

JUN 7 2000

PATRICK FISHER
Clerk

PUBLISH

UNITED STATES COURT OF APPEALS
TENTH CIRCUIT

RON SMITH and LUCY SMITH,

Plaintiffs–Appellees,

v.

INGERSOLL-RAND COMPANY,

Defendant-Appellant.

No. 98-2340

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO
(D.C. No. CIV-94-1083-MV)

John M. Kobayashi (Bennett L. Cohen, The Kobayashi Law Firm, P.C., Denver, Colorado; and Barry Ostrager, Mary Beth Forshaw, and Daniel H. Tabak, Simpson Thacher & Bartlett, New York, New York, with him on the briefs), The Kobayashi Law Firm, P.C., Denver, Colorado, for Defendant-Appellant.

Esteban A. Aguilar (James A. Branch, Jr. and Michael B. Browde, Albuquerque, New Mexico, with him on the brief), Aguilar Law Offices, Albuquerque, New Mexico, for Plaintiffs-Appellees.

Before **HENRY** and **PORFILIO**, Circuit Judges, and **WEINSHIENK**,* District Judge.

*The Honorable Zita L. Weinshienk, Senior District Judge for the United States District Court for the District of Colorado, sitting by designation.

PORFILIO, Circuit Judge.

Ingersoll-Rand Company appeals from a judgment entered following a jury verdict assessing a total of \$27,268,661 in actual and punitive damages for injuries arising from an incident in which a machine manufactured by the company injured appellee, Ron Smith. Ingersoll-Rand contends the district court erred on numerous grounds warranting reversal. We disagree and affirm.

I. BACKGROUND

At the center of this case is a large piece of construction equipment known as a milling machine. Used to remove pavement prior to resurfacing a road, this machine “chews” through asphalt or concrete with a revolving cutting drum and ejects the debris out the front of the machine on a conveyer belt into a waiting dump truck. To insure the machine cuts to a uniform depth, a pair of sensor “skis” drag along the surface of the road on either side of the cutting drum, following the undulations of the road surface and raising or lowering the drum to maintain a consistent cut depth. Testimony at trial indicated these sensor skis periodically become clogged with the detritus incumbent in the milling operation and jam in a position above the road surface. This forces the cutting drum to rise out of the cut and effectively halts the milling operation until the skis can be dislodged.

Operation of the milling machine requires a crew of two or three people, an operator who drives the machine, and one or two groundsmen, who walk in close proximity to the sides of the machine, setting the depth of cuts, telling the operator when to begin and end cuts, alerting the operator of obstructions such as manhole covers, and dislodging the sensor skis when they become jammed. Testimony at trial indicated groundsmen commonly free the jammed skis by hammering them back down into position with a shovel or hammer.

On April 5, 1993, Ron Smith was a groundsman for a road crew operating an Ingersoll-Rand milling machine in Las Cruces, New Mexico. Toward the end of the workday, Mr. Smith was using a short sledgehammer to dislodge a jammed ski while the machine backed up. The machine operator, apparently unaware of Mr. Smith's presence, turned the wheels to reposition the machine for a new cut. Mr. Smith's right foot became trapped under the front tire of the machine, crushing his foot and injuring his lower leg to a degree that necessitated the surgical amputation of his right leg above the knee.

Mr. Smith and his wife, Lucy, sued Ingersoll-Rand under theories of strict liability and negligence. The Smiths alleged the milling machine was dangerously defective because of the lack of mirrors which would enable the driver to see the sides and rear of the machine, the jamming of the ski system, the lack of guards around the front tires, and a lack of warning signs. At trial, the Smiths contended Ingersoll-Rand had "rushed" the milling machine to market without undertaking adequate safety studies and that the

company failed to add safety features even after several accidents made the machine's defects obvious. At the close of the evidence, Ingersoll-Rand moved for judgment as a matter of law. The district court denied the motion, and the jury found in favor of the plaintiffs, awarding Mr. Smith \$8,529,465.20 and Mrs. Smith \$1,279,192.51 in compensatory damages, and imposing \$17,400,000 in punitive damages. Ingersoll-Rand then renewed its motion for judgment as a matter of law, and, in the alternative, moved for a new trial or a remittitur of damages. The district court denied these motions. Ingersoll-Rand now raises a superfluity of issues on appeal.

II. JURY EXPOSURE TO EXTRINSIC MATERIAL

We begin with Ingersoll-Rand's claim that a new trial is necessitated by the jury's exposure to extrinsic materials during deliberations. In the course of deliberations the jury requested a large writing tablet. In response to their request, the jurors were given an easel and large notepad which, unbeknownst to the court, contained nine pages of information written by the plaintiffs' counsel and one of the plaintiffs' experts during trial. When the notepad was discovered in the jury room after deliberations, the district court notified counsel and held two evidentiary hearings to determine whether the jurors were exposed to the pages. After hearing the testimony of the jury foreman and the juror who had acted as scribe, the district court determined there was not the "slightest possibility" Ingersoll-Rand was prejudiced by the presence of the notepad pages in the jury room. Ingersoll-Rand contends the district court erred and it is entitled to a new trial.

Unfortunately, this Court appears to have developed two different standards by which a trial judge is to assess the impact of exposure to extraneous material on a jury. In one vein of our case law, we have held jury exposure to extrinsic material warrants a new trial if there is the “slightest possibility” the exposure affected the verdict. *See United States v. Byrne*, 171 F.3d 1231, 1235-36 (10th Cir. 1999) (upholding district court’s finding there was not the “slightest possibility” harm resulted from unadmitted exhibit inadvertently given to jury); *United States v. Jaramillo*, 98 F.3d 521, 525 (10th Cir. 1996) (same); *United States v. Wood*, 958 F.2d 963, 965-67 (10th Cir. 1992) (upholding grant of new trial where district court found slight possibility jury exposure to a prosecution exhibit inadvertently left in jury room might have harmed defendant); *Johnson v. Makowski*, 823 F.2d 387, 390-91 (10th Cir. 1987) (upholding district court’s finding of not even the slightest possibility of harm where defense exhibit not received into evidence was given to jury); *United States v. Marx*, 485 F.2d 1179, 1184 (10th Cir. 1973) (finding, given overwhelming evidence of defendants’ guilt, there was not the slightest possibility the presence of unadmitted government exhibits in jury room harmed the defendants).

In a second vein, we have held jury exposure to extraneous information creates a “presumption of prejudice” which may be rebutted by showing the exposure was harmless. *See United States v. Aguirre*, 108 F.3d 1284, 1288 (10th Cir. 1997) (holding jury’s use of dictionary to look-up the definition of a term relevant to defendant’s alleged offense raised presumption of prejudice); *Mayhue v. St. Francis Hospital of Wichita, Inc.*, 969 F.2d

919, 922-26 (10th Cir. 1992) (upholding district court’s order of new trial on basis that plaintiff failed to overcome presumption of prejudice raised by jury foreman’s use of dictionary to define legal terms for other jurors); *United States v. Hornung*, 848 F.2d 1040, 1043-45 (10th Cir. 1988) (upholding presumption of prejudice test where third party volunteered information about criminal defendant to juror); *United States v. Day*, 830 F.2d 1099, 1139 (10th Cir. 1987) (upholding use of the presumption of prejudice approach when juror held brief conversation with government witness in court restroom); *United States v. Greer*, 620 F.2d 1383, 1385 (10th Cir. 1980) (upholding the application of the presumption of prejudice approach where U.S. Marshal engaged juror in conversation during lunch break at trial); *United States v. Gigax*, 605 F.2d 507, 515 (10th Cir. 1979) (upholding use of the presumption of prejudice approach to conversations between jurors and third parties).

Ingersoll-Rand urges us to conflate the two approaches, arguing we should presume prejudice, and then allow the rebuttal of that presumption only upon a showing that there is not the slightest possibility the extrinsic evidence affected the verdict. Such an approach has superficial appeal, but is inconsistent with our case law, which clearly treats the two approaches as independent methods of appraising the impact of extrinsic evidence on a jury. The critical distinction between the two approaches, of course, may be found in the placement of the initial burden of proof. Under the “slightest possibility” approach the burden –however light– of showing that harm occurred rests on the moving

party. In contrast, the presumption of prejudice approach relieves the moving party of any burden and forces the nonmovant to prove any exposure was harmless.

One may posit factual distinctions between the situations in which this Court has employed the presumption of prejudice approach and those in which we have employed the slightest possibility approach: generally, we appear to use the latter when unadmitted trial exhibits stray into the jury room, while the former is generally applied where jurors actually come into contact with third parties. However, such factual distinctions strike us as tenuous at best, and we can see no justifiable jurisprudential reason why a jury's exposure to written statements not in evidence should be treated any differently than a jury's exposure to oral statements not in evidence. Compare *Wood*, 958 F.2d at 966 with *Mayhue*, 969 F.2d at 921-23.

Having identified this bifurcation in our case law, judicial discretion dictates that we leave its ultimate resolution for another day. First, precise resolution requires adopting one standard to the foreclosure of the other, an act which may only be undertaken by this court sitting *en banc*. *In re Smith*, 10 F.3d 723, 724 (10th Cir. 1993). Second, under the facts of this case, it is quite clear Ingersoll-Rand was not harmed by the presence of the extrinsic material in the jury room regardless of which standard is applied.

Under either standard, we review the district court's determination for an abuse of discretion, reversing only where the decision was "arbitrary, capricious, whimsical, or manifestly unreasonable." *Byrne*, 171 F.3d at 1235; See also *Mayhue*, 969 F.3d at 922

(presumption of prejudice approach reviewed for abuse of discretion). Our deference is mandated by the limitations inherent in the appellate process, for we face a cold record, while the trial judge “has the advantages of close observation of the jurors and intimate familiarity with the issues at trial.” *Mayhue*, 969 F.2d at 922 (quoting *United States v. Cheyenne*, 855 F.2d 566, 568 (8th Cir. 1988)). The trial judge is therefore “uniquely qualified to appraise the probable effect of information on the jury, the materiality of the extraneous material, and its prejudicial nature.” *Wood*, 958 F.2d at 966 (quoting *United States v. Bagnoriol*, 665 F.2d 887, 885 (9th Cir. 1981)).

In this case, the trial court appropriately heeded our admonition to assess the possibility of prejudice by “reviewing the entire record, analyzing the substance of the extrinsic evidence, and comparing it to that information of which the jurors were properly aware.” *Hornung*, 848 F.2d at 1045. When it learned of the presence of extraneous evidence in the jury room during deliberations, the trial court notified the parties, and as the law of this circuit requires, held hearings to determine the extent of the improper contact. *Id.* After interviewing two jurors— the foreman and the scribe who actually used the notepad— the district court determined, as a matter of fact, the jury saw only the first of the nine notepad pages. However, in an abundance of caution, the court analyzed the effect of the extrinsic evidence under the assumption the jury had seen all nine pages. The trial court found all the information contained on the notepad was “cumulative and

duplicative” of evidence properly admitted at trial.² Additionally, the presence of this information in written form did not prejudice Ingersoll-Rand because the jurors, which the district court described as “particularly attentive,” were allowed to take notes at all times during the trial. The district court thus concluded Ingersoll-Rand was not prejudiced by the jury’s exposure and denied the motion for a new trial. Our review of the record, and in particular of the notepad pages present in the jury room, convinces us the district court’s conclusion that Ingersoll-Rand was not prejudiced by no means constitutes an abuse of discretion.

III. DAUBERT AND EXPERT TESTIMONY CONCERNING DESIGN DEFECT AND HEDONIC DAMAGES

Ingersoll-Rand contends the district court abdicated the gatekeeping requirements imposed by *Daubert v. Merrell Dow Pharmaceutical, Inc.*, 509 U.S. 579 (1995), in admitting the testimony of two experts regarding defects in the milling machine and the testimony of a third expert concerning hedonic damages. We apply an abuse-of-

² The fact the notepad contained only properly admitted evidence distinguishes this case from *United States v. Wood*, 958 F.2d 963 (10th Cir. 1992), where the district court granted a new trial after evidence which had explicitly been denied to the jury turned up in the jury room during deliberations. Ingersoll-Rand does contend some of the information contained on the notepads –the calculations of Ron Smith’s future earnings, Lucy Smith’s lost wages, and the cost of Lucy Smith’s counseling– were admitted into evidence without a proper evidentiary foundation. This allegation lacks merit. Our review of the record reveals no indication the district court abused its discretion in admitting this testimony. *Orth v. Emerson Elec. Co.*, 980 F.2d 632, 637 (10th Cir. 1992) (holding question of whether adequate foundation exists to support a particular piece of evidence is reviewed for abuse of discretion).

discretion standard when reviewing a trial court's decision to admit or exclude expert testimony. *General Electric v. Joiner*, 522 U.S. 136, 138-39 (1997).

In *Daubert*, the Supreme Court held Federal Rule of Evidence 702 requires the trial court to ensure any scientific testimony offered under the rule is “not only relevant, but reliable.” 509 U.S. at 589. In *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137 (1999), which was decided after the district court ruled in this case, the Supreme Court significantly clarified the scope of *Daubert*, holding the Rule 702 gatekeeping duties of the trial judge apply to all expert testimony, whether such testimony is based on scientific, technical or other specialized knowledge. *Kumho* also makes it clear that the gatekeeping function is a flexible and commonsense undertaking in which the trial judge is granted “broad latitude” in deciding both how to determine reliability as well as in the ultimate decision of whether the testimony is reliable. *Id.* at 141-42. The purpose of the *Daubert* gatekeeping function is not to measure every expert by an inflexible set of criteria but to undertake whatever inquiry is necessary to “make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.” *Id.* at 152.

Ingersoll-Rand contests the admission of the testimony of Dr. Edward Karnes, offered by the plaintiffs as an expert in “human factors engineering,” or “ergonomics,” and Vincent Gallagher, offered by the plaintiffs as an expert safety consultant. Dr.

Karnes testified, based on a review of depositions and discovery material, Ingersoll-Rand failed to conduct an adequate human factors analysis of the milling machine before marketing it. He also testified, from the standpoint of human factors analysis, that the lack of adequate visibility around the vehicle and the noise, which prevented adequate communication among workers, made the machine unreasonably dangerous and defective. Asked what devices he would recommend adding to the machine to increase safety, Dr. Karnes testified the machine should have had mirrors to enable the operator to view the groundsmen on either side. Finally, Dr. Karnes disputed Ingersoll-Rand's claim that mirrors would create a false sense of security leading to more accidents, testifying the claim was a rationalization which had been tested and disproven in human factors literature.

For his part, Mr. Gallagher testified, based on his review of depositions and discovery documents, Ingersoll-Rand failed to conduct appropriate hazard analyses and risk assessments before marketing the milling machine. He opined the failure to properly consider the hazards and risks led to adoption of improper safety measures. Ingersoll-Rand argues the conclusions of both Mr. Gallagher and Dr. Karnes are unreliable under *Daubert* because neither had firsthand experience with milling machines.

We see no abuse of discretion in the district court's decision to admit the testimony of both Dr. Karnes and Mr. Gallagher. The record discloses they are amply qualified as experts in their respective fields, and their testimony was limited to matters within their

fields of expertise. Neither possessed firsthand knowledge of the particular machine at issue, but firsthand knowledge is not requisite to the admissibility of an expert opinion. *Daubert*, 509 U.S. at 592 (“[A]n expert is permitted wide latitude to offer opinions, including those that are not based on firsthand knowledge or observation.”). The bulk of the testimony by both Mr. Gallagher and Dr. Karnes focused on the procedures Ingersoll-Rand followed in developing and marketing the milling machine, an area into which firsthand observation of the machine would shed little light. Nevertheless, to the extent the lack of firsthand experience by either expert is relevant, it goes, as the district court ruled, to the weight and not the admissibility of the testimony. *See* 63B AM. JUR. 2D *Products Liability* § 1860 (1997).

Ingersoll-Rand also objects to the testimony of Stan Smith, a forensic economist. At trial, the plaintiffs attempted to have him testify, based on his own calculations, that Ron Smith’s “hedonic” or “loss of enjoyment of life” damages fell between \$1,742,514 and \$2,323,411. Ingersoll-Rand moved in limine to exclude this testimony.

Responding to Ingersoll-Rand’s motion in limine to exclude Stan Smith’s hedonic damages testimony, the district court, relying on our decision in *Compton v. Subaru of America, Inc.*, 82 F.3d 1513 (10th Cir. 1996), *overruled by Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137 (1999), determined Stan Smith’s testimony was not “scientific” and therefore *Daubert* was inapplicable. Nonetheless, the district court found Stan Smith’s valuations of a statistical human life to be unreliable and concluded any

attempt to quantify Ron Smith's hedonic damages would be "both unhelpful and confusing to the jury." The district court therefore excluded any testimony purporting to quantify hedonic damages.

The district court did, however, allow Stan Smith to testify about the meaning of hedonic damages. The court reasoned that, as hedonic damages are explicitly allowed under New Mexico law, testimony "explaining hedonic damages and how they differ from other damages, particularly pain and suffering" would ensure hedonic damages were given the "consideration they deserve as part of the substantive law of New Mexico" and would help the jury "place a value on a loss that is difficult to quantify."

Although it succeeded in excluding all testimony quantifying hedonic damages, Ingersoll-Rand appeals, arguing, first, that expert testimony about hedonic damages is inherently unreliable under *Daubert*, and, second, that the district court allowed Stan Smith to define New Mexico substantive law on hedonic damages in violation of the court's duty to charge the jury on matters of law.

Ingersoll-Rand's claim necessitates differentiating hedonic damages as a concept from the methodology generally used in their computation. The concept of hedonic damages is premised on what we take to be the rather noncontroversial assumption that the value of an individual's life exceeds the sum of that individual's economic productivity. In other words, one's life is worth more than what one is compensated for

one's work.³ The assumption that life is worth more than the sum of economic productivity leads to the equally noncontroversial conclusion that compensatory awards based solely on lost earnings will under-compensate tort victims.⁴ The theory of hedonic damages becomes highly controversial when one attempts to monetize that portion of the value of life which is not captured by measures of economic productivity.

Attempts to quantify the value of human life have met considerable criticism in the literature of economics as well as in the federal court system. Troubled by the disparity of results reached in published value-of-life studies and skeptical of their underlying methodology, the federal courts which have considered expert testimony on hedonic damages in the wake of *Daubert* have unanimously held quantifications of such damages inadmissible. *See, e.g., Saia v. Sears Roebuck & Co.*, 47 F. Supp. 2d 141, 148-49 (D. Mass. 1999) (finding Stan Smith's hedonic damages testimony inadmissible because his calculations are untestable and the theory does not meet the requirement of general acceptability); *Mercado v. Chicago*, No. 96-C-2787, 1997 WL 537343 (N.D. Ill. 1997) (excluding Stan Smith's hedonic damages testimony due to the lack of unanimity among economists as to which life valuation studies ought to be considered) (citing *Mercado v. Ahmed*, 756 F. Supp. 1097 (N.D. Ill. 1991)); *Brereton v. United States*, 973 F. Supp.

³ Those of us who toil in the public sector have little trouble with this concept.

⁴ Joseph A. Kuiper, Note, *The Courts, Daubert, and Willingness-to-Pay: The Doubtful Future of Hedonic Damages Testimony Under the Federal Rules of Evidence*, 1996 U. ILL. L. REV. 1197, 1203 (1996).

752, 758 (E.D. Mich. 1997) (finding Stan Smith's calculations of hedonic damages unreliable under *Daubert*); *Kurncz v. Honda North America*, 166 F.R.D. 386 (W.D. Mich. 1996) (finding Stan Smith's hedonic damages testimony inadmissible under *Daubert* for the reasons articulated in *Ayers v. Robinson*, 887 F. Supp. 1049 (N.D. Ill. 1995)); *McGuire v. City of Santa Fe*, 954 F. Supp. 230, 232-33 (D.N.M. 1996) (finding, under *Daubert*, hedonic damage testimony is neither testable nor generally accepted); *Ayers v. Robinson*, 887 F. Supp. 1049 (N.D. Ill. 1995) (finding variation of results and assumptions underlying value of life studies made hedonic damages calculations unreliable under *Daubert*); *Hein v. Merck & Co.*, 868 F. Supp. 230 (M.D. Tenn. 1994) (rejecting hedonic damages testimony as insufficiently reliable or valid to meet the requirements of *Daubert*); and *Sullivan v. United States Gypsum Co.*, 862 F. Supp. 317 (D. Kan. 1994) (finding Stan Smith's calculation of hedonic damages to lack sufficient validity to be admissible under *Daubert*).

This case, however, does not require us to determine the admissibility of studies purporting to quantify hedonic damages, and we venture no opinion on that count. We must instead evaluate the considerably narrower testimony the district court did admit. Here, Stan Smith testified only to the definition of loss of enjoyment of life, which he described as “an estimate of the value of a person's being for enjoyment of life as opposed to the value of a person's doing or their economic productive capacity, whether it's in the marketplace, in the business, or in the household as a service.” Stan Smith

further testified that in valuing the loss of enjoyment of life he considers the effect the injury has on “the ability to enjoy the occupation of your choice,” “activities of daily living,” “social leisure activities” and “internal well-being.”

As we noted above, the district court, relying on our decision in *Compton*, admitted Stan Smith’s testimony without explicitly performing a *Daubert* analysis. We do not believe, however, the bare fact that the district court did not explicitly utilize the *Daubert* analysis in admitting Stan Smith’s testimony renders the admission erroneous. *Kumho* teaches that the word *Daubert* is not talismanic; it simply means that prior to admitting expert testimony, the court must insure the testimony “is not only relevant, but reliable.” *Kumho*, 526 U.S. at 147.

We believe the district court appropriately exercised its Rule 702 gatekeeping function. First, the district court determined that testimony defining hedonic damages was relevant. As the district court correctly noted, New Mexico state law permits both the recovery of hedonic damages and allows “an economist to testify regarding his or her opinion concerning the economic value of a plaintiff’s loss of enjoyment of life.” *Sena v. New Mexico State Police*, 892 P.2d 604, 611 (N.M. Ct. App. 1995), *cert. denied*, 890 P.2d 1321 (N.M. 1995). The district court also made an appropriate decision regarding reliability, excluding the quantification which has troubled both courts and academics, but allowing an explanation adequate to insure the jury did not ignore a component of damages allowable under state law.

Ingersoll-Rand also contends Stan Smith's explanation of hedonic damages constituted impermissible testimony on an ultimate question of law, violating our admonition that "in no instance can a witness be permitted to define the law of the case." *Specht v. Jensen*, 853 F.2d 805, 810 (10th Cir. 1988). This rule is not, however, a per se bar on any expert testimony which happens to touch on the law; an expert may be "called upon to aid the jury in understanding the facts in evidence even though reference to those facts is couched in legal terms." *Id.* at 809. Expert testimony on legal issues crosses the line between the permissible and impermissible when it "attempt[s] to define the legal parameters within which the jury *must* exercise its fact-finding function." *Id.* at 809-10 (emphasis added).

We do not believe Stan Smith's testimony constitutes such an attempt. Stan Smith did no more than explain his interpretation of the meaning of hedonic damages and offer four broad areas of human experience which he would consider in determining those damages. Importantly, Stan Smith made no attempt to apply the facts of this case to the criteria he proffered to the jury; the jury remained free to exercise its fact-finding function. We believe Stan Smith's testimony on hedonic damages no more defined the law of the case than did his testimony regarding the computation of other types of damages. For example, he described in great detail the factors the jury could consider in calculating Ron Smith's lost future earnings. Such testimony is common and certainly

does not define the law of the case. 29 CHARLES ALAN WRIGHT & VICTOR JAMES GOLD, FEDERAL PRACTICE AND PROCEDURE: EVIDENCE § 6264 (1997).

IV. ADMISSION OF OTHER ACCIDENTS

Ingersoll-Rand's third proposition of error is the district court's admission of evidence concerning six other accidents involving the company's milling machines. We review the admission of evidence for abuse of discretion. *C.A. Associates v. Dow Chemical Co.*, 918 F.2d 1485 (10th Cir. 1990). We must afford great deference to the district court; review of a cold record is a poor substitute for a trial judge's intimate familiarity with the evidence and its role in the context of the trial as a whole.

The threshold inquiry in any dispute over the admissibility of evidence is whether the evidence is relevant. *Id.* at 1489. In situations involving the admissibility of other accidents, relevance is determined by the "substantial similarity" test. *Ponder v. Warren Tool Corp.*, 834 F.2d 1553, 1560 (10th Cir. 1987). Accidents bearing substantial similarity to the case before the court make the existence of a fact of consequence to the action before the court more or less probable, while dissimilar accidents are less likely to bear on a fact of consequence to the case before the court. The precise degree of similarity required to ensure the relevance of another accident depends on the theory of defect underlying the case. *Four Corners Helicopters, Inc. v. Turbomeca, S.A.*, 979 F.2d 1434, 1440 (10th Cir. 1992); *Ponder*, 834 F.2d at 1559. Hence we require a high degree of similarity when plaintiffs offer other accident evidence to prove causation in

their case, but accept a lesser degree of similarity when evidence of other accidents is offered to show the defendant had notice of potential defects in its product. *Wheeler v. John Deere Co.*, 862 F.2d 1404, 1407 (10th Cir. 1988); *Ponder*, 834 F.2d at 1559. We must consider, then, with considerable precision, not only the facts of the other incidents but the theories under which plaintiffs urge their admission.⁵

In this case, the plaintiffs offered the six other incidents involving Ingersoll-Rand milling machines to show that: (1) the milling machine which injured Mr. Smith was defectively designed; (2) Ingersoll-Rand had notice of the defective design; and (3) Ingersoll-Rand had a culpable mental state for purposes of assessing punitive damages.

⁵ The facts of the other accidents admitted by the district court, as gleaned from the record, are as follows:

- (1) Ledgerwood Accident. On October 17, 1990, Mr. Ledgerwood was struck and killed by a model MT-6520 milling machine. Mr. Ledgerwood was standing on the right side toward the front of the machine and was struck while the machine was moving in reverse.
- (2) Rogers Accident. On April 27, 1992, Ms. Rogers was struck and injured by a model MT-6520 milling machine. Ms. Rogers was standing behind the machine flagging traffic and was struck while the machine was reversing.
- (3) Alexander Accident. On April 19, 1993, Mr. Alexander was struck and injured by a model MT-7000 milling machine. Mr. Alexander was standing to the left rear of the machine as it backed-up.
- (4) Johnson Accident. On February 25, 1994, Mr. Johnson was struck and injured by a model MT-7000 milling machine. Mr. Johnson was struck while kicking a ski to dislodge it while the machine was moving in reverse.
- (5) Madden Accident. On July 6, 1994, Mr. Madden was struck and injured by a MT-7500 milling machine. Mr. Madden was standing on the left side of the machine near the rear and was struck while the vehicle was reversing.
- (6) Washington Accident. On September 28, 1994, Mr. Washington was struck by a model MT-7500 milling machine. Mr. Washington was standing on the left side of the machine clearing debris and was struck as the machine moved forward.

Although the district court admitted evidence of all six accidents, its grounds for doing so are less than clear. Ruling from the bench on October 20, 1997, the district court denied Ingersoll-Rand's motion in limine to exclude the evidence of the other accidents stating, "I find a substantial similarity between all of these accidents and the one that is in issue here. I also believe that they are relevant to the question of existence of a default." In court on November 7, 1997, while addressing Ingersoll-Rand's objection to the admission of accident reports prepared by private investigators employed by Ingersoll-Rand, the trial judge remarked, "the evidence with regard to other accidents that occurred involving this type of equipment and the specificity involved in those particular accidents are clearly relevant and admissible on the question of Ingersoll-Rand's knowledge of what kind of potential hazards existed because of their equipment, the seriousness of the injuries and, for purposes of punitive damages, their mental state in terms of what they did about this."

However, the court's written orders indicate a narrower basis for admission. The court's written order of November 12, 1997, denying the motion in limine to exclude evidence of the other incidents concludes "the accidents at issue are substantially similar to Mr. Smith's alleged accident, and are therefore admissible to show notice of the existence of a design default." Likewise in its Memorandum Opinion and Order in response to Ingersoll-Rand's Motion for a New Trial and Renewed Motion for Judgment as a Matter of Law, the court reiterates its finding that the other accidents were substantially similar for purposes of demonstrating notice of defect.

Our review, however, is not contingent on the theory of admissibility adopted by the district court: “evidence does not become inadmissible simply because the district court relied on an erroneous reason for admitting it. So long as the evidence is admissible under some legally correct theory, no error occurred.” *United States v. Jackson*, 88 F.3d 845, 847 (10th Cir. 1996). We are free to affirm the rulings of a district court “on any ground that finds support in the record, even where the lower court reached its conclusions from a different or even erroneous course of reasoning.” *Cayce v. Carter Oil Co.*, 618 F.2d 669, 677 (10th Cir. 1980). We thus proceed to evaluate each of the six incidents admitted by the trial court and the three grounds of admissibility offered by the plaintiffs.

We begin with the plaintiffs’ theory that the other incidents were admissible to show Ingersoll-Rand had notice of the defects which caused Mr. Smith’s injury. To be admissible on the theory of notice, the incidents must be similar enough to the event in question that they would have alerted the defendant to the problem or danger at issue. In this case, four of the six incidents (Johnson, Madden, Washington, and Alexander) were incorrectly admitted to show notice, as they occurred after the incident at issue here. *See Julander v. Ford Motor Co.*, 488 F.2d 839 (10th Cir. 1973) (holding evidence of subsequent incident inadmissible to show notice of defect). The district court’s holding as to the remaining two incidents (Ledgerwood and Rogers) appears correct. Both incidents involved injuries to members of the ground crew caused by reversing milling

machines. Both cases raise the issue of visibility, which is one of the plaintiffs' theories of defect in this case, and both incidents sufficiently preceded Mr. Smith's accident to serve as notice to Ingersoll-Rand.

We consider now the admissibility of the six incidents as proof of defective design. The Smiths' claim of defective design is composed of four subparts: (1) lack of mirrors which would allow the operator to see the sides and back of the machine; (2) defective design of the ski system; (3) lack of a physical guard over the large opening behind the front tires; and (4) lack of an emergency stop switch accessible to the ground crew. Of the plaintiffs' four theories of defectiveness, the centerpiece of their case at trial was the lack of visibility from the operator's platform and the feasibility of equipping the machine with mirrors.

We first note that under New Mexico substantive law, which governs this case, incidents occurring after the incident at issue, but before the date of trial, may be used to prove a product is defective. *See Brooks v. Beech Aircraft Corp.*, 902 P.2d 54, 63 (N.M. 1995) (quoting *Dart v. Wiebe Manufacturing, Inc.*, 709 P.2d 876, 881 (Ariz. 1985)) ("The quality of the product may be measured not only by the information available to the manufacturer at the time of design, but also by the information available to the trier of fact at the time of trial."). The fact that four of the incidents proffered occurred subsequent to Mr. Smith's accident does not preclude their admissibility to prove the existence of a defect.

Ingersoll-Rand urges that the six incidents are too dissimilar to support admissibility on a defect theory. First, the six incidents proffered by the plaintiffs involve several different models of milling machines. In addition to the MW-6520 which injured Mr. Smith, two incidents involved the MT-6520, two the MT-7000 and two the MT-7500, also known as the Pro Cut 2200. The record indicates the MW-6520, which injured Mr. Smith, was Ingersoll-Rand's first foray into the milling machine market. It is apparently smaller than the other three milling machines, and it moves on wheels, while the other machines move by means of tracks, like a military tank.

The substantial similarity rule does not require identical products; nor does it require us to compare the products in their entireties. The rule requires substantial similarity among the variables relevant to the plaintiff's theory of defect. Here, for example, the plaintiffs' primary allegation of defect is the lack of visibility from the operator's platform and the feasibility of equipping the machines with mirrors. The Smiths argue the configuration of the MW-6520's operator platform, which enables the operator to move back and forth across the machine and steer from either side, rather than sitting in a fixed position, creates dangerous visibility problems; when an operator stands on one side, his ability to see people on the other side is greatly diminished. Although the milling machines are of different sizes, and thus their blind spots are not identical, they are substantially similar when viewed from the perspective of this allegation of defect. All the machines in question have open platforms with no fixed operator station, none are

equipped with mirrors, and none of the operators saw the victims immediately prior to hitting them.

Similarly, Ingersoll-Rand's defense to this allegation of defect demonstrates the propriety of treating the models as similar. Ingersoll-Rand argued mirrors would be of little use because they would become dirtied or broken by the rigors of the milling operation, vibrate to a degree making them unusable, and instill a false sense of security in the machine operator. These assertions are equally applicable to all of the milling machines in question, underscoring our conclusion that the machines are substantially similar for purposes of the visibility defect.

Ingersoll-Rand also contends the circumstances surrounding the incidents are too dissimilar to warrant comparison. Similarity of circumstances is, like similarity of the product, viewpoint dependent. For example, from the broadest perspective, all six incidents could be construed as similar, since all occurred while the milling machine was moving. More narrowly, five incidents occurred as the machine was moving in reverse. Still more narrowly, only two of the incidents occurred while the machine was moving in reverse and turning. Finally, only Mr. Smith was struck while attempting to dislodge a jammed ski while the machine was moving in reverse and turning. We select the appropriate viewpoint by reference to the plaintiff's theory of defect. In this case, plaintiffs' theory regarding lack of visibility is broad enough to encompass all six

incidents. The plaintiffs produced evidence that in each case lack of visibility was at least a potential cause of the incident.

We also note the plaintiffs introduced evidence indicating Ingersoll-Rand itself did not consider the various milling machine incidents too dissimilar to warrant comparison. The record indicates that in 1994 Ingersoll-Rand held both an internal meeting and a meeting with members of the Construction Industry Manufacturer's Association (CIMA) to discuss the six milling machine accidents.

Finally, we consider the admissibility of the other incidents to demonstrate Ingersoll-Rand had the culpable mental state necessary to award punitive damages.⁶ Under New Mexico law, evidence going toward the defendant's mental state is relevant for purposes of punitive damages, and such evidence may include conduct occurring after the incident in question. *See Gonzales v. Surgidev Corp.*, 899 P.2d 576, 584 (N.M. 1995) (allowing admission of articles criticizing defendant's lens implants published after plaintiff's surgery, but before defendant removed lens from market). New Mexico law also provides evidence supporting punitive damages need not have been admissible on the issue of compensatory damages. *See Clay v. Ferrellgas, Inc.*, 881 P.2d 11, 17 n.4 (N.M. 1994) (upholding admission of evidence defendant routinely neglected to file required

⁶ The necessary mental state required under New Mexico law to award punitive damages is discussed in Section V below.

forms with state inspector in case alleging defendant negligently installed a propane tank in plaintiff's automobile).

We believe all six other incidents are clearly relevant to Ingersoll-Rand's mental state. Plaintiffs argued throughout trial that Ingersoll-Rand "rushed" to enter the milling machine market, and in so doing neglected to adequately conduct a "human factors" analysis. In particular, the plaintiffs emphasized Ingersoll-Rand's failure to study the feasibility of placing mirrors on the machine to ameliorate visibility problems. The other acts evidence allowed the jury to make the reasonable inference that Ingersoll-Rand persevered in its refusal to place mirrors on its machines despite numerous accidents potentially caused by poor visibility.

We conclude, then, that all six incidents were appropriately admitted to show mental state for the purposes of assessing punitive damages, and all six were appropriately admitted to show the visibility defect, but only the Rogers and Ledgerwood incidents were properly admissible to show notice. Ideally, of course, the district court should have instructed the jury about limitations on the use of each other incident. The burden in this situation, however, fell to Ingersoll-Rand to request an appropriate limiting instruction. *United States v. Barbee*, 968 F.2d 1026 (10th Cir. 1992). Ingersoll-Rand's failure to request a limiting instruction constitutes waiver of any objection based on the court's failure to give such an instruction. *Robinson v. Audi NSU Auto Union Aktiengesellschaft*, 739 F.2d 1481, 1485 (10th Cir. 1984).

V. JURY INSTRUCTIONS REGARDING PUNITIVE DAMAGES

Ingersoll-Rand contends the district court erroneously instructed the jury regarding the mental state necessary under New Mexico law to support an award of punitive damages. We consider jury instructions in their entirety, applying *de novo* review to determine whether the jury was misled on the applicable law. *Medlock v. Ortho Biotech, Inc.*, 164 F.3d 545, 552 (10th Cir. 1999). Despite this standard of review, we do not require perfection, but “we must be satisfied that, upon hearing the instructions, the jury understood the issues to be resolved and its duty to resolve them.” *Id.*

The district court instructed the jury, pursuant to the New Mexico Uniform Jury Instructions, that it could award punitive damages if it found Ingersoll-Rand’s conduct “was malicious, willful, reckless, wanton or grossly negligent.” Ingersoll-Rand argues the trial court erred in giving this instruction, contending the New Mexico Supreme Court eliminated gross negligence as a mental state sufficient to support the award of punitive damages in *Paiz v. State Farm Fire and Casualty Co.*, 880 P.2d 300 (N.M. 1994).⁷ The plaintiffs respond that Ingersoll-Rand misreads *Paiz*; while *Paiz* indeed held gross negligence to be an insufficient mental state, it did so because the jury instruction at issue in *Paiz* defined gross negligence as “failure to exercise even slight care.” *Id.* at 308. The Smiths assert the district court complied with *Paiz*, not by eliminating gross negligence

⁷ The New Mexico jury instruction in question was amended in 1998 to eliminate gross negligence as a basis for the award of punitive damages. Ingersoll-Rand makes no argument that this modification should be applied retroactively to this case.

from the jury instructions, but by defining it as “an act or omission done with conscious indifference to harmful consequences.”⁸

Our reading of *Paiz* comports with that of the plaintiffs. The jury instruction at issue in *Paiz* troubled the court because it permitted a jury to award punitive damages on a showing of gross negligence, which was defined as “failure to exercise even slight care.” *Id.* The New Mexico Supreme Court reasoned that punitive damages are intended to punish and deter prohibited conduct, and thus should only be assessed where the

⁸ It is not clear under New Mexico law that *Paiz* is applicable at all to the award of punitive damages in product liability cases. On its facts, *Paiz* was an action for breach-of-contract. Nonetheless, the court ordered the modification of the uniform jury instruction on punitive damages, which is applicable in both tort and contract. (N.M. Uniform Jury Instructions Civil 13-1827). The punitive damages jury instruction was subsequently modified, a modification presumptively approved by the New Mexico Supreme Court, to remove gross negligence from the list of culpable mental states, suggesting that *Paiz* applies in tort as well as contract.

However, immediately following *Paiz*, the New Mexico Supreme Court decided *Clay v. Ferrellgas, Inc.*, 881 P.2d 11 (N.M. 1994), in which the court explicitly declined to address the question of whether grossly negligent conduct constitutes a sufficient basis for the assessment of punitive damages in the tort context. *Id.* at 15 n.2. Similarly, in *Torres v. El Paso Elec. Co.*, 987 P.2d 386, 397 (N.M. 1999), the New Mexico Supreme Court again noted in dicta that “[w]hile it is true that this Court rejected gross negligence as a basis for punitive damages in a contract action in *Paiz v. State Farm Fire and Cas. Co.*, we specifically declined to reach the issue in the context of a negligence action in *Clay*.” (citations omitted). We need not attempt to define the intended reach of the *Paiz* decision. See *Griffin v. Davies*, 929 F.2d 550, 554 (10th Cir. 1991) (We should not “undertake to decide issues that do not affect the outcome of a dispute.”)

We believe the district court instructed the jury in a manner that assures they determined Ingersoll-Rand acted with a mental state which comports with *Paiz*. Should the New Mexico Supreme Court determine *Paiz* is inapplicable outside of the context of contract law, then the jury awarded punitive damages under an overly restrictive instruction, and the error is harmless.

conduct at issue displays a “conscious” or “deliberate” disregard of a potential harm. *Id.*

The defendant must act knowingly, displaying an “evil motive” or culpable mental state.

Id. The *Paiz* court set the mental state necessary to support punitive damages at “reckless disregard,” which, under its definition, occurs, “when the defendant knows of potential harm to the interests of the plaintiff but nonetheless ‘utterly fails to exercise care’ to avoid the harm.” *Id.* (citations omitted).

The crux of the *Paiz* decision, thus, is the degree of mental culpability required to award punitive damages; the legal catch-phrase attached to that mental state is secondary, if not wholly arbitrary. As the *Paiz* court noted, the phrase gross negligence is “so nebulous” as to have “no generally accepted meaning.” *Id.* at 309 (quoting W. PAGE KEETON, ET. AL, PROSSER & KEETON ON THE LAW OF TORTS § 34, at 212 (5th ed. 1984)). In this case, the district court defined the phrase gross negligence as “an act or omission done with *conscious* indifference to harmful consequences.” (emphasis added). In so doing, the district court aligned the definition of gross negligence with the mental state required in *Paiz*. To hold the district court improperly instructed the jury would be to elevate form over meaning, and violate our edict that “no particular form of words is essential if the instruction as a whole conveys the correct statement of the applicable law.” *Webb v. ABF Freight System, Inc.*, 155 F.3d 1230, 1248 (10th Cir. 1998) (internal quotation omitted). Here, we are satisfied the instructions as a whole convey a correct

statement of the law of the State of New Mexico and can discern no abuse of discretion on the part of the trial court.

VI. EXCESSIVE DAMAGES

Ingersoll-Rand contends both the jury's compensatory and punitive damages awards are excessive and asks that we remand for retrial or remit the awards.

a. Compensatory Damages

We review the district court's decision to deny a new trial or remittitur under an abuse of discretion standard. *Gasperini v. Center for Humanities, Inc.*, 518 U.S. 415, 435 (1996) (quoting *Browning-Ferris Industries of Vt., Inc. v. Kelco Disposal, Inc.*, 492 U.S. 257, 279, n.25 (1989)). In a diversity action state law governs the propriety of an award of damages. Under the law of New Mexico, a jury's assessment of damages is largely inviolate and is not to be disturbed "except in extreme cases, as where it results from passion, prejudice, partiality, sympathy, undue influence, or some corrupt cause or motive where palpable error is committed by the jury, or where the jury has mistaken the measure of damages." *E.W. Richardson v. Rutherford*, 787 P.2d 414, 422 (N.M. 1990).

In this case, the jury awarded Mr. Smith \$8,529,469 and Mrs. Smith \$1,213,000 in compensatory damages. Of Mr. Smith's total compensatory damages, approximately \$1.5 million are "quantifiable" – past and future medical costs and past and future lost income. The remaining \$7,000,000 is composed of "nonquantifiable" damages for "pain and suffering" and "loss of enjoyment of life." Of Mrs. Smith's compensatory damages,

\$213,000 are quantifiable economic damages, and the remaining \$1,000,000 is apparently attributable to her loss of consortium.

Ingersoll-Rand contends an award of seven million dollars for pain and suffering or loss of enjoyment of life and one million dollars for loss of consortium is grossly excessive, and can only be a result of passion and prejudice created by the presence of extrinsic evidence in the jury room during deliberations, the admission of evidence of other accidents, and the admission of improper expert testimony. We have, of course, already considered and rejected each of these alleged bases of error. Having concluded they do not constitute error, we have no trouble reaching the conclusion that they did not prejudice the jury. Ingersoll-Rand is thus left with the argument that the sheer size of these awards permits the inference they were based on passion or prejudice.

In support of that argument, Ingersoll-Rand suggests these nonquantifiable damages awards considerably exceed jury verdicts in similar cases. We are hesitant to accept the invitation to undertake this comparative inquiry. First, such comparisons yield no insight into the evidence the jurors heard and saw or how they used it during their deliberations. Second, such comparisons detract from the appropriate inquiry, which is whether the verdict is against the weight of the evidence. *Blanke v. Alexander*, 152 F.3d 1224, 1236 (10th Cir. 1998); *see also Coates v. Wal-Mart Stores, Inc.*, 976 P.2d 999,

1010 (N.M. 1999) (“[E]ach case of [compensatory damages] must be decided on its own facts and circumstances.”)⁹

Review of this record convinces us these damages awards are not against the weight of the evidence. The jury heard ample evidence of the physical and emotional pain Mr. Smith suffered and will continue to suffer, the permanent changes in his ability to perform and enjoy the activities of life, and the changes in his relationship to his wife and children, to support the “pain and suffering” and hedonic damage he was awarded. Similarly, the jury heard sufficient evidence of Mrs. Smith’s emotional distress over her husband’s injury and the strain placed on their relationship to support her award for loss of consortium. Therefore, although the amounts awarded here are unquestionably large, we find no grounds to substitute our judgment for that of the jury and trial judge who heard and considered the evidence at trial.

b. Punitive Damages

Ingersoll-Rand also contends the jury award of punitive damages in the amount of \$17,460,000 violates substantive due process. We review the constitutionality of a punitive damages award *de novo*, *FDIC v. Hamilton*, 122 F.3d 854, 857 (10th Cir. 1997),

⁹ If we were to engage in a comparison of jury awards in factually similar cases, we would have to begin with *Rogers v. Ingersoll-Rand, Co.*, 971 F. Supp. 4, 8 (D.D.C. 1997), one of the similar incidents introduced by the plaintiffs in this case. In *Rogers*, the jury awarded the plaintiff, whose leg was crushed by an Ingersoll-Rand milling machine, \$10,200,000 in compensatory damages. This award was subsequently upheld on appeal by the D.C. Circuit. *Rogers v. Ingersoll-Rand Co.*, 144 F.3d 841 (D.C. Cir. 1998).

under the rubric of the Supreme Court's decision in *BMW of North America v. Gore*, 517 U.S. 559 (1996).

Under *BMW* a substantive due process challenge to a jury award of punitive damages requires a two-step inquiry: first, we must define the scope of the state interest the punitive award is intended to further, *id.* at 568, and, second, we are to determine whether the award is “grossly excessive” in comparison to that state interest. *Id.* at 574. Most litigation challenging the constitutionality of an award of punitive damages focuses on the second step of this inquiry, determining whether an award is grossly excessive by analyzing the reprehensibility of defendants' conduct, the ratio of potential harm to punitive damages, and the disparity between civil penalties and the punitive damage award.

Here, however, our analysis begins with the inquiry into the scope of the state interest the punitive award is intended to further. *Ingersoll-Rand*, focusing on the Supreme Court's statement in *BMW* that “a State may not impose economic sanctions on violators of its laws with the intent of changing the tort-feasor's lawful conduct in other States,” contends the jury's assessment of punitive damages was improperly based on accidents which occurred outside the State of New Mexico. *Id.* at 572.

BMW does not, however, create an absolute bar to jury consideration of similar incidents simply because they occurred outside the jurisdiction in which the jury sits. The *BMW* court points out that out-of-state acts are clearly admissible “to show the degree of

reprehensibility of a defendant's conduct." *Id.* at 574, n.20. See also *Continental Trend Resources, Inc. v. OXY USA, Inc.*, 101 F.3d 634, 638 (10th Cir. 1996).

In *BMW*, the defendant was assessed punitive damages for activities in other states, which were explicitly legal in those states. By punishing behavior in other states which those states had made a legislative decision to permit, Alabama reached beyond its own zone of legitimate interests and encroached on the sovereign interests of other states. *BMW*, 517 U.S. at 570-72. The Supreme Court used habitual offender statutes to illustrate that these issues of sovereignty and comity do not arise when the behavior punished is not lawful in the other jurisdictions:

Habitual offender statutes permit the sentencing court to enhance a defendant's punishment for a crime in light of prior convictions, including convictions in foreign jurisdictions. A sentencing judge may even consider past criminal behavior which did not result in a conviction and lawful conduct that bears on the defendant's character and prospects for rehabilitation. But we have never held that a sentencing court could properly punish lawful conduct. This distinction is precisely the one we draw here.

Id. at 573 n.19. We thus have no trouble concluding the district court did not exceed New Mexico's legitimate interest in punishing and deterring the production of defective products by permitting the jury to consider incidents occurring outside the state. Not only were the out-of-state incidents offered to illustrate the reprehensibility of Ingersoll-Rand's conduct, but the manufacture of defective products is not a lawful activity in any of the jurisdictions where the other incidents occurred.

Having established the jury did not consider evidence outside New Mexico's legitimate scope of interests, we must *now* determine whether Ingersoll-Rand received "fair notice not only of the conduct that will subject [it] to punishment, but also of the severity of the penalty that a State may impose." *Id.* at 574. "Perhaps the most important indicium" of the fairness of a punitive damages award is the "degree of reprehensibility of the defendant's conduct." *Id.* at 575. In analyzing the reprehensibility of Ingersoll-Rand's behavior, we make all inferences from the available evidence in favor of the plaintiffs. *United International Holdings, Inc. v. The Wharf (Holdings) Limited*, ___ F.3d. ___, Nos. 97-1421, 98-1002, 2000 WL 504735, at *21 (10th Cir. 2000). Doing so, Ingersoll-Rand's conduct may reasonably be construed as reprehensible: the jury could have found the company rushed into production a potentially dangerous product without conducting necessary safety and human factors evaluations and then refused to make feasible modifications even after numerous accidents illustrated the product's shortcomings.

Our inquiry into whether Ingersoll-Rand had fair notice of the severity of the penalty its conduct could incur requires an examination of the ratio of punitives to actual harm inflicted on the plaintiff. *BMW*, 517 U.S. at 580. Fair notice requires punitive damages bear a "reasonable relationship" to compensatory damages. *Id.* Here the jury awarded \$17,460,000 in punitive damages and \$9,808,661 in compensatory damages, resulting in a ratio of 1.78:1. Although substantive due process does not compel a magic

ratio above which an award “cross[es] the line into the area of constitutional impropriety,” *Pacific Mutual Life Ins. Co. v. Haslip*, 499 U.S. 1, 24 (1991), we believe a ratio of less than 2:1 does not “raise a suspicious judicial eyebrow.” *TXO Production Corp v. Alliance Resources Corp.*, 509 U.S. 443, 481 (1993) (O’Connor, J., *dissenting*). We are therefore satisfied the punitive damages awarded here are fair and constitutionally permissible.

VII. CONCLUSION

The task of a trial judge in conducting a fair trial is as much art as science, and a trial of this magnitude –spanning a month and including the testimony of over thirty witnesses– crosses numerous junctures at which reasonable jurists could have diverged and reached different but equally valid outcomes. The majority of the issues Ingersoll-Rand raises on appeal –the jury’s exposure to extraneous material, the admission of experts under *Daubert*, the admission of other acts evidence and the question of the excessiveness of compensatory damages– occur precisely at such junctures. In reviewing questions of this nature, our role is not to determine whether the trial judge proceeded at every juncture exactly as we would have. Instead, we are to defer to the trial judge’s decisions unless it is obvious he or she has “exceeded the bounds of permissible choice in the circumstances.” *Moothart v. Bell*, 21 F.3d 1499, 1504 (10th Cir. 1994). Close review of the record indicates to us the trial judge here acted well within the bounds of permissible choice.

As for the two issues raised by Ingersoll-Rand which warrant closer review –the appropriateness of the jury instructions and the constitutionality of the punitive damages award– our *de novo* review reveals no error in the trial court’s initial decisions. We therefore **AFFIRM** in its entirety the judgment of the district court.