

**IPSE DIXIT MEETS KUMHO TIRE:  
MOVING TO EXCLUDE “JUNK SCIENCE”  
FROM THE COURTROOM**

by  
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**Introduction**

This article summarizes the historical background in the law of evidence regarding exclusion of unreliable expert witness testimony. It then goes on to discuss the United States Supreme Court’s most recent pronouncement on this topic in a decision issued in March of 1999 entitled *Kumho Tire Co. v. Carmichael*.<sup>1</sup>

**The Frye Test**

For 70 years, the “general acceptance” test was the dominant standard for determining the admissibility of scientific evidence at trial and was first enunciated in *Frye v. United States*.<sup>2</sup> The 1923 *Frye* test had its origin in a decision concerning the admissibility of evidence derived from a systolic blood pressure deception test (a crude precursor to the polygraph machine). In that case, the then Court of Appeals for the District of Columbia described the device and its operation stating:

Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone, the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained *general acceptance in the particular field in which it belongs*.<sup>3</sup>

Accordingly, for many years, if the bases of the proposed testimony was “generally accepted” within the scientific community, the testimony was usually admitted.

**The Daubert Test**

In 1993, the United States Supreme Court issued its landmark decision in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*<sup>4</sup> The *Daubert* decision set forth standards for expert

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<sup>1</sup>*Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1107 (1999).

<sup>2</sup>*Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923)

<sup>3</sup>*Id.* at 1014 (emphasis added).

<sup>4</sup>*Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 US 579, 113 S. Ct. 2786, 125 L.Ed. 2d

testimony to be admissible as “scientific knowledge” under the Federal Rules of Evidence, and specifically Federal Rule of Evidence 702.

Federal Rule of Evidence 702 states:

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.

The *Daubert* Court noted that the Federal Rules of Evidence -- and especially Rule 702 -- places limits on the admissibility of purportedly scientific evidence by assigning the trial judge the task of ensuring that an expert’s testimony rests on a reliable foundation and is relevant to the task at hand. Further, noting that the “general acceptance test” under *Frye* predates the Federal Rules of Evidence by half a century, the *Daubert* Court held that it was incompatible with the Federal Rules of Evidence, and that it should not be applied in federal trials.<sup>5</sup>

The *Daubert* Court held that the Federal Rules of Evidence impose a duty on the trial court to become a “gatekeeper” excluding potentially unreliable testimony. The trial court must exclude evidence which is based on “subjective belief or unsupported speculation.”<sup>6</sup> Explaining this, the Court stated:

[T]he trial judge must determine at the outset ... whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue. This entails a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue.<sup>7</sup>

The Court also listed four other nonexclusive factors which should be considered in determining the reliability of a particular scientific theory or technique. They are as follows:

1. Whether the theory or technique proffered by the expert can be tested or has been tested.

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469 (1993).

<sup>5</sup>*Id.* at 2794.

<sup>6</sup>*Id.* at 590.

<sup>7</sup>*Id.* at 2795.

2. Whether the theory or technique has been subjected to peer review and publication.
3. Consideration should be given the known or potential rate of error for the scientific technique, and to the existence and maintenance of standards controlling the technique's operation.
4. Whether the theory or test has widespread acceptance within the relevant scientific community.<sup>8</sup>

Additionally, on remand of *Daubert*, the 9th Circuit Court of Appeals added that the expert's testimony is presumptively unreliable if the research was performed in anticipation of, rather than independent from, the litigation.<sup>9</sup>

### **Clarifying Daubert - The Joiner Decision**

In 1997, the United States Supreme Court issued its decision in *General Electric v. Joiner*.<sup>10</sup> The major thrust of the *Joiner* opinion was its holding that *abuse of discretion* is the standard of review by which appellate courts are to evaluate a trial court's ruling on the admissibility of evidence.<sup>11</sup> The *Joiner* Court specifically noted that the *Daubert* Court had not previously addressed an appellate court's standard of review in dealing with a motion to exclude expert testimony. The *Joiner* Court did point out, however, the fact that *Daubert* did not change the standard of review that is traditionally employed in making evidentiary rulings.

Additionally, one clarification provided by *Joiner* is that although the expert's methodology is the focus, the conclusions drawn should also be evaluated. The *Joiner* Court noted:

But conclusions and methodology are not entirely distinct from one another. Trained experts commonly extrapolate from existing data, but nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit*<sup>12</sup> of the expert. A

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<sup>8</sup>*Id.* at 2796-97.

<sup>9</sup>*Daubert v. Merrell Dow* (9th Cir. 1995) 43 F.3d 1311.

<sup>10</sup>*General Electric v. Joiner* (1997) 522 US 136, 118 S.Ct. 512.

<sup>11</sup>*Id.* at 517.

<sup>12</sup>*ipse dixit*: Latin for "He himself said it;" something asserted but not proven. BLACK'S LAW DICTIONARY.

court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.<sup>13</sup>

### **Further Explaining and Expanding Daubert -- The Kumho Tire Decision**

On March 23, 1999, the United States Supreme Court issued its opinion in *Kumho Tire Co. v. Carmichael*.<sup>14</sup> The *Kumho Tire* case involved a July 6, 1993 accident in which the right rear tire of a mini-van driven by Patrick Carmichael blew out. In the accident that followed, one of the passengers died, and others were severely injured. In October of 1993, the Carmichaels brought a diversity suit against the tire's maker and distributor (collectively Kumho Tire) alleging that the tire was defective.

A cornerstone of plaintiffs' case was the testimony provided by an expert in tire failure analysis, Dennis Carlson, Jr. Carlson intended to testify at trial that in his expert opinion, a defect in the tire's manufacture or design caused the blow out. That opinion was based on a visual and tactile inspection of the tire. He also based his opinion on the theory that in the absence of at least two of four specific observable physical symptoms indicating tire abuse, the tire failure of the sort that occurred could only have been caused by a product defect.

### **The Procedural Context**

Defendant Kumho Tire moved to exclude Carlson's testimony on the ground that his methodology failed to satisfy Federal Rule of Evidence 702 and its implicit reliability requirement. The District Court granted the motion (entering summary judgment for the defendants -- Kumho Tire) and acknowledged that it should act as a reliability "gatekeeper" under *Daubert* even though Carlson's testimony might be considered "technical" rather than "scientific." The District Court noted *Daubert*'s four factors (discussed earlier) in determining reliability of a particular scientific theory or technique, and found that those factors militated against the reliability of Carlson's methodology. On plaintiffs' motion for reconsideration, the District Court agreed that the *Daubert* analysis should be applied flexibly and that its four factors were simply illustrative. However, the District Court affirmed its earlier decision because it found insufficient indications of the reliability of Carlson's methodology.

The plaintiffs appealed the District Court's ruling. The 11th Circuit Court of Appeals reversed and held that the District Court had erred as a matter of law in applying *Daubert*. Believing *Daubert* was limited to the scientific context, the Court of Appeal held that the *Daubert* factors did not apply to Carlson's testimony, which the Court of Appeals characterized as skill or experience based. In other words, the 11th Circuit held that *Daubert* applied only to experts offering opinions based on scientific theory, as opposed to experts offering opinions based on knowledge gained by experience.

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<sup>13</sup>*Id.* at 519.

<sup>14</sup> *Kumho Tire Co. v. Carmichael* (1999) 119 S.Ct. 1167.

Kumho Tire petitioned for *certiorari*. The United States Supreme Court granted *certiorari* in light of the uncertainty among the lower courts about whether, or how, *Daubert* applied to expert testimony that might be characterized as based not upon “scientific” knowledge, but rather “technical” or “other specialized” knowledge. The Supreme Court held that *Daubert* did indeed apply to “technical” and “other specialized” knowledge. Before discussing the precepts delineated by the Supreme Court, it is essential to review the specific facts of this case and how they correlate with the proposed expert testimony.

### **Plaintiff Expert Carlson’s Testimony**

Carlson based his opinion that a defect in its manufacture or design caused the tire to blow out, in part, upon three general premises:

*First*, a tire’s carcass should stay bound to the inner side of the tread for a significant period of time after its tread depth has worn away.

*Second*, the tread of the tire at issue had separated from its inner steel belted carcass prior to the accident; and,

*Third*, this separation caused the blow out.

However, Carlson’s conclusion that the defect had caused the separation was based on other specific propositions, several of which Kumho Tire strongly disputed. They are as follows:

(1) Carlson stated that if the separation is not caused by a certain kind of tire misuse called “overdeflection” (under inflating the tire or causing it to carry too much weight, thereby generating heat that can undo the chemical tread/carcass bond), then, its cause is a tire defect.

(2) Carlson said that if a tire has been subjected to sufficient overdeflection to cause separation, then it should reveal four physical symptoms. These symptoms are: (a) tread wear on the tire’s shoulder that is greater than the tread wear along the tire center; (b) signs of the bead of the tire (portion that meets the rim) having been pushed too hard against the bead seat on the inside of a tire’s rim; (c) sidewalls of the tire with physical signs of deterioration such as discoloration and/or; (d) marks on the tire’s rim flange.

(3) Carlson concluded that where he does not find at least two of the four physical symptoms described above (a - d), he concludes that a manufacturing or design defect caused the separation.

Carlson testified that he had inspected the tire in question. He conceded that the tire showed greater wear on the shoulder than on the center, some signs of being pushed too hard against the bead seat, some discoloration and a few marks on the rim flange, and inadequately

filled puncture holes which could also cause heat and could lead to separation. However, in each instance he testified that the symptoms were not significant. He explained that it was his opinion that they did not reveal overdeflection. Based on these observations, Carlson concluded that the tire did not bear at least two of the four overdeflection symptoms, nor was there any less obvious cause of separation, and since neither overdeflection nor puncture caused the blowout, a defect must have done so.

Based on a review of these facts and proposed testimony, the Supreme Court reversed the 11th Circuit's holding and stated three general reasons as follows:

First, the Court pointed out that the language of Federal Rules of Evidence Rule 702 does not make any distinction between "scientific" knowledge and "technical" or "other specialized" knowledge. The rule states that *any* such knowledge might become the subject of expert testimony. Hence, the Court concluded that as a bare matter of language, Rule 702 applies its reliability standard to all "scientific," "technical," or "other specialized" matters. The *Kumho* Court did concede that the *Daubert* decision referred only to "scientific" knowledge, but stated that this was merely the result of the nature of the expertise at issue in that case.

Second, the Court pointed out that Rule 702 permits all expert witnesses to offer opinion testimony, not just those offering "scientific" knowledge. Accordingly, the Court concluded that *Daubert*'s rationale applies to non-scientific experts as well as scientific experts.

Third, the Court stated that applying variable standards to scientific and non-scientific testimony would prove difficult if not impossible because there is no clear line that divides one from the other. The Court went on to state that there is no convincing need to make such distinctions. Clarifying this, the Court noted that experts, using specialized knowledge or experience, which is often foreign to a jury, often tie all kinds of observations together and translate them into conclusions. The Court reiterated its holding that the trial court's effort to assure that specialized expert testimony is reliable and relevant will help the jury evaluate the foreign experience whether the testimony reflects scientific, technical, or other specialized knowledge.

The *Kumho* Court went on to specifically treat the question of whether a trial judge determining the "admissibility" of an engineering expert's testimony, *may* consider several more factors that *Daubert* said might bear on a trial court's determination of admissibility. Emphasizing the word "may," the Court answered that question "yes." The *Kumho* Court pointed out that *Daubert* made it clear that its list of factors was meant as a help, but was not meant to be definitive. The Court stated that *Daubert*'s questions can help evaluate the reliability even of "experience-based" testimony. Writing for the majority, Justice Breyer explained as follows:

In certain cases, it will be appropriate for the trial judge to ask, for example, how often an engineering expert's experience-based methodology has produced erroneous results, or whether such a method is generally accepted in the relevant engineering

community. Likewise, it will at times be useful to ask even of a witness whose expertise is based purely on experience, say, a perfume tester able to distinguish among 140 odors at a sniff, whether his preparation is of a kind that others in the field would recognize as acceptable.<sup>15</sup>

Justice Breyer went on to summarize, stating:

We do not believe that Rule 702 creates a schematism that segregates expertise by type while mapping certain kinds of questions to certain kinds of experts. *Life and the legal cases that it generates are too complex to warrant so definite a match.*<sup>16</sup> (emphasis added)

The Court then moved on to a specific application of the way in which a trial court might consider the *Daubert* factors given the specific facts of the case at hand. The Court noted that the specific issue before it was not the reasonableness of Carlson's use of visual and tactile inspection to determine whether overdeflection had caused the tire's tread to separate. Rather, it was the reasonableness of using such an approach along with his particular method of analyzing the data (observations) obtained to draw a conclusion regarding the matter to which Carlson's testimony was directly relevant. In other words, the likelihood, based on Carlson's methodology, that a defect in manufacturing or design caused its tread to separate leading to the blow out. The Court pointed out that Carlson's deposition transcripts cast considerable doubt upon the reliability of both Carlson's general theory of defect, and about the significance of his visual inspection.

The Court remarked that Carlson's visual inspection could ascertain with some certainty minute tread wear differences, but was insufficient to tell with any certainty that it had traveled less than 10,000 or more than 50,000 miles. The Court stated that certain contradictions in measuring tread depth, and other contradictions about the method of visual inspection and its interpretation further undercut his opinion's reliability and that it could not find, in the record, a convincing defense of Carlson's methodology. It found that none of the *Daubert* factors, including that of "general acceptance" in the relevant expert community, indicated that Carlson's testimony was reliable. The Court further pointed out that there was no evidence that other experts utilized the "two factor" test, or use visual and tactile inspections to make the kind of observations and distinctions necessary to Carlson's conclusions. Last, the Court noted the lack of any articles or papers validating Carlson's approach as well as the lack of evidence that other experts utilized the two factor test.

Accordingly, the Supreme Court found that the District Court had not abused its

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<sup>15</sup>*Id.* at 1176.

<sup>16</sup>*Id.*

discretion in disallowing Carlson's testimony and reversed the 11th Circuit's ruling.

### **Conclusion**

Accordingly, *Kumho Tire* expands the application of the *Daubert* case to any trial in which an expert opinion is offered. Via *Kumho Tire*, and to some extent, the *Joiner* decision, the U.S. Supreme Court has given the trial court wide authority and flexibility to deal with the admission of expert opinion evidence under Rule 702. Also, a clear standard of review -- abuse of discretion -- has been set, and this is a difficult standard to overturn on appeal. Perhaps most significantly, the Supreme Court has sanctioned, and to some extent required, the trial court to review the conclusions of the expert and determine if they are connected to the existing scientific data by logical and common sense inference. If not, they can be excluded.

These rulings are particularly significant for aviation products liability defendants. Obviously, when the defendant is faced with speculative plaintiff expert testimony and/or questionable methodology, this should be vigorously challenged under the precepts outlined in *Daubert* and clarified under *Joiner* and *Kumho Tire*.

The foregoing is a brief synopsis of the laws that relate to admission of expert testimony and is not intended to be a thorough review of the various procedural aspects and tools for defendants seeking to exclude unreliable expert scientific opinions. ABC assureds should continue to seek the advice of Mendes & Mount, LLP in properly bringing under judicial scrutiny the "junk science" which is sometimes proffered by plaintiff's experts in aviation product liability cases.