator of the MADYMO software program).

¹ Dr. Robert Butler will be precluded from testifying regarding the MADYMO modeling analysis because his expert report does not mention the MADYMO analysis and he has not provided a declaration stating that the MADYMO modeling analysis accurately illustrates his expert opinions in the case.

Because the MADYMO modeling analysis may be shown at trial solely to illustrate the opinions of Dr. Smith, testimony of Mr. Chinni regarding the MADYMO modeling analysis will be unnecessary. Mr. Chinni shall be precluded from testifying at trial regarding the MADYMO modeling analysis or his involvement with its creation.²

IV. CONCLUSION

In accordance with the foregoing, it is therefore ORDERED as follows:

1. Defendant's motion is GRANTED to the extent it seeks a pretrial evaluation and ruling regarding an admissibility issue.
2. Defendant's motion is DENIED to the extent it seeks a ruling that the MADYMO modeling analysis will be admissible as substantive evidence at trial. The MADYMO modeling analysis will not be admissible as substantive evidence at trial.
3. At trial, Defendant's expert, Dr. Harry Smith, will be allowed to show the MADYMO modeling analysis to the jury during the course of his testimony, in order to illustrate the principles Dr. Smith employed in rendering his opinions, and a cautionary instruction consistent with this limited ruling will be submitted to the jury. Dr. Smith shall be precluded from providing testimony at trial that seeks to bolster the reliability of the MADYMO program itself. Dr. Smith shall be precluded during his testimony from referring to the program's name, MADYMO, or referring to Mr. Chinni, IMMI, or TASS.
4. James Chinni shall be precluded from testifying at trial regarding the MADYMO modeling analysis at issue or his involvement with its creation.

² This order does not address or resolve the admissibility of Mr. Chinni's other proposed testimony, regarding "the development, design, testing and industry usage of Class 8 tractor restraint systems." (ECF No. 173, Ex. 2, at 1.)

Dated this 3rd day of May, 2011.

BY THE COURT:



William J. Martínez
United States District Judge